Alternative Investment Analyst Review

Call for Articles

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Chosen pieces will be featured in future issues of *AIAR*, archived on **CAIA.org**, and promoted throughout the CAIA community.

Editor's Letter

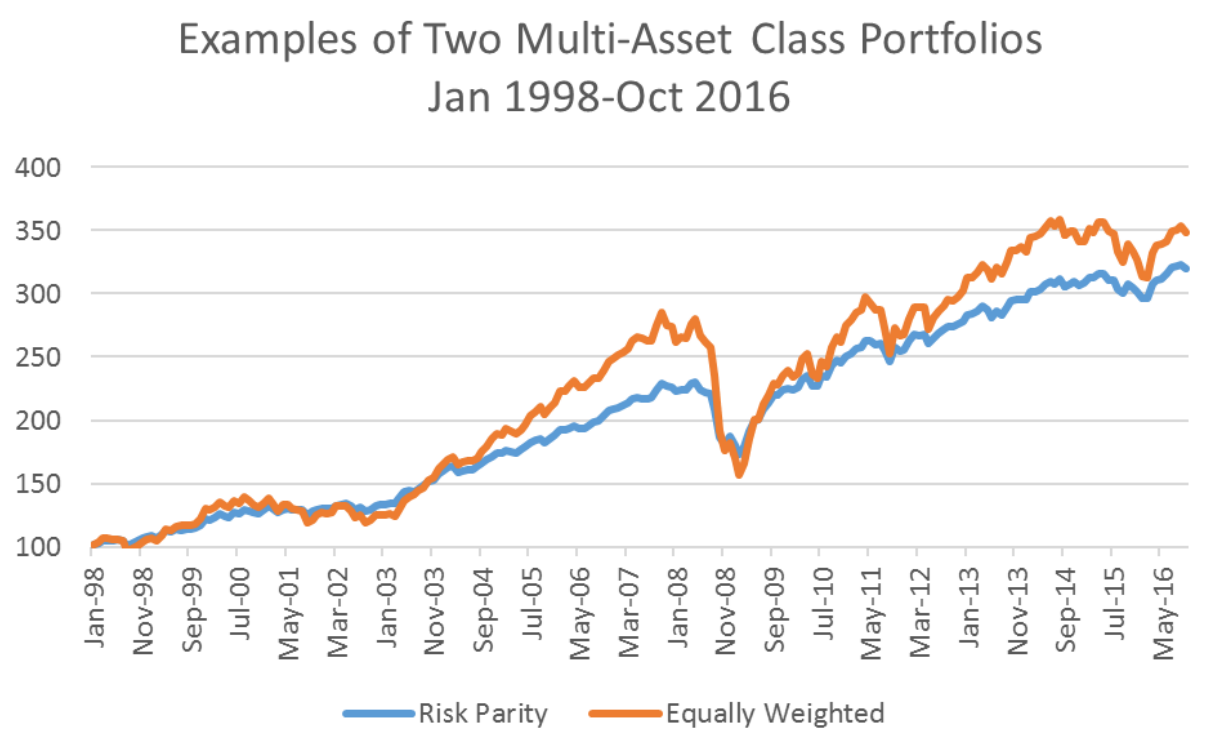
Understanding the Systemic Risk of a Multi-Asset Portfolio

Most investors understand that diversification benefits associated with a multi-asset portfolio could almost disappear during periods of extreme financial stress. The most important case being during the 2008-2009 global financial crisis when the correlations among all risky assets approached one, and only cash and U.S. Treasuries provided some downside protection for such portfolios. These periods of extreme financial distress give rise to systemic risk when financial risks arising from one segment of the market spills over into other segments and very soon the entire global financial market is under stress. While these periods of stress do not arise frequently, their impacts are so great that it pays for investors to be aware of such risks and devise plans to manage and mitigate the effects of this risk. However, before we discuss ways of managing this risk, we need to develop a more precise measure of it.

Suppose an investor is considering a multi-asset class universe of investments to implement an asset allocation program. These asset classes are listed in the following table:

CISDM EW Hedge Fund	Barc US Agg Bond	Barc US Corp High Yield	Barc US Govern	S&P 500	S&P GSCI	MSCI EAFE	MSCI World	MSCI EM	Red Rocks Global Listed Private Equity	DJ Equity All REIT

The asset classes displayed here should allow an investor to create a well-diversified portfolio, providing a steady rate return during the last 25 years. For example, the following chart displays the performances of an equally weighted portfolio and a risk-parity portfolio consisting of these asset classes from January 1998 to October 2016.



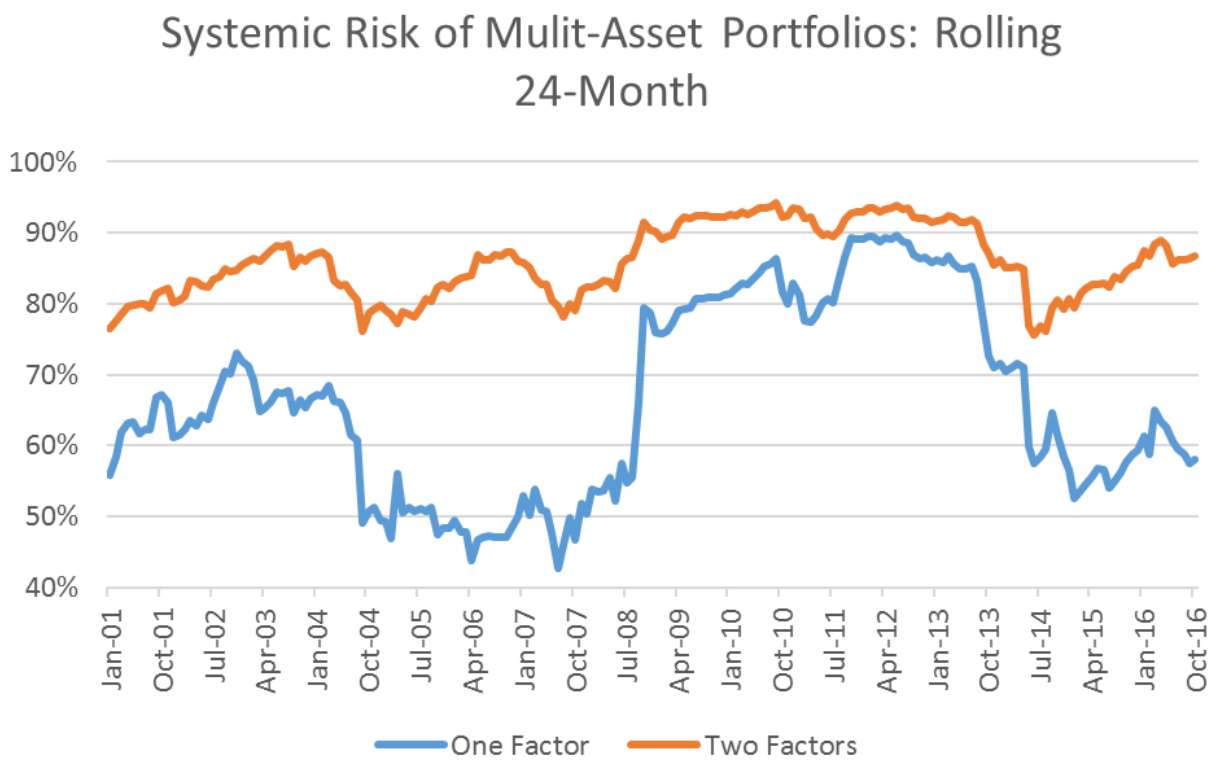
We can see that both portfolios experienced significant declines during 2008-2009 and smaller, but still meaningful declines, during the sovereign debt crisis of 2011 as well as the Chinese slowdown of 2015-2016. What we wish to measure here is the potential diversification benefits offered by these asset classes through time. In other words, we want to identify periods during which one or two common factors begin to drive the returns on all risky asset classes.

Principle Component Analysis (PCA) is a widely used method for extracting information about the common factors that affect the volatility of a set of observations (e.g., returns on assets). Basically, PCA attempts to find the following representation of returns

$$\textbf{Return on Asset k} = \textbf{Weight}_{k1} \times \textbf{PCA}_1 + \textbf{Weight}_{k2} \times \textbf{PCA}_2 + \ldots + \textbf{Weight}_{kN} \times \textbf{PCA}_N$$

That is, asset returns are expressed as linear combinations of a set of common components or factors. More importantly, these factors are independent of each other, and they are determined such that the first factor has the highest explanatory power, then the next factor has the second highest explanatory power and so on. Suppose in 2007 the first factor ends up explaining 50% of the time series variations of these asset classes and then in late 2008 the first factor's explanatory power increases to 90%. This means that there was a substantial decline in the diversification opportunities provided by these asset classes because in late 2008 the major driver of risk asset returns was responsible for 90% of the variation in their returns. The following chart displays the percentage of the time series variation of these asset classes explained the first factor and the first two factors through time.

