WINTER 2019

SACRS

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SACRS 2019 SPRING CONFERENCE

MAY 7-10, 2019 ◆ RESORT AT SQUAW CREEK ◆ LAKE TAHOE, CA

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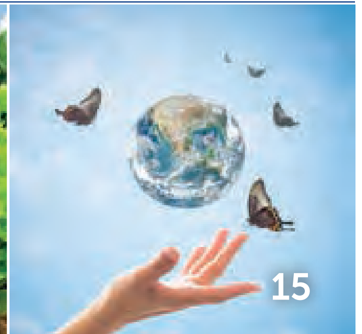

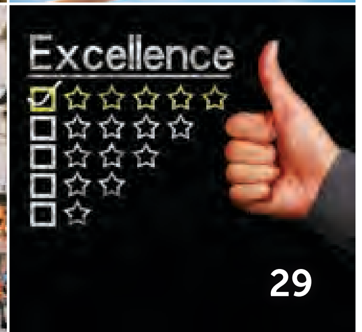

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FROM THE EDITOR

Dreaming of Spring

Even though a California winter is pretty mild by most standards, I am already dreaming of spring, because with it comes the SACRS Annual Spring Conference! Planning is in full-force right now. We have a lovely venue, Resort at Squaw Creek, Olympic Valley/Lake Tahoe, that you are sure to enjoy. Here is a sneak peak at the calendar of events for May 7-10. ***Hope to see you there!***

If you have an idea for a speaker or a breakout session for SACRS Fall Conference in Monterey, now is the time to share it. Visit SACRS.org to submit your suggestions.

Sulema H. Peterson

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

*P.S. This edition of SACRS magazine continues the tradition of articles shared by members. If you have ideas for a story, consider submitting an article! You can do that by contacting me at **sulema@sacrs.org**.*

TUESDAY, 5/7/19

3:00PM-5:00PM	Pre-conference Trainings
5:30PM-6:30PM	SACRS Welcome Reception

WEDNESDAY, 5/8/19

6:45AM-7:45AM	SACRS Yoga
8:30AM-9:00AM	General Session Welcome
9:00AM-3:00PM	General Sessions FEATURING: *Don Ezra, Author and Former Co-Chair of Global Consulting, Russell Investments*
3:15PM-5:00PM	Affiliate Breakout , Attorney, Internal Auditors, Administrators, Investment, Trustee, Safety, Admin Staff, Ops/Benefits & Disability Breakouts
4:30PM-5:30PM	SACRS Legislative Committee Meeting
6:30PM-9:30PM	SACRS Annual Evening Event: Casino Royale

THURSDAY, 5/9/19

7:00AM-8:00AM	SACRS 5K Fun Run/Walk
8:45AM-9:00AM	General Session Welcome, Volunteer Awards
9:00AM-12:30PM	General Sessions FEATURING: *General Wesley K. Clark, (ret.), Businessman, Educator, Writer and Commentator, Chairman and CEO of Wesley K. Clark & Associates*
2:00PM-4:30PM	Concurrent Sessions
4:30PM-5:30PM	SACRS Education Committee Meeting
4:30PM-5:30PM	SACRS Nominating Committee Meeting
5:30PM-6:30PM	SACRS Reception

FRIDAY, 5/10/19

8:30AM-8:45AM	General Session Welcome
8:45AM-9:45AM	General Session
10:00AM-Adj	SACRS Business Meeting

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

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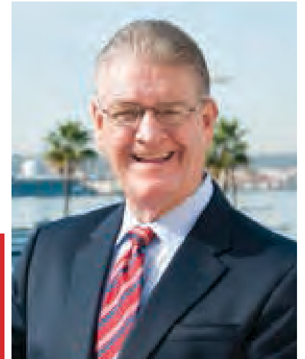
MID-WAY POINT UPDATE



"Outstanding!" "Amazing!" "Terrific!" These are just a few of the adjectives used to describe our latest SACRS conference that has generated new momentum to get us rolling into 2019.

The New Year is a time to celebrate our recent accomplishments and set our sights on long-term goals.

We were successful in convening a retreat for your SACRS board before the fiscal year started in July, enabling them to set annual goals. Now that we've reached the mid-way point for the fiscal year, here are updates on some of the goals we agreed upon.

In 2018, we worked hard to upgrade the quality of speakers at our conferences. Notable guests have included The Honorable Willie Brown, Ben Stein and David Rubenstein. We also brought a new level of consistency to our conferences, thanks to the professionalism of our conference moderator, Frank Mottek of KNX/CBS Los Angeles. He has done a sensational job moderating our conference general sessions expertly, and we thank him for his continued participation in SACRS. Special kudos also goes to Vivian Gray (board chair of LACERA) for doing a fantastic job pulling together the program for the conference this past November.

"Our SACRS – U.C. Berkeley Public Pension Investment Management Program has become a jewel for our organization, and we want more people to know about it."

We have completed goals like expanding our board to seven members and finishing our committee reviews, but there is more we can do. Our SACRS – U.C. Berkeley Public Pension Investment Management Program has become a jewel for our organization, and we want more people to know about it. We plan to hire a professional marketing team this year to help get the word out and recruit more participants for this great program.

The board also plans to continue its visits to all '37 Act counties in order to gather direct feedback from CERAs. We want to facilitate as much participation in SACRS as we can muster.

Full Steam Ahead to Tahoe!

Getting involved starts with jumping on the SACRS conference train! We will hold our spring SACRS conference in beautiful Lake Tahoe at the Resort at Squaw Creek. This can't miss, four-day event will be May 7-10, 2019, so go to SACRS.org now to register and save your spot. How can you pass up Tahoe in the spring?

While on our website, I also encourage you to check out our committees. Our affiliate, audit, bylaws, education, legislative, nomination and programing committees are constantly seeking new members who can offer fresh perspectives. Becoming a committee member will give you a chance to have direct input in the direction of SACRS.

If you know of a great speaker or know someone who would be willing to speak at our conferences, we'd love to know about them. Please don't hesitate to send the recommendation to us so we can look over your ideas.

See you in the spring!

Dan McAllister, *President of SACRS & SDCERA Trustee*

> “Many people associate blockchain with Bitcoin, but they’re not synonymous.”

What Blockchain and Lettuce Have In Common

There is currently a lot of hype about blockchain networks, in part because of the meteoric rise—and subsequent decline—of Bitcoin, a cryptocurrency supported by a public blockchain network. Blockchain technology is important to understand for several reasons, in particular from a fundamental investing perspective because it can be applied to increase efficiency and reduce costs. It can even be applied to curtail widespread E. coli outbreaks.

BLOCKCHAIN MEETS LETTUCE

In 2018, several deadly E. coli outbreaks linked to romaine lettuce sickened hundreds of people while authorities struggled to identify the specific source of the tainted product. With the first outbreak, it was ultimately narrowed down to Yuma, Arizona.

“Do not eat or buy romaine lettuce unless you can confirm it is not from the Yuma growing region,” warned the Centers for Disease Control.

But how do you know if your lettuce came from Yuma? Blockchain.

BLOCKCHAIN BASICS

Before we explain how blockchain technology can be used to curb an E. coli outbreak, it’s worth understanding how blockchain works.

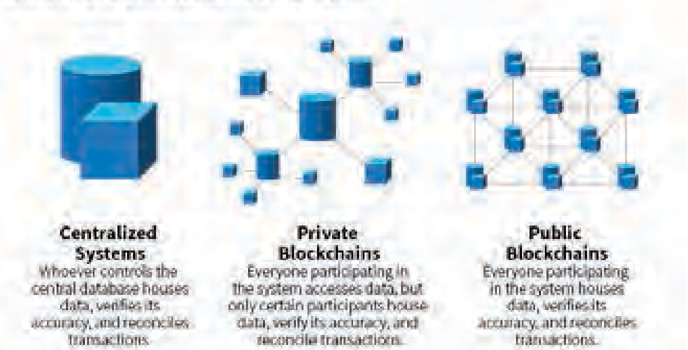
Many people associate blockchain with Bitcoin, but they’re not synonymous.

Blockchains distribute encrypted information (typically a ledger) among network participants, who themselves authenticate the information.

Essentially, this is “a world without middlemen,” in the words of *Harvard Business Review*. It provides “nearly friction-free cooperation between members of complex networks that can add value to each other by enabling collaboration without central authorities.”

The need to exert greater control of information and improve data privacy in certain settings led to the bifurcation of blockchains into private and public networks, with the distinction driven by who controls the consensus function.

In a public blockchain, like the network that supports Bitcoin, every participant in the network houses data, makes decisions about the accuracy of data, and reconciles transactions. On the other hand, with a private blockchain, every participant in the network has access to data, but only a few participants have permission to verify and reconcile that data.



THE LETTUCE CONNECTION

So what does this have to do with lettuce?

Blockchain allows for the efficient exchange of information among various nodes in a network, like a supply chain. And some large corporations are using it to do just that—more proficiently track goods from point A to point B.

Walmart, for example, is using blockchain to monitor portions of its food delivery supply chain. This can help Walmart avoid broad recalls such as its 2018 romaine lettuce recall. Blockchain can tell Walmart from which supplier a product came and on what date, in a way that is fully auditable and impossible to falsify.

That is such a significant advance that the vice president of food and safety at Walmart has said, "There's no question about it, blockchain will do for food traceability what the internet did for communication."

But food delivery isn't the only industry that can benefit from blockchain; we are seeing adoption occur across industries.

ADOPTION ACROSS MULTIPLE INDUSTRIES

Some banks, for example, are using blockchain to assist with cross-border payments and settlement/clearing of securities trades.

The U.S. Food and Drug Administration is testing a blockchain-based platform through which electronic medical records, data from clinical trials, and health data gathered from wearable devices could be better shared.

De Beers, a diamond miner and retailer plagued with questions about the origin and authenticity of its diamonds, announced in May that it had tracked 100 high-value diamonds from miner to retailer using blockchain, an effort designed to avoid imposters and conflict minerals.

And numerous governments—including those in Russia, Dubai, and Sweden—are either testing or piloting blockchain-based land registries that would digitize and verify information about asset ownership and store it in blockchain registers.

CASE STUDY: TRUCKING INDUSTRY

The trucking industry is also poised to benefit from the use of blockchain, as moving goods from one point to another often involves a large number of simple transactions that need to be verified along the way. Typically, few parties are involved and it's easy to verify that the goods have arrived as intended.

However, the current verification process relies on email and phone calls, which can take days. With 100 members, including UPS and FedEx, a consortium called the Blockchain in Trucking Alliance (BiTA) hopes to make that process more efficient by using blockchain. As a shipment enters a truck, it will be scanned. As the truck moves from point A to point B, the GPS logs would ensure that it arrives at its intended destination. At unloading, the shipment would be scanned again.

When the truck arrives at point B, the data is reconciled—everything that was scanned on the way in is matched on the way out—the blockchain would know that the transaction is authentic and complete and remit payment immediately.

A community bank in Texas is even building a payment system to sit atop BiTA's blockchain. The bank provides factoring for U.S. truckers, meaning that they buy trucking companies' accounts receivable at a discount. Its biggest credit cost is fraud—a result of truckers providing fake invoices.

If this bank can build an automated system that is 100 percent accurate and verifiable, its operational costs should decline dramatically, and its profitability should increase significantly.

MAINSTREAM ADOPTION BY 2025

Although we are in the early stages of blockchain development, real blockchain solutions are already being developed and implemented quickly. Accenture predicts blockchain will enter the mainstream by 2020, and we will see mainstream adoption by 2025.

However, some data suggest that it may happen even faster than anticipated: The Depository Trust & Clearing Corporation (DTCC), for example, is poised to start clearing and settling the trades of all swaps on a blockchain in the first quarter of 2019.

There are challenges, of course. Research firm IDC projects worldwide blockchain spending will reach $10 billion by 2021, but not all spending will be successful. According to Gartner, approximately 80 percent of enterprise blockchain applications whose goal is to save money will fail.

From our investment perspective, active management provides a distinct advantage as we can assess the potential implications of blockchain on a company-by-company basis.

As part of our fundamental analysis, we consider which companies can harness and benefit from blockchain (like the Texas community bank mentioned above) and which companies have the potential to be disrupted.

This is the nexus of fundamental research and assessing management teams' strategic vision for the future. We are focused on first making sure we understand blockchain conceptually, then applying that perspective as we determine which companies might be most affected (positively and negatively) as one component of our in-depth, fundamental research.

