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IN THIS ISSUE

By Kim Lew, Vice President and Chief Investment Officer, Carnegie Corporation of New York

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Investing in Diverse Asset Managers: A Performance Imperative

The investment team at Carnegie Corporation of New York is tasked with maximizing our endowment's returns so that the grantmaking foundation established by Andrew Carnegie more than 100 years ago can fulfill its mission of doing "real and permanent good in this world." However, we do not make program- or mission-related investments; we do not seek out double bottom-line investments, nor do we pursue strategies in order to "do good." We are performance seekers. Full stop.

So why have we decided to prioritize diversity when evaluating and selecting investment firms to help manage our endowment? Because we believe it is a performance imperative. As the U.S. population becomes increasingly diverse and international markets become more accessible to investors, firms employing individuals with varied backgrounds will have a competitive advantage in understanding the nuances of investible opportunities.

A report commissioned by the John S. and James L. Knight Foundation, "Diversifying Investments: A Study of Ownership Diversity and Performance in the Asset Management Industry," examined four segments of the asset management industry — mutual funds, hedge funds, private equity funds, and real estate funds — and found strikingly low levels of women and minority ownership as a percentage of all firms in each asset class, ranging from a low of 1.8 percent of real estate firms managed by women and a high of 8.3 percent of hedge funds managed by minorities. In terms of assets under management, representation of diverse-owned firms was even lower, ranging from less than one percent for mutual funds to 3.8 percent for private equity (Fig. 1).

A subsequent report issued by the U.S. Government Accountability Office notes that investment firms owned by women and people of color manage less than one percent of the $70 trillion in U.S. assets under management. By contrast, women and people of color comprise roughly 70 percent of the U.S. population — a massive consumer base that drives purchasing behavior, customer preferences, and market trends.

Today, generating alpha in traditional asset classes and industry sectors that are overcapitalized is harder to do. We believe outperforming requires identifying new areas of opportunity, while being able to anticipate risks that might arise as global demographics shift. Investment professionals that represent a broader range of the population and as a result bring diverse perspec- [Continued on Page 8]

NMS MANAGEMENT

Nancy M. Szigethy
Founder, President and Chief Executive Officer

ABOUT NMS

NMS is a membership-based organization serving as the primary educational resource for the endowment and foundation community through its high caliber meetings. Believing that most successful business ventures are built on trust, and trust can only be developed through relationships, NMS strives to facilitate relationships through its membership platform.

As the chief source of unbiased educational forums, NMS promotes high standards of competence and ethics. As part of its mission, NMS provides its members with access to leading thinkers in the asset management industry through its content rich programming in a non-commercial setting of peers. NMS is the bridge to the latest investment ideas and information applicable to the endowment and foundation community.

Institutional Investing in Draw-Down Private Partnerships

By Anurag Pandit, CFA, CIO of ALSAC/ St. Jude Children's Research Hospital, Adjunct Faculty University of Memphis

By Kelley Anderson, MSBA in Finance, Faculty University of Memphis

Private investments are specialty investments only available to institutional and large investors with long investment horizons. As in most exclusive clubs, preferred membership is restricted, with elite institutions, such as university endowments and mission-based organizations, gaining favorable status and access to the most sought-after managers. The private investments industry, has grown from $0.5 trillion in assets to almost $5 trillion in assets over the last 20 years. In recent years, the increase of capital allocation to the private market has helped spur a growth of private investment funds, larger fund sizes, and more competition for deals. These factors, along with greater competition in private investments, has led to a narrowing spread in returns between private investments and the public market. The effects of quantitative easing and low rates have created an inflation in asset prices, and private investments are no exception. Even so, private investments may offer opportunities not afforded by the public markets.

Some current Wall Street forecasts predict in excess of 500 basis points in incremental returns for broad private partnerships. Neither history nor current valuation levels suggest this is reasonable. Adjusting for end point biases, we realistically estimate that a broad portfolio of private equity partnerships adds approximately 100-200 basis points of incremental returns compared to public markets. Given the potential for future slender incremental returns, it is important to structure the long term private partnership portfolio optimally in order to enhance returns. The two main factors driving returns from private investments are the allocation among the diverse products within private investments and diligent selection of fund managers with whom to invest.

Allocation Strategy in Long-Term Private Investments

Within private investments, there are several investment sub-classes, each with their own risk and return profiles. Private investments are dominated by buyout funds, venture capital (VC), and growth equity, which together account for close to 60% of all private long-term fund assets. However, there has been growth in other private asset classes such as private credit and real assets including energy, infrastructure and real estate. The increase in the number of categories and number of private investment funds has often resulted in over-diversification and excessive bucketing among institutional investors. Excessive fractionalizing, or bucketing, is the enemy of returns, as capital is unnaturally allocated and often trapped in non-essential buckets. If the universe is carved minutely enough, every strategy is top quartile; a common claim by most general partners. A more open architecture of manager evaluation, with fewer buckets, will likely result in better competition for capital and higher portfolio returns. We suggest a long-term private partnership portfolio should be broadly categorized into three groups: venture and growth equity, buyouts, and opportunistic. This is sufficient to obtain an adequate number of disparate growth paths without compromising returns or diversification. The precise allocation depends on an institution's liquidity and risk profile but should generally tilt toward venture, growth equity and buyouts.

Venture capital derives its success from new enterprise creation which faces both existential risk as well as stock market risk, representing the riskiest segment of the market, but also with the highest potential returns. Of all the clubs in private partnerships, the elite "venture club" is the most difficult to access. It is also the club that benefits from the best emerging companies, skewing industry average returns. Historically, investing with the median VC manager will likely result in lower than stock market equivalent returns. In addition, the abnormally high historical returns earned by VC appears to be isolated to the late eighties and early nineties. Returns have significantly retracted to more normal levels over the past twenty years. For these reasons, it is critical to be ultra-selective in VC in terms of manager selection. A dedicated exposure to VC could result in trapping capital in median managers. Growth equity includes investing in a later stage than VC investments and returns tend to be less skewed by high outperformers and investment wipeouts. Therefore, combining the VC allocation with growth equity, which also invests in technology and healthcare focused companies, reduces the risks associated with adverse selection.

Unlike venture capital and growth equity, buyouts are generally cash generating companies in need of some form of restructuring or capital structure management. Buyouts provide a natural complement to venture and growth equity for two reasons. First, they typically invest in more stable and established cash-generating businesses, which allows these firms to service debt, unlike growth equity and venture which use cash to fund growth. Second, they operate in complementary industries; Buyouts are mostly in industrial, service and asset-heavy businesses, while VC and growth equity are technology and health care centric. Buyout funds demonstrate greater consistency in returns with much less adverse selection bias. While several prominent observers in the industry have favored smaller niche buyout funds, our findings make no such size distinction. We find that larger funds appear to earn similar returns, on average, as smaller-to-mid-size ones.

We believe all other long-term private partnership opportunities should vie to compete for capital in an "opportunistic" segment. This provides for inclusion of any strategy, so long as it meets the target return hurdle, although a case can be made for achieving a target liquidity premium over public market equivalents. Equivalently attractive publicly traded securities, such as REITs, should help conserve liquidity capacity in lieu of private real estate. We find that private real estate *[Continued on Page 10]*

By Reginald G. Sanders, CFA, CAIA
Director of Investments
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Takeaways from a Decade of Learning: The Generalist Model

Context

March 1, 2020 will mark my 10-year anniversary as part of the investments team at the W.K. Kellogg Foundation, an independent, private philanthropy. For this entire period, we have employed a generalist approach to investing the foundation's assets. Given that the governance structure at the Kellogg Foundation allows for the investment staff to have manager selection discretion within the limitations of the strategic asset allocation ranges, we have had material flexibility to iterate on a generalist model that works best for us.

It is important to note that a generalist approach does not work for all organizations. I have worked in both generalist and specialist models over the course of my career and each has its share of positives and negatives. From my experience, there are three major hurdles to being a generalist. One is that a generalist has to try to create an edge relative to specialist peers who will always have a depth of knowledge advantage in their area of focus. That is not an easy task. The second drawback is that since the learning curve is not as straightforward as focusing on one area, the generalist path typically takes more time to develop that edge. A third challenge is that more intentional communication is needed within the team in a generalist model to ensure both direction and alignment in execution than in a specialist model where the boundaries are more explicitly defined. While I can personally attest to these challenges, based on the last ten years, the rewards have been more than worth it for the Kellogg Foundation.

I have worked in both generalist and specialist models over the course of my career and each has its share of positives and negatives.

Before sharing my takeaways on the value and utility of the generalist model in my experience, it might be helpful to highlight our particular context.

Our investment team consists of four decision-makers, including myself, Neal Graziano, Carlos Rangel and Joel Wittenberg. All four of us have to be in agreement for an investment recommendation to be approved. As chief investment officer, Joel has a veto, but rarely ever uses it. In terms of coverage, the investment team directors (Neal, Carlos and myself) all follow managers across asset classes. However, each of us is the strategy lead for one of the three main sleeves in the portfolio. I lead the hedge fund effort. Neal leads our private investments and Carlos leads our public equities.

Another feature of our context is that the four of us have worked together for a long time. Neal started at the Kellogg Foundation in July 2007. Joel joined in September 2009. I joined in March 2010 and Carlos joined in October 2010. It is rare that the top four decision-makers for a nonprofit investment team are together for almost a decade. In the team's view, however, the generalist approach has played a big part in our stability and explains the depth of learning and effectiveness of this approach.

To illustrate that, I will highlight four key lessons from our team's experience using and refining the generalist model that particularly resonate with me.

[Continued on Page 11]

FIG. 1 Sources of a Sustainable Edge

MINDSET	Are you approaching the targeted opportunity set with a unique way of thinking versus your peers? It is also just as important to understand why your unique way of thinking exists in order to better assess how durable this difference in mindset could be.
TALENT	A well-performing team needs talent. Does your team have the depth of talent to maintain an edge longer-term?
EXPERIENCE	Do you have the necessary experience to execute your chosen strategy? Do the key people have the requisite experience working with each other? Do you and/or others on your team (either individually or collectively) have experiences (applicable to your edge in the strategy) that are unique to you or your team and cannot be replicated by a competitor no matter how talented that peer is? If the answers to these questions are Yes, then I have found based on my experience that an edge can be very durable
ENVIRONMENT	What is your mandate? Has an internal environment been created with the culture, the appropriate processes and the requisite resources to best leverage the unique mindset, talent and experiences of your team to achieve the mandate?

By Nicholas Csicsko
Managing Director
Trinity Church Wall Street

Authenticity and Working Toward Alignment in an Institutional Portfolio

> **"The more constraints one imposes, the more one frees one's self of the chains that shackle the spirit."**
>
> — Igor Stravinsky, *Poetics of Music in the form of Six Lessons*

Institutional investors find purpose knowing that their work supports the philanthropic goals of their organizations. Many of my most inspirational interactions have been with the program directors and grantees that provide tangible context for the daily work we do to preserve and grow the purchasing power of our portfolio. This same higher purpose, doing more than just compounding capital, is a key motivation often cited by our investment partners. This commonly shared motivation could be a foundation from which to respond to increasing demands from stakeholders for accountability and alignment in our portfolios. Yet, figuring out where to start can be overwhelming as building and managing a portfolio that meets its return target is difficult enough.