We can see that the first two factors explain 75% to 95% of the variations of these asset classes through time. The first factor alone explains up to 90% of the variation during periods of financial stress.



Keeping track of these two figures through time will provide investors with early warning signals that diversification benefits are disappearing and appropriate actions must be taken. In addition, investors should track the exposures of their portfolios to these factors through time. For example, in the case of Equally Weighted and Risk Parity portfolios displayed earlier, their overall exposures are given below:

	Exposures to the First Factor: Jan 01-Oct 16	
	Risk Parity	Equally Weighted
Correlation	92%	96%
Beta	0.132	0.242

We can see that the risk parity portfolio has a significantly lower beta with respect to the first factor. In addition, one can calculate rolling betas of these two portfolios with respect to one or two factors to determine if the portfolios exposures to systemic risk is increasing or not. Finally, exposures to systemic risk as measured by these factors can be taken into account when the optimal asset allocations are implemented. In this process, allocations to those asset classes that have the greatest exposure to systemic risk can be reduced.

Hossein Kazemi

Editor

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Hedge Fund Compliance: Risks, Regulation, and Management

Jason Scharfman
Corgentum Consultating LLC

Compliance is one of the fastest growing areas in the alternative investment space, and this is particularly true for the hedge fund industry. Recent reports outline that the hedge fund industry has already spent in excess of $3 billion on compliance related efforts. Today, surveys indicate that individual hedge funds on average spend at least 5% - 10% of their operating budgets on compliance, and these percentages are expected to steadily increase.

This well written highly detailed book begins by highlighting the changing scope of hedge fund compliance, as outlined in this excerpt: "Today, hedgefund compliance has evolved into more than a regulatory exercise. Hedge fundcompliance programs are now required to regularly engage compliance risks across a wide variety of operational and investment areas, ranging from cybersecurity and conflict of interest management to trade allocation and increased oversight of the use of investment research. To meet these challenges, hedge funds, their investors and service providers must continually reevaluate the role of the compliance function to ensure that they not only meet these new regulatory requirements but also keep pace with industry best practices

One key compliance challenge hedge funds increasingly struggle with is the challenge of regulatory reporting. In this excerpt *Hedge Fund Compliance: Risks, Regulation and Management* the author outlines some key questions hedge funds face in this area and an approach to the process:

"A hedge fund manager often wants clear answers to the following questions:

- *Which reporting do I need to file?*
- *When do I need to file them?*
- *How often do I have to keep filing them?*
- *When will I have to make additional filings?*

The process of determining the answers to these questions is a multistep one. On a high level, the steps in the reporting process are:

Step 1: Evaluate a hedge fund's regulatory reporting eligibility requirements.

Step 2: Determine what specific forms and data are required.

Step 3: Develop a strategy regarding what data to provide.

Step 4: Select the appropriate method and group to transmit information to a regulator.

Step 5: Adhere to ongoing filing requirements.

Step 6: Conduct ongoing evaluations of new filing requirements

The compliance rules regarding regulatory reporting can be quite complex. Straightforward answers to these types of questions often require an analysis of each hedge fund's specific circumstances. Also influencing these answers are the specific requirements of each different financial regulator."

Hedge Fund Compliance covers topics that will be of interest not just for hedge funds and their service providers but for allocators as well. An entire chapter of the book focuses on the ways in which investors can evaluate a hedge fund compliance function during the due diligence process. The following excerpt highlights an area of increased focused for investors during due diligence, the oversight of material non-public information and expert networks often used by hedge funds during the investment research process:

"Another reason investors are increasingly focused on material non-public information ("MNPI") is because over the past few years the avenues by which hedge funds may become exposed to MNPI through the investment research process have increased. One of the drivers of this has been the growth of what is known as the expert network industry. Expert networks are companies that provide a matchmaking service between individuals who have particular experience in different industries and companies that may be useful for hedge fund's in considering different potential investment opportunities. For example, a hedge fund may be considering making an investment in a company that manufactures semi-conductors but may not be familiar with recent trends in the industry. Speaking to a recently retired executive from that industry would likely provide useful insights to the hedge fund.

Although the experts the hedge funds speak to are not supposed to provide MNPI to the hedge funds they speak to, the risks for transmission are present. Investors seeking to evaluate a hedge fund's potential compliance liabilities as it relates to MNPI therefore, are increasingly focusing on the way hedge funds interact with expert networks. In evaluating a hedge funds compliance oversight in this area important factors investors can investigate including the use of the following best practices:

1) The hedge fund performs due diligence on the expert network: It is important for hedge funds to perform due diligence on the ways in which an expert network seeks to prevent the transmission of MNPI from its experts to a hedge fund. Investors should evaluate how thoroughly a hedge fund has evaluated the expert network including understanding the compliance framework in place at the expert network itself, as well as the training and vetting processes for experts.

2) The hedge fund communicates its own compliance policies to the expert network: In addition to MNPI controls that may be in place at the expert network itself, it is also important for hedge fund's to pro-actively give the expert network the hedge fund's own MNPI related compliance policies. The reason for this is there may be differences in place between the hedge funds own policies and the expert network. In many cases, hedge funds have stricter prohibitions in place then the expert network may have. In these cases, if the hedge fund is to utilize the expert network, there should be special measures taken to ensure that the hedge funds policies are complied with. An example of how a hedge fund may bridge this gap in practice would be by having a hedge fund employee read a disclaimer prepared by the hedge fund's compliance department which would reiterate what the specific policies of the hedge fund in this area, and reiterate that the employee does not wish to receive MNPI from the expert.

3) Pre-clearance of experts: Prior to having a hedge fund's employees engage in any discussion with experts, it is considered best practice to have them pre-clear the use of specific experts through a hedge fund's compliance departments rather than working directly with the expert network. The purpose of this is to allow the compliance function to vet the use of any potential experts while keeping in mind any potential conflicts that may be in place as it relates to current or planned investments of the firm's funds. In this case, the compliance function could leverage off of the above referenced practice of utilizing a restricted list, which is utilized to assist in overseeing personal account dealing, to ensure that an individual does not maintain too close an affiliation with a particular company that is on the restricted list.

4) Limitations on expert public company experience: If an expert currently works or has recently worked for a publicly traded company, many hedge funds seek to maintain enhanced restrictions on any conversations a hedge fund's employees may have with this expert. The reason for this is that if the hedge fund were to make trades related to the public company where the expert has direct experience there is an enhanced risk that MNPI could be discussed that the hedge fund may then act upon.

Some hedge funds maintain policies that explicitly prohibit its employees from speaking to experts that are currently working at public companies. Additionally, hedge fund policies may also not allow employees to speak to experts that have worked at a public company within a pre-determined times period such as, last 12 months.

5) Compliance auditing of expert calls: It is considered best practice for a hedge fund's compliance function to maintain a mechanism for auditing the actual calls between the hedge fund employee and the expert. The most common mechanisms utilized is for a representative of compliance to actually listen into the calls in conjunction with the hedge fund employee as they speak to the expert. While it is ideal for compliance to listen in to every call in some cases, depending on the resources in place at the hedge fund, compliance may instead opt to randomly select the calls to audit.

6) Preparation of expert call summaries: It is also considered best practice for the hedge fund to prepare a summary memorandum of the call with the expert. These summaries serve to develop a written log of which experts were spoken on what dates. Additionally, these summaries also create documentation of the topics and specific companies that were discussed during the call. This facilitates monitoring and testing of expert activity, discussed below, as well as allows the hedge fund to provide documentation to regulators in the event questions arise relating to a hedge fund potentially trading in MNPI.

7) Monitoring and testing of expert requests and conversations: It is considered best practice for the compliance function to monitor the use of experts by employees. As part of this monitoring, the compliance function should note if a hedge fund employee, such as an investment analyst, consistently talks to the same expert. With frequent usage of the same expert there is the potential for the analyst to push too far in asking for information about a particular subject which could venture into the realm of MNPI.

Additionally, it is considered best practice for the compliance department to monitor the specific companies discussed expert calls in order to determine if a hedge fund is actively using this information in violation of MNPI rules. This can be the case even if multiple different experts are utilized. For example, if over the course of a month, a hedge fund's investment analyst talks to 15 different experts about the prospects of The Dow Chemical Company and then the hedge fund actively trades in that company over the same period, these trades should be subjected to a higher degree of scrutiny by the compliance department to determine if MNPI was a factor in executing those trades. This would include reviewing the content of the conversation between the analyst and the experts as well as evaluating the timing and specifics of the hedge funds trades and the items discussed with the expert in order to determine if any potential violations took place."