Daniel Hill, *CFA is a global research analyst covering the financials sector. He was previously a global generalist research analyst and an international and global research associate supporting the global financial team under the guidance of research analysts. Daniel Hill joined William Blair in 2005 as an investment accountant. He is a member of the CFA Institute and the CFA Society of Chicago. He received a B.S. in finance from the University of Nebraska and an M.B.A. from Northwestern University's Kellogg Graduate School of Management.*

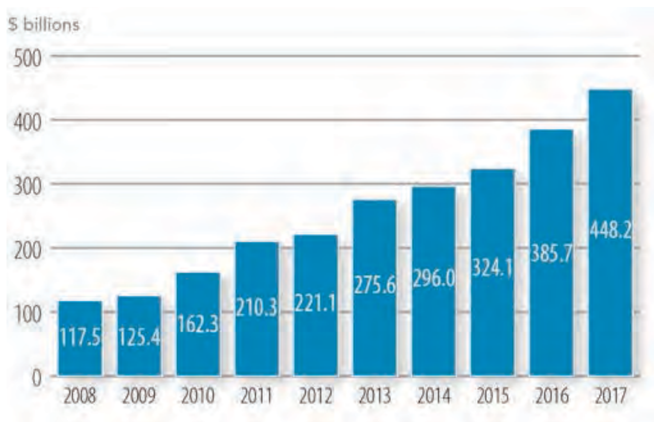
FEATURED STORY

"Infrastructure commonly refers to the essential services and facilities needed to generally support and sustain society, such as airports, toll roads, power transmission lines, and oil and gas midstream."

INVESTING IN INFRASTRUCTURE

In recent years, the infrastructure asset class has received growing attention from global institutional investors attracted by the prospect of strong risk-adjusted returns, protection against inflation, and a low correlation to public markets. The industry has experienced significant growth over the past 10 years: total global infrastructure assets under management have grown from $118 billion in 2008 to $448 billion at the end of 2017.[i] Further, the number of infrastructure-focused private market partnerships grew from less than 100 to more than 500 over the same period.[ii] However, as the industry has matured and acceptance among institutional investors has grown, questions remain about the asset class, including how it is defined, its risks, and the various strategies it utilizes. We will explore these questions and also provide a broad overview of the asset class and the current infrastructure investment environment.

Global Unlisted Infrastructure AUM



Source: Preqin Private Capital Performance Update, February 2018

Overview of Investing in Infrastructure

Infrastructure commonly refers to the essential services and facilities needed to generally support and sustain society, such as airports, toll roads, power transmission lines, and oil and gas midstream. Common characteristics of investing in infrastructure assets include the following:

- *Monopolistic/High Barriers to Entry*—Infrastructure investments typically require large initial capital outlays, contain significant and often monopolistic regional advantages, or are bound by contractual and regulatory frameworks that limit competition in the marketplace.
- *Stable, Long-Term Cash Flows*—Infrastructure assets typically have long useful lives and are backed by con-tracts or concessions often lasting more than 30 years.
- *Inflation-Correlated Revenues*—Given the essential nature of infrastructure assets, their owners are often able to pass inflation on to consumers through price adjustments.

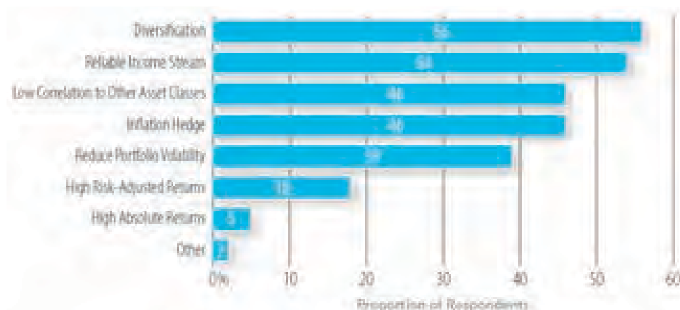
> *"Today, private equity–like fund structures represent the most-common means of pursuing infrastructure."*

- *Limited Correlation to Economic Cycles*—Given their inelastic demand characteristics, infrastructure assets typically see little variance in performance or use across various economic conditions.

Global institutional investors have been actively pursuing opportunities in infrastructure since the early 1990s; however, the asset class is in an early stage of adoption in the United States. Initially, investors in infrastructure were largely non-U.S. institutions, such as public pension plans, insurance companies, and sovereign wealth funds in Australia, Canada, and Europe. Recently, however, institutions in the United States have become more active in the sector, creating new allocations or expanding existing allocations to include infrastructure, primarily in real assets or private equity.

Although the objectives for investing in infrastructure vary, common attractions include added diversification, steady income, low correlation to other assets, and inflation protection. The manner in which institutions invest in infrastructure also varies. Prior to the early 2000s, investors primarily accessed infrastructure either through publicly listed vehicles or open-ended private funds. Following that period, the use of closed-end fund structures, similar to those used in private equity, increased both in terms of size and number. Today, private equity–like fund structures represent the most-common means of pursuing infrastructure. Further, as knowledge about and comfort with the sector have grown in recent years, many institutions have begun to complement their portfolio with infrastructure co-investments and, in some cases, direct infrastructure investments.

Investors' Main Reasons for Investing in Infrastructure



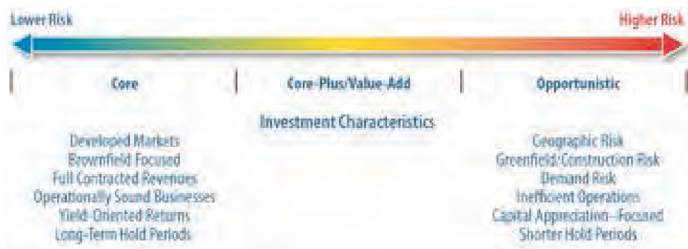
Source: Preqin Investor Interviews, June 2015.

> *“Infrastructure assets vary widely on a risk/return basis, from stable, cash-generative operating assets to opportunistic investments that possess characteristics similar to private equity investments.”*

Infrastructure Investment Strategies

Infrastructure assets vary widely on a risk/return basis, from stable, cash-generative operating assets to opportunistic investments that possess characteristics similar to private equity investments. Although formal strategy definitions continue to evolve, investors most commonly divide infrastructure into five categories: core, core-plus/value-add, opportunistic, public-private partnerships, and infrastructure debt.

Infrastructure Spectrum of Risk



Source: Pathway Research.

Core and opportunistic investments sit at opposite ends of the spectrum in regard to risk, return, and types of assets. Core investments typically involve developed markets, are brownfield focused, have fully contracted revenues, exhibit yield-oriented returns, and have longer-term hold periods in operationally sound businesses/assets. Opportunistic investments often contain geographic risk, are greenfield focused, have exposure to demand risk, emphasize capital gains, entail shorter holding periods, and may be made in businesses/assets with inefficient or mismanaged operations.

Core

Core investments consist of assets that require little in the way of operational improvement and generate returns based largely on contractual cash flows. As such, core investments are generally considered to be lower risk and focus primarily on established, brownfield projects. These assets, given their stable nature, tend to be the focus of investors with low target returns that desire consistent, long-term income. Returns are typically generated through current yield and range from the mid-to-high single digits. Given their highly contracted cash flows, combined with limited ongoing management of the underlying assets, core investments tend to have long-term time horizons, making them often the focus of both investment managers with open-ended fund vehicles and institutional investors who pursue direct investments.

Core-Plus/Value-Add

These investments typically include assets that tend to be early in stage or that possess less predictable revenue characteristics than core investments. As such, these investments require a greater degree of operational management and possess greater opportunity for active management through operational improvements and asset-expansion activities. Core-plus/value-add fund vehicles also occasionally invest in industries typically viewed as non-traditional infrastructure (e.g., fiber networks, parking meters, and oil and gas gathering and processing). Core-plus/value-add assets are expected to exhibit returns stemming from both current income and capital appreciation and are expected to generate higher returns than core investments, typically in the low-to-mid teens, albeit at a higher degree of risk. Given their active management requirements, core-plus/value-add investments are most commonly made through closed-end fund vehicles that are managed utilizing many of the tools common in private equity. Ultimately, the goal of managers that utilize this strategy is to exit their investment, typically after a 5- to 7-year hold period, when the manager’s value-add efforts are complete and the asset’s risk-profile has been reduced to more closely resemble a core asset.

Opportunistic

Opportunistic investments target assets on the higher end of the risk spectrum as a result of their exposure to greenfield/construction, non-contracted revenues, or fluctuations in market demand. Investment managers that pursue opportunistic investments focus on reducing and controlling these risks in an effort to transform the asset into a core or core-plus investment. Opportunistic fund vehicles generally target returns mirroring those seen from private equity investments and generally derive the majority of their returns from capital appreciation, though certain assets can still generate a moderate amount of current yield.

Public-Private Partnerships (PPPs)

PPPs represent a joint venture between a private consortium of investors—typically a financial partner and a construction partner—and a government entity and are formed to build or repair an essential economic or social infrastructure project. The private consortium agrees to take on the construction and operation of a new infrastructure project or the repair and maintenance of an existing infrastructure project in exchange for a defined payment structure based on either the asset's availability for use (e.g., hospitals, courthouses) or, for revenue-generating assets, a percentage of earnings (e.g., toll roads, bridges, public transit systems). Following the end of the agreed-upon contract (typically greater than 20 years), the PPP asset is turned over to the public entity for further maintenance and operation.

Governments typically seek this type of investment structure when looking for certainty of price, completion date, and ongoing operation of the asset. Although negotiating the initial consortium agreement is key in PPP projects, typically construction or maintenance cost risks are borne by the construction partner in the private consortium. These projects can span from very low risk assets with moderate returns (e.g., availability payments) to higher-risk, higher-returning assets where demand risk is borne by the financial investor (e.g., toll roads and airports). Returns for PPP assets are typically exclusively generated through yield-based income.

Although common in Europe, Canada, and Australia, PPP investments have been slow to develop in the United States, but have seen recent growing adoption, particularly in California, Colorado, Virginia, and New York. As budget-constrained states and local governments continue to seek alternative sources of capital to address their infrastructure needs, PPP investments have the potential to gain further adoption in the United States.

Infrastructure Debt

Debt investments in infrastructure projects represent a large, but lower-returning avenue to gain access to the infrastructure asset class. Infrastructure debt strategies are generally categorized by low levels of loss due to the stable, highly visible contractual cash flows of infrastructure projects, which allow for consistent debt servicing throughout their useful life. Managers focused on this strategy typically differentiate themselves through the flexibility the terms they offer to borrowers, the availability of debt financing for the specific targeted assets, and the manager's ability to conduct thorough, in-depth credit analysis.

Infrastructure Investment Characteristics

	Infrastructure Debt	Public-Private Partnership	Core	Core-Plus/ Value-Add	Opportunistic
Typical Target Net Return	5%–7%	8%–12%	7%–9%	10%–15%	≥ 15%
Key Risks	Credit Risk, Interest-Rate Risk	Contract Risk	Operating Risk, Financial Leverage	Operating Risk, Strategy Implementation	Strategy Implementation Market Risk
Main Return Driver	Income	Income	Income	Income & Appreciation	Appreciation
GDP Sensitivity	Low	Low	Low	Low	High
Greenfield/Brownfield	Both	Predominantly Greenfield	Brownfield	Predominantly Brownfield	Both
Operating Complexity	Low	Low/Medium	Low/Medium	Medium	High

Source: Deutsche Asset Management, J.P. Morgan, and Pathway Research.
Note: Target net returns are presented for illustrative purposes only and reflect Pathway's expectation of the annualized internal rate of return to limited partners, net of manager fees, expenses, and carried interest over the life cycle of an infrastructure fund. Given the anticipated risks of each infrastructure strategy; actual investment returns vary and could differ significantly from the target net returns shown.

Infrastructure Asset Life Cycle

The infrastructure asset life cycle begins with the early development stage when design and planning are conducted and licenses are secured. Following this, a project transitions into the late-development stage. During this period the financing terms are negotiated and agreed upon and construction begins. Toward the end of construction, the management team is formed for the ongoing projected operations and the asset is prepared to commence operations. The project is then opened for use, and revenue generation begins. At this point the project enters the brownfield stage, which typically lasts between 10 and 25 years, but can last for more than 30 years.

Infrastructure Asset Life Cycle

Source: Pathway Research.

Key Infrastructure Risks

The infrastructure sector has its own set of key risks:

- *Demand Risk*—If actual usage of an asset is below forecasted levels due to lower demand, returns can become compressed and the risk of default can increase. Given the more volatile nature of assets exposed to demand risk, the degree of financial leverage employed is often more modest. This type of risk is most commonly associated with toll roads, airports, and rail lines, which are correlated to economic growth in the surrounding region.
- *Interest-Rate Risk*—The long-term nature of infrastructure assets and their income orientation make these assets particularly sensitive to changes in interest rates. Higher interest rates can result in an increase in financing costs, as well as in a reduction of the present value of projected cash flows (i.e., reduction in market value).
- *Political and Regulatory Risk*—Changes in the political or regulatory environment can threaten the legal framework supporting infrastructure investments and the general viability of infrastructure projects.
- *Greenfield Risk*—Due to the complex nature of many construction projects, unexpected delays or cost overruns during the construction phase can delay revenues and affect returns. However, a strongly negotiated financial contract can often pass on this risk to other parties (e.g., construction manager, insurance provider).
- *Operational Risk*—Inefficient operations, increased costs, and unplanned maintenance can affect the expected stream of cash flows generated by the asset.

In Summary

The infrastructure asset class is commanding growing interest from institutions looking for stable and predictable cash flows, low volatility, and low correlation to other asset classes. Here are some things to consider:

- The infrastructure asset class remains young, but a number of credible managers have emerged that possess long-term investment records.