Stakeholders want to be able to say without a doubt that they support good in the world when, without hindsight, the results of an institution's actions will always be less clear. There are very few examples, if any, of companies that have only a positive or negative effect on society and finding consensus is even more elusive. Problems faced by society are generally created through the interaction of corporations, consumers, and governments, yet the reproach most often falls on corporations rather than consumers or governments despite their symbiotic relationship. Debate will continue to rage as companies and sectors fall in and out of favor as time rolls forward, though every institution has to decide where it will take a stand, what it will support, what it may potentially avoid, and what it is willing to sacrifice to accomplish these goals.

Simply put, holdings within an investment portfolio should not contradict the philanthropic goals of an institution and in the best case can leverage its operations, providing market-based solutions to complement work done via grants. To do this one must understand what they own and who they are partnered with and be willing to debate the countless grey areas associated with businesses, their conduct, and their effect on society. This said, most holdings in a diversified portfolio will have limited tangible connection with the philanthropic goals of an institution, though understanding the overall impact of these companies on society is crucial and is of growing interest to stakeholders.

No matter the strategy to improve alignment, an organization's approach should be logical, authentic, and complete rather than just talking points with which to satisfy stakeholders or the media. Most agree with this ideal, though in a world driven by sound bites, there is little time to discuss issues of implementation, find consensus, and be willing to change as the facts change.

For example, if an organization chooses to exclude company X from their portfolio, they must work to understand the opportunity cost and ramifications of this decision and be willing to commit to the exclusion of company X across their entire portfolio. A first step would be to screen company X out of separately managed accounts, which most managers will accommodate. Next, their fund investments must be considered, but here there is more complexity as very few managers will agree to remove company X from their portfolio as it could adversely affect their other partners. Some managers may agree to create a separate fund that excludes company X, managed alongside their main fund, though an organization must decide if it is comfortable partnering with a manager that owns company X in any vehicle. To further soften the binary decision to redeem if a manager owns company X, a materiality threshold may be set as a compromise.

The complexity of the conversation becomes greater as one considers passive strategies where the values and considerations of a portfolio manager are replaced by rules-based index creation, greatly increasing the probability that company X is a constituent. Any passive strategy would need to exclude company X which could limit an organization's ability to rebalance their portfolio through use of passive strategies. Furthermore, excluding company X from strategies with limited to no transparency and high turnover such as quantitative and macro strategies is difficult to do with certainty. Finally, no matter the extent to which an exclusionary policy is enacted, liquidity terms add a further level of complexity to the situation.

This example is not meant to be exhaustive, but rather illustrative of the complexity that comes from the ideal of avoiding a sector or company. As always with exclusions, there is the question of whether avoiding a company or sector has any meaningful effect on the company itself or if it is just a placebo to satisfy stakeholders. An alternative to exclusion can be engagement where one chooses to have a seat at the table rather than avoiding a controversial company. This approach can be time consuming, allowing for limited areas of focus, though it can produce meaningful results over time. Regardless of the approach, finding and gaining access to great managers can take years and modifying or challenging this relationship can impact an institution's ability to deliver returns. However, most managers care deeply about their portfolios and want to engage, discuss, and discover material long-term risks.

Institutions must recognize that it takes time to align a portfolio and that thoughtful debate is necessary to balance the financial and philanthropic goals of an institution. Switching costs are real and incrementalism is most likely the best approach towards alignment. Simplicity is crucial, as a portfolio of ten managers is easier to align than a portfolio of fifty. Holdings level transparency is essential, as is lower turnover and a *[Continued on Page 13]*

Institutions must recognize that it takes time to align a portfolio and that thoughtful debate is necessary to balance the financial and philanthropic goals of an institution.

By Meena Lakshman, CFA
Director Investments
Helmsley Trust

Should Endowments and Foundations Increase Their Exposure to China?

Most Endowments and Foundations (E&Fs) have a direct allocation to China through public and private investments with a median allocation of around 6%, according to a recent Cambridge Associates survey. Very few E&Fs have a direct exposure to China greater than 10% of the portfolio AUM. While there is no universally appropriate level of China allocation within a portfolio, and allocation to any asset class and region depends on the risk-return-correlation profile of that investment, long-term investors should take a serious look at this region.

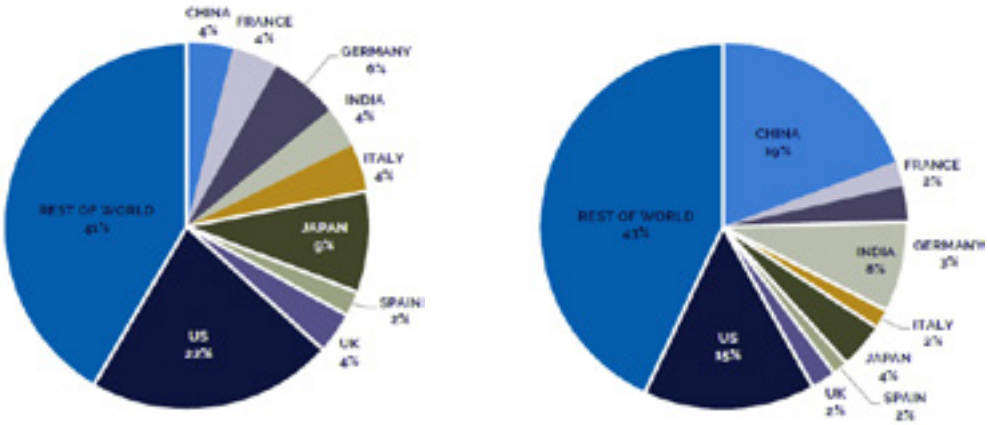
China is now the largest economy in the world on PPP basis

China's relevance to global growth has increased over the years. While the U.S. still takes a large share of the global economy, its share has reduced from 22% of the global economy in 1990 to 15%, and China's share of world GDP has increased from 4% in 1990 to 19% in 2019, in purchasing power parity terms (Fig. 1). In U.S. dollar terms, China is the world's second largest economy with a GDP of around $14 trillion (16% of world GDP), as against U.S. GDP of $21 trillion. China also contributes almost a third to incremental global GDP growth rate, compared to 13% for the U.S. (Fig.2). It is no wonder that "when China sneezes, the world catches a cold."

The world has become more dependent on China – not less

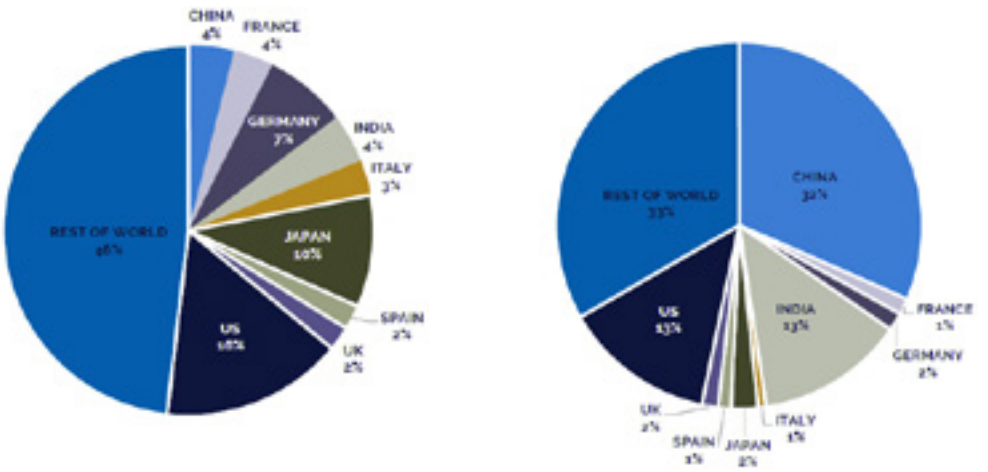
According to a McKinsey study, the world's exposure to China's trade, technology and capital has increased dramatically from 2000 to 2017, while China's exposure to the world has fallen. The rest of the world's aggregate exposure index rose from 0.4 in 2000 to 1.2 in 2017, while China's exposure to the world peaked at 0.9 in 2007 and has declined to 0.6 in 2017 (Fig. 3). This declining exposure partly reflects China's rebalancing of the economy away from trade, property and fixed investment to domestic consumption. *[Continued on Page 14]*

FIG. 1 Nominal GDP in PPP terms



Source: IMF and BCA Research

FIG.2 Contribution to global GDP growth



Source: IMF and BCA Research

By Alex Chung
System Manager, Investments
CommonSpirit Health

Diversifying Well: Shedding Light on The Quant Black Box

Introduction

All investors aim to invest well. This typically means generating positive returns over a long period of time at an appropriate level of risk. Ray Dalio states the following as one of his fundamental investment principles:

"Diversifying well is the most important thing you need to do in order to invest well…Diversifying well is a matter of knowing how to reduce your expected risk by more than you reduce your expected return (i.e., improving your return-risk ratio)."

In an article about diversifying well[1], Dalio begins describing a framework for diversifying a portfolio across asset classes, sectors, currencies, and countries. Diversification can also be captured through different investment philosophies, such as value versus growth, or different investment approaches such as fundamental versus quantitative.

This preamble hints at yet another piece making a case for quant strategies. That is not the objective of this article. The challenge I aim to address is how limited partners can think of quant investments besides "black boxes". For those allocators open to considering quant strategies but have had trouble differentiating between strategy types or have been uncomfortable with the complexity and lack of transparency, the goal of this piece is to provide a navigational guide[2].

The first section provides a basic roadmap of the quant landscape. The next section outlines core components of a quantitative investment process and ways to approach diligence. The final section concludes with some parting thoughts.

Diversification can also be captured through different investment philosophies, such as value versus growth, or different investment approaches such as fundamental versus quantitative.

31 Flavors of Quantitative Investing

"Quant" is an investment approach that can be applied towards any asset class. Quantitative strategies utilize models to transform data into signals to maximize the outcome of a formulated objective, e.g. maximize return per unit of risk. Sharing the use of models does not mean that all quant strategies or "machines" behave the same way. One of the first steps towards adding quant strategies to a portfolio is an assessment of the different "flavors".

The Quant Style Spectrum

Imagine a spectrum of return types where "alpha" sits at one end and "beta" anchors the other end. Figure 2 demarcates a few examples of strategy styles that reside on such spectrum. Think of a beta quant strategy as being well-known and cheaply accessible while providing a high degree of transparency into the entire investment process. Beta quant strategies include index trackers like ETFs, alternative weighting strategies like risk parity and common risk factor strategies like alternative risk premia ('ARP').

Think of an alpha quant strategy as being highly capacity constrained, difficult to source and usually very short-lived so requiring more frequent trading. Alpha strategies can also specialize in using unstructured data that are difficult to collect and process. Strategies on the alpha end of the spectrum include statistical arbitrage and advanced machine learning that can have holding periods ranging from intraday to a few weeks.

Alternative Risk Premia: The Gateway Quant

The definition of alpha in quant investing is continuously evolving. ARP strategies serve as a de facto divide between alpha and beta. ARPs are cost-effective ways to systematically access well-known, academically supported common risk factors prevalent across major asset classes, e.g. value, carry, momentum/trend-following, and low volatility. ARPs are also commonly referred to as "smart beta" in a long-only portfolio construct.

What is notable about ARPs is that they were once "quant alpha" prior to the 2000s and have since been more commoditized. ARP strategies may be an appropriate starting point for investors looking to make a first diversifying quant investment because they offer a high degree of transparency into the investment process, fixed fee structure, and favorable liquidity terms (often daily or weekly redemptions[3].