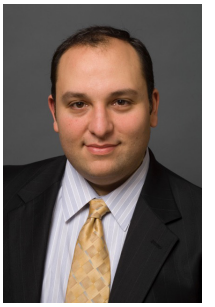
Hedge Fund Compliance concludes with an analysis of recent compliance trends including an overview of the impacts of MiFID II and AIFMD as well as the discussion of enhanced personal liability for hedge fund Chief Compliance Officers. Another interesting trend highlighted in the book is the of increasing insurance costs for hedge funds seeking coverage related to the expenses associated with regulatory examinations as discussed in the following excerpt:

"Another trend relates to the increasing compliance related insurance costs for hedge funds. In recent years, regulatory agencies such as the US SEC and the UK FCA, as well local US state regulators have increased their scrutiny of hedge funds. With this increased attention has also come increased litigation brought by these regulators as part of enforcement activity. To meet this growing demand, a recent trend has emerged whereby the hedge fund insurance industry has increasingly offered professional liability coverage to hedge fund managers that can provide them with coverage to cover the cost of mounting a legal defense when these regulatory actions were brought.

As with all insurance policies there are a number of exceptions and specific requirements for the hedge fund to be eligible for the coverage. One of the key items in this area that has increasingly come under contention has been a push for hedge funds that enter into settlements with financial regulators such as the SEC to actually admit guilt, as opposed to settling with the regulator in which they neither admitted nor denied guilt. The way many of these professional liability policies have been traditional drafted, if a hedge fund were to admit guilt the way the settlement would be structured with the regulator could exclude it from coverage of defense costs under the insurance policy under what are known final adjudication or judgement exceptions. While this specific issue is still developing in the hedge fund industry, as regulators increased their enforcement efforts there is also a growing concern that hedge fund insurers will have to pay increased defense costs under these policies as regulators increase their enforcement activity across the board. This consequently, has caused many in the industry to speculate that the costs of these policies to hedge funds will continually increase as well."

To add further perspective on the real-world applications of compliance the book also includes interviews regarding the benefits of hedge fund compliance consultants with ACA Compliance Group, and on the increasingly important compliance role played by technology consultants, including in the area of cybersecurity, with Eze Castle Integration. The book also features an accompanying website which includes examples of core compliance documentation and forms commonly used by hedge funds. Hedge Fund Compliance: Risks, Regulation and Management is currently available for order from booksellers worldwide including Amazon.

Author's Bio



Jason Scharfman

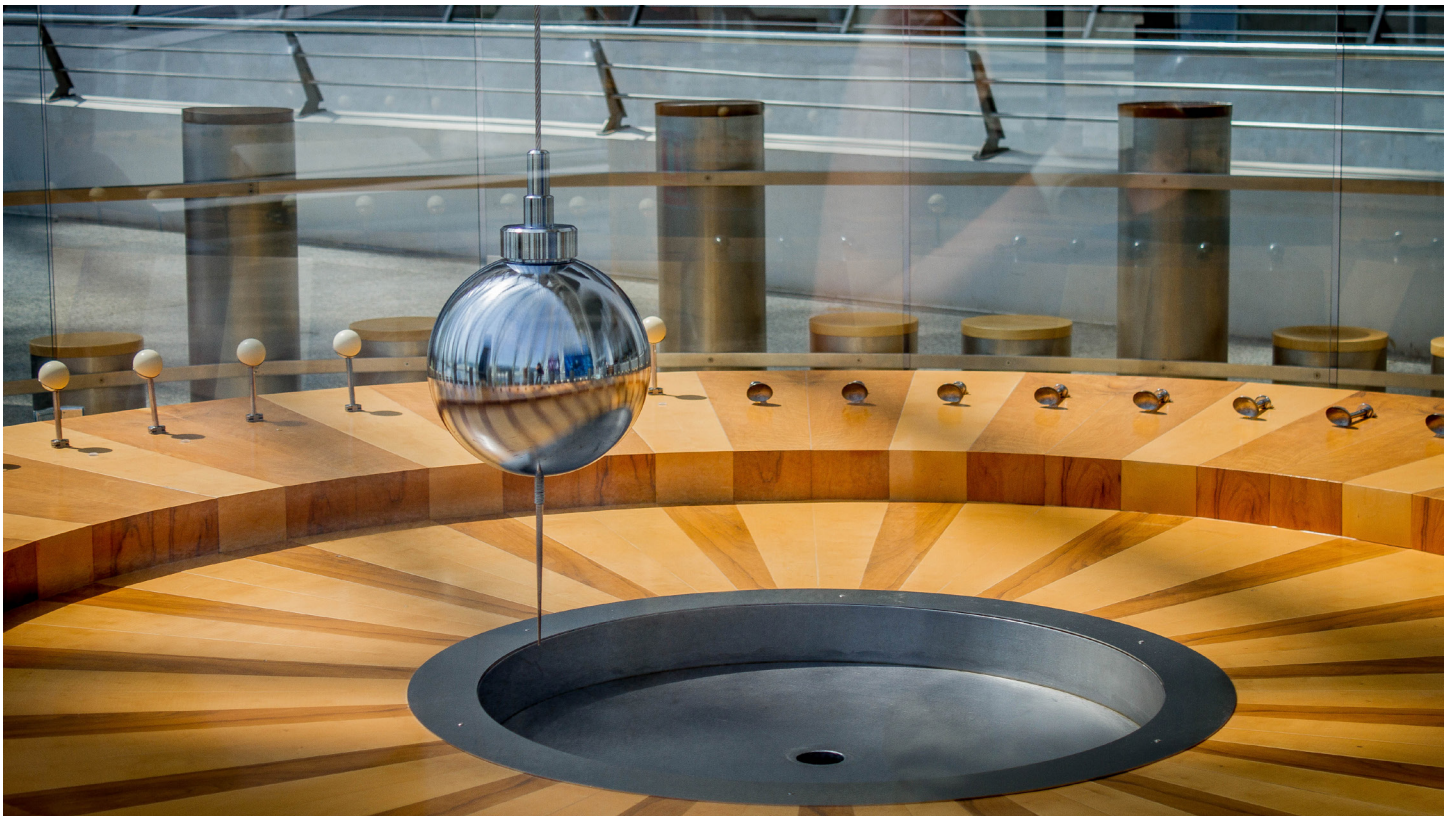
Jason Scharfman is the Managing Partner of Corgentum Consulting, a specialist consulting firm that performs operational due diligence reviews and background investigations of fund managers of all types, including hedge funds, private equity, real estate, and long-only funds on behalf of institutional investors, including pensions, endowments, foundations, fund of funds, family offices, and high-net-worth individuals.

He is recognized as one of the leading experts in the field of due diligence and is the author of the forthcoming *Hedge Fund Compliance: Risks, Regulation and Management* (Wiley Finance, 2016), *Hedge Fund Governance: Evaluating Oversight, Independence, and Conflicts* (Academic Press, 2014), *Private Equity Operational Due Diligence: Tools to Evaluate Liquidity, Valuation, and Documentation* (John Wiley & Sons 2012), and Hedge Fund Operational Due Diligence: Understanding the Risks (John Wiley & Sons, 2008). He has also contributed to the Chartered Alternative Investment Analyst (CAIA) curriculum on due diligence and has served on the organization's Due Diligence, Risk Management and Regulation Committee.

Before founding Corgentum, Mr. Scharfman previously oversaw the operational due diligence function for a $6 billion alternative investment allocation group called Graystone Research at Morgan

Stanley. While at Morgan Stanley, he was also a senior member of a team that oversaw all of Morgan Stanley's operational due diligence efforts, allocating in excess of $13 billion to a firm-wide platform of more than 300 fund managers across multiple investment strategies. Before joining Morgan Stanley, he held positions that primarily focused on due diligence and risk management within the alternative investment sector at Lazard Asset Management, SPARX Investments and Research, and Thomson Financial.

Mr. Scharfman received a BS in finance with an additional major in Japanese from Carnegie Mellon University, an MBA in finance from Baruch College's Zicklin School of Business, and a JD from St. John's University School of Law. He is admitted to the practice of law in New York and in New Jersey. In addition, he holds the Certified Fraud Examiner (CFE) and Certified in Risk and Information Systems Control (CRISC) credentials. He has consulted with the US House Judiciary Committee on hedge fund regulation and has also provided training to financial regulators on hedge fund due diligence. Mr. Scharfman has served as a consultant and testified as an expert in hedge fund litigation and has lectured on the subject of hedge fund operations and operational risk as an adjunct professor at New York University. He is a member of several industry organizations, including the Information Systems Audit and Control Association, the American Bar Association, the New York State Bar Association, and the New Jersey State Bar Association. He has written extensively on the subject of due diligence and speaks worldwide on due diligence and operational risks.