- Infrastructure strategies vary widely on a risk/return basis, from stable, cash-generative operating assets to opportunistic investments with private equity–like returns.
- The structures used to invest in infrastructure vary, ranging from publicly traded funds to privately held open- and closed-end structures.
- Prior to investing in infrastructure, clear objectives for a program should be established because they have a significant impact on both the strategies pursued and the investment structure utilized.

ENDNOTES

i Preqin Private Capital Performance Update, February 2018.

ii Preqin Quarterly Update, Infrastructure Q3 2018, October 2018.

Jason C Jenkins, CFA is a managing director at Pathway Capital Management, LP, and is responsible for investment analysis and conducting due diligence on primaries and co-investments; negotiating and reviewing investment vehicle documents; and client servicing. Additionally, Mr. Jenkins oversees Pathway's infrastructure program, which pursues global infrastructure and real asset investment opportunities.

KEY TERMS

Greenfield—A greenfield project is one that does not follow a prior project and typically consists of unused lands where there is no need to remodel or demolish an existing structure.

Brownfield—A brownfield project is one where an existing structure is modified or upgraded rather than newly constructed.

Dry Powder—Dry powder refers to cash or cash-equivalent assets that are available to invest. In private equity, this typically refers to capital that has been committed to a partnership but has not been drawn down for an investment.

Core Investments—Partnerships that target primarily brownfield assets in traditional infrastructure industry segments (e.g., bridges, roads, utilities, and social infrastructure) that require little in the way of operational improvement.

Core-Plus/Value-Add Investments—Assets that require some operational management, to which the manager can add significant value through acquisitions or operational improvements.

Opportunistic Investments—Assets on the higher end of the risk spectrum: assets with exposure to construction risk, assets with non-contracted revenues containing demand risk or market risk, and assets with emerging-market risk.

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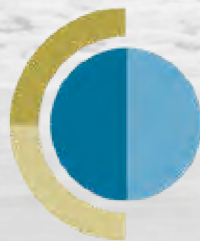

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Innovative Data Lens Widens the View on **Sustainable Investing**

In April 2018, the U.S. Department of Labor (DOL) issued a bulletin that fired a shot across the bow of employer-sponsored retirement plans. The bulletin seemed to call into question whether strategies focused on environmental, social and governance (ESG) issues are appropriate for plans of this nature. The new advisory served as a high-profile reminder that although fiduciaries might see the virtues of investing responsibly, their primary responsibility remains acting in the best interests of participants.

We believe the key to resolving that tension is equally straightforward. It starts with having an objective, data-driven framework for minimizing whatever costs ESG portfolio constraints impose on returns. That includes having a way to overcome the persistent sparsity of good-quality data created by the voluntary nature of companies' ESG reporting.

While the recent DOL guidance didn't technically alter previous guidelines cautioning plan sponsors against putting their own social goals ahead of savers' interests, it did advise specifically against putting too much weight on ESG factors. In effect, the DOL was saying that absent hard evidence that ESG helps returns (or at least does not hurt), an investment's positive social benefit does not ineluctably make it a prudent choice for retirement investors.

In a recent study, QMA sought to provide an objective basis for determining the precise contribution of ESG factors to investment performance. Not only does our approach potentially provide a practical "do no harm" framework for integrating ESG into portfolios, it includes a novel workaround to one of the biggest impediments to such efforts in the past: the lack of available ESG data. In the evolving ESG landscape, we see these as important missing links in helping sponsors square the growing desire to do good with their fiduciary responsibility to grow and protect people's retirement assets.

> *"Even as the popularity of ESG has grown, investors have continued to struggle with an essential challenge: incorporating ESG factors into portfolio construction."*

The Data Problem at the Heart of ESG Integration

Even as the popularity of ESG has grown, investors have continued to struggle with an essential challenge: incorporating ESG factors into portfolio construction. Adding considerations such as a company's level of carbon emissions, the diversity of its hiring practices or how it treats suppliers typically means that the universe of investment candidates becomes more restricted or that constraints are placed on the portfolios. In either case, returns may suffer.

Some proponents of ESG may accept lesser performance as the cost of doing the right thing, the trade-off for improving the lives of others and leaving a better world for future generations. Assuming stakeholders are of the same mind, public plans clearly have some more flexibility to act in this regard than private plans strictly governed by Employee Retirement Investment Savings Act guidelines.

Alternatively, investors may view ESG issues as risk factors that can eventually impact a company's bottom line. Because these investors may also believe the long-term risks associated with poor ESG practices are not fully incorporated into market prices, integrating ESG factors in this way can be seen as a way to actually improve long-term risk-adjusted returns.

It is this perspective that the DOL more directly had in mind when it raised its question — where is the supporting evidence in the data?

"While some studies document lower returns for better ESG firms, others show higher returns and still others demonstrate no meaningful difference."

As part of our study, QMA conducted an extensive literature review of the collective conclusions of the past 30 years of ESG academic and practitioner research. Our review convincingly shows that firms with better ESG scores tend to have a lower cost of capital (both debt and equity) and enjoy higher valuations than firms with lower ESG scores. However, this suggests that if markets are efficient and investors properly incorporate ESG into prices, future returns on better ESG firms should be lower than on inferior firms. In fact, what the studies mostly show is that it is difficult to draw any sort of conclusion about ESG's effect on returns. While some studies document lower returns for better ESG firms, others show higher returns and still others demonstrate no meaningful difference.

Unlike most categories of data used to model returns, ESG disclosures are not mandatory, resulting in huge gaps due to non-reporting. A lack of uniform reporting standards hinders comparability across firms, and low correlations among data vendors' company ESG ratings means that even the choice of ESG data provider can add some noise to the modeling process.

Building on the SASB Materiality Map

Recently, the Sustainability Accounting Standards Board (SASB) took a big step toward resolving some of these data issues with its development of disclosure standards for ESG factors that investors find relevant to a company's financial condition or operating performance. Incorporating input from a huge cross-section of experts from across the professional investment community, the SASB initiative ultimately drew on the feedback of sector-specific analysts to create a "Materiality Map" to the criteria most economically impactful for each industry. The idea was that by focusing on air quality and employee health and safety for oil and gas producers, for example, or customer welfare and fair advertising practices for insurers, etc., investors could at least begin to home in on the issues with the greatest potential value to an investment process.

An unavoidable consequence of the SASB initiative, however, is that until a higher level of reporting can be achieved, the quantity of data points available for use has effectively become even more limited. Our study was a direct attempt to use the SASB Materiality Map to determine whether it was feasible to create a framework for systematically integrating ESG factors into portfolios in a way that would not hurt returns. Yet to do that, we suspected we would also need to find a solution to this data scarcity issue.

Establishing the Framework, Defining the Gaps

Our first task was to use the Materiality Map and the raw ESG data items available from Bloomberg to establish a numeric framework that would allow for meaningful comparisons across categories and firms. We then used this framework to classify firms as having an overall "good" or "bad" score. If they had at least six SASB material items and at least 50 percent were positive, they were "good." If they had at least six SASB material items and fewer than 20 percent were positive, then they were "bad." The rest of the companies were classified as either neutral or missing.

We found that when compared to using all available ESG data, using only data material to each industry definitely helped with the signal-to-noise ratio of our results. Looking at both the Russell 3000® and S&P 500 universes from 2008 (the first year for which many categories were available) through 2016, we found that companies rated most highly on material ESG items actually outperformed those rated most poorly. Interestingly, we also confirmed the findings from prior studies of higher valuations for good ESG companies. This suggested to us the possibility of an "ESG bias" similar to the bias around higher-quality companies in general, that may cause investors to misprice good ESG firms somewhat by expecting their higher valuations to continue in the future.

There was just one problem: While these results were interesting, because of the small sample size, they did not reach anywhere close to a threshold of statistical significance. In the Russell 3000, only about a third of companies reported at least six SASB material items. Of those, the number of companies that could be classified into materially good or bad (as opposed to neutral) firms amounted to just 1.4 percent and 2 percent of the population, respectively.

Expanding the ESG Classification

But that got us thinking. What if there were a way to somehow fill in for the gaps in the data by expanding the rating of material items to include non-reporting companies? So, we performed analysis similar to what is known as pairs trading.

In the classic example of pairs trading, a manger will focus on two stocks that have tended to move in tandem in the past – say, Coca-Cola and Pepsi. If Coke rises in price and Pepsi stays the same, the manager will short Coke and buy Pepsi on the

assumption that prices will eventually return to their historical equivalence. Our hypothesis was that companies that score similarly on ESG metrics are a bit like Coke and Pepsi — over time the behavior of their stock prices should follow the same general pattern.

Using companies that reported a sufficient number of material SASB ESG items, we subtracted the average market-value-weighted returns of bad ESG companies from those of good ESG companies and called this data the Good Minus Bad (GMB) factor. We then ran regressions of the monthly returns of every firm in the universe on the five Fama-French factors (the market, value, size, operating profitability and investment) plus our GMB factor. We found that this GMB factor was statistically significant for many firms — it helped explain returns even after controlling for the other factors.

So, we then used this model to effectively *infer* the ESG classification for the non-reporting companies based on the degree to which the patterns of their stock returns were explained by this GMB factor. As a result, the population of good and bad ESG companies were expanded by over 200 percent.

With this larger sample including inferred ESG classifications, we then repeated our initial analysis, and we saw an even more pronounced pattern than before — a positive spread of nearly six percentage points in annual returns between good and bad ESG companies. And this time the results were statistically significant.

However, when we analyzed the consistency of returns year by year (always a key consideration in researching new signals for our models), we found that more variation existed, with the bad companies actually outperforming in four of the eight years. Thus, although we found statistically better performance of good ESG firms across the full period, practically speaking, we should probably think of the two groups as having equivalent returns. Still, these results show the benefit of using the expanded ESG universe.

A Bridge to the Future

Like many investors around the world, U.S. pension plans increasingly want to do the right thing by using their influence to pressure companies to become better corporate citizens. But as the DOL's recent fiduciary guidance highlights, a major challenge is how to minimize the potential costs imposed by ESG constraints on portfolios, particularly given the persistent sparsity of ESG data resulting from companies' non-reporting. Our study shows it is possible to greatly expand the classifications of good and bad ESG companies into non-ESG-reporting firms.

Our approach is especially suited to quantitative portfolios with large numbers of positions and many small exposures. In such portfolios, a manager can generally identify companies with bad ESG metrics and swap them out for companies with similar expected returns and better ESG scores without the need to employ detailed ESG analysis of individual firms.

But we see our methodology as also having another potential benefit: encouraging more companies to publish material ESG data. After all, if a company's management does not like being judged on an inferred rating, investors using our data completion technique need only respond that as soon as the company publishes the data they would be happy to calculate the actual score instead. In that sense, these new additions to the ESG toolkit become another way to increase accountability — of companies as well as pension plans — while helping to bridge to a more perfect future. Which is very much the whole spirit of responsible investing.

Serving investors since 1975, QMA targets superior risk-adjusted returns by combining research-driven quantitative investment processes built on economic and behavioral foundations with judgment from experienced market practitioners. Ultimately, each portfolio is constructed to meet the individual financial needs of the client. An independent boutique backed by the capabilities of one of the world's largest asset managers, QMA is the quantitative equity and global multi-asset solutions business of PGIM, the global investment management businesses of Prudential Financial, Inc. As of September 2018, we manage approximately $128 billion in assets for a wide range of global clients.

This is intended for Professional Investors only. All investments involve risk, including the possible loss of capital. Past performance is not a guarantee or a reliable indicator or future results.

Sources: *QMA, SASB, Bloomberg ESG data, CRSP database. Russell 3000® Index, S&P 500 Index, SASB, IBES, Compustat Point-in-Time database.*

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MATURE PENSION PLANS ARE SENSITIVE MANAGE WITH CARE

A Survey of SACRS Plan Maturity Measures

"Maturity doesn't mean you stop fighting, you just change the things you fight for." Carlos Wallace

A good deal has been written about public plans taking on too much risk. Less has been written about the factors that make pension plans sensitive to risk.

That is about to change.

A new actuarial standard of practice on the assessment and disclosure of risk (ASOP 51) that became effective for annual valuations after November 2018 requires actuaries to identify and assess significant risks to pension plans and disclose plan maturity measures that are important to understanding those risks.

As pension plans mature, they become far more sensitive to risks than plans that are not mature. But, there is significant variation in the level of maturity among public pension plans. Understanding maturity and how that affects the ability of pension plans to tolerate risk is essential to understanding how they are affected differently by investment return volatility, other economic conditions, improvements in longevity, and other demographic changes.

> *"All of the risks pension plans face are increasingly magnified as plans mature."*

Mature pension plans are very sensitive to changes. The ups and downs of investment returns can throw mature pension plans into crisis. Changes in the economic environment or demographics of members can necessitate assumption changes that may make mature pension plans unaffordable. All of the risks pension plans face are increasingly magnified as plans mature.

We have identified key plan maturity measures and the range of those measures based on data that Cheiron compiled for all SACRS Systems from 2007 through 2017.