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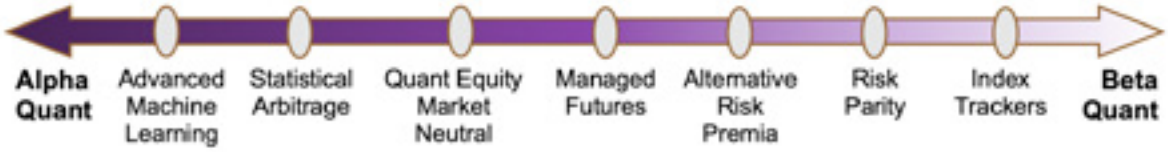
FIG. 2 Spectrum of Quantitative Investing Styles



[1]https://www.linkedin.com/pulse/diversifying-well-most-important-thing-you-need-do-order-ray-dalio/
[2]For full disclosure, I have a bias toward quant strategies. I used to be a quant portfolio manager. My organization, CommonSpirit Health, and colleagues have a long history of investing with quant managers. I have also made new quant investments as well as non-quant ones since becoming an allocator.
[3]For more insight into ARPs, I recommend reading the "Risk Premia Portfolio: An Allocator's Approach" article in the 2017 NMS Exchange by the Margaret A. Cargill Philanthropies organization.

The Power of Technological Change

By Ken McAtamney
Partner, Portfolio Manager
William Blair

We must understand that technology is less about technology stocks and more about the way disruption affects corporate performance.

Bullish on Tech—Especially Outside the Tech Sector

Asset managers and owners have similar concerns and opportunities related to technology—both when investing in it and applying it. We must understand that technology is less about technology stocks and more about the way disruption affects corporate performance. And we must address the implications of technology for our businesses.

The Technology of Everything

The biggest force to be reckoned with as investors in technology today is the technology of everything—increased computing power; artificial intelligence and machine learning; distributed computing through the cloud; ubiquitous data; richer analytics and visualization; and the power of mobility.

These influences have profoundly changed the corporate world. In manufacturing, healthcare, retail, media, and transportation, the level of disruption has never been higher, and it's creating both stresses to incumbents and opportunities for newcomers (Fig. 1).

Looking Beyond Technology Stocks

Investing in technology stocks to access the profit growth technology companies generate seems obvious but it is actually less fruitful than you might think and comes with more risk than might be expected.

Based on the Russell 3000 Index returns since 1998, the best-performing technology industry group, software and services, ranks only eighth among all industry groups, behind some industry groups within the consumer, healthcare, and industrials sectors.

Other limits to investing in technology include expectations and valuations, which tend to be far too optimistic, leading to challenging stock returns. A shrinking opportunity set—fewer initial public offerings, robust private markets, slowing growth (thanks to regulation, lower capex needs, and abundant capital), and more mergers and acquisitions—are also a challenge.

When we look beyond the technology sector, however, we see better examples of companies that have built lasting, durable, sustainable competitive advantages by being early and/or intentional adopters of technology. Once entrenched, these companies are less likely to be disrupted. Ongoing innovation also becomes a self-fulfilling mindset.

Domino's Pizza illustrates this concept well. Early in its development, the company used technology as a differentiator in all aspects of its business: supply chain, food preparation, delivery, and customer engagement. Now it's a clear leader in an industry that is rapidly accelerating the pace of technology-led innovation. Compare Domino's to another well-known company, Google parent Alphabet. Both went public in 2004, but Google stock is up 2,500%, while Domino's stock is up 4,000%.

In a world of disruption, we find companies like these an appealing place to seek long-term value creation. So, we're bullish on technology, especially outside of the technology sector.

Laissez-Faire Governance Creates Risks

Of course, no discussion of technological disruption would be complete without an analysis of the risks, and I'll start in an unusual place: the government.

Historically, the government (including the military) and academia have worked alongside corporations to develop new technologies. The Defense Advanced Research Projects Agency (DARPA) and NASA are good examples.

This has changed. We've seen an erosion of government influence in early-stage research and development as well as a more laissez-faire approach to intervention.

Thus, the private technology industry has amassed considerable power—power perhaps not seen since the turn of the last century, when robber barons in steel, rail, and banking were left to their own devices.

This is particularly clear as it relates to data ownership, privacy, and security. There has been a concentration of power in large platforms, leading to concerns about competition: How exactly can we "undo" Google? Public pressure on this topic will be unrelenting.

"What the government gives, the government takes away." It's a commonly cited quote, and history tells us it's accurate; we just don't know when it will happen and to what magnitude.

Societal Disruption Precedes Policy Change

Possibly, however, the biggest risks related to technology are at the existential level—that is, they have little to do with technology itself. *[Continued on Page 20]*

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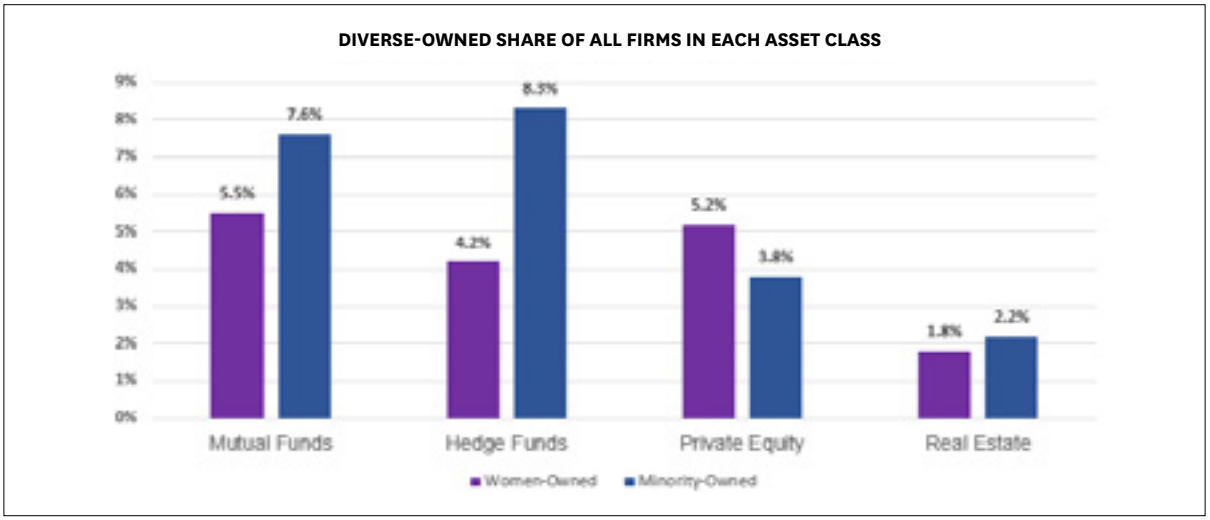
Fig. 1 Diverse-Owned Share



Source: Bella Research Group/Knight Foundation

The different lenses through which we view the world enrich our investment decisions.

tives that can challenge the status quo, will have a competitive advantage on both these fronts.

Diversity in investing is not just about firms that satisfy women and/or minority ownership percentage thresholds. We invest with firms who cultivate a culture that seeks and welcomes diversity at all levels of their organizations, including among their portfolio companies. It is not about a firm making "token" hires to represent diversity. It is about a firm believing diversity matters in achieving better outcomes and actively building an organization to reflect that belief.

As a team of 10 professionals from diverse racial, ethnic and socio-economic backgrounds, the Carnegie Corporation of New York investment team embodies this belief. The different lenses through which we view the world enrich our investment decisions.

In a Harvard Business Review article entitled "Why Diverse Teams Are Smarter," the authors David Rock and Heidi Grant cite a number of studies demonstrating that diverse teams perform better. They posit that diverse teams focus more on facts, process facts more carefully, and are more innovative. They acknowledge that diverse teams feel less comfortable since collaboration is easier among homogenous team members who understand each other. However, our investment strategy at Carnegie Corporation of New York is not about looking for investment firms that arrive at easy decisions, but rather finding those that make decisions resulting in the best performance.

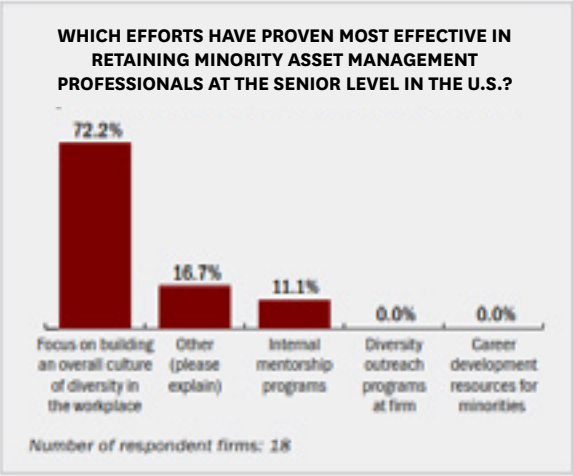
We are seeing investment firms make more of an effort to recruit women and people of color. The trend in the data is positive, according to Preqin's Women in Alternative Assets report, with women representing 19.7 percent of the alternative assets industry today as compared with 18.8 percent in 2017 — a 0.9 percent increase. However, hiring for diversity is the easier part of the equation. It is the inclusion piece that is more challenging: giving diverse individuals authority and valuing their input is what changes outcomes. Having a diversity of thought and perspective is meaningless if you never use the insights that are available to you (Fig 2).

With more and more institutional investors paying attention to this issue, and proactively seeking greater representation in their portfolios, why don't we see more firms with diverse leadership? Furthermore why do we continue to see such a meaningful underrepresentation of diverse decision makers in our portfolio and the portfolios of our peers who share our commitment to diversity and inclusion?

Among our portfolio firms as well as more broadly, we see reasonable representation of women and people of color in the junior ranks, but the numbers fall off a cliff at the senior level. A joint survey conducted by FundFire and the Money Management Institute collected ethnic and racial diversity from 23 asset management firms representing more than $5.3 trillion in assets. At the executive committee level, 88 percent of professionals are white. Women at senior levels range from a high of 13.4 percent at venture capital firms to a low of 8.5 percent at real estate investment firms (Fig. 3).

We often hear there is a pipeline problem. There are insufficient numbers of women and minorities available to join established firms and there are *[Continued on Page 9]*

Fig. 2 Ethnic and Racial Diversity at Asset Management Firms



Source: FundFire and Money Management Institute

[Continued from Page 8]

too few women and minorities forming their own funds. While this issue is real, several additional factors compound the challenge:

(1) Size: Diverse managers tend to be emerging firms launching first-time funds, and as such, often lack the resources needed to meet the back-office requirements of institutional investors. Additionally, first-time funds bring their own set of risks that many foundations shy away from.

(2) Capital Constraints: Many foundations, including ours, have limited capital managed by a small staff. A lean investment team can only manage a certain number of relationships effectively. Since foundations make smaller commitments than other types of institutional investors, strong relationships based on loyalty to existing general partners are paramount for access. Underpinning those relationships is the notion that foundations are long-term loyal investors. Adding a new manager to a portfolio operating with capital constraints often requires terminating an existing manager. This can prove a challenging course of action when the existing manager has been a good partner and loyalty has been a critical calling card.