Long-Termism Versus Short-Termism: Time for the Pendulum to Shift?

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Introduction

We are often told to think long-term, keep the big picture in mind, or that it's a marathon, not a sprint; however, evidence shows it's not always in human nature for individuals to behave in a long-term-focused manner. Public companies are no different, and in recent years, the debate has centered on the detrimental impact of the short-term mindset of many public companies. Short-termism (a.k.a. quarterly capitalism) is defined as companies' fixation on managing for the short term, with decisions driven by the need to meet quarterly earnings at the cost of long-term investment. Short-termism is viewed as a problem because it has the potential to undermine future economic growth with the lack of long-term investment, ultimately leading to slowing GDP, higher unemployment levels, and lower future investment returns for savers—implications that could hurt everyone.

This article will analyze the short-termism versus long-termism debate, examine how institutional investors are proposing to alleviate short-term thinking, and explore how incorporating long-term metrics is a critical step in this transition to long-termism.

What is Short-Termism And Is It A Problem?

In 2013, McKinsey and the Canada Pension Plan Investment Board (CPPIB) conducted a McKinsey Quarterly global survey of more than 1,000 board members and C-suite executives to gauge their long-term approach in managing their companies. The authors of the survey (Bailey and Godsall) confirmed the pervasiveness of short-termism in today's corporate mindset.

- 63% of respondents said the pressure to generate strong short-term results had increased over the previous five years.
- 79% felt pressured to demonstrate strong financial performance over a period of just two years or less.

- 44% said they use a time horizon of less than three years for setting strategy.
- 73% said they should use a time horizon of more than three years.
- 86% declared that using a longer time horizon to make business decisions would positively affect corporate performance in a number of ways, including strengthening financial returns and increasing innovation.
- 46% said that the pressure to deliver strong short-term financial performance stemmed from their boards, while the board members expressed that they were just channeling the short-term pressures that they feel from institutional investors.

The results were startling and brought to light how deeply the short-term mindset has permeated corporate culture. There is a consensus that the main source of the problem is the tremendous pressure that public companies face from financial markets to maximize short-term results time and time again. It's not just sentiment and surveys that convey this focus on the short term, but also empirical data that appears to support this. There has been a substantial increase in the rate at which individual stocks change hands, often cited as evidence that U.S. institutional investors have adopted a "trading" rather than a "buy-and-hold" mentality, which then translates into pressure for companies to deliver on short-term performance targets or risk losing investors. Indeed, some of the turnover may be due to high-frequency electronic trading. However, that cannot be the only driver of the growth, with annual turnover of stocks traded on the NYSE increasing from 36% in 1980 to 63% in 1996, and up to a high of 138% in 2008.

Lastly, the rise of and prominent role played by "activist" investors is seen as further evidence of secular trends encouraging short-term behaviors at the expense of long-term thinking. Historically, activists had focused on smaller firms, but as their presence grows, they are targeting much larger firms and several large-cap companies. McDonald's, Apple, JCPenney, and DuPont have been embroiled in public confrontations with large activist investors.

Typically, activists focus their attention on companies undertaking some short-term structural corporate (e.g., spinoffs) or financial actions (e.g., buybacks). In fact, in a study done by Yvan Allaire (MIT 2015), activist objectives were tracked, and almost 75% of the time, their publicly stated objectives centered on the following three points.

1. Sell the company or some form of asset restructuring or spinoff (31% of the cases).
2. Board change (25%).
3. Change in payout policy, such as share repurchase or dividend increase (17%).

Activist funds buy shares, get board seats, and then employ their strategy to unlock value from the company. More often than not, unlocking value entails some form of financial engineering that drives up the share price and ultimately allows the activist fund to profit from its initial investment. Allaire's research showed that there were few strategic, operational, or growth objectives prescribed for companies targeted by activists. In the end, this typically resulted in hollowed-out companies with little resiliency during economic downturns that were less apt to invest in the long term. One point of evidence of activism is the record amount of buybacks from large-cap companies. In Exhibits 2 and 3, we track buyback and dividend activity compared with capital expenditures. Shareholder-payout activity was at or near record levels compared with capital expenditures. According to Henderson and Rose (2015), a number of studies confirm that some managers trade off future, positive net present value (NPV) projects in order to meet analyst expectations. However, their research also supported companies' focus on meeting earnings as a positive sign. They highlight studies that have shown some firms that "make their numbers" do better in the long term, reporting better operating results and obtaining higher market valuations than their competitors. Their argument is that the pressure to meet earnings may reflect the fact that short-term results are a particularly credible signal of the health of the firm and the competence of the management, rather than an undue focus on the short term on the part of investors.

Differing motivations for meeting earnings, whether they stem from a desire to appear credible or are a reaction to short-term pressures, do not negate the fact that trade-offs are occurring, with long-term considerations falling by the wayside to deliver short-term earnings.

Of note, despite empirical evidence that corporations are engaging in short-termism and making trade-offs, some highly respected economists, such as Larry Summers, caution against going too far in reforming "quarterly capitalism." He mentions risks such as driving the U.S. economy towards a "Japan's keiretsu system," which insulated corporate management from share-price pressure by encouraging cross holdings among large Japanese conglomerates.

Keiretsu was widely seen as a great Japanese strength. However, Summers noted that many "Japanese companies, despite the macroeconomic difficulties there, have lacked market discipline and have squandered leads in sectors ranging from electronics to automobiles to information technology." While Japanese firms may represent one polar extreme, in the U.S. and elsewhere, there appears to be a real trade-off mentality present at the corporate level between producing current results and investing for the future, with the balance more heavily weighted toward short-term considerations.

Coalition To Deal With Short-Termism

In recent years, the issue of short-termism has come back to the forefront of investing. Whether it is investors, academics, think tanks, or economic organizations, the issue continues to garner a great deal of thought on how it can be addressed across a wide spectrum of participants.

In 2011, the World Economic Forum published a report titled "The Future of Long-Term Investing," containing recommendations for both investors and regulatory authorities to remove obstacles to long-term investment and increase the positive impact of a long-term investment strategy. In 2013, the IMF weighed in and published "Procyclical Behavior of Institutional Investors During the Recent Financial Crisis:

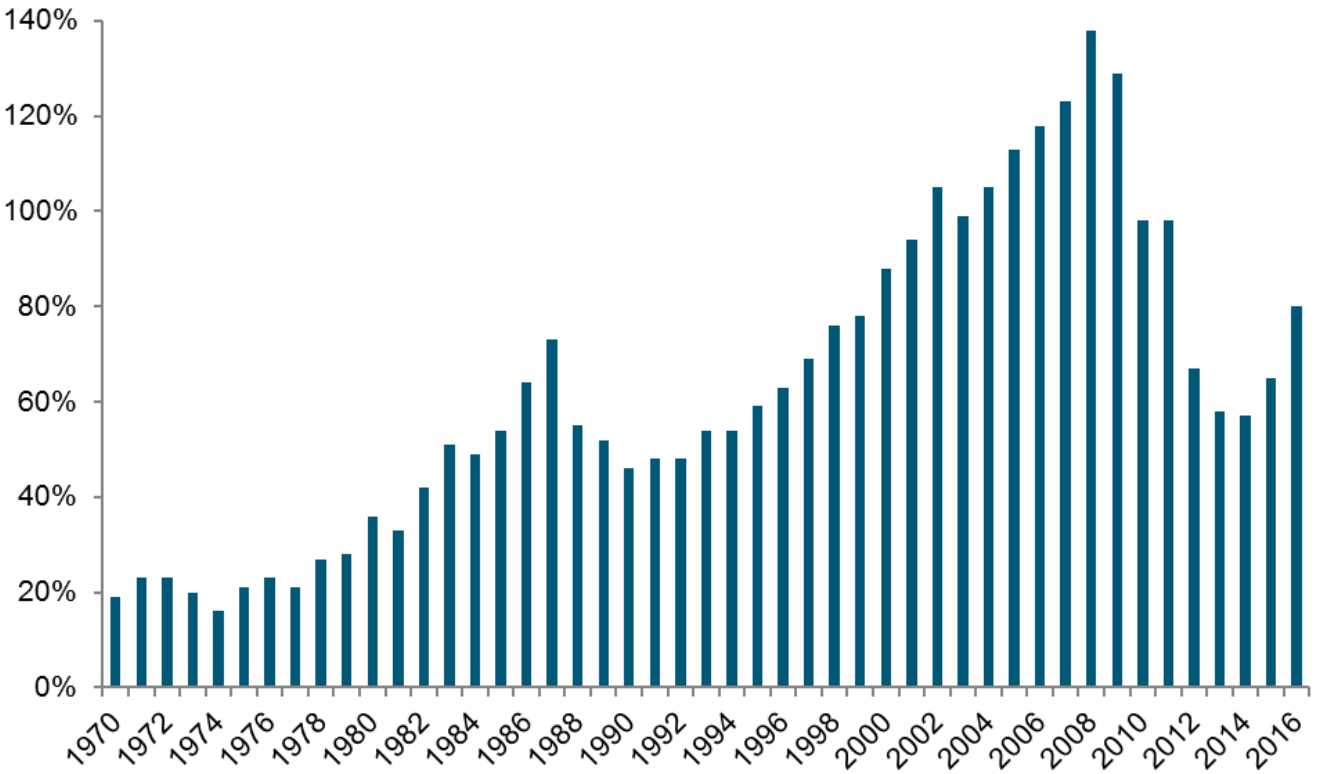

Exhibit 1: Annual Turnover of All Stocks Traded on the NYSE
Source: NYSE Factbook. Data as of February 2016. Chart is provided for illustrative purposes.