PENSION PLAN MATURITY MEASURES

Support Ratio

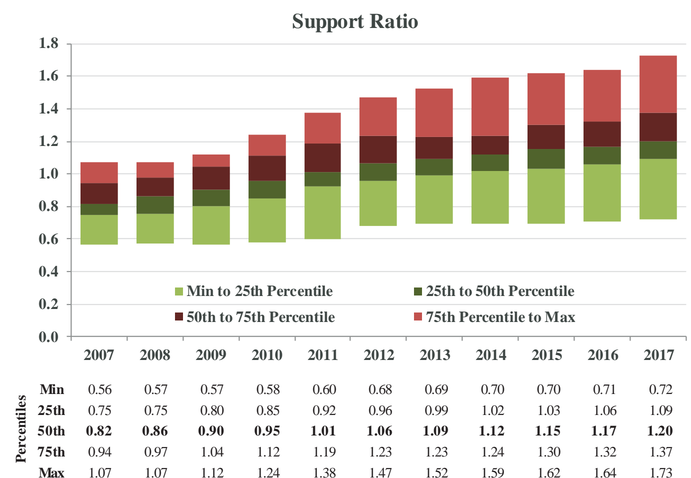
The most intuitive measure of pension plan maturity is the Support Ratio—the ratio of inactive[1] members to active members. New plans have no inactive members. Over time, active members quit their jobs, retire, and become eligible to collect benefits and new active members replace them. Contributions to the plan are often based on a percentage of active members' payroll, and the contributions have to support each active member plus any shortfall that may have accumulated on active and inactive members. As the number of inactive members grows, the contributions needed to support the potential shortfalls related to inactive members as well as active members becomes a larger percentage of active member payroll.

> *"The number of inactive members grew faster than the number of active members for all SACRS plans, but for some plans the growth in Support Ratio was much faster than for others."*

Chart 1 shows the distribution of Support Ratios for SACRS plans from 2007 through 2017. Support Ratios have increased steadily, with a notable increase during the Great Recession. The number of inactive members grew faster than the number of active members for all SACRS plans, but for some plans the growth in Support Ratio was much faster than for others.

Nationally, Support Ratios have also grown following a pattern similar to the growth among SACRS plans. However, SACRS plans tend to be more mature: the median Support Ratio for plans in the Public Plan Database is 0.98 compared to 1.20 for SACRS plans.

Chart 1



Percentiles	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Min	0.56	0.57	0.57	0.58	0.60	0.68	0.69	0.70	0.70	0.71	0.72
25th	0.75	0.75	0.80	0.85	0.92	0.96	0.99	1.02	1.03	1.06	1.09
50th	**0.82**	**0.86**	**0.90**	**0.95**	**1.01**	**1.06**	**1.09**	**1.12**	**1.15**	**1.17**	**1.20**
75th	0.94	0.97	1.04	1.12	1.19	1.23	1.23	1.24	1.30	1.32	1.37
Max	1.07	1.07	1.12	1.24	1.38	1.47	1.52	1.59	1.62	1.64	1.73

Asset Leverage Ratio

While the Support Ratio is a relatively intuitive indicator of plan maturity, it doesn't tell us how changes actually impact a plan's finances. The Asset Leverage Ratio[2], in contrast, can be used to estimate the impact of investment risks on a plan's finances. The ratio is calculated by dividing the market value of the plan's assets by its payroll. Plans with large Asset Leverage Ratios are likely to have more difficulty recovering from an investment loss and receive a greater benefit from an investment gain. They are more sensitive to investment volatility than plans with small Asset Leverage Ratios.

For example, Table 1 below summarizes the impact of a 10 percent investment loss compared to an assumed investment return of 7.0 percent (in other words a -3.0 percent investment return) for hypothetical plans A and B.

Table 1

	HYPOTHETICAL PLAN A	HYPOTHETICAL PLAN B
Asset Leverage Ratio	3.0	10.0
Loss as a Percent of Payroll	30.0%	100.0%
Interest on Loss as a Percent of Payroll	2.1%	7.0%

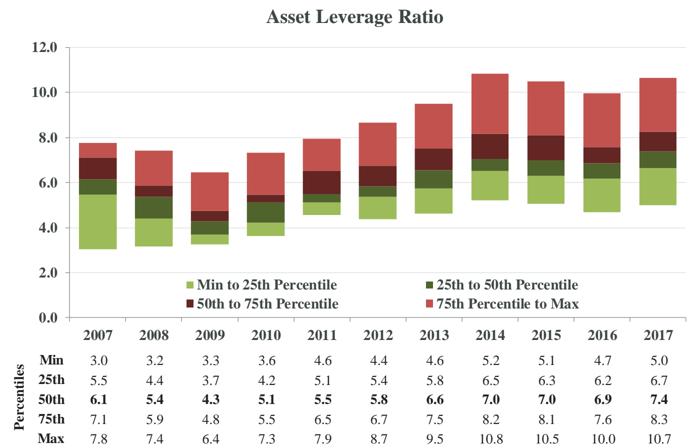
Plan A has an Asset Leverage Ratio of 3.0, so the 10 percent investment loss equates to 30 percent of payroll. Given the discount rate of 7.0 percent, Plan A would have to pay 2.1 percent of payroll to cover the interest on the investment loss, which may be an affordable increase in contribution. Plan B has an Asset Leverage Ratio of 10.0, so the 10 percent investment loss equates to 100 percent of payroll, and a 7.0 percent of payroll payment to cover the interest on the investment loss or more than three times as much as Plan A for the same 10 percent investment loss. Plan B is more sensitive to investment gains and losses than Plan A and may need to consider a more conservative investment policy than Plan A in order to lessen significant investment losses that it may not be able to afford.

Chart 2 shows the distribution of Asset Leverage Ratios for SACRS plans from 2007 through 2017. The Asset Leverage Ratio fluctuates with asset and payroll levels. In 2009, asset levels plummeted due to the stock market crash causing Asset Leverage Ratios to decline as well. Since then, asset levels have grown while payroll levels have remained relatively flat, resulting in increases in Asset Leverage Ratios for most plans.

These changes in Asset Leverage Ratios illustrate some key dynamics. Plans are more sensitive to investment risks immediately before an investment loss than immediately after, and plans that are fully funded are more sensitive to investment risks than if they were poorly funded. As a result, plans that are well-funded may want to consider reducing investment risk while plans that are poorly funded may not.

There is a wide range of Asset Leverage Ratios among SACRS plans and an even wider range among public plans nationally, indicating significant differences in sensitivity to investment risk. The highest SACRS plan had more than double the Asset Leverage Ratio of the lowest SACRS plan. Nationally, the 95th percentile plan in the Public Plan Database had an Asset Leverage Ratio that is nearly five times that of the 5th percentile plan. SACRS plans tend to have higher Asset Leverage Ratios than public plans nationally with a median Asset Leverage Ratio of 7.4 compared to 5.1 nationally. This difference reflects the generally better funding levels of SACRS plans as well as the relative level of maturity.

Chart 2



Percentiles	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Min	3.0	3.2	3.3	3.6	4.6	4.4	4.6	5.2	5.1	4.7	5.0
25th	5.5	4.4	3.7	4.2	5.1	5.4	5.8	6.5	6.3	6.2	6.7
50th	**6.1**	**5.4**	**4.3**	**5.1**	**5.5**	**5.8**	**6.6**	**7.0**	**7.0**	**6.9**	**7.4**
75th	7.1	5.9	4.8	5.5	6.5	6.7	7.5	8.2	8.1	7.6	8.3
Max	7.8	7.4	6.4	7.3	7.9	8.7	9.5	10.8	10.5	10.0	10.7

Even within plans, there can be significant differences in Asset Leverage Ratios for different employers. For example, a small special district that employs mostly safety members who earn higher benefits will likely have a higher Asset Leverage Ratio than the whole plan that includes a mix of safety and non-safety members. Plans may want to consider this metric as they consider how much investment risk each employer can afford.

Typically, plans with low Asset Leverage Ratios are more likely to be comfortable with more aggressive asset allocations while plans with a relatively high Asset Leverage Ratio may need to take a more defensive approach to investment risk.

Actuarial Liability Leverage Ratio

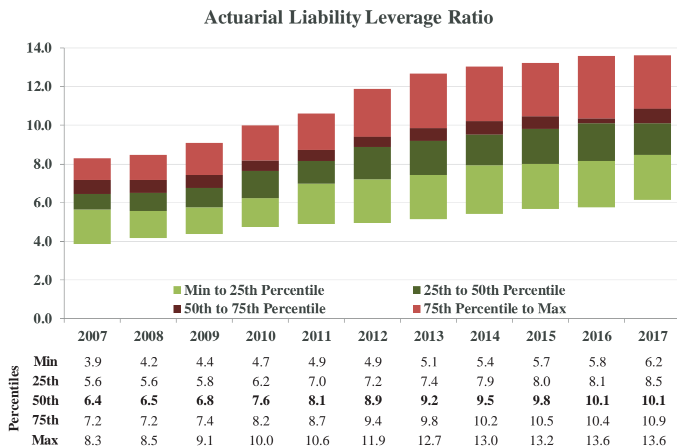
The Actuarial Liability Leverage Ratio equals the actuarial liability of the plan divided by payroll. As with the Asset Leverage Ratio plans with large Actuarial Liability Leverage Ratios are more sensitive to assumption changes and demographic gains and losses. In many cases, particularly among larger plans, demographic gains and losses are relatively minor, but changes in assumptions, such as reducing discount rates and improving mortality assumptions, have had a significant impact on public plans recently. For plans with high Actuarial Liability Leverage Ratios, these changes are more significant than for plans with low Actuarial Liability Leverage Ratios.

Chart 3 shows the distribution of Actuarial Liability Leverage Ratios for SACRS plans from 2007 through 2017. Unlike the median Asset Leverage Ratio, the median Actuarial Liability Leverage Ratio increased at a relatively steady rate throughout the period.

As with the Asset Leverage Ratio, there is a wide range of Actuarial Liability Leverage Ratios among SACRS plans and an even wider range among public plans nationally that may make different policies appropriate for managing changes. Plans with high Actuarial Liability Leverage Ratios may have a greater need to

phase in the impact of assumption changes and to target a level of conservatism in their assumptions even as it is more difficult to do so.

Chart 3



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Min	3.9	4.2	4.4	4.7	4.9	4.9	5.1	5.4	5.7	5.8	6.2
25th	5.6	5.6	5.8	6.2	7.0	7.2	7.4	7.9	8.0	8.1	8.5
50th	**6.4**	**6.5**	**6.8**	**7.6**	**8.1**	**8.9**	**9.2**	**9.5**	**9.8**	**10.1**	**10.1**
75th	7.2	7.2	7.4	8.2	8.7	9.4	9.8	10.2	10.5	10.4	10.9
Max	8.3	8.5	9.1	10.0	10.6	11.9	12.7	13.0	13.2	13.6	13.6

Net Cash Flow

We define net cash flow as total contributions less benefit payments and administrative expenses as a percentage of assets. A negative cash flow indicates that benefit payments and expenses are larger than contributions, and significantly negative cash flow makes a plan more sensitive to near-term investment returns, particularly negative returns. When investments lose money and the net cash flow is negative, the asset base from which plans need to recover is smaller. As a result, plans need an even higher investment return to recover. For example, if net cash flow is zero, to recover from a 20 percent loss a plan would need an investment return of 25 percent (1÷0.8). But if the plan had a negative cash flow of 15 percent of assets, it would need more than a 30 percent return to recover (0.85÷0.65).

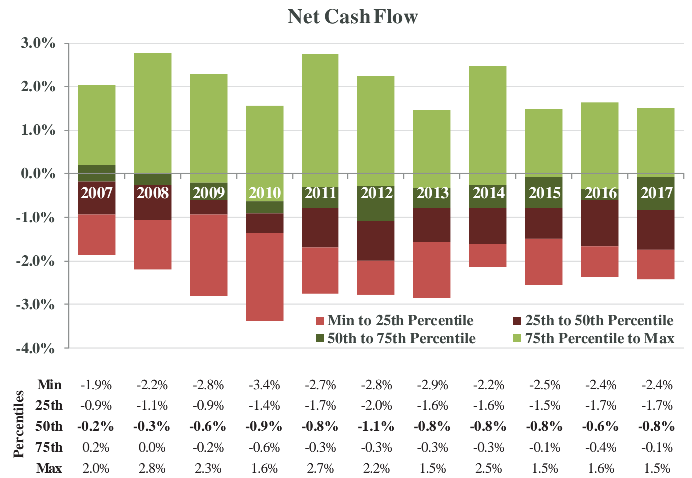
Negative cash flow does not indicate a plan has been managed poorly. In fact, the entire objective of pre-funding a pension plan is to accumulate assets to pay benefits instead of just paying benefits with contributions. The objective of pre-funding is to create negative cash flow. Moreover, plans that are very well-funded will have low contribution rates even as they pay out significant benefits – a situation with highly negative cash flow.

For public plans that always contribute an Actuarially Determined Contribution, cash flow is most negative when the plans are well-funded. When funding levels decline; contribution levels increase easing the negative cash flow. However, for plans where the contribution rates are fixed or cannot be increased, negative cash flow combined with declining funding levels can indicate that the plan may be at risk of insolvency.