(3) Selection Bias: When it comes to identifying talented managers, we employ shortcuts to facilitate underwriting and minimize career risk, including investing with known quantities and investing alongside peers. Such shortcuts, however, make it more challenging for an emerging manager to gain traction. Behavioral science "do tank" Stanford SPARQ and impact investment firm Illumen Capital conducted an online experiment with asset allocators to determine whether and how bias influences evaluations of funds led by people of color across different levels of performance. There is some nuance to the findings of the study, published in Proceedings of the National Academy of Sciences, and we encourage everyone to go read the actual study, which was also summarized on SPARQ's website. The study revealed that asset allocators struggle to gauge the competence of racially diverse teams and make judgments about a team's competence based on the racial homogeneity or heterogeneity of a team. According to the report, "At stronger performance levels, asset allocators rated white-led funds more favorably than they did black-led funds when evaluating investment skills, competence, and social fit." This finding was shocking to us that it challenged our investment team to really examine our own personal biases as well as pervasive structural biases.

Against the backdrop of the three aforementioned factors that compound the challenge of identifying and investing in firms that authentically represent a broader range of the population and perspectives, our team takes a multi-pronged approach to increasing diversity in our portfolio:

1. We ask all existing managers in our portfolio to share what initiatives they've taken and how they are thinking about promoting a culture that values diversity. We are not looking to punish a firm for what it lacks; rather, we are looking to incentivize managers to build a culture in which diversity matters.

2. We have dedicated a senior staff member to meeting with every manager with meaningful women or minority ownership that comes across the transom. While our capacity for new commitments is limited, we offer feedback and offer to be a resource.

3. We host a series of "speed dating"-style events in which a small pool of diverse managers across asset classes present to a larger group of colleagues at peer institutions.

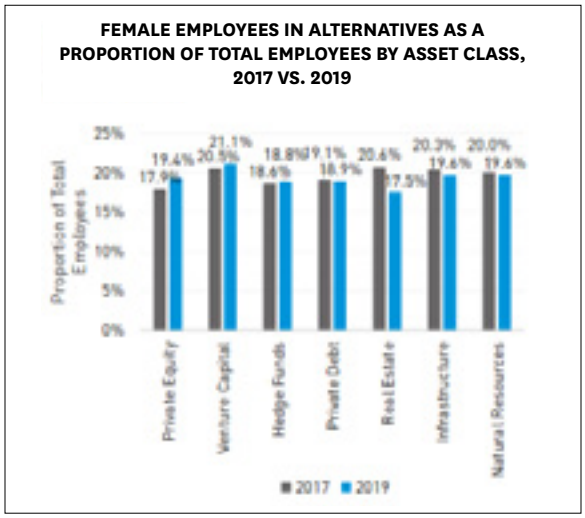
4. We actively support organizations that build the pipeline of young women and minorities entering the asset management industry.

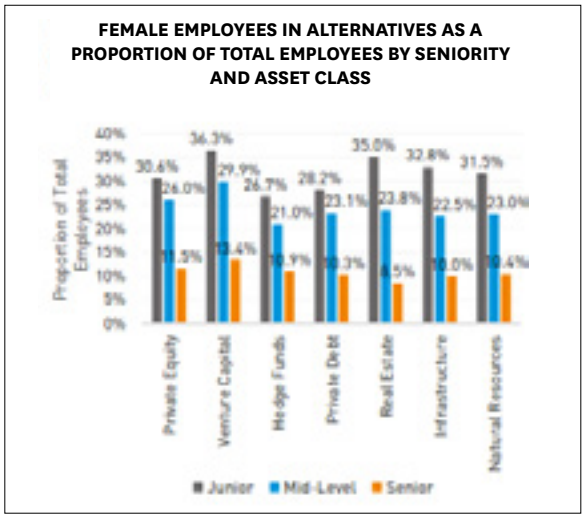
5. We examine our own biases and actively try to mitigate them.

6. Lastly, we have amplified our public voice, speaking at industry events about prioritizing diversity and inclusion.

[Continued on Page 22]

Fig. 3 Female Employees in Alternatives as a Proportion of Total Employees





Source: Preqin Pro

[Continued from Page 2]

Finding the right managers is extraordinarily difficult even though the process, on paper, is seemingly easy.

does not provide a sufficient illiquidity premium, nor does it provide adequate risk-adjusted returns especially in value-add and development strategies. While private investments in natural resources do better than their public equivalents, the overall level of returns are relatively low. Such strategies are best compared with other opportunistic ideas including private real estate, secondary funds and private debt, instead of a dedicated bucket. For reasons explained in the next section, portfolio diversification is better accomplished in the more liquid segments of an investment portfolio.

Limitations of Diversification in Long-Term Private Partnerships

Long-term private partnership investing does not lend itself well to a diversification program for two reasons. First, valuations are lagged thus creating an artificial smoothening effect relative to public markets and second, the possibility to rebalance within private partnerships is limited owing to the long-term deployment of capital. Thus, if the real asset segment of a private portfolio is being used to hedge venture capital risk, the remainder of the rebalancing will have to be accomplished in the marketable segment, making the process both cumbersome and inaccurate. We believe that the focus of the private portfolio should be on accessing the highest-earning and diverse set of growth products such as venture, growth equity, buyouts, and distressed debt, reserving true portfolio diversification to other publicly traded segments of the portfolio. This will result in the institutional investor's liquidity premium being concentrated on high-returning products while providing a suitable premium over public market securities.

Manager Selection is Paramount

Private investing is a 'people first' business. Stable teams that have worked together for at least ten years is a reasonable sign of private partnership manager stability. Finding the right managers is extra-ordinarily difficult even though the process, on paper, is seemingly easy. Since private investments involve writing a blank check to a manager, a study of the manager, their motivations, their integrity, their investment history and rolodex is essential. It reveals how they secure deals and exits, the operational improvements they bring to a company, whether they work well with entrepreneurs and other investors. This is carefully built over years, but, is fragile. From the standpoint of an institutional investor, evaluating managers requires a dedicated full-time ear-to-the-ground effort, to gain knowledge of industry participants. Despite finding the best mangers, access is often elusive as several of the best managers, particularly in venture capital, are closed to new investors. Typically, institutional investors with pools of capital of approximately $2 billion and higher can afford a strong investment department with dedicated private partnership resources. It also enables such institutions to develop expertise with deal-level intelligence to access future direct co-investment opportunities. With potentially lower future investment returns, a co-investment program is an effective way for institutional investors to salvage a greater share of the gross economics from private partnerships. Some larger institutions, with resident expertise, are already beneficiaries of this trend. Additionally, in a low return environment, the importance of identifying future top-quartile managers has become increasingly important.

Manager Performance Measurement is Multi-Faceted

In analyzing the past performance of managers, in addition to the standard methods of comparing internal rates of return, public market equivalent returns, multiples of invested capital and total value-to-paid-in-capital, it is particularly important to analyze asset level returns. By reviewing the value-add created at the level of the asset, one can separate financial engineering, particularly leverage, to evaluate cash flow improvements. This should then be aggregated at the portfolio level to assess the nature of distribution of returns. Some useful tools include evaluating asset impairment ratios along with the distributions of returns by vintage year and across competitors. Deal-level attribution at the partner level helps identify the most important rainmakers at a private partnership firm.

Investing in Times of Extended Valuations

Global money supply growth and quantitative easing have created asset price inflation across the world. Long-term private partnership assets are no exception. There are no signs to suggest that private partnerships are egregiously expensive relative to other assets. Buyout managers are paying 8×-10× EBITDA today compared to 6×-8× a few years ago. In comparison, the S&P 500 is trading at 21× versus the long-term average of 16.5×. The markets lukewarm reception of iconic venture deals like Lyft and Uber might suggest elevated private market expectations versus the public markets, but there is limited data to confirm this. The number of IPOs trading at lower than deal price is within historical trends. The amount of 'dry powder' or uncalled capital, is at a historic high, but within historical levels relative to the total amount of capital deployed. Another measure of excess is the ratio of private market capital deployed as a percentage of public market equities. At approximately 14% currently, it is well below the 18% high observed just prior to the 2008 Great Financial Recession.

Further, there have been structural changes in the shape of corporate markets. There has been a trend of companies staying private longer now than in the past. The total number of stocks in the Wilshire 5000 is now below 4,000. A wave of corporate consolidation and the pain of complying with onerous securities regulations have been offered as potential reasons.

Today's conditions of excessive liquidity and commoditization of capital has resulted in the balance of power in favor of general partners over limited partners. This is evident in larger fund sizes, extended fund lives, shortened duration between sequential fund raising and fee structures and documentation terms in favor of GP's. This is creating a further headwind for the [Continued on Page 22]

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Identifying our edge first gave structure to our process.

1– To define your edge, focus inward first. It helps to delineate your broader circle of competence from your more targeted circle of mastery.

When we consider managers to hire, we all try to make sure that they have a sustainable edge in their respective areas of focus. However, I have found that re-directing that lens to yourself is extremely helpful when using a generalist approach. The flexibility of the generalist approach's wider mandate can turn into a liability if there is no structure to your process. Identifying our edge first gave structure to our process.

As shown in Figure 1, assessing mindset, talent, experience and environment help identify one's edge.

As shown in Figure 2, performing this level of introspection can reveal individual blind spots, identify the circle of competence (things that we can do well) and also one's circle of mastery (the things that we can do well that are best aligned with our edge).

Personally, during this journey, identifying the things we should not be doing that are outside our circle competence has been relatively easy. What has been much harder is identifying the more targeted circle of mastery that lies within the circle of competence – because it requires self-discipline to give up activities that you know you can do well, but are not best aligned with your edge as an institution.

For us, co-investments were a good example of the challenge in identifying one's circle of mastery. All four decision-makers had direct investment backgrounds prior to becoming asset allocators. We have the talent and experience to make co-investments part of our toolkit. However, in our first co-investment opportunity as a team, we failed to get to a decision on a particular take-private co-investment opportunity that should have been in our sweet spot. This was largely a timing issue, since the opportunity emerged in the middle of the busy spring annual meeting season.

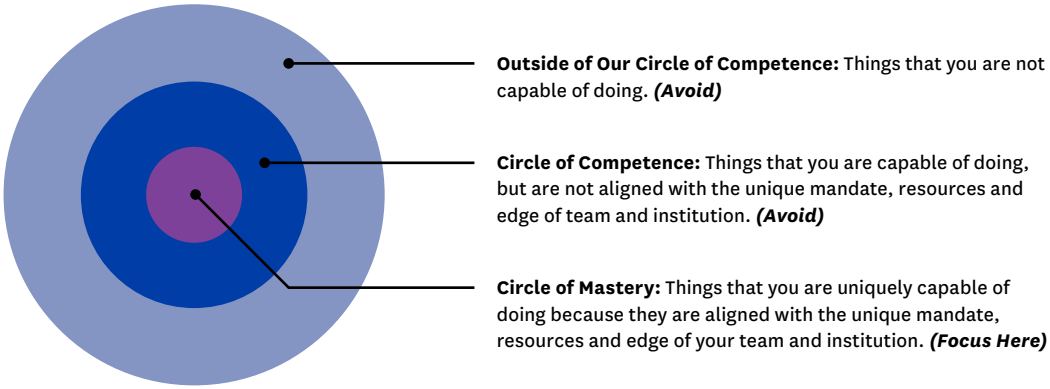
When we sat down afterwards as a team to do an assessment of what went wrong, we realized that while we had the talent and experience to do co-investments, we did not have the appropriate mindset (almost all of our time was spent on fund investments, not direct investments) or the internal environment (we had a small team without dedicated resources) to have an edge in this activity, unless we devised more defined parameters that catered to our edge.