Causes, Impacts, and Challenges," a paper that examined the reasons behind this procyclical behavior. Its conclusion was that behaving in a manner consistent with long-term investing would lead to better long-term, risk-adjusted returns and, importantly, could lessen the potential adverse effects of the procyclical investment behaviors of institutional investors on global financial stability.

Focusing Capital on the Long Term (FCLT) was set up in 2013 by McKinsey & Company and CPPIB in order to develop practical frameworks, metrics, and approaches for promoting longer-term behaviors in the investment and business worlds. Since then, over 100 pension funds, asset managers, and companies have joined the initiative

Prior thoughtful recommendations often focused on what companies can do to shift away from short-termism—such as refrain from publically projecting quarterly earnings or extend the time horizons for executive compensation—without enough focus on what asset owners can do (Pozen, 2014). However, the coalition of institutional investors in FCLT is realizing that telling company management to focus on the long term, and thereby placing the entire onus on them, is both unrealistic and ineffective.

If one looks at the capital markets and the investment value chain, the major parties are companies, asset owners, and asset managers (there are intermediaries involved but the key parties listed control the flow of capital). If it's any consolation to companies, they are not alone in facing increased pressures; asset owners face increased regulatory and funding pressures, while asset managers continue to operate in the "hire and fire" model. With the increased pressure, the time frame they are given to beat their benchmarks gets ever shorter in duration.

According to FCLT, "the single most realistic and effective way to move forward is to change the investment strategies and approaches of the participants who form the cornerstone of our capitalist system: the big asset owners." Asset owners are the key constituent to effect real change and, their buy-in to long-term thinking will facilitate the process for other players, such as asset managers, corporate boards, and company executives, to move away from short-termism.

Asset Owner Action Plan

FCLT brought together nine major asset owners, controlling an aggregate of over USD 6 trillion in assets under management in order to create a detailed action plan with specific implementation strategies to help asset owners around the world incorporate a long-term mindset throughout the investment process. Their recommendations revolve around steps across five core action areas that all institutional investors must consider:

1. Investment beliefs
2. Risk appetite statement
3. Benchmarking process
4. Evaluations and incentives
5. Investment mandates

The five areas collectively provide a framework for institutional investors to improve long-term outcomes for their portfolios, their investee companies, and ultimately for all stakeholders. Their guide can be found on the FCLT website and is a comprehensive document. Analyzing the detailed prescriptions outlined by FCLT is beyond the scope of this paper.

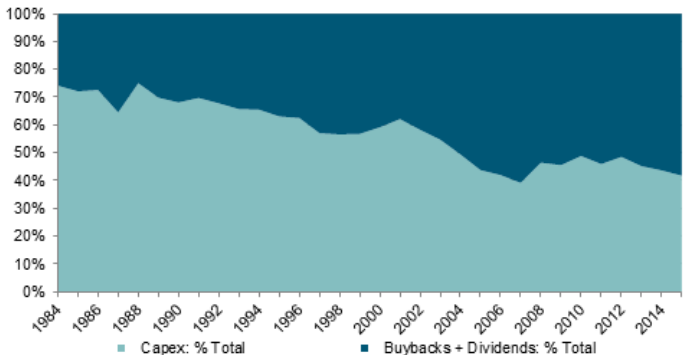

Exhibit 2: S&P 500® Companies' Capital Expenditures Versus Buybacks and Dividends
Source: S&P Dow Jones Indices LLC. Data as of December 2015. Chart is provided for illustrative purposes.

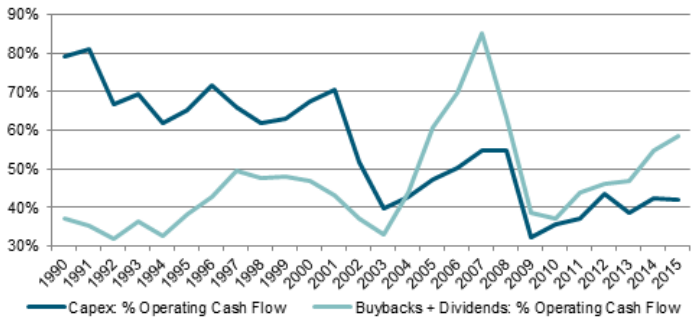

Exhibit 3: S&P 500 Companies' Capital Expenditure and Payout Percentage of Operating Cash Flow
Source: S&P Dow Jones Indices LLC. Data as of February 2016. Chart is provided for illustrative purposes.

Throughout the recommendations, a common theme is continually emphasized: the need for incorporating long-term metrics that go beyond standard GAAP accounting numbers into the investment analysis process.

S&P Dow Jones Indices worked extensively with CPPIB to create a long-term value creation benchmark, which is the third imperative in their portfolio guide to asset owners (see Exhibit 5). The S&P Long Term Value Creation Global Index was designed as a vehicle to identify the companies that embody long-termism and give long-term investors an index that seeks to track the performance of these like-minded companies. We will be releasing a follow-up paper that will give a deeper overview on the objective, the process, and the structure that went into creating the index.

Long-Term Metrics

In general, long-term metrics can be classified into two general categories: (1) industry-specific metrics that will vary by sector, and (2) sustainability metrics that encompass environmental, social, and governance (ESG) evaluation criteria.

For the first category, despite the lack of uniformity and the variation by industry, asset owners and managers must realize the importance of these figures in the investment analysis process and work with company management to identify and obtain these metrics. For example, Natura, a Brazilian cosmetics company, is pursuing a growth strategy that requires it to scale up its decentralized door-to-door salesforce without sacrificing high-quality salespeople. To help investors understand its performance on this key indicator, the company publishes data on salesforce turnover, training hours per employee, salesforce satisfaction, and salesperson willingness to recommend the role to a friend.

The second category of sustainability metrics requires that analysts give appropriate weight to inherently long-term factors, including the long-term implications of ESG risks and opportunities. Environmental criteria focus on a company's energy use, waste, pollution, and natural resource conservation, as well as evaluate the environmental risks inherent in the company's business model and how the company is managing these risks. Social criteria evaluate a company's business, employee, and community relationships. They seek to determine whether a company works with suppliers who hold similar values, involves itself with its community, has working conditions that show a high regard for employees' health and safety, upholds other stakeholders' interests, etc. Lastly, governance issues deal with a company's leadership, executive compensation, audits, internal controls, and shareholder rights.

The wide acceptance of ESG sustainability metrics has been hindered by their emerging status, the lack of uniformity in data and criteria, and limited history for creating robust back-tested portfolio models. However, there is an ever-growing group of industry coalitions that seek to educate, publicize, and standardize ESG data, which is helping ESG metrics gain greater support. Groups such as the Carbon Disclosure Project (CDP), the G20-based Financial Stability Board, the Sustainability Accounting Standards Board (SASB), the Global Reporting Initiative (GRI), the investor-driven International Integrated Reporting Council (IIRC), and the UN-led Principles for Responsible Investment are helping the investment community understand, accept, and implement sustainability metrics in their investment process.

Of the three ESG factors, governance has been viewed by most investors as the most important variable for corporate performance and has more of an established history, followed by environmental and social factors. However, the longer the investor horizon, the more weight may be given to beliefs in environmental risks and opportunities, as well as to social impacts.

For sustainability metrics, S&P Dow Jones Indices partners with RobecoSAM, an investment data firm that is known for its Corporate Sustainability Assessment (CSA), which consists of an annual survey and analysis of the sustainability performance of global companies. The CSA has been conducted annually since 1999. Given its extensive history and experience in surveying and analyzing material, beyond financial long-term metrics, RobecoSAM's data provides findings on the corporate level of how long-term metrics and long-termism in general can take better hold in the investment value chain.

The following section describes RobecoSAM's view on developing a robust research framework to capture drivers of long-term value creation.