> *“As SACRS plans continue to improve funding levels, negative cash flow may become a more significant issue.”*

Chart 4 below shows the distribution of Net Cash Flow for the SACRS plans from 2007 through 2017. More than 75 percent of the SACRS plans had negative cash flows during the period, but at very moderate levels. The lowest SACRS plan in 2017 had net cash flow of -2.4 percent compared to -2.7 percent for the median plan in the Public Plan Database. As SACRS plans continue to improve funding levels, negative cash flow may become a more significant issue.

Chart 4



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Min	-1.9%	-2.2%	-2.8%	-3.4%	-2.7%	-2.8%	-2.9%	-2.2%	-2.5%	-2.4%	-2.4%
25th	-0.9%	-1.1%	-0.9%	-1.4%	-1.7%	-2.0%	-1.6%	-1.6%	-1.5%	-1.7%	-1.7%
50th	**-0.2%**	**-0.3%**	**-0.6%**	**-0.9%**	**-0.8%**	**-1.1%**	**-0.8%**	**-0.8%**	**-0.8%**	**-0.6%**	**-0.8%**
75th	0.2%	0.0%	-0.2%	-0.6%	-0.3%	-0.3%	-0.3%	-0.3%	-0.1%	-0.4%	-0.1%
Max	2.0%	2.8%	2.3%	1.6%	2.7%	2.2%	1.5%	2.5%	1.5%	1.6%	1.5%

CONCLUSION

With the implementation of ASOP 51 and its requirement to disclose plan maturity measures that help explain the risks faced by the plan, we expect an increased focus on plan maturity measures. To put these measures in context, it is helpful to understand how a public plan compares to its universe of public plans. SACRS plans tend to be more tightly grouped than public plans nationally, but there are still significant differences in maturity levels between plans. With this perspective, plans can gain insight into how sensitive they are to various risks compared to their peers and develop policies to manage those risks. Plans that are more mature may want to consider ways to reduce their exposure to risks compared to other plans even at the expense of increased costs, and plans that are less mature may be willing to have a greater exposure to risks compared to other plans in order to reduce expected costs.

ENDNOTES

1 Inactive members are members no longer employed by the sponsor who are entitled to a future benefit from the plan. They include service and disability retirees, deferred vested members and surviving beneficiaries.

2 This measure is also sometimes referred to as the Asset Volatility Ratio.

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“As the Chinese domestic equity market evolves and enjoys increasing representation in equity benchmarks, institutions should plan their approach to adding an allocation to China A-shares and consider its potential impact on portfolios.”

Optimizing Institutional Equity Allocations with China A-Shares

The opening of the China A-share market to foreign investors—and the subsequent growing inclusion of a much larger number of Chinese companies in widely-used equity indices—could be one of the most transformative financial market events over the next decade. Institutional investors considering an investment in the domestic China A-share market can now tap into the full China equity pool—more than 3,500 listed companies worth nearly $7.6 trillion across the entire market-capitalization spectrum.

An allocation to China A-shares presents a unique opportunity for institutions to optimize their global equity portfolios. Our analysis shows that the Chinese domestic market exhibits low correlation with other widely held asset classes (such as Hong Kong-listed H-shares, as well as U.S. and European equities), because: a) the Chinese domestic market is influenced by unique economic, political, and monetary policy considerations, and; b) it has very different market participants than elsewhere.

Additionally, given China's long-term economic prospects and inefficiencies in its domestic equity market, an investment in China A-shares exhibits superior alpha-generating potential. As the Chinese domestic equity market evolves and enjoys increasing representation in equity benchmarks, institutions should plan their approach to adding an allocation to China A-shares and consider its potential impact on portfolios. We believe institutional investors should take a progressive approach to allocating to this momentous asset class.

Over recent decades, China has gradually opened its equity markets for foreign investors through a variety of schemes. Then, the launches of the Shanghai-Hong Kong Stock Connect Program in 2014 and the Shenzhen Connect Program in 2016 gave foreigners access to Shanghai- and Shenzhen-listed stocks, without quotas or the need for a license. These programs significantly lowered the costs of accessing the Chinese onshore market. Finally, on June 1, 2018, MSCI added China A-shares into its emerging market indices for the first time.

"China is forecast to overtake the United States as the world's largest economy by 2030. That growing economic importance will increasingly be reflected in global equity indices and in portfolios."

Opening markets to foreigners was a long journey, however the opportunity is significant. China is forecast to overtake the United States as the world's largest economy by 2030. That growing economic importance will increasingly be reflected in global equity indices and in portfolios.

Further, adding China A-shares to portfolios adds meaningful diversification, as evidenced by China A-shares' low historic correlation with major equity markets globally (Exhibit 1). Two main reasons drive this low correlation. First, the Chinese domestic equity market is still in its infancy. Trading is dominated by retail investors and the quickly evolving regulatory environment remains volatile and susceptible to Chinese domestic politics.

Second, these companies yield 90 percent of their revenue domestically, making them less sensitive to global macro-economic trends, and more sensitive to Chinese fiscal and monetary policy, which traditionally have not been highly correlated to the policies of the U.S. and other Western authorities.

Exhibit 1: China A-shares have a low correlation with major equity markets

	China A-shares	HK-listed China stocks	Asia Pacific Ex-Japan equities	Global Emerging Markets equities	Japan equities	US equities	European equities	World equities
China A-shares	1.00	0.51	0.35	0.31	0.24	0.19	0.20	0.22
HK-listed China stocks	0.51	1.00	0.90	0.87	0.57	0.64	0.67	0.71
Asia Pacific Ex-Japan equities	0.35	0.90	1.00	0.97	0.65	0.75	0.82	0.85
Global Emerging Markets equities	0.31	0.87	0.97	1.00	0.59	0.76	0.84	0.85
Japan equities	0.24	0.57	0.65	0.59	1.00	0.53	0.59	0.65
US equities	0.19	0.64	0.75	0.76	0.53	1.00	0.85	0.96
European equities	0.20	0.67	0.82	0.84	0.59	0.85	1.00	0.95
World equities	0.22	0.71	0.85	0.85	0.65	0.96	0.95	1.00

As of September 30, 2018: Correlation data is calculated based on historical return of respective MSCI indices for the past 10 years, using weekly USD return. China A-shares represented by MSCI China A Onshore Index. HK-listed China stocks represented by MSCI China Index. APxJ equities represented by MSCI AC Asia ex Japan Index. GEM equities represented by MSCI Emerging Markets Index. Japan Equities represented by TOPIX Index. U.S. equities represented by S&P 500 Index. European equities represented by MSCI Europe Index. World equities represented by MSCI World Index.

Source: Bloomberg, Allianz Global Investors

China A-shares also give investors an entry to more deeply benefit from China's ongoing shift from an export-driven economy into the so-called "new economy," characterized by an increased role of domestic consumption and higher-value-added sectors, such as tourism, entertainment, healthcare equipment, industrial automation, new energy vehicles, biotech, software and new materials.

That includes greater access to the small- and mid-cap companies set to be the future drivers for China's economic growth—technology, innovation and the rapidly expanding Chinese middle class. China A-shares—especially when accessed through non-passive instruments—better reflect the promise of the country's digital future than emerging-market benchmarks, such as the MSCI Emerging Markets Index, which is highly biased towards Chinese mega- and large-cap stocks.

> *"Although China A-shares are now included in the MSCI EM Index, their weighting is less than 1 percent."*

Most institutional investors benchmark their exposure to China to international equity (i.e., MSCI ACWI ex-US) and/or global emerging market (i.e., MCSI EM) indices. But simply increasing allocations to those indices may not be the ideal way to broaden China exposure. Here's why: Although China A-shares are now included in the MSCI EM Index, their weighting is less than 1 percent. (Exhibit 2) To put that into context, the market cap of China A-shares was, at the end of March 2018, 10.6 percent of the total value of all global equities, and the overall Chinese economy accounted for 15 percent of global economic output in 2017[i]. So, China A-shares are considerably under-represented in one of most widely used emerging-markets benchmark by institutional investors.

Chinese exposure within the MSCI EM Index is also weighted heavily toward low-growth companies and concentrated in a few mega-cap technology firms, creating further imbalances for institutional investors seeking to establish an exposure to Chinese equities that is concomitant to the country's current growth opportunity. In this context, we believe a direct allocation to China A-shares—especially when done through non-passive instruments—can provide investors a more well-adjusted exposure to the Chinese market.

While it's certainly a positive step that MSCI has begun adding China A-shares to its key MSCI EM Index, representation will likely remain very small and, in our view, artificially depressed. From this perspective, we don't believe that investors who decide to define their China A-share exposure by simply "buying the MSCI EM Index" will be properly positioned to seize this opportunity in the next few years.

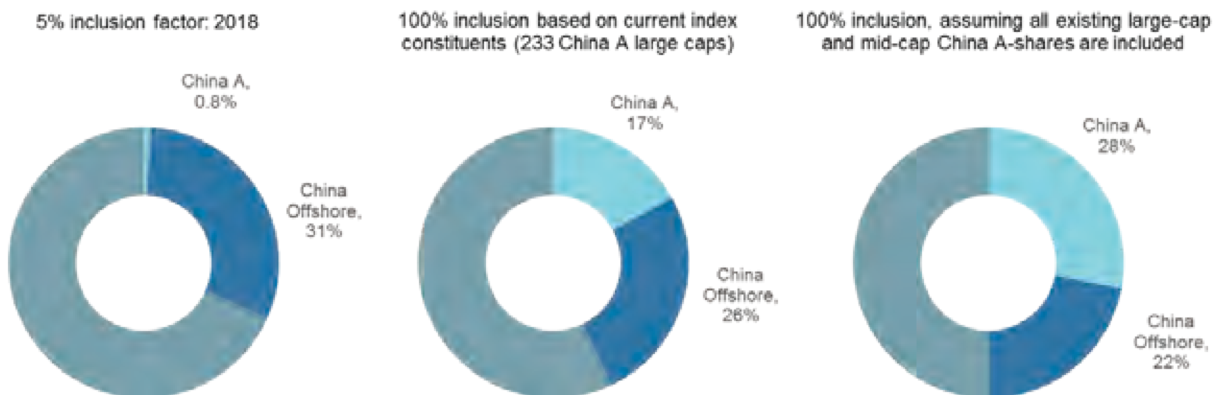
While the China A-share market represents a significant opportunity, like any emerging market investment, it carries its own unique risks. For example, while the next few years should see greater participation from institutional investors, the market for now remains dominated by retail investors, who account for more than 80 percent of daily turnover, and often chase short-term profits. Also, local Chinese equity analysts tend to be less experienced than is the case in developed markets, leading to a greater frequency of earnings surprises than in mature markets.

As shown in Exhibit 3, all this contributes to higher volatility. There is also higher sector rotation for China A-shares compared to developed-market indices, and a high dispersion of returns. Furthermore, stock-trading suspensions—while trending lower—remain common. Also, the regulatory environment is evolving at a fast pace but remains unpredictable.

Those risks, however, are characteristic of many developing markets: They tend to dissipate as the influence of foreign investors and domestic institutions increases and the dominance of retail investors diminishes.

On balance, we believe that the time has come for institutions to consider a dedicated allocation to China A-shares, especially

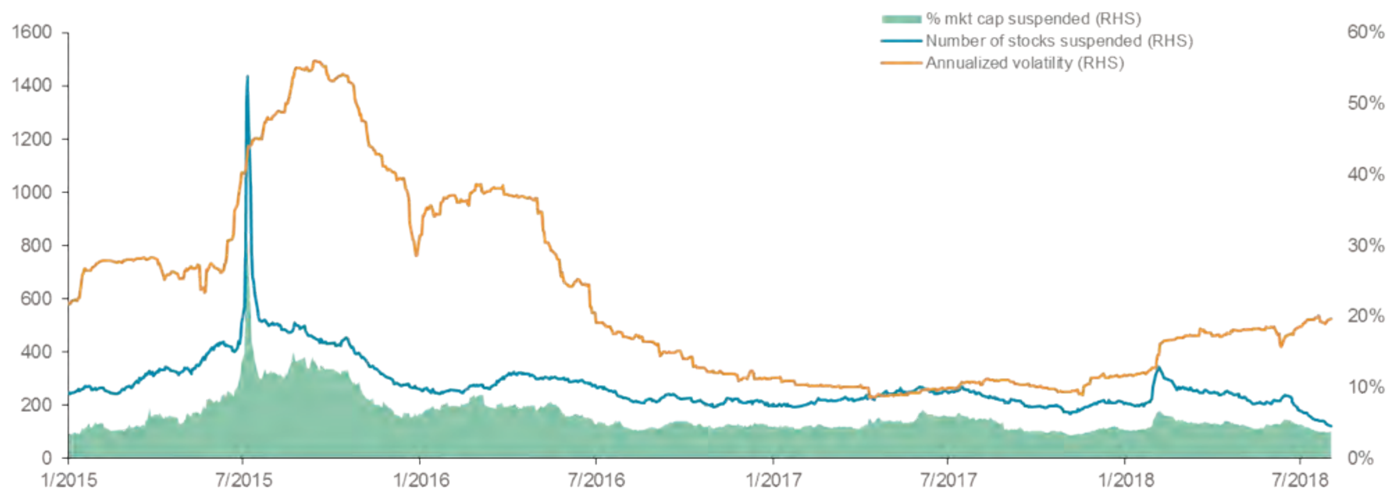
Exhibit 2: **China A-shares are substantially under-represented in the MSCI Emerging Market Index**



As of May 2018: Middle chart is based on MSCI's proposal in May 2018 to include 233 large-cap China A-shares stocks into MSCI Emerging Market index. Right chart is based on the assumption that all China stocks are available to be included in MSCI Emerging Market index. We use a 85 percent discount factor, which should approximately represent the large- and mid-cap universe within China A-shares.