The mindset and environment issues that were impediments to co-investments for us were structural and unlikely to change. Fund manager investments, not direct investments, will always be the top priority of our team. Also, from a resources perspective, the team's size was not going to change materially. As a result, we developed a set of guidelines for conducting due diligence on co-investments which took these facts into account and raised the bar for doing deeper due diligence work on potential co-investments. This resulted in getting to "No" quicker on co-investment opportunities outside of our circle of mastery, which has ultimately led to a win-win from a return on time invested standpoint for both our managers (due to the time sensitive nature of most co-investments) and for us (allowing more time for opportunities within our circle of mastery).

2– Adopt a T-shaped versus an I-shaped mindset.

The T-shaped and I-shaped mindsets are concepts highlighted in Chapter 9 of David *[Continued on Page 12]*

FIG. 2 Focus Inward First To Define Your Circle Of Mastery



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Epstein's book, "Range: Why Generalists Triumph in a Specialized World." Once I read this book, I realized that we had been using a T-shaped approach at the W.K. Kellogg Foundation. Having a T-shaped mindset refers to the ability to go both broad like a generalist and deep like a specialist. The top part of the T is representative of breadth of generalists. The "I" or trunk of the T is representative of the depth of specialists. In one study cited, 3M observed that their most innovative and productive (both in terms of number of patents and in commercial impact) scientists were neither generalists, nor specialists, but were generalists who were specialized in one specific area. This is similar to the roles Carlos, Neal and I have on our team (generalists who can go deep into one of the three major sleeves in the portfolio) and I do believe this structure has helped us think more creatively in terms of manager selection and portfolio construction in a way that would be hard to imagine if we were either just generalists or just specialists.

The challenge we have as humans is to prevent our biases from interfering with our ability to see the full context of a situation.

Additionally, in learning how to adopt a more T-shaped mindset, there are many times in which I find myself as being the top half of the T and needing to connect with a specialist or subject matter expert to create the trunk of the T. However, I have learned that there is an art to creating that trunk of the T. You need the specialist to fill in the subject matter blind spots in order to create the contextual mosaic for the ultimate decision. However, over time, the light bulb eventually turned on for me and I realized that specialists did not have my context. Therefore, I should not take everything a specialist believes as true simply because they are a technical subject matter expert. My own generalist context for making the investment decision is where I have the edge against the specialist, so I may have to disregard input from a specialist that is technically correct if it does not fit my context. Learning how to leverage specialist input to reduce my blind spots has been critical to maximizing the advantages of a generalist without compromising the needed subject matter depth that a specialist can provide.

3– Apply a first principles mindset to investing.

One of the benefits to foundation management of working in a more generalist model is that it has forced me to take a more first principles approach to investing. Instead of thinking in terms of asset classes in a prescriptive, surface-level way, it has been much more rewarding to think in terms of the first principles of an investment return: efficiency (return per unit of risk), correlation (the diversifying nature of returns), convexity (the asymmetry of returns) and volatility (the dispersion of returns). All investments regardless of asset class have varying degrees of these four components to an investment return. Once I came to understand the power of first principles thinking in investments, I realized how it increases the flexibility in the number of "ways to win" by applying a common foundational language across asset classes. There are a number of quantitative and qualitative inputs that go into assessing the structural nature of these first principles that are applicable, agnostic of asset classes.

Applying first principles thinking has helped us from a portfolio construction perspective. For example, even though asset classes are separate silos in our strategic benchmark, our individual manager position sizing and portfolio construction are very similar in our public equity, hedge fund and illiquid portfolios largely due to the application of common first principles.

Applying first principles thinking has also been beneficial from a manager selection standpoint. Being an expert and/or having an edge in your respective space can make any of these four first principle factors for an investment return materially more favorable than what would be the case if no edge existed. From an efficiency standpoint, the return for risk taken is higher. From a diversification standpoint, the return stream is more differentiated and more structurally uncorrelated. From a convexity standpoint, the upside is more favorable than the downside relative to comparable strategies. From a volatility or risk standpoint, the variability of outcomes relative to comparable strategies is lower. The robustness of being able to apply this first principles framework to every manager in our portfolio has been very powerful.

4– Use a scientific method approach to de-bias decision-making.

Over the course of our decade together as an investment team, the individual biases in investment analysis that each of us had developed from prior career experiences became more prevalent. Since our work is integrated into the Kellogg Foundation's broader racial equity mission, each of us is well aware of how harmful unchecked biases can be from a race perspective. As an investments team, we learned that by applying first principles thinking, we could see how unchecked biases could be harmful from an investment perspective, too.

Biases are not always negative. We all have them. Our brains naturally develop biases, because they are needed as shortcuts for us to make our lives more efficient. The challenge we have as humans is to prevent our biases from interfering with our ability to see [Continued on Page 13]

Takeaways from a Decade of Learning: The Generalist Model
[Continued from Page 12]

the full context of a situation. This is very difficult to do.

Fortunately, the Kellogg Foundation invests significant time and resources into employee development and professional growth. As a team, we went through unconscious bias training to help us better detect implicit biases and to develop ways to override these biases.

Biases in investment analysis can be explicit (intentional) or implicit (unintentional) in nature. Many biases in investment thought that prevent people from seeing the full context are explicit in nature (or intentional), which makes it highly unlikely that the bias will ever change because the person is aware and is intentional in expressing the bias. Unlike explicit racial bias, there is nothing morally wrong with explicitly stating an investment bias. This makes it even more challenging to filter out unwarranted biases in investment thought that can be obstacles to more optimal decision-making.

Given that biases are not necessarily all good or all bad, using a scientific method approach to determine the extent to which biases in investment thought align with the first principles of an investment return has brought more clarity to how to integrate the different biases of each decision-maker on our team in a more objective way. Asking myself the question, "Is my bias more of a contextual by-product of my own unique life and/or career experiences or is it truly a fundamental and universal first principle of an investment return?" has been truly helpful in detecting and self-correcting some of my own biases.

Usually when I initially pose the first part of this question to myself, the answer is a definite "Yes." My bias is definitely a contextual by-product of my own unique life and career experiences. However, when it comes to the second part of the question that raises my initial bias to the higher bar of a universal first principle, the initial answer is often "Partially," because it often does not reflect the diversity of other contextual perspectives that would fill in the blind spots necessary to raise my viewpoint to the level of a universal first principle. However, there are times when the answer is a resounding "No" and I am grateful for having gone through the mental exercise, because an unwarranted bias is no longer a part of my mental framework.

Using a scientific method approach to de-bias decision-making is nothing new. Some of the most successful managers in our portfolio (in particular, the quant managers) have done this well for many years. We have applied the transferrable lessons and tailored them to our process. While no one will confuse us with employing as scientific an investment process as a Man Group, Two Sigma or Renaissance, adopting some of the higher-level principles of these processes has helped to limit the negative impact that our potential unwarranted biases can have on our decision-making. After starting to recognize some of these negative impacts, the four of us had an off-site session to lay our biases on the table. We constructed a scorecard that, in addition to the typical quantitative inputs, also included a number of qualitative inputs incorporating each person's biases that had some first principle underpinnings. The goal of this qualitative scorecard is to not necessarily to choose the manager with the highest qualitative score; rather, it is to make sure that there is some sort of bias override system in place so that no one risk factor that touches on a person's particular bias is emphasized disproportionately in comparison to the other risk factors that materially complete the rest of the mosaic for a potential investment opportunity.

Conclusion

These are just four of the many more learnings I have acquired from a decade of experience employing a generalist approach at the Kellogg Foundation. Having the appropriate governance structure, the right culture and a growth mindset to continuous improvement are just some of the other important components to have when employing a generalist approach. I am also sure that Neal, Carlos and Joel would have an equally long list of learnings from their experiences as well. Hopefully, these four learnings I have shared can be helpful to those are who are either considering or are currently implementing a generalist approach to managing their institutional portfolios.

Every asset allocator can find his or her own circle of mastery – the arena where what one does well aligns with the unique needs of his or her institution. It is possible to become more T-shaped and less I-shaped in your mindset, adopt first principles thinking in your investment analysis and use more scientific method-like processes to de-bias your decision-making. Doing these things are iterative, never-ending processes that require continuous work, self-awareness and humility. However, they have been very rewarding to our team over the past decade.

Authenticity and Working Toward Alignment in an Institutional Portfolio
[Continued from Page 4]

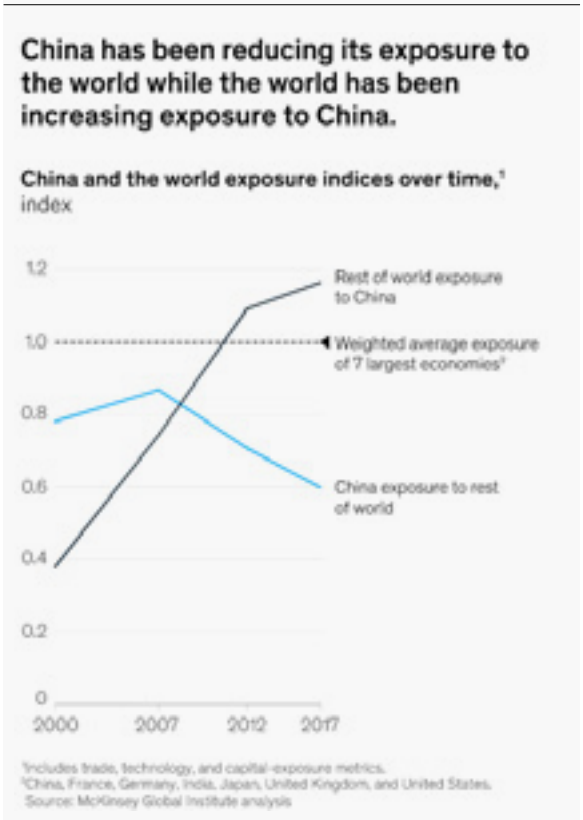
focus on the long-term. Unfortunately, it is impractical for most institutions to have a limited number of underlying holdings and complete transparency, therefore compromise will be needed. Incrementalism does not make for a great sound bite, though is the reality of a complicated and multifaceted process.

Defining an institution's focus can help an investment team decipher what is important and where to search for value. An aligned and successful portfolio starts with great managers who share similar values and serve as ambassadors of an organization in the market. Additionally, constraints can become a point of strength if approached holistically and thoughtfully, resulting in greater alignment across an institution and serving as a point of pride and a retention tool in an industry that has higher than expected turnover given its long-term horizon. It should not be forgotten that this work is never complete, mistakes will be made, choices will need to be revisited and evaluated, but care and pride taken in the process can help build consensus and stronger relationships, with stakeholders, team members, and managers.

[Continued from Page 5]

China has opened its public equity and debt markets to the world and money has flowed in.

FIG.3 World's increased dependence on China



Contribution of Chinese household consumption to its GDP growth has increased from one-third 10 years ago, to more than three-quarters today (Fig.4), which is very similar to other developed economies. Chinese consumers are consuming a large share of the global and domestic output and this rising demand has led to development of domestic value chains and a rebalancing of the economy away from commodity-intensive gross capital formation. The increasing exposure of the rest of the world to China reflects China's increasing importance as a market, a supplier and a provider of capital.