Robecosam's Perspective On Research Frameworks And Investor Engagement

In order to orient corporate decision-making toward a longer-term time frame, RobecoSAM's view is that companies need to

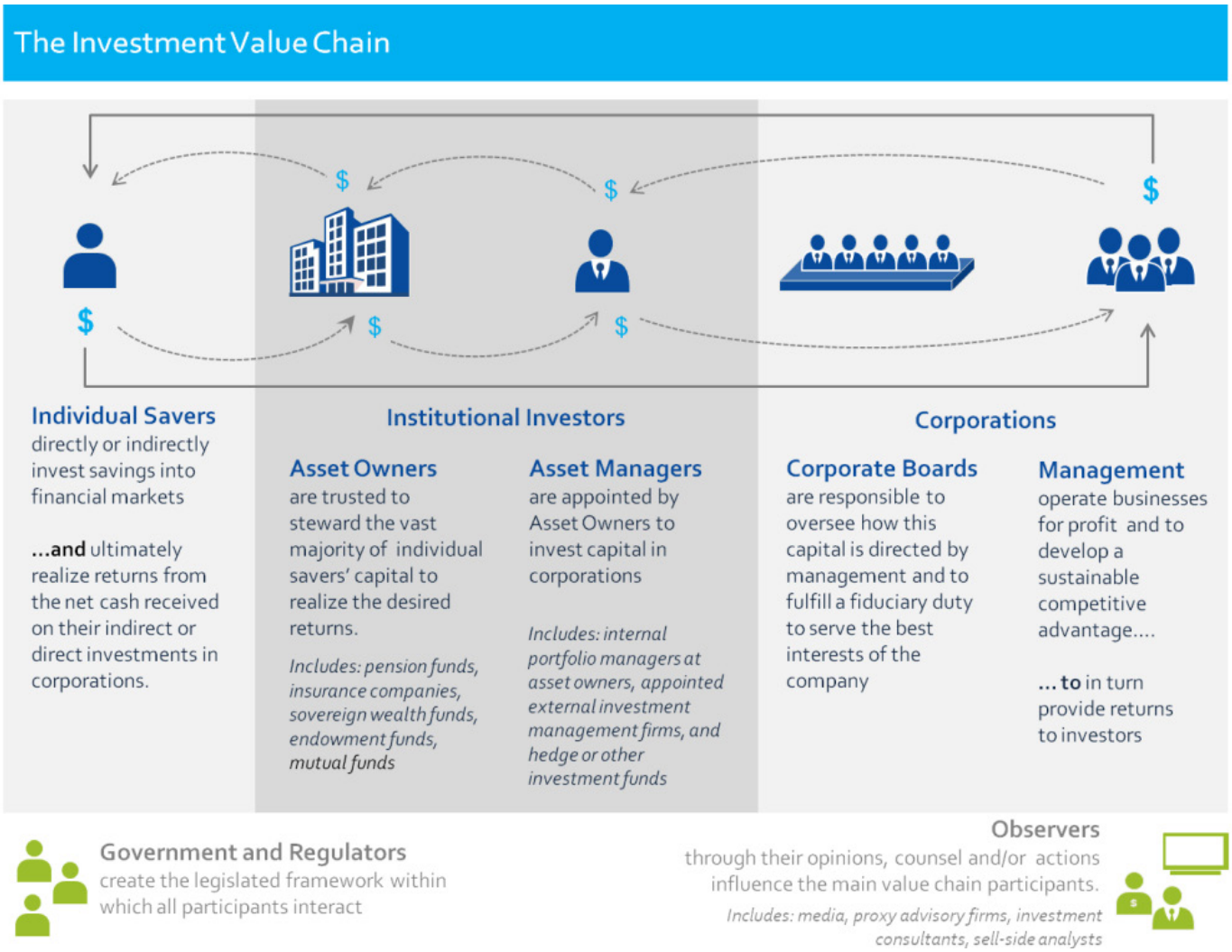

Exhibit 4: Investment Value Chain Participants
Source: FCLT. Chart is provided for illustrative purposes.

employ long-term metrics and incentives that orient the decision making of senior managers and employees more generally toward a longer-term time horizon and in turn report these to investors.

Based on the results of the 2015 Dow Jones Sustainability Index assessment, RobecoSAM observed that only 18% of the 1,845 companies assessed demonstrated clear evidence of CEO incentives that were longer than three years. To orient management decisions around long-term issues, companies will need to change the way they motivate senior executives and employees in order to adopt a greater role in long-term incentive schemes.

In order to facilitate this change, it is important that investors' research frameworks also adapt to include a greater focus on long-term corporate strategy and the corresponding metric. This requires moving beyond traditional sustainability or ESG key performance indicators (KPIs), measuring past performance, and adopting a greater focus on evaluating long-term planning and future-oriented KPIs, metrics, and targets that measure long-term value creation.

Specifically, research frameworks should focus on three key areas in evaluating company performance. First, in evaluating corporate governance, research frameworks should not only measure the level of executive compensation but, more importantly, the time frame and the performance metrics used for senior executive compensation.

Evaluating the existence and extent of long-term incentive plans is essential in order to measure whether the company orients executive behavior toward long-term goals and strategic targets. In addition, research frameworks should provide a more granular evaluation of the nature of the incentive schemes used in order to evaluate whether and to what extent companies create the incentives for executives to orient strategies around the key drivers of long-term value. The transparency of companies in terms of the target and the results of executive performance are also critical elements in determining the quality of the corporate governance of a company in relation to long-term performance.

Second, research frameworks should focus in greater depth not only on the risk-management frameworks that companies employ but also on the degree to which they disclose longer-term risks and mitigation actions to investors. It is important for investors to evaluate the ability of companies to identify and report on new and emerging risks that may affect the business over a period longer than three years, and evaluations of risk management should account for the awareness and transparency of companies in regard to such longer-term risks. Research frameworks evaluating risk management should also address key qualitative elements of risk management relating to risk culture, risk reporting, and innovations in a company's risk-management system.

Five Core Action Areas for Institutional Investors	Institutional Investors Should...
1. Investment Beliefs Set the investment philosophy and provide a compass to select investment strategies and navigate short-term turbulence.	Clearly articulate investment beliefs, with a focus on their portfolio consequences, to provide a foundation for a sustained long-term investment strategy.
2. Risk Appetite Statement Establish the risk framework by clarifying the asset owner's willingness and ability to prudently take risks and accept uncertainties.	Develop a comprehensive statement of key risks, risk appetite, and risk measures appropriate to the organization and oriented toward the long term.
3. Benchmarking Process Measure the success of investment strategies and their execution over the long term.	Select and construct benchmarks focused on long-term value creation; distinguish between assessing the strategy itself and evaluating the asset managers' execution of it.
4. Evaluations and Incentives Ensure alignment between asset owner's and asset manager's financial interests toward the long term.	Evaluate internal and external asset managers with an emphasis on process, behaviors, and consistency with long-term expectations. Formulate incentive compensation with a greater weight on long-term performance.
5. Investment Mandates Define and formalize the portfolio approach and the relationship between asset owner and asset manager.	Use investment-strategy mandates, not simply as a legal contract but, as a mutual mechanism to align the asset managers' behaviors with the objectives of the asset owner.

Exhibit 5: Asset Owner Action Plan
Source: FCLT. Table is provided for illustrative purposes.

Third, and perhaps most importantly, research frameworks should be developed to evaluate companies' ability to identify and report on the sources of long-term value creation itself. Only by companies clearly disclosing the drivers of long-term value creation can investors evaluate whether and to what extent companies are orienting strategic decisions around long-term value drivers. Consequently, investor research should evaluate whether companies identify the long-term value drivers underlying the performance, as well as their use of metrics to measure this performance in a long-term time frame.

Sustainability reporting initiatives such as the GRI, SASB, IIRC, and the CDP have aided in orientating corporate reporting in the direction of sustainability issues and performance, which is an essential step in the right direction. However, more work is required within sustainability frameworks and buy- and sell-side research to move beyond traditional sustainability issues and encompass a broader scope that evaluates the time frame and direction of corporate strategy. This will help investors make better-informed decisions and ultimately should help incentivize companies to provide greater reporting on their actions relating to long-term value creation.

The McKinsey research for the FCLT clearly indicates a significant disconnect between the timeframes that C-Suite executives indicate they should be using to manage their business effectively and the actual time frames by which they orient their decisions currently. The source of this disconnect, according to companies, is the pressure that they receive from investors to focus on short-term results.

To begin to overcome this misalignment, it is incumbent upon the investment community not only to analyze corporate performance differently, but also to engage companies on questions relating to long-term performance. Sustainability researchers, buy- and sell-side analysts, and investors in general must engage companies directly in requesting clear information on long-term strategy and metrics. Only when investors pose the right questions will companies begin to feel the pressure to reorient their decisions around long-term strategies as well as reorient their communications toward issues that matter over the long term.