Source: MSCI, Bank of America Merrill Lynch, Allianz Global Investors

Exhibit 3: China A-share stock suspensions and volatility have declined but remain relatively high



As of August 6, 2018.

Source: Goldman Sachs, Allianz Global Investors

since it offers a significant source of diversification. To underscore how relatively absent institutions are from what could be the most significant market opportunity today, foreign investors still only own around 2.1 percent of China A-shares[ii]. All in all, it is our view that, despite current risks, the China A-share market has matured enough to accommodate the arrival of foreign institutional investors. But institutions should employ caution to avoid potential pitfalls and mitigate inherent risks.

We believe that active management can help investors to properly exploit the China A-shares market's inefficiencies to generate potential outsized returns by selecting the highest performing stocks and avoiding problematic ones. When investing in a still-developing marketplace, with elevated volatility levels like the Chinese domestic market, potential downside protection is as critical as potential upside reward.

Institutions should, in our view, take an incremental approach to deploying this new asset class in their portfolios. We consider the case for investing in onshore China today as similar to investing in emerging markets a quarter of a century ago: Back then, many investors viewed deploying capital to developing economies as risky. Today, however, an emerging-market allocation is a typical part of any institutional investor's strategic asset allocation. We forecast that allocations to onshore China will follow a similar trajectory.

Based on our view that the importance of the domestic China equity market is underrepresented in the benchmark index typically used for emerging-market allocations, we believe that adding a more significant allocation to China A-shares as part of an institution's current emerging-market allocation makes sense for both risk-return reasons and for portfolio optimization, especially given the asset class' low correlation to other global equities.

The question then becomes, how heavily should an emerging-market allocation tilt toward onshore China? While the precise answer varies among institutions, data suggests that the sweet spot may be between a 10% to 20% direct allocation to China A-shares, with the money to fund that allocation coming from institutions' existing emerging-market portfolios.

Using the MSCI EM index as our proxy for a "core" emerging-market portfolio, we compiled historical data from the past 15 years (Exhibit 4) to observe what the impact of adding the MSCI China A-Shares Onshore Index to an MSCI EM index allocation would be on annualized returns and on risk.

Our analysis reveals that shifting 10 percent of one's global emerging-market allocation to China A-shares would modestly improve the overall portfolio return from an annualized 11.1 percent to 11.3 percent with a significant Sharpe ratio enhancement from 0.462 to 0.484. A bolder shift of 20 percent of one's allocation to China A-shares would boost the annualized overall portfolio return to 11.4 percent and push the Sharpe ratio up to 0.495.

Any historical analysis is start- and end-point sensitive and should only offer a starting point for considering exposure to an asset class. Nevertheless, history and experience have shown us that the Chinese domestic equity market is clearly on an evolutionary path, especially in terms of its outlook for broader investor participation and potential lower volatility.

With that in mind, we firmly believe that institutional investors should consider an increased allocation to China equity through exposure to the country's domestic market, deploying capital in a steady yet evolutionary fashion, to benefit from a "first-mover" advantage without overly taxing their risk budgets.

"Put bluntly, this could be the single most transformative event in financial markets in the coming decade."

Exhibit 4: **Overweighting emerging market allocations to China A-shares may increase risk-adjusted portfolio returns.**

Allocation from global emerging markets to China A-shares

Allocation to China A-shares	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Annualized return	11.1%	11.3%	11.4%	11.5%	11.4%	11.3%	11.1%	10.9%	10.5%	10.1%	9.6%
Annualized volatility	21.3%	20.8%	20.6%	20.8%	21.3%	22.2%	23.3%	24.7%	26.3%	28.1%	30.0%
Return / Volatility	0.518	0.543	0.554	0.552	0.537	0.512	0.478	0.44	0.4	0.359	0.319
Sharpe ratio	0.462	0.484	0.495	0.494	0.48	0.457	0.426	0.391	0.354	0.316	0.279
Beta	1.00	0.97	0.93	0.9	0.87	0.83	0.8	0.77	0.73	0.7	0.67

Table shows analysis of returns for the MSCI Emerging Market index (used as proxy for global emerging markets) and MSCI China A Onshore index (used as proxy for the China A-share market) indices from June 30, 2003 to July 31, 2018. Percentages shown in the table represent portion of portfolio allocated to China A-shares.

Source: Allianz Global Investors. Allocations shown represent hypothetical non-investable portfolios. Hypothetical portfolios have certain inherent limitations. The analysis does not reflect the results of trading in actual accounts or the material economic and market factors that could impact an investment manager's decision making process. Performance is shown for a limited period of time. Performance over a different market cycle may not be as favorable as the performance shown and may result in losses. No representation is being made that any account will or is likely to achieve profits or losses similar to these being shown.

Put bluntly, this could be the single most transformative event in financial markets in the coming decade. As a result, we believe that institutions should consider increasing allocations to onshore China, as they did with emerging-market allocations a generation ago. That can be achieved by altering existing emerging-market allocations to add direct allocation to China A-shares in order to better position portfolios for the intermediate and long term. Historical data suggests that doing so could improve returns and may also diminish risk, making it a compelling portfolio optimizer.

ENDNOTES

i FactSet, MSCI, Goldman Sachs Investment Research, as of May, 2018.
ii FactSet, MSCI, Goldman Sachs Investment Research, as of May, 2018.

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READING THE YIELD CURVE

"Investors have called attention to the matter because an inverted yield curve (where shorter-term rates are higher than longer-term rates) has historically preceded a recession."

The shape of the yield curve has received more attention this year as it continues to flatten. Investors have called attention to the matter because an inverted yield curve (where shorter-term rates are higher than longer-term rates) has historically preceded a recession. (See Exhibit 1) However, current conditions in the fixed income market, heavily influenced by unconventional monetary policy, suggest that we must view the flattening in conjunction with other indicators for a true gauge on the state of the economy.

The spread (difference) between 10- and two-year Treasury yields has been declining since the beginning of 2014, when it stood at over 260 basis points (bps) (2.60 percent). As of October 31, 2018, it has fallen to just 28 bps. With the spread narrowing to historically tight levels, what is the yield curve telling us now? Are we on the brink of a recession? What other factors, besides the shape of the curve, inform investors about potential recessions?

Exhibit 1: 10-Year Treasury Yield Minus Two-Year Treasury Yield

Source: Bloomberg, as of 11/19/2018.

What Does the Shape of the Yield Curve Mean?

The spread between the yield on 10-year and two-year Treasuries is just one measure of market expectations for interest rates over the short term versus the longer term. For instance, if two-year Treasuries are higher yielding than 10-year Treasuries, the market expects rates to be higher over the next two years than over the long term. This then implies that long-term rates are expected to be lower between year two and year 10.

Research by multiple economists has concluded that an inverted yield curve had occurred before each of the preceding six recessions.[1] In fact, recent Federal Reserve (Fed) research shows that during the past 60 years an inverted yield curve preceded every recession by anywhere from six to 24 months, with only one exception in the mid-1960s.[2] Typically, the curve inverts because short-end yields rise while the long-end yields rise less or even decline. While the curve has not yet inverted, the current environment fits this pattern as yields on the short end have risen in lockstep with the Fed increasing rates, while the 10-year Treasury yield has stagnated around 3 percent.

So why has the relationship between inversion and recession held in the past? Although little consensus exists among economists, there are a few possible explanations. One possibility is that the shape of the curve influences the availability of credit. Since banks borrow short and lend long, the shape of the curve influences their profitability and willingness to lend; a flatter curve makes lending less profitable, in turn, leading to less lending and slower economic activity. Another possible explanation is that an inverted curve is a sign of investors' belief that the Fed has increased rates too much, ultimately triggering a slowdown in the economy and forcing the Fed to eventually lower rates in response.

While these anecdotal explanations have some logic, other researchers have pointed out that, although the relationship seems to hold for the U.S., the record is less definitive elsewhere. In a recent research piece, AQR examined the yield curves in other developed markets and found that the relationship between the shape of the curves and recessions is mixed.[3] For example, in Australia, the yield curve has inverted four times since 1990, but Australia has only experienced one recession during that time (three false positives). Since the real estate and stock market bubbles burst in the early 1990s, Japan has had multiple recessions, yet its yield curve never inverted during that period. So, while an inverted yield curve has a good track record of predicting U.S. recessions, outside of the country, the record is far less reliable.

The Shape of the Yield Curve Does Not Equal an Imminent Recession

While PFM is paying close attention to the flattening yield curve as a possible indicator of a future recession, we also analyze a variety of other leading indicators. Another gauge that has a good track record of predicting oncoming recessions is the unemployment rate. While the unemployment rate is typically viewed as a lagging indicator, research has shown that it typically rises before the economy enters a recession; during the nine months leading up to previous recessions, the unemployment rate began to rise.[4] (See Exhibit 2)

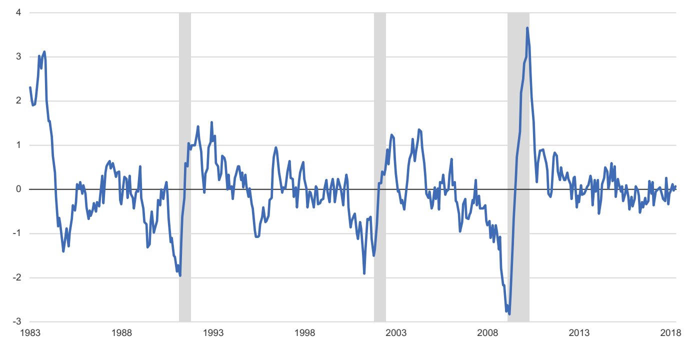
Exhibit 2: Unemployment Rate

Source: FRED, as of 10/31/2018.

With the unemployment rate currently at approximately 3.7 percent, and with expectations that it will fall further, it is not currently showing any signs of weakness. That being said, if the unemployment rate continues to fall, a tighter labor market could put pressure on wages, leading to higher inflation in a potentially overheating economy. This, in turn, would likely lead to more aggressive monetary tightening by the Fed. If the Fed continues to raise rates, the economy may start to slow, the unemployment rate may begin to rise, and the economy could eventually enter a recession. It may be possible for the Fed to engineer a "soft landing," but it has had trouble slowing the economy in the past without contributing to the onset of a recession. We are reluctant to conclude that this time would be any different.

Another indicator of a possible recession is the year-over-year (YoY) change in the Leading Economic Index (see Exhibit 3) made up of various forward-looking economic data that is combined to forecast the direction of the U.S. economy six months in the future. Historically, when the Leading Economic Index has dropped below its level from a year prior, a recession has tended to follow. Currently, the index is above this threshold and continues to rise. Based on this indicator, we are not expecting a recession in the near future.

Exhibit 3: YoY Change In the Leading Economic Index



Source: FRED, as of 10/31/2018.

> *"While the relationship between an inverted yield curve and a recession has historically been strong, we may currently be in uncharted territory, partially due to the Fed's management of its large balance sheet."*

The Fed and the Shrinking Term Premium

While the relationship between an inverted yield curve and a recession has historically been strong, we may currently be in uncharted territory, partially due to the Fed's management of its large balance sheet. One place we can see this is the 10-year term premium. (See Exhibit 4).

Investors typically demand a premium (higher yield) to buy 10-year Treasuries versus buying shorter-dated Treasuries and rolling them over as they mature for a period of 10 years. According to the New York Fed, from June 1961 to April 2012, that term premium was approximately 1.80 percent: Investors earned 180 bps more by purchasing 10-year Treasuries versus buying short-term Treasuries and rolling them forward.

Exhibit 4: 10-Year Term Premium

Source: NY Fed, as of 10/31/2018

Although the term premium has varied widely over time, it has rarely been as little as it has been recently. In fact, starting in 2014, investors buying 10-year Treasuries began earning a negative term premium, meaning they would earn a higher expected return buying short-term Treasuries and rolling them over than investing in long-term Treasuries.

While economists do not fully agree on why the term premium is now negative, one possibility is the Fed's large accumulated balance of Treasuries and Agency mortgage-backed securities. Prior to the financial crisis, the Fed's balance sheet was less than $1 trillion. As a result of several large-scale bond-buying programs (Quantitative Easing, or QE), it grew to $4.5 trillion. One Fed study estimates that the Fed's QE program has lowered the term premium by 100 bps.[5] In addition, the Fed's 2011-12 "Operation Twist," the shifting of Treasury holdings from short maturities to longer-term ones, had the effect of further lowering longer-term rates.[6]

“In addition, the Fed's balance sheet is much larger than in the past, implying that the Fed's balance sheet actions could continue to have a significant impact on rates and the shape of the yield curve.”