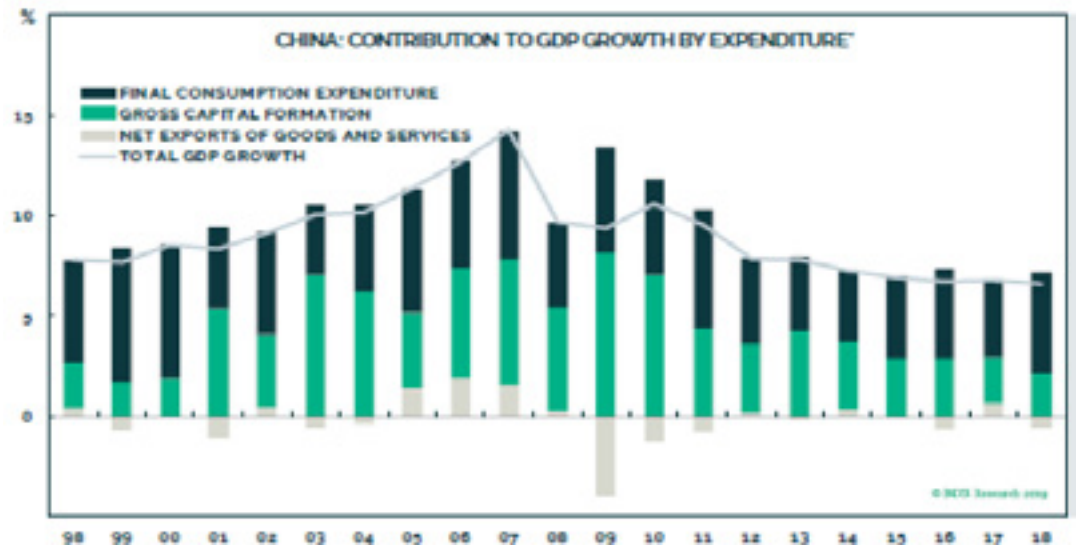
Since the 2008 Global Financial Crisis (GFC), we have seen coordinated global monetary policies lead to declining rates globally and increased rates of capital being pumped into the global economy. Most of the European and Japanese interest rates are either below or close to zero. As yields have come down in this cycle, credit growth has accelerated. Credit impulse, which is defined as change in the change of financial conditions, has resulted in short-term global growth accelerating or decelerating from the prior quarter.

What has been especially interesting in this cycle has been the size of the contribution of Chinese capital and credit impulse to global growth (Fig. 5).

The size of Chinese credit impulse has far exceeded U.S. and European credit impulses since the financial crisis in 2008. As Chinese policy makers embarked on an aggressive stimulus in 2008-09 (GFC), 2011 (Eurozone crisis) and 2016 (Chinese-led Asian slowdown), global growth accelerated, and markets rallied. All this stimulus spurred growth, revived animal spirits and boosted global demand. This global credit impulse led by China also resulted in improved global public markets (ACWI) earnings and rallying equity markets (Fig. 6). The global credit impulse typically feeds into the global economy with a 6-9-month lag.

Today, we are seeing another pick-up in global credit impulse (though not as strong as in the recent past), which will lead to a 2020 global growth rebound. The question remains as to how much arsenal is left with central banks to stimulate continued growth through accommodative monetary policies. Most central banks are getting constrained as leverage rises in the system (Fig. 7). *[Continued on Page 15]*

FIG. 4 Consumption has become a larger part of Chinese growth



Source: National Bureau of Statistics, BCA Research

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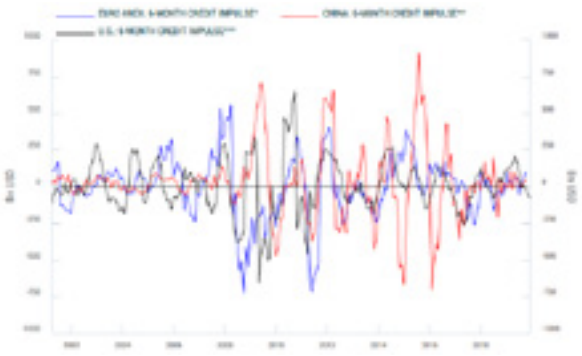
FIG. 5 China has acted as the central bank of the world



Source: ECB, PBOC, Fed, BCA Analytics

FIG. 6 Nominal GDP in PPP terms

*All Country World in local currency, ** Shown as 12-month change

Source: BIS, BCA Analytics

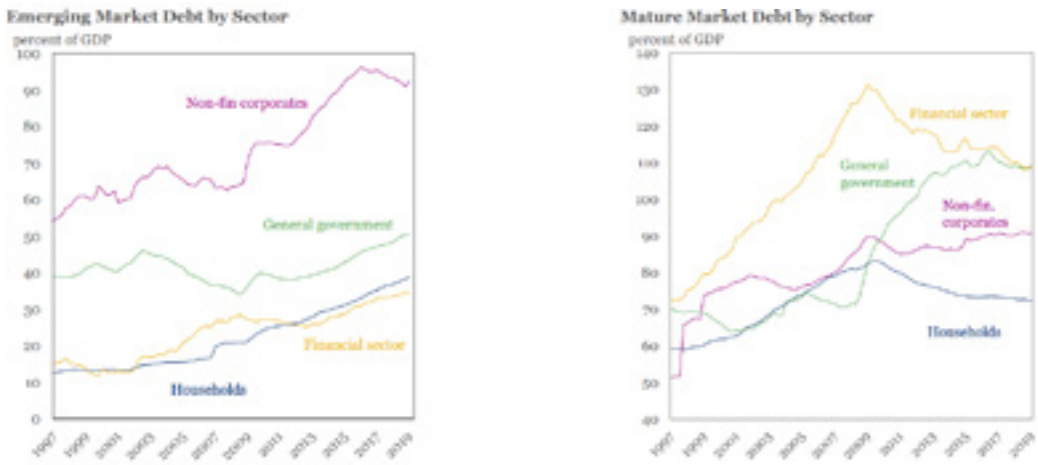
How should Endowments and Foundations look at investing in China? Should they increase their exposure in line with China's dominance of world GDP? What are the risks they need to monitor?

- **Investable universe:**
  While China is the fastest growing and the second largest economy in nominal dollar terms, it accounts for less than 4% of listed global public equity markets (ACWI) (Fig 7b). This is changing as we speak, however. Integration of the world's second largest equity market with the global stock market is now firmly in motion. China has opened its public equity and debt markets to the world and money has flowed in. The Shanghai stock exchange hosts some of China's biggest and most liquid onshore equities. Its market capitalization of $4.5 trillion makes it one of the most liquid markets in the world. Hong Kong has set up a stock and bond connect program with China, which allows Hong Kong-based investors to invest in more than 4,000 mainland-listed stocks and trade in government, agency and corporate debt on China's interbank bond market.

  MSCI started to partially include China large-cap A shares in the MSCI Emerging Markets (EM) Index on May 31, 2018. Under the current partial inclusion plan, China A shares will be slowly increased in the MSCI EM Index. In the event of full inclusion, China equities would exceed 40% of the MSCI Emerging Markets Index (Fig. 8) and almost 6% of ACWI. These figures could potentially rise further, should foreign ownership limits and free-float increase. Based on full market cap, China could be almost 50% of EM and 12% of ACWI (closer to its 16% USD GDP weight in the world), although this is unlikely to occur anytime soon given strategic government holdings of A-shares.

- **Corporate governance issues and investor protections:**
  China does not rank high on corporate governance compared to major markets globally (Fig. 9). Most companies in China do not separate corporate leadership from its board members. Only 38% of China A companies have independent board members and only 12% of the boards are diverse. Regulatory risks and Political risks are additional issues to be monitored. Changes in regulations *[Continued on Page 16]*

FIG. 7 Rising debt ratios in all regions of the world



Source: IMF and BCA Research

[Continued from Page 15]

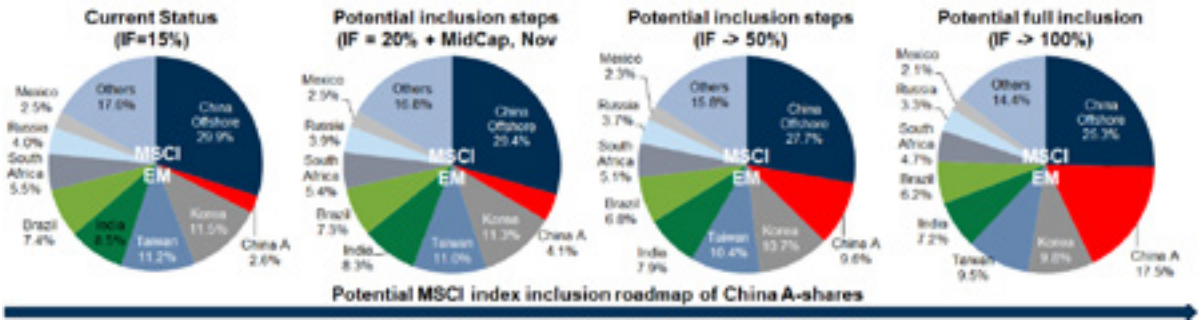
FIG. 7b Chinese assets are underrepresented in global indices

Source: Factset, MSCI, Goldman Sachs Investment Research

can affect not just state-owned enterprises but also private companies to different extents. For example, the recent regulatory change on the reinforcement of Party committees inside Chinese companies is not what foreign investors expected to see as the direction of corporate governance development in China. While the vast majority of foreign investors believe China's investor protection system is weaker than that found in developed markets in Asia-Pacific, they view overseas-listed mainland firms as having better governance.

- **Probability of a significant slowdown in the Chinese economy:**
  China faces a significant increase in leverage in the economy, which is curtailing its policy response (Fig. 10). The Chinese central bank Governor has reiterated that they will no longer use flood-like stimulus measures. The response this year has been more limited and directed towards tax reforms, cuts to bank reserve requirements and marginal reduction in term lending rates. However, China's fiscal stimulus package, including about two trillion yuan of tax cuts, has had less of a multiplier effect on lifting growth at home and abroad compared with previous easing during the GFC and the Eurozone crisis, which was mainly focused on infrastructure and property spending. Chinese government officials are also running out of growth-boosting, cash-generating public projects such as toll roads and bridges to fund. Capital formation, which used to account for more than half of China's economic growth until recently, has fallen to less than 20%. State-owned banks that were the traditional lenders to these infrastructure projects have become more wary and tightened lending standards as non-performing loans (NPL's) rise. Manufacturing has cooled due to weak domestic and International demand and U.S. trade pressures. China will gradually slow to a sub 4% growth rate with the effects reverberating throughout the world.
- **Geopolitical tensions:**
  The Trump Administration started a trade war by imposing unilateral tariffs against China on national security grounds, sanctioned tech companies critical for China's economic future and tightened relations with Taiwan. All this has led to global manufacturing contracting, sentiment souring and equity markets selling off. Fear of a global recession has forced both the U.S. and China to the negotiating table, and they have agreed to roll *[Continued on Page 17]*

FIG. 8 Chinese assets are underrepresented in global indices



Source: IMF and BCA Research

[Continued from Page 16]

back tariffs on each other's goods in phases as they work towards a deal. Such an understanding will help to provide a roadmap to a deal, de-escalating the trade war. However, a harder line on China has gained policy consensus across political parties and is unlikely to be resolved in the near term.