Conclusion

The issue of short-termism is not a new phenomenon, and in fact it was 30 years ago that Peter Drucker noted in a Wall Street Journal editorial that, "Everyone who has worked with American management can testify that the need to satisfy the pension fund manager's quest for higher earnings next quarter, together with the panicky fear of the raider, constantly pushes top managements toward decisions they know to be costly, if not suicidal, mistakes." As noted by Roger Martin, (HBR, October 2015) "short-termism is a debate that is difficult to settle because the answer is fundamentally unknowable. There is no control group; we cannot compare the performance of corporate America with short-termism to that of corporate America without short-termism.

However, there is palpable evidence of short-term pressures with those who matter most: the managers executing business strategy. In the past, companies have had to deal with short-termism alone, despite increased pressure from both institutional investors and activist investors. Large asset owners are realizing that the single most effective way to deal with short-termism is by changing the investment strategies and approaches of the participants who control the capital: the asset owners. Therefore they have put forth their detailed recommendations on how the asset owner community can adopt long-termism principles.

In transitioning to long-termism, an important constant is for investors to incorporate long-term metrics, which should be viewed as equal in importance to GAAP financial measures. RobecoSAM's experience is that investors also need to build a more in-depth framework in evaluating companies, with a greater focus on executive compensation, detailed risk-management analysis, and increased shareholder engagement.

In closing, investors are in the position that will most likely have the most leverage to halt short-term behavior from corporations. They hold the key as their buy-in to long-term thinking could facilitate the process for other key players, such as asset managers, corporate boards, and company executives, to move away from short-termism.

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Kelly L. Tang is director, Index Research and Design, at S&P Dow Jones Indices. Kelly is responsible for ESG research and design and publishing applied research papers geared for both retail and institutional channels.

Prior to joining S&P Dow Jones Indices in 2015, Kelly spent nine years at Bessemer Investment Management as a buy-side analyst in addition to working for three years on the sell-side at Sanford C. Bernstein & Co. covering brokerage stocks. Kelly started her career at Goldman Sachs Asset Management in the Investment Management Services division.

Kelly is an Adjunct Professor at Fordham University Gabelli School of Business. She teaches Portfolio Management and Cases in Investor Relations.

Kelly is a CFA Charterholder, a member of the New York Society of Security Analysts (NYSSA) and the CFA Institute. Kelly has a bachelor's degree in history from Stanford University and a master's in business administration from Harvard University.

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Christopher Greenwald is Head of the Sustainability Investing Research team at RobecoSAM, which is responsible for the integration of sustainability at RobecoSAM and at Robeco as well as the sustainability assessment methodology underlying the Dow Jones Sustainability Index (DJSI). Previously, he headed the Sustainability Application and Operations team, overseeing RobecoSAM's data collection process for the DJSI. Prior to joining RobecoSAM, Christopher was Head of ESG Content Strategy for ASSET4 / Thomson Reuters where he managed the research department and was responsible for the integration of ESG at Thomson Reuters. Christopher holds an MBA from HEC Lausanne as well as a Certificate in Financial Asset Management Engineering from the Swiss Finance Institute. He also holds a Ph.D. in political science from Duke University and has previously taught at the University of Chicago.

The Freedom to Innovate in Complete Safety: A Regulatory Renewal to Promote Tomorrow's Growth

Florence Anglès CAIA
REYL Group

The ending of the Bretton Woods accords in 1971 marked the beginning of a long process of financial deregulation and globalisation. The financial system continued to evolve and innovate, enabling banks to improve their profitability and market share. But it remains true that innovation, the source of social progress, is a risky activity that has to be managed at the risk of fuelling instability. The history of the last three decades serves as a testament to the adverse effects of unbridled financial innovation. Faced with this threat, a safeguard proved necessary: regulation.

The banking system is one of the pillars of the real economy, financing individuals and enterprises. However, the multiple risks nestled in the core of its activity are a source of instability when they are underestimated or inadequately managed. Concerned about establishing a high degree of safety, national and international supervisory authorities have developed a regulatory framework aimed at ensuring that banks put in place appropriate risk management systems. Prudential rules have gradually evolved in response to past financial crises in order to take account of the ever-changing economic and financial environment. Since 1988, regulations have been continuously revised in attempts to thwart, with only limited success, the circumvention strategies put in place by banks by means of innovative products. The trilogy of Basel accords testifies to the evolution of the international prudential system whose primary task is to promote financial stability and creditor protection. Adopted in 1988, the Basel I accord introduced the concept of the solvency ratio or the Cooke ratio for the

first time. This first regulatory draft was not perfect and certain pitfalls appeared, particularly as regards the scope of the risks covered. The Basel I accord was then revisited, giving rise in 2004 to Basel II, built around three interdependent and complementary pillars. The Cooke ratio gave way to a new capital ratio and we were now in the era of the McDonough ratio. This second accord aligns capital requirements with risk measurements and entrenches best practice in terms of risk management. The first two volumes of the Basel accords relied on a founding principle: a financial system was robust if its individual components were robust. This represented the advent of microprudential regulation.

To circumvent such regulation, banks used all their ingenuity to refine innovative and often complex products whose perception of risk escaped them and contributed to an increase in instability and even helped the next crisis to emerge. This is particularly the case with securitisation, identified as the catalyst of the subprime crisis. This financial crisis reached such a magnitude that the authorities had to intervene to limit its impact on the real economy and bail out a number of financial institutions. The founding principle of the first two Basel accords collapsed like a house of cards: financial institutions might have seemed robust while the system was not. Systemic risk came to the fore and the stability of the financial system as a whole became the priority. The supervisory authorities unpicked global risk in all its dimensions: transversal and temporal in search of an innovative principle based on the fundamentals of the golden rules of the two preceding accords. Relative equilibrium was abdicated in favour of general equilibrium and regulations were enriched with the macroprudential strand through the third chapter of the Basel accords, Basel III. Regulators prepared for battle to promote global financial stability by equipping themselves with dedicated revolutionary tools (contracyclical measures, liquidity ratios, etc.).

The 2008 crisis marked a turning point in the regulatory saga and also a paradigm shift in the financial system. The post-crisis period – characterised by desperately low interest rates, favourable to the erosion of intermediation margins and a frantic quest for yield – also experienced a technological shock. Long regarded as a support function, after 2008 technology became an engine of financial innovation. Careful blends of financial services and technology, fintechs really understood this and profited from an environment of mistrust of banks among the general public, particularly the younger generations, making their appearance on territory often regarded as the preserve of the financial institutions. The transition to the digital era also spelt the end of the banking monopoly, and barriers fell with the entry onto the financial market of new players arousing envy and fear. This new financial ecosystem represented a strategic challenge not only to banks since it revolutionised their business model but also to the supervisory authorities: how were they to ensure that regulations remained appropriate to new entrants?

The positioning of the regulators with respect to fintechs was crucial if innovation was not to be curbed while ensuring safety at the same time. Technological innovation, entailing new risks, some of them operational, necessitated the installation of suitable management. Particular attention had to be paid to the fight against fraud, the risk of money laundering and the financing of terrorism. The recent advances within the European Union have gone in this direction with the May 2016 report of the Economic and Monetary Affairs Committee on virtual currencies and the European Commission's proposal of 5 July to include virtual currencies in anti-money laundering arrangements. However, the regulatory approach used has still to be harmonised and different paths have emerged to deal with technological innovation. In Europe, the new Eldorado for fintechs is to be found in London, boosted by the international influence of its financial centre.

It is, therefore, no coincidence that the UK regulator revisited its framework conditions with a head start over its European counterparts. The FCA has adopted two-speed regulation, providing a specific approach to fintechs. The sandbox principle, in place since 9 May 2016, enables entrepreneurs to test new ideas without applying strict regulation to them. While favourable to innovation, this initiative raises quite a few questions, particularly that of the frontier between the sandbox and common regulation. Another, more nuanced path, which is preferred in France, aims 'to adapt regulation to the size and risks incurred by players' with a view to ensuring safety while at the same time assisting fintechs. With regard to Switzerland, an innovation-friendly country, regulatory work has also begun.