If the Fed has indeed distorted market rates, the relationships of the past may no longer hold. In addition, the Fed's balance sheet is much larger than in the past, implying that the Fed's balance sheet actions could continue to have a significant impact on rates and the shape of the yield curve. The Fed is now in the process of reducing its balance sheet, which may begin to unwind some of the curve impact, but some Federal Open Market Committee (FOMC) members have indicated that reduction process may already be near coming to a close. While the relationship between a flattening yield curve and economic activity may still be valid, it may not have the strong link it did in the past. Therefore, a small inversion in the curve today may not predict a recession.

The Fed has, of course, acknowledged the flattening yield curve, but will this cause it to slow or pause its rate increases? The short answer is "no." Historically, it has not done so, and we believe it would be inappropriate for the Fed to alter its course based solely on the shape of the curve if other economic indicators suggest the economy is growing and inflation is firming. Of course, the shape of the curve is something that FOMC members have said they monitor, but, short of other indicators pointing to a slowdown in the economy, we expect the Fed to continue on its current path of periodic, gradual rate increases.

Our Final Read

Following a pickup in the second quarter, recent economic data suggests the U.S. economy continues to grow at a modest, sustainable pace. Further, we expect the Fed funds rate to rise to approximately 3.25 percent to 3.5 percent by the end of 2019. None of the economic data released so far this year has materially changed our assumptions.

Thus, in our current view, we do not expect the curve to invert, nor do we believe the current yield curve flattening signals an oncoming recession. In addition, changes in the fixed income market since the financial crisis of a decade ago suggest that the linkage between a flattening yield curve and weaker future economic activity may not be what it once was.

Nevertheless, we respect the predictive historical relationship between inverted yield curves and recessions in the U.S. and will continue to monitor the shape of the yield curve, as well as a comprehensive range of other economic indicators, to make appropriate investment decisions for our clients. In any case, changes in the yield curve will certainly give investors and economists something to argue about, at least until the next economic slowdown is upon us.

ENDNOTES

1 Arturo Estrella and Mary R. Trubin, "The Yield Curve as a Leading Indicator: Some Practical Issues," *Current Issues in Economics and Finance* 12 no. 5 (2006). Accessed August 2, 2018. https://www.newyorkfed.org/medialibrary/media/research/current_issues/ci12-5.pdf

2 Michael D. Bauer and Thomas M. Mertens, "Economic Forecasts with the Yield Curve" *FRBSF Economic Letter*, 2018 no. 7 (March 5, 2018). Accessed August 2, 2018. https://www.frbsf.org/economic-research/files/el2018-07.pdf

3 "Macro Wrap-Up: The Yield Curve Is a Very Interesting Topic," AQR (May 4, 2018). Accessed August 2, 2018. https://www.aqr.com/Insights/Research/Macro-Wrap-Up/Macro-Wrap-Up-The-Yield-Curve-is-a-Very-Interesting-Topic

4 Kevin L. Kliesen, "Recession Signals: The Yield Curve vs. Unemployment Rate Troughs," *Recession Synopses* 2018 no. 16 (June 1, 2018). Accessed August 2, 2018. https://research.stlouisfed.org/publications/economic-synopses/2018/06/01/recession-signals-the-yield-curve-vs-unemployment-rate-troughs/

5 Brian Bonis, Jane Ihrig and Min Wei, "The Effect of the Federal Reserve's Securities Holdings on Longer-term Interest Rates," *FEDS Notes* 2017 (April 20, 2017). Accessed August 2, 2018. https://www.federalreserve.gov/econres/notes/feds-notes/effect-of-the-federal-reserves-securities-holdings-on-longer-term-interest-rates-20170420.htm

6 "Maturity Extension Program and Reinvestment Policy," Board of Governors of the Federal Reserve System, last modified August 2, 2013. Accessed August 2, 2018. https://www.federalreserve.gov/monetarypolicy/maturityextensionprogram.htm

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Growing Interest for Asset Owners to Claim Compliance with the **GIPS Standards**

"Recently, more asset owners have begun to apply the same principles to their own performance reporting and ACA Performance Services is seeing growing interest in attaining GIPS compliance among the asset owner community."

The popularity and worldwide adoption of the Global Investment Performance Standards (GIPS®) by investment management firms is largely due to demand by asset owners. In the interest of risk management, asset owners increasingly require external investment managers to comply with the GIPS standards. Recently, more asset owners have begun to apply the same principles to their own performance reporting and ACA Performance Services is seeing growing interest in attaining GIPS compliance among the asset owner community.

In September 2018, ACA Performance Services and eVestment released the results from The Value of GIPS Compliance, 2018 Manager and Consultant Survey. Ninety-four percent of consultants and investors believe more pension funds, foundations, endowments, and other asset owners will claim compliance with the GIPS standards in the next five years.

Why Are More Asset Owners Claiming Compliance with the GIPS Standards?

The GIPS standards establish best practices for the calculation and presentation of investment performance that is readily comparable among investment firms and organizations on a global basis. Compliance with the GIPS standards provides the following benefits, among others:

- Accountability commensurate with that expected of external investment managers
- Full and transparent performance information and disclosure to participants, beneficiaries, and oversight board(s)
- Improved compliance framework inclusive of standardized policies and procedures related to the calculation and presentation of performance
- Valuation best practices among external private fund managers
- Additional trust and confidence from the board and management, resulting in fair and just compensation of the management team
- Solid operational foundation for performance calculation and reporting
- Strengthened organizational governance
- Comprehensive view of total fund assets that leads to more effective and accurate benchmark selection
- Independent third-party verification and examination provides additional in-depth review than financial statement audit alone

“For most asset owners, becoming GIPS compliant is essentially getting the 'work house' in order and organized.”

The Roadmap to GIPS Compliance

For most asset owners, becoming GIPS compliant is essentially getting the “work house” in order and organized. Asset owners generally are in favor of following industry best practices on behalf of their stakeholders, but assets owners must also consider the benefit of compliance relative to the work involved in becoming so. There is also the challenge of remaining compliant. Although the landscape of asset allocations, investment vehicles, and operational environments may vary greatly across asset owners, the process of becoming GIPS compliant remains consistent.

__Alicia Hyde Spencer__, CIPM, is a partner with ACA Performance Services, a division of ACA Compliance Group, which provides GIPS consulting and verification services to investment managers in the United States and abroad. Alicia joined ACA in 2004 after serving as an equity research analyst at Southport Capital. She has worked with over 100 of ACA's clients and has extensive knowledge of and experience in applying the GIPS standards to various types of firms, helping firms achieve and maintain GIPS compliance, and has a broad perspective on best practices on implementing the GIPS standards.

__ACA Performance Services__, a division of ACA Compliance Group, offers GIPS verification and other investment performance services to investment managers across the globe.

PLANNING CHECKLIST

- [ ] Educate relevant staff about the GIPS standards
- [ ] Determine resources and budget based on the definition of the firm and which total funds/assets fall within that scope, including any externally-managed assets
- [ ] Begin a GIPS Manual to document policies and procedures for calculating performance, both current and historical, for the applicable time period(s)
- [ ] Develop a plan for determining internal investment-management costs and the methodology that will be used to incorporate these costs into the net-of-fees return
- [ ] Determine the initial period of compliance (must be a minimum of one year)

DID YOU DOCUMENT?

- [ ] Total plan policy benchmarks including the underlying benchmarks and weights, both current and historical
- [ ] Method, source, and frequency for calculating the required total net-of-fees returns, inclusive of manager fees and investment management costs
- [ ] Timing of valuation updates for private investments and other illiquid assets
- [ ] Record retention policies and procedures, especially if there has been a change to systems, vendors, and/or upgrades

GETTING STARTED: RECOMMENDED READING

- ACA Performance Services' White Paper: The GIPS Standards for Asset Owners by visiting *acacompliancegroup.com/news/white-paper/white-paper-gips-standards-asset-owners*
- GIPS standards website: *gipsstandards.org*
  - 2010 Edition of the GIPS Standards
  - Exposure Draft of the 2020 GIPS Standards
  - GIPS Reports for Asset Owners: Comparison of Sections 11-12 with Firm Reports --
  - Guidance Statement on the Application of the GIPS Standards for Asset Owners
  - GIPS Q&A database
- Local performance country sponsor organizations:
  - U.S. Investment Performance Council (USIPC)
  - Canadian Investment Performance Council (CIPC)
- GIPS helpdesk: *gips@cfainstitute.org*

INVESTOR SENTIMENT STAYS POSITIVE DESPITE GEOPOLITICAL DRAMA

There has been no shortage of drama across the macroeconomic and geopolitical landscape so far in 2019. However, it appears that investors may be tuning out much of the political theater around them. Which storylines are moving markets now, and which may become more integral to the plot in the weeks ahead?

The UK Faces An Important Brexit Vote

On Jan. 15, Parliament will say "yea" or "nay" to Prime Minister Theresa May's Brexit Withdrawal bill. You may recall this was originally scheduled for December and was postponed because it appeared likely it would fail to garner enough votes. The situation doesn't appear any brighter for May's plan this go-round — some even expect the vote to be postponed yet again, given its low likelihood of passage. The good news is that there is less likelihood that the worst-case scenario — a "Brexident" (i.e., a "no deal" Brexit) — could come to pass. That's because Parliament recently passed two pieces of legislation that would essentially punish the UK government if it incurs a "no deal" Brexit. It is also becoming increasingly likely that the actual Brexit date (currently scheduled for March 29) could get pushed back, which should be helpful as well in avoiding a "no deal" scenario.

And so what lies ahead for the UK if it is able to postpone the actual Brexit date? We could see an "off the shelf" option, such as Norway's relationship with the UK. However, I continue to believe there is a growing likelihood of a second Brexit referendum. May has said that if Parliament votes down her proposal, there is likely to be no Brexit. She intended that to be a warning to British citizens; however, it may have actually served as encouragement to some members of Parliament to vote against her proposal — and then support a second Brexit referendum.

The U.S. Government Shutdown Makes History

In the United States, the partial government shutdown has extended beyond three weeks; it is now the longest shutdown in U.S. history and has no end in sight. While only approximately 25 percent of the government is closed, the shutdown promises to have an increasingly negative impact on the U.S. economy as it drags on. Thus far, the stock market seems to be ignoring this shutdown; that may change if U.S. debt is downgraded by any of the rating agencies.

A National Debate Begins In France

In France, President Emmanuel Macron can't seem to find a way to diffuse the significant anger that has grown toward him, which has manifested itself in a nine-week-long protest in Paris by the gilets jaunes ("yellow vests"). I knew his reforms would not be popular (although I thought they would be positive for economic growth), but I have been surprised to see such strong resistance.

When I was in France last November, I kept asking the people I met why there was such opposition to Macron. I was surprised to hear that it wasn't due to his actual policies, but it was more about the way he communicated them — many felt he lacked empathy. (I remember how enraged French citizens were by a previous leader who seemed to lack empathy, suggesting that peasants eat cake when they didn't have bread.)

Macron's new attempt at diffusing the anger toward him is a three-month long national debate — called the grand debat — which starts mid-January. This series of town hall-style meetings is intended to be a forum for open, honest discussion and feedback. While Macron has promised that no topic is off-limits, he has said that this will not impact his economic reform agenda. Not surprisingly, a recent survey in Le Figaro indicated that 70 percent of respondents believe the grand debat will "serve no purpose." I worry that this initiative will further anger French citizens and increase the likelihood that Macron will soon be swept out of office. In my view, this would be unfortunate, as his reform agenda was promising. In addition, he was shaping up to be the heir to Germany's Angela Merkel as the de facto leader of the European Union.

Earnings Could Be Disappointing, But Investors Remain Positive

Investors looking for positive news in earnings may come up short. Last week saw several high-profile downward revisions to earnings from Macy's, Kohl's, Delta, Jaguar Land Rover, Constellation Brands and American Airlines. These added to the previous week's warnings from Apple and FedEx. My suspicion is that, because the "P" (stock prices) has moved much lower, the "E" (earnings) has not received as much scrutiny. But that could easily change. Earnings season has the potential to be disappointing, so we will want to follow it closely.

But despite all of the above, investor sentiment was decidedly positive in early January. My view is that investors are laser-focused on the two key risks that have been hanging over stocks in the past year — the trade war and Federal Reserve (Fed) tightening. Since those risks are in abeyance, at least for the time being, investors breathed a sigh of relief.

Kristina Hooper, *is the Chief Global Market Strategist at Invesco. She entered the financial industry in 1995. Prior to joining Invesco, she was the U.S. investment strategist at Allianz Global Investors. Prior to Allianz, she held positions at PIMCO Funds, UBS (formerly PaineWebber) and MetLife. She has regularly been quoted in The Wall Street Journal, The New York Times, Reuters and other financial news publications, and has appeared regularly on CNBC and Reuters TV. Subscribe to the Invesco U.S. Blog and get Kristina Hooper's Weekly Market Compass posts in your inbox. Simply choose "Market & Economic" when you sign up.*

SHORT TAKES

Conversations with Fall Conference Keynotes

In 2018, upgrading the quality of SACRS Fall Conference keynote speakers was a goal and the Program Committee surely succeeded with a lineup of insightful heavy hitters. If you missed hearing from them, here are a few highlights.