The emerging tensions between China and the U.S. may seem to fit into the outlines of the Thucydides trap, in which a rising power challenges the status quo power. However, today we live in a multipolar world, dominated not only by the U.S. and China but also by Europe and Japan, who have formidable economies and military capabilities. Russia remains a potent military power, even as India surpasses it in terms of overall geopolitical power. A multipolar world tends to be far more dynamic and therefore more unpredictable.

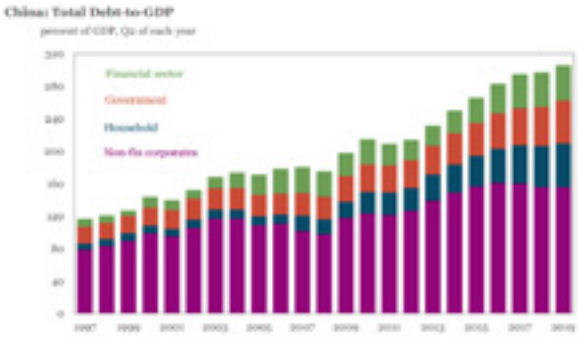
Conclusion

In this deeply integrated world, China has been responsible for two-thirds of global growth, it is a tremendous global consumer and accounts for a significant portion of ACWI earnings. In the last two global mid-cycle slowdowns, the largest central banks led by the Chinese central bank came to the rescue and lifted economies and markets. It remains to be seen whether China rescues the world again, given its leverage constraints. In the end, institutional portfolios will be impacted by the growth in China even if they do not have direct exposure to that region. Endowments and Foundations should acknowledge that China is a high-risk, high-reward market and there are many themes and asset classes in this market that offer compelling fundamental risk-reward. While every investor's risk-return profile and current portfolio allocations should drive exposure to any region or asset class, we should be aware of and embrace the structural shifts that are taking place and will likely reshape the global investment landscape in the years to come.

FIG. 9 China does not rank high on corporate governance

Source: Factset, MSCI, Goldman Sachs research

FIG. 10 China's total debt surpasses 300% of GDP



Source: Institute of International Finance

[Continued from Page 6]

Alpha vs Beta: Key Attributes

Another key step towards understanding quant investing is differentiating between strategy characteristics. Figure 3 outlines ten attributes and how they differ between alpha and beta quant strategies. This framework can serve as a starting point for evaluating which quant strategies might be appropriate for an allocator's needs and requirements.

Breaking Down Performance into 3Ps: People, Philosophy and Process

Quant managers who believe they can deliver alpha are notoriously secretive about details around their operations. Even though portfolios may be managed in an "entirely systematic" fashion, humans are still the ones building and improving the models behind those portfolios. Ultimately, people, philosophy and process ('3Ps') are the compounders for future performance success[4].

Conducting diligence through the 3Ps lens not only focuses on the relationship between the past and the future, but also reduces the need for current details that managers are reluctant to divulge and also likely to be less relevant in the future.

Figure 4 outlines the core workflow of most quantitative investment processes. A variety of input data gets fed into three main types of models: forecasting models that predict returns, risk models that quantify risk and transaction cost models that provide estimated costs of trading. The outputs of these three model classes are consumed by a portfolio construction model, which generates a target portfolio that best fits a strategy's objective and constraints. The order management system manages the trade orders required to reach that target portfolio while the execution model transacts the trades in the open market.

Drilling into the 3Ps for each component of the workflow paints a richer picture of a manager's strengths, weaknesses and areas of focus as well as provides ways to differentiate between managers. The sections below touch on how the concepts of people, process and philosophy relate to the workflow along with sample diligence questions to pinpoint where edge and expertise may reside.

People

Technology provides scale and efficiency, but managing a quant strategy is still resource intensive in both people and technology. Parts of the investment process that require significant people investment include cleaning and maintaining data, conducting research and building and upgrading technological infrastructure. Continued investment in people is paramount, but talent attraction and retention is also particularly competitive in the quant space. The keys to future success for the People pillar is balancing exciting, value creating responsibilities (e.g. research, product launches) with mechanical yet necessary ones (e.g. portfolio implementation, infrastructure upgrades) in order to keep staff engaged.

Sample Diligence Questions:

- Who owns the data management process and how is success measured?
- What is the personnel breakdown, turnover and growth for each workflow group?

Philosophy

A quant manager's philosophies provide insights into where edge is perceived, how performance is evaluated and how to hold the manager accountable for future performance. For example, a manager may believe its edge is in exploiting structural market inefficiencies. The manager should be able to provide 1) a narrative on why the inefficiencies exist (which hints at what data is used for measurement and prediction), 2) the risks attached to them and 3) conditions and time horizons in which the inefficien-*[Continued on Page 19]*

[4]Past performance is important but serves primarily as a discounted harbinger of future outcomes. I emphasize discounted because quant investing requires continuous evolution and innovation to succeed.

FIG. 3 Ten Differentiating Attributes Between Alpha and Beta Quant Strategies

	Alpha Quant	Beta Quant
Excess Return Generation	Scarce and short-lived with greater risk/reward potential	Persistent with lower risk/reward potential
Return Drivers	Highly proprietary but also more susceptible to data overfitting	Well-known and academically supported but easily replicated
Data Types Utilized	Expensive and typically in unstructured format or resource intensive to process	Commonly subscribed, easily accessed and lower maintenance required
Techniques & Technology	Advanced machine learning methods customized in systems built in-house	Simple rules-based or linear models widely available through third party software
Portfolio Characteristics	Long/short portfolios with higher turnover and more frequent trading	Long-only or long/short portfolios with lower turnover and less frequent trading
Capacity	Highly capacity constrained and typically in high demand	High capacity and scalable with many manager options managing large AUM
Track Record	Shorter live track records driven by novelty and evolution of ideas	Longer live track records driven by idea acceptance and proliferation
Transparency	Low to no transparency around investment process details (data sources and models)	High degree of transparency around investment process and methodology
Fees & Terms	Higher fee structures (management and incentive fees) with less favorable liquidity	Cost-effective fee structure (management fee only) with favorable liquidity terms
Keys to Future Success	Research innovation; Talent attraction and retention;	Staying ahead of industry evolution; World class large-scale execution platforms

[Continued from Page 18]

cies might be profitable or disappear (performance evaluation and accountability). The keys to future success for the Philosophy pillar is having the ability to adapt as proprietary ideas become more known and being cognizant of where biases can impede evolution.

Sample Diligence Questions:

- Are forecast models based on economically rational hypotheses? Is the goal to maximize model prediction accuracy?
- Over what time horizon does the manager believe it can accurately forecast returns and risk? Why does that timeframe make sense to the manager (and you)?

Process

The primary objective of process diligence is understanding "how the sausage is made". Listening to quant managers describe their investment and research processes in the abstract can be as exciting as watching paint dry. Examples of live investment strategies can give more color, but quants are notoriously secretive about successful ideas. Talking about research from a manager's "graveyard", ideas that were tested and discarded, is a useful way to discuss specifics about their testing approach and to judge the rigor of the decision-making. Asking a manager about project prioritization is another way to describe the research process and ideas.

Once new research has been approved for inclusion, an investor should also focus on the path taken towards deploying capital to that idea. For example, a new model could be re-coded into the production codebase as a check for research errors. The key to future success for the Process pillar is having robust investment protocols that incorporate sound testing and implementation controls.

Sample Diligence Questions:

- How does the research process safeguard against data overfitting?[5]
- How frequently does the manager deploy new datasets and model enhancements? How long does implementation take?

Final Thoughts

I have encountered in my experiences as both an investment manager and a limited partner a common sentiment of aversion towards quantitative strategies. On one hand, that is not surprising given that the aftermath of Long Term Capital Management and the August 2007 "Quant Quake" still give lots of investors PTSD. Investors as humans take comfort from narratives that explain why something made or lost money. It is not unreasonable to shy away from investments founded on complex math formulas that may not afford a clear story on performance drivers.

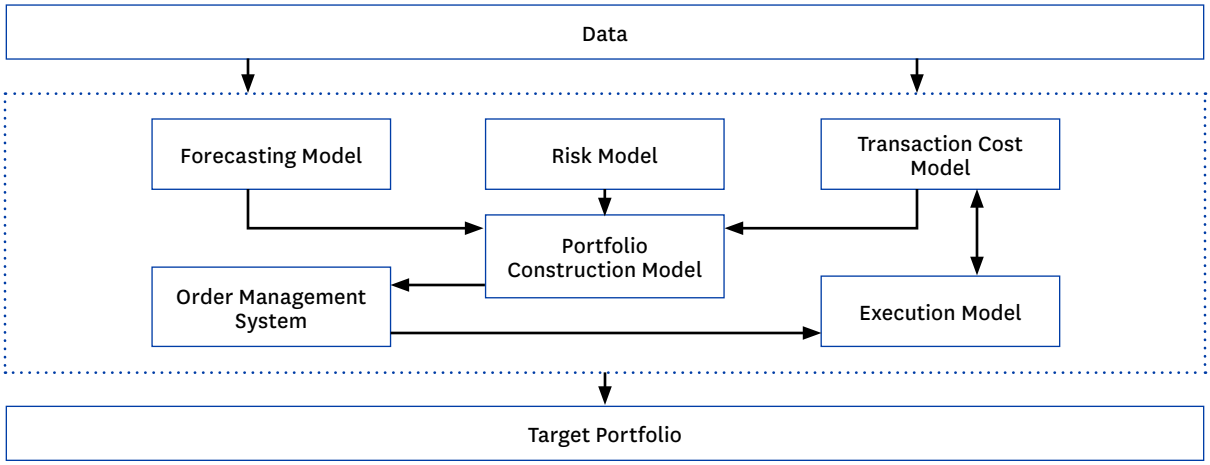
On the other hand, quant investing affords complementary perspectives on data consumption and portfolio construction. Data, such as audio, video and text, is being generated at an explosive rate. Computers and machine learning techniques are critical to efficiently consume and process such data for investors to gain an informational advantage. Many fundamental investors recognize this value and have integrated quantitative techniques to enhance investment processes, e.g. running quantitative screens to quickly filter investment opportunities, analyzing portfolio risk or comparing performance versus a shadow systematic portfolio to evaluate human biases.

Adding strategies with strong diversification potential like quantitative ones is appealing, but manager selection is challenging. Even so, I and others at CommonSpirit Health believe that diversifying well includes investing in quantitative managers alongside fundamental managers. We rely on the 3Ps framework, internal experience and external resources, such as consultants and networks of managers and allocators, to enhance the quant manager diligence process. Investing is an exercise in maximizing desired outcomes while minimizing uncertainty. Quant strategies present a different kind of uncertainty with strong diversification properties that require more thinking outside the box.

*I would like to thank my colleagues in the CommonSpirit Health investment team for their time, support and valuable contributions to this article.

[5]A 2018 paper by Rob Arnott, Cam Harvey, and Harry Markowitz provides a useful playbook on understanding a quant manager's research process (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3275654)

FIG. 4 Core Workflow of a Quantitative Investment Process



[Continued from Page 7]

Looking at the role technology plays in society, there are plenty of positives.