VIKRAM MANSHARAMANI

Vikram Mansharamani first gained widespread attention with his book *Boombustology: Spotting Financial Bubbles Before They Burst*. Since then he's gone on to show investors and business leaders how to look at the world differently in order to manage risk and navigate radical uncertainty. His talk, **Navigating Uncertainty**, at the SACRS 2018 Fall Conference was well received by attendees.

SACRS Magazine: Your keynote opened up with a review of geopolitical and economic cross-currents and major transitions happening with examples like China's economy, technology, and energy. But then you stopped and made a reference to skating.

VM: That's right. I provided a view of the world as I see it and I told them that I believe everything that I said. But then I said, it's all irrelevant because great hockey skaters know you skate to where the puck is going, not where it is. That's what we have to do, we have to layout different and disparate dots and connect them in order to navigate uncertainty. We have to draw a conclusion as to where the puck is going.

No one knows what is happening in China, or with food prices, but we can layout in a framework a whole bunch of different dots and form an insight. Take a probabilistic approach and connect the dots. See who is generating wealth and how. See who is behaving and how. If you do, you will get incremental insights. The future doesn't have to surprise you.

SACRS Magazine: During your speech you predicted that a global consumer boom is coming.

VM: There is a growing emergence of the middle class and that is having a ripple effect. For instance the global demand for high value animal protein is in turn driving the need for grain, agriculture, and fertilizer reserves. But this is good. It is exactly what the doctor ordered for the oversupply. It's an optimistic story.

The demand for power storage and batteries to enable consumption of energy will be a gigantic development for electric cars market. Interestingly, dismissed countries hold the key ingredients that the global powers want.

More money means more healthcare. More preventive care, more dental care as there is more money in one's pocket.

It's exponential on exponential.

SACRS Magazine: You noted, however, that India is one of the few countries not growing its middle class.

VM: Prime Minister Modi is literally in awe of China and how farmers have been able to move into the middle class. But I think China might be the last country to be able to do it. Modi is battling automation in manufacturing, where countries like Japan, because of population decrease, is more easily adopting automation. The pace of automation is going to be key. Workers need to have time to be re-skilled, otherwise people will be stranded without a job.

SACRS Magazine: What were the concerns you shared with the audience, in terms of what to watch?

VM: I'm nervous about Saudi Arabia. Its defense budget is the world's third largest, and is ahead of Russia's. Leading analysts believe Saudi Arabia is gearing up for an armed conflict with Iran.

I believe that there is a reasonable chance for a recession in 2019. The Fed continues to raise rates, driving the U.S. dollar to disruptive heights. The European financial systems will be tested. Rising interest rates are equivalent to the tide going out. Warren Buffett once said, "When the tide goes out, you can see who is swimming naked." I think we are going to see some naked swimmers.

PATSY DOERR

A leading expert and thought leader in the field of corporate social responsibility, diversity and inclusion and sustainability, Patsy Doerr's greatest passion is helping large organizations build and develop initiatives that best position them for long-term success in a diverse, global environment. Her experience includes driving these efforts in social impact, talent, learning, organizational development, diversity and inclusion, and client engagement primarily, but not limited to, financial services.

SACRS Magazine: In your keynote, **Social Impact Is No Longer A Soft Issue**, you spoke about how impact investing (those investments primarily focused on environment, social and governance – ESG) is on the rise. Why is that?

PD: This is a critical time when voices are rising, we have seen this with the Me Too movement. Corporations need to take it seriously. We are seeing organizations placing resources behind diversity and inclusion (D&I) and social good. While some may have characterized D&I as a soft issue in the past, today there is mounting data on the business case for it.

There is an intersection between investing, sustainability, diversity and inclusion. Impact investment is on the rise. The 250 billion dollar industry is growing at 18 percent a year. While there is not a causation yet with D&I there is a correlation.

SACRS Magazine: What would be an example?

PD: Supply chain and human trafficking. How are our products being made? Large, complex global companies that produce consumer goods are being questioned about modern day slavery. There is a growing movement and we are making progress, but it is not happening fast enough. We need to step up the effort.

SACRS Magazine: How do we do that? Many organizations now have diversity programs, what else should they be doing?

PD: I don't believe in separate diversity training. We need to integrate D&I with how we train and make it a part of a core strategy. Diversity practitioners need to and lately are moving much closer to the executive suite. We need to move away from the silo of diversity activities to a much broader application.

Another important approach is for organizations to have sponsorship programs. Many have mentorship programs, which are wonderful and can provide good advice, etc. But sponsors advocate for you when you aren't in the room. These relationships have to be built, however, not assigned, but more and more companies are formalizing sponsorship programs.

SACRS Magazine: How are the returns on impact investing?

PD: We are seeing correlations between social good and bottom lines. There is a growing number of consumers that do their research and won't buy from those that aren't doing the right thing.

It really is incumbent of all of us to take D&I and social good seriously. At the end of the day, diversity is not about race, gender, LBGT, etc. It is about different perspectives, styles and approaches.

HONORABLE WILLIE L. BROWN, JR.

Two-term Mayor of San Francisco, legendary Speaker of the California State Assembly, and widely regarded as the most influential African-American politician of the late twentieth century, Willie L. Brown, Jr., has been at the center of California politics, government, and civic life for an astonishing four decades. SACRS Fall Conference attendees got to experience his uncensored wit and wisdom first hand as he commented on the state of California and the most recent November elections.

SACRS Magazine: What is your biggest take away from this election?

HWB: It's amazing how blue California has become! It is unprecedented.

SACRS Magazine: What are a few of the new Governor's biggest challenges?

HWB: The homeless crisis. Governor Newsom has some history with it. When he was Mayor of San Francisco he advocated for care not cash. He wanted to take the same money and convert it to services. There is today an increased sensitivity to homelessness and poverty, which aren't the same thing. Homeless are people with an absence of a place to sleep. Poverty will cause you to lose your home. The two have very different needs. The Governor knows this very well. The question will be if he can get people like farmers and coastal communities where there is very little homelessness to get on board with proposed programs.

SACRS Magazine: Do you think California will continue to lock horns with Washington DC?

HWB: It's smarter for California to not lock horns and vice-a-versa. Both should want to avoid confrontation. If California were to spend time trying to impeach President Trump it would be bad. I do think Mr. Trump sees California as a heavy-weight.

SACRS Magazine: Do you think we need to make California more business friendly?

HWB: California is a great place to live. Education here is superior. There is a well-trained and diverse workforce. California is naturally business friendly. I think the Governor will address it that way. Businesses can help in a way that won't hurt them.

SACRS Magazine: What do you see in terms of transportation in California?

HWB: Governor Brown made Prop 6 (the ballot measure that proposed a repeal of the Road Repair and Accountability Act, also known as Senate Bill 1) the cornerstone of his exit. The original measure passed by the two-thirds vote, but some Californians wanted to stop it. This November the voters said, we don't want to stop it. The question now is can Governor Newsom grab up the baton and run with it fast enough and deliver what the voters expect to see.

SACRS Magazine: Any predictions on a Democratic president in 2020?

HWB: A Democrat could potentially be president, but we can't have 15 candidates, even if they are strong, that's too many. Trump hasn't increased his base at all and won't. But if Democrats don't put forth a single strong candidate, it won't be successful.

JILLIAN MANUS

Jillian Manus is Managing Partner of Structure Capital, an early stage Silicon Valley tech fund, branded as The Architects of the Zero Economy. Structure's thesis is to "invest into underutilized assets and excess capacity". Doing better with what we have, rather than tossing out what is actually valuable but not yet valued. Her memorable talk at the Fall Conference was entitled **Don't Waste an Opportunity**.

SACRS Magazine: If one were to look at you, one would never guess that you were once homeless and living on the streets of New York City. But that experience really shaped your worldview, didn't it?

JM: Yes. I was in a domestic abuse situation and I was broken both physically and mentally. I was in and out of shelters during that time and one of the shelters had a soup kitchen. It wasn't long before I realized the kitchen wasn't being used efficiently. They weren't using their workforce (other homeless) well and food was being wasted. I created an org chart and a messaging system whereby we went out into the community to gather up things that were leftover or intended to be thrown out. We increased the number of people that could be fed and people knew to come to us to donate unwanted things. Other shelters began to replicate what we were doing. That was when I knew I had something of value to give. But I still have a lens that I look through with a homeless person's eye. You see, nothing on the streets is ever wasted and at Structure Capital our focus is on underutilized assets and excess capacity. Our number one effort and mindset is to invest in values not just valuations.

It would surprise people even more that even today I live on the streets of San Francisco once or twice a week.

SACRS Magazine: You were an early investor in Uber. What other technologies are you involved in supporting?

JM: Yes. The sharing economy is an excellent example of managing waste.

Another is a company called Shift. It offers an end-to-end translation of skills, both hard and soft for military veterans. One of the most underutilized talent pools in the U.S. is made up of veterans. There is so much wasted talent. There are 40,000 homeless veterans with 11,000 of them here in California. Of those, 80 percent do not have jobs. We are putting big data to work to help identify the skills learned in the military that can be translated into civilian job openings. We can now match skills, identify the gaps in skill sets and address those gaps.

We are also investing in artificial intelligence to help look at healthcare workforces to better mobilize and deploy healthcare workers.

SACRS Magazine: When you stop and look around, there is so much waste, isn't there?

JM: Sadly, yes. Even something as basic a need as food. One in four Americans are hungry, yet there is so much food waste. There is a company called Copia that makes healthy food more accessible to people through technology that is helping businesses redistribute high-quality excess food. We need more of that.

Blessings are *not* meant to settle on us, but to pass through us. Pass it forward. We should leave this world a little bit better.

BEN STEIN

New York Times Best Selling Author & Emmy Winner Ben Stein, is a powerful speaker on economics, politics, education, and history. He has written or co-written about 30 books, most of which concentrate on investing, and many of which are New York Times bestsellers. Widely considered one of the great humorists on political economy, Ben Stein thrilled the SACRS attendees with a riff on his boring teacher character in *Ferris Bueller's Day Off*, which was recently ranked as one of the 50 most famous scenes in American film.

SACRS Magazine: How would you characterize the current economy?

BS: The easy pickin' days in the stock market are over. Interest rates close to zero. Incredibly high returns on stock. My father used to say, "If something cannot go on forever, it's going to stop."

SACRS Magazine: Where do we go from here?

BS: Interest rates have to rise. Mortgage rates by post-war standards are still low. Luxury real estate will continue to grow. There is so much foreign money that wants to come to the U.S. There was a poll of people from all over the world and more than half want to live in the U.S. and more than half of them want to live in California. It's where people come with a dream. Middle income housing is not so strong.

SACRS Magazine: What's happening now that concerns you?

BS: I'm worried about trade. We want free trade but let's not get into fights with people that are our friends. Trade wars are no one's idea of a good time. We should not let tariffs get in the way.

We also have a defense problem, we are way behind other countries.

SACRS Magazine: You were a speech writer and lawyer for President Nixon. His trip to China was groundbreaking because he was the first president to visit a nation not recognized by the United States because of its communist politics.

BS: Nixon thought the Chinese would be an incredible powerhouse. They are a billion of the most talented people and he was right. Capitalism has done wonders there. But they are not even close to us per capita. The Death by China talk is wildly exaggerated.

Nixon was the first to propose national healthcare and Edward Kennedy killed it. We can't be the only industrial world without it.

SACRS Magazine: Do you have any advice for the SACRS folks?

BS: I love the index funds, short will be bumpy though. You SACRS people are doing great work. Creating prosperity for people in their later years, it's by far the most humane way to make money. Keep doing it, and God bless.

November 13-16, 2018

SACRS

2018 FALL CONFERENCE

Renaissance Indian Wells Resort and Spa • Indian Wells, CA

The SACRS 2018 Fall Conference took place in Indian Wells, California November 13-16 and included presentations, training sessions, breakout sessions, and concurrent sessions covering a variety of topics. Here's a look back at a few of the activities and events.

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Resort at Squaw Creek
Lake Tahoe, CA

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

SPRING 2020
May 12-15
Paradise Point Resort & Spa
San Diego, CA

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

SPRING 2021
May 11-14
Hyatt Regency Long Beach
Long Beach, CA

FALL 2021
November 9-12
Loews Hollywood Hotel
Hollywood, CA

SPRING 2022
May 10-13
Omni Rancho Las Palmas
Resort & Spa
Rancho Mirage, CA

FALL 2022
November 8-11
Hyatt Regency Long Beach
Long Beach, CA

SPRING 2023
May 9-12
Paradise Point Resort & Spa
San Diego, CA

FALL 2023
November 5-11
Omni Rancho Las Palmas
Resort & Spa
Rancho Mirage, CA