Technology enables new solutions, which lead to better and faster offerings for consumers and more efficiency and profits for manufacturers. Virtual reality (VR), for example, could prove to be a powerful force in retraining workers faster than ever. According to the Society for Human Resources Management, programs in which workers use VR headsets for training show productivity gains of 20% to 35%.

Technology also brings jobs. We searched Glassdoor for job openings that didn't exist 10 years ago, and the results included titles such as cloud architect, mobile app manager, and AI engineer.

That said, we have started to see technology take an unexpected toll within the past 10 to 15 years: labor displacement, income inequality, and other social pains. While much of the movement toward nationalism, protectionism, and tariffs has been blamed on globalization, we believe it results more from disruptions caused by technology.

We are likely seeing the consequences of rapid technological advancements occurring faster than labor skills, regulation, and government policy.

We are likely seeing the consequences of rapid technological advancements occurring faster than labor skills, regulation, and government policy.

This has occurred before, as technological disruption outpaced society's ability to catch up during the first three industrial revolutions: mechanization and the steam engine, mass production and electricity, and the rise of digital technology.

While government and society have successfully transitioned before, the impacts of our current technology revolution are being felt more quickly than in the past because change occurs much more rapidly. Angst is high while we wait for policy to catch up to disruption with changes to societal safety nets, including education and training/retraining.

Embracing Change in the Asset Management Industry: Humans Plus Machines

What are the implications for active equity asset managers and, by extension, their clients as asset allocators?

The role of the active equity manager has been called into question in recent years as undifferentiated performance, and high fees are compounded by investors' difficulty in identifying outperforming managers.

And the solutions available to allocators have also changed, thanks to technology. The disaggregation of alpha and beta, cheap passive beta exposure, and the evolution of cheap factor exposures are just a few examples.

A Perfect Era for Passive — But That Will Change

Passive, smart beta, and factor investing take a rules-based approach to varying degrees, and they have the ability to identify and exploit patterns at low to no cost.

But we have been in a perfect era for this. Volatility has been low since the global financial crisis, thanks to abundant capital. And a concentrated set of leaders has dominated the market as a result of winner-take-all economics aided by network effects.

So, while there is a clear role for these strategies, we must remember that passive is, by definition, unable to predict disruptions in economic outcomes and profit pools, and thus any index, however "smart," is always lagging.

Applications for AI and Big Data

Like the term big data, the meaning of AI is getting stretched beyond the original meaning of the term. Big data used to be a problem that few businesses had, but it has become a term applied to what was moderately-sized but unwieldy data (or "uncomfortable data"). Similarly, AI is being used more broadly to encompass more advanced analytics and methods. Artificial Intelligence has over-promised before and is likely [Continued on Page 21]

Fig. 1 The Technology of Everything

[Continued from Page 20]

to be over-promising now, given the conditions where it works well and where it is much less effective.

That said, with the advancement and volume of data comes a relentless demand for how to use it to make better decisions. When it comes to using new analytic methods to improve our decision-making, we see a large number of opportunities across the investment process. For example, we've used machine learning techniques to evaluate our trading costs and to modify the factor models that inform our discretionary process.

But AI or advanced analytics won't replace humans - someone still has to ask the right question, wrangle the information needed to answer it, select a reasonable method, be on guard for biases, provide an interpretation of output, and validate the efficacy of the model. These are new tools for the toolkit, more like a robotic exoskeleton that helps a worker do their job better than a robot that replaces that person.

For now, at least, AI cannot do a better job than humans when it comes to predicting big changes, such as future consumption habits and innovations.

Humans are better at strategy, while machines are better at tactics.

If the next era differs from the past era (due to de-globalization, deconsolidation, and the break-up of big tech, for example), those changes will be better understood by humans than machines. Humans are better at strategy, while machines are better at tactics.

Consider Japan's $1.34 trillion government pension fund, GPIF, which used AI not to predict manager performance but to monitor fund behavior. In other words, does a particular fund behave and react to the market or economy as predicted? Does the manager really do what it says it will do? Those are tactical considerations, not strategic.

Profit Pools Shift

As investors in quality growth companies, we are very interested in how technology has changed the nature of competitive advantages, created and destroyed new business models, transformed competition, and changed costs, capabilities, and convenience.

The 20-year history of the retail industry is a good example. Technology has changed how products are created, marketed, and sold. From fast fashion to the customer's information advantage, the entire equation has changed.

It's not a surprise that retail industry profits have grown slightly more than the overall market over the past 20 years, by 6.7% versus 6.5% (represented by the retail industry within the Russell 3000 Index).

But the shifts within that growth are surprising. Internet sales now comprise 28% of total retail industry profits, a compound annual growth rate of more than 24% since 1999. Meanwhile, general merchandise and department stores have gone from 55% of total retail 20 years ago to 11% today.

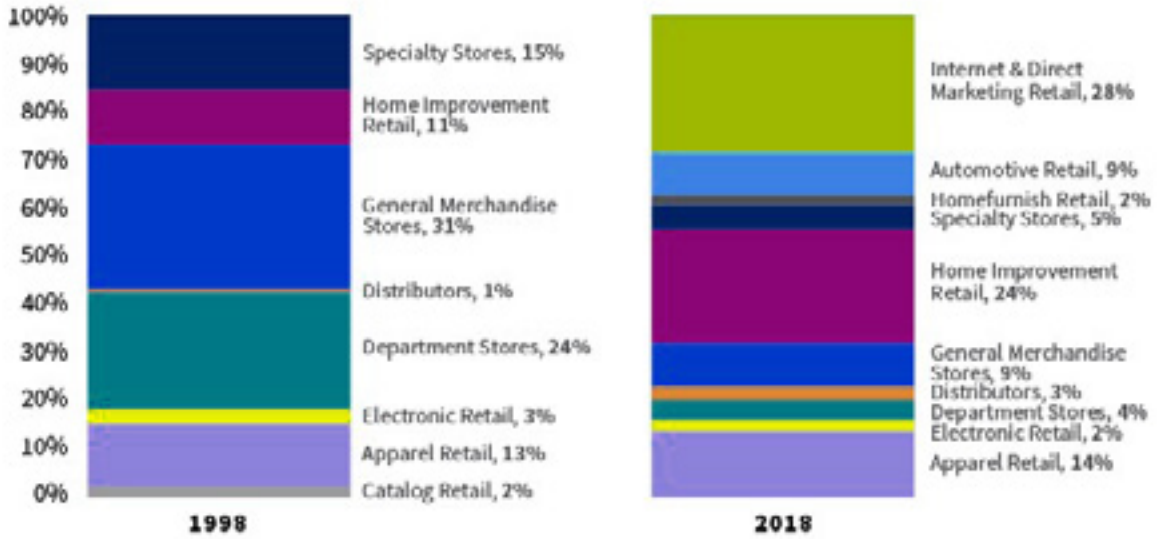
IBM Watson can beat humans at the ancient and intricate game of Go, but could a machine have predicted Amazon's ever-expanding total addressable market (TAM) better than humans could? Doubtful. This is the reality of the nature of the innovation and disruption cycle. It takes creativity, insight, and imagination to identify it (Fig 2).

An Integrated Approach

What are the takeaways? How can we as asset managers do better? How can our clients do better?

The answer isn't to change who we are. One financial behemoth has said it is not an investment bank, but a technology company in the financial services industry. I take issue with that. We don't have to pretend to be technology companies in order to [Continued on Page 22]

Fig. 2 Shift in Profit Pools: Retail Industry



Source: Russell 3000 Index narrowed down to the retail industry, as of 12/31/18. Shows percentage of profit pools.

Investing in Diverse Asset Managers: A Performance Imperative
[Continued from Page 9]

Andrew Carnegie intended his philanthropic work to be carried out in perpetuity, saying "even after I pass away the [wealth] that came to me to administer as a sacred trust for the good of my fellow men is to continue to benefit humanity for generations untold." We honor our commitment to his legacy by embracing diversity and inclusion in pursuit of superior investment performance resulting from a broad range of perspectives.

Institutional Investing In Draw-Down Private Partnerships
[Continued from Page 10]

institutional investor in today's environment. Maintaining a measured investment pace with the best and most fiduciary-responsible managers remains the best solution.

Timing Private Markets is Futile

Investing in long term private partnership structures is a program executed with discipline and without regard to market conditions. The common wisdom is that one cannot time the stock market. That is even more relevant in private partnership investing. There is a temptation, during such heady times, to stop or dramatically scale back investing in private partnerships. We believe this is unwise as it may materially skew vintage year risk. It also fails to take into account that some of the best investing vintages are just prior to a crisis, as capital can be attractively deployed during stressed times. In order to benefit from timing, an investor would have to be extraordinarily perspicacious to make private partnership commitments exactly 6-12 months before a crisis.

Conclusion

Investing in private partnerships can be a key competitive advantage for an institutional investor focused on higher-returning strategies in two or three broad segments, as opposed to a common temptation of over-diversification and excessive bucketing. We suggest a focus on venture capital, growth equity, and buyouts as the main asset class allocations with a remaining consideration of opportunistic allocation that encompasses all other strategies. Manager selection is paramount, while attempting to time commitments in a long-term program has limited, if any, tactical benefits. Efficient portfolio diversification is best achieved in the marketable segments of an investment portfolio, although it is desirable to have several different sources of high growth products within private partnerships. Investors with strong internal investment departments and staff focused on private partnerships are in a position to prepare themselves for future co-investments, creating a more favorable sharing of the gross economics of private partnerships.

Disclaimer: This article solely represents the opinions of the authors and not the opinions or policies of ALSAC or the University of Memphis.

The Power of Technological Change
[Continued from Page 21]

survive in our industry, or any industry.

We do, however, have to assess our organization's culture and mindset toward technology. Sometimes in the asset management business, we consider change a dirty word. But evolution is imperative, and a proactive approach to understanding and utilizing technology is better than a reactive one. Success really is about change, and innovation more broadly.

The good news is that many trends—including reduced costs due to digitization, for example—are making things more accessible. But acquiring the capabilities and talent will be challenging, and will take time (not to mention discomfort) to adjust. We are all feeling that already.

Internal Mindset and Culture Key

Our framework for adapting to change is to consider the external solutions available, the internal forces necessary, and approaches that combine these elements.

There are many external solutions that provide businesses with the capabilities of bigger organization without the infrastructure and costs, including cloud computing and partnerships with start-up accelerator programs.

But most important may be business leaders taking responsibility. At William Blair, I chair our technology working group, and two years ago we created the role of technology leader within our business unit.

One of our goals is to create a borderless technology environment, bringing technology from the back office into the front office and blurring the boundaries of technology and investment skills.

To reiterate, I don't see technology replacing humans. Humans will continue to have a role, which is why we believe so deeply in the role of active management.

Celebrating the 15-Year Anniversary of the NMS Endowment & Foundation Member Community



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Standing from Left to Right: Matt Yannocone, *Principal, Siguler Guff & Company, LP* ; Jeff Goll, *Marketing and Client Service, DePrince, Race & Zollo, Inc.*; Jason Filiberti, *Managing Director, Angelo, Gordon & Co.*; Andy Stenovec, *Global Client Relations, GMO LLC*; Bob Underhill, *Executive Vice President, Shorenstein Properties LLC*, Andrew Tubman, *Director, E&F Strategies Wellington Management Company LLP*; Kevin Welsh, *Partner and Senior Managing Director, Kayne Anderson Capital Advisors, L.P.*

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