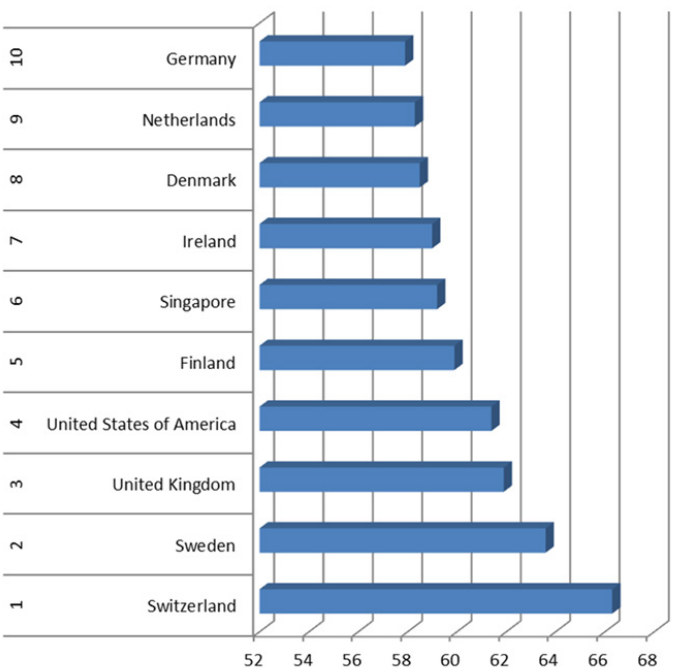

Exhibit 1: Top 10 Global Innovation Index 2016
(https://www.globalinnovationindex.org/)

Fintechs in Switzerland are not in a regulatory no man's land but are subject to anti-money laundering requirements and FINMA authorisation depending on their activity. To ensure that all players are placed on an equal footing, the Swiss regulator has been reviewing its prudential framework conditions. In light of this neutral approach as regards technology, FINMA has reviewed its regulation and dropped certain obstacles by authorising in particular video and online identification and the possibility of concluding an asset management mandate in digital form. FINMA plans to go further by defending the creation of a new category of authorisation for players not conducting specifically banking operations as well as a free authorisation field, sandbox, intended for start-ups not necessitating any authorisation up to a deposit threshold of CHF 200,000. The Federal Council confirmed, in its communiqué of 20 April 2016, an initial

exemption concerning crowdfunding platforms. It also tasked the Federal Department of Finance with examining the need for regulation in this area.

Prudential regulation is often criticised on account of its unwieldiness, its invitation to be circumvented and its delayed effect, reforms very often being made only after the crisis. Since 2008 regulators have turned a corner and extolled the motto that says that prevention is better than a cure. Financial innovation has also evolved, mainly confining itself to complex products until 2008 and now focusing on the digitisation of financial activities. Fintechs have penetrated this regulated market, breaking the bank's historical monopoly. This change in the centre of gravity of financial activity has not escaped the attention of the supervisory authorities, who have decided to support them while at the same time maintaining a high standard of safety. However, the proposed arrangements vary from one jurisdiction to the next as fintechs lack frontiers and can easily be relocated.

Author's Bio

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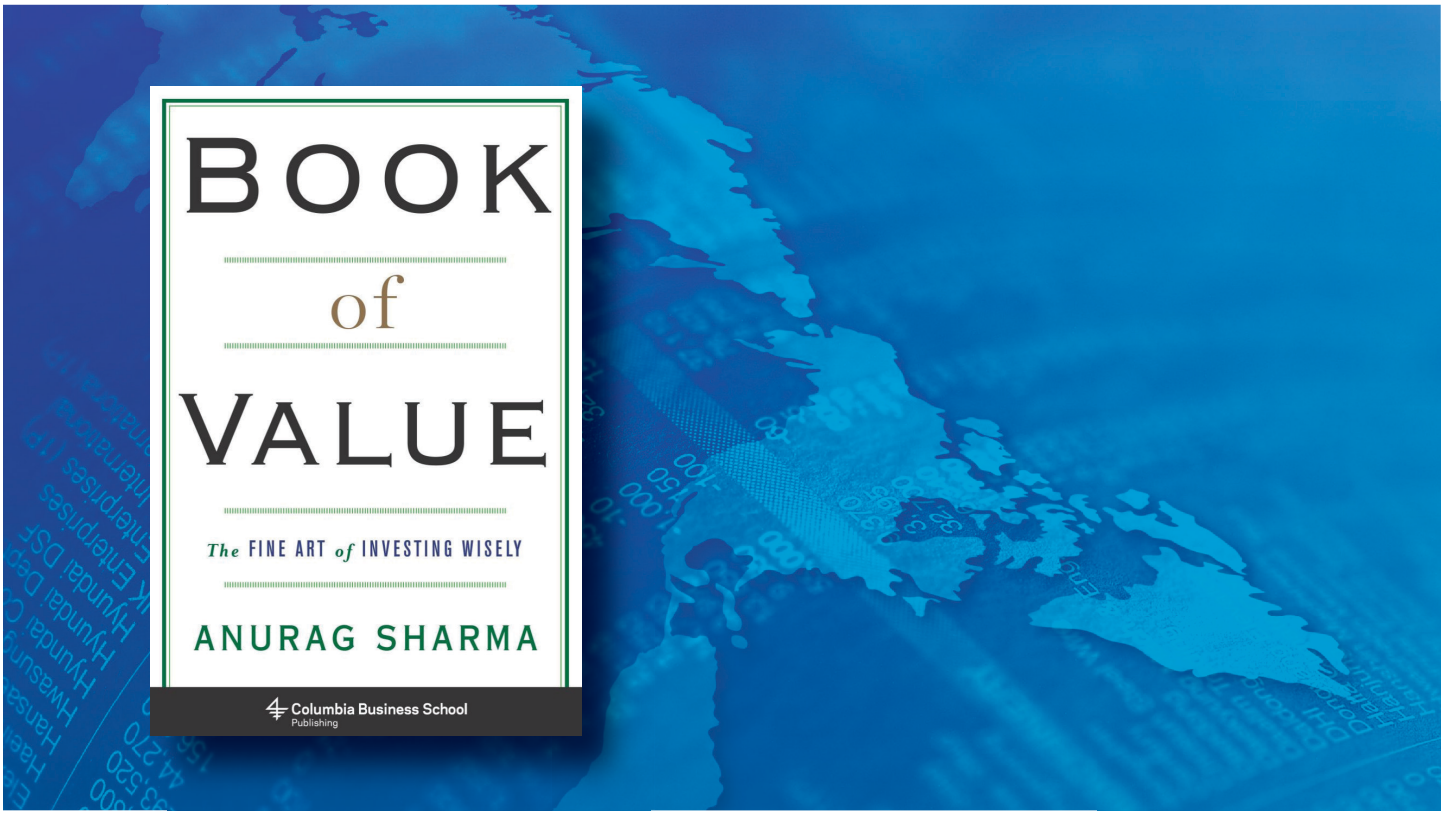
Florence Anglès trained in econometrics and is a graduate from the Toulouse School of Economics. Florence Anglès is also a qualified statistician with a diploma from ENSAI (Ecole nationale de la statistique et de l'analyse de l'information). She has been a CAIA charterholder since 2007 and became a certified RGCP (Registered Global Credit Professional) in November 2014, awarded jointly by the ICTF (The Association of International Credit and Trade Finance Professionals) and Thunderbird School of Global Management.

She has spent most of her career in risk management within the banking sector, beginning her career in Paris and participating in a Basel II project for Société Générale. She then worked in risk management for KPMG in Brussels, where she piloted a number of projects for major international banks responding to regulatory changes such as Basel II and Solvency II. In 2009, Florence set up the rating model validation unit, in compliance with FINMA requirements, at Banque Cantonale Vaudoise. She then joined Deloitte Switzerland at the end of 2012 as Senior Manager in charge of Risk Management practice prior to being appointed as Head of Risk Management at REYL Group.

Further to her professional commitments, Florence Anglès is highly active within a number of voluntary organisations. She is a Chapter Executive in Geneva of CAIA Switzerland, ambassador Toulouse School of Economics in Switzerland, Board Member of BPW (Business and Professional Women) Switzerland in charge of Women on Boards and financial innovation strategies, member of "club de lecture" Prix Turgot in Paris and a consultant for the Prix Strategis in Switzerland. She also recently co-founded GIROS, an association of Swiss chief risk officers, which is a working group promoting awareness among risk managers regarding the most pressing topics and enabling members to share good market practices.



Interview with Anurag Sharma

Barbara J. Mack
Content Director
CAIA Association

Interview

BM: Let's talk a little bit about your history and how you wound up in finance.

AS: I'm mainly a strategy guy and my PhD is in strategic management. Strategy is essentially an integrative discipline, originally conceived in the late 1970s to bring together all of the other functional courses taught in business schools. It sought to break down the disciplinary insularity of the different departments and academic journals. This meant trying to cut across the silos of finance, marketing, operations, and accounting, to try to understand organizations holistically.

A fundamental question in strategy is "Why is one firm more profitable than another?" This is a seemingly simple question, but there can be many answers, both qualitative and quantitative. I took a number of finance classes during my MBA and PhD programs and what struck me most was that finance had become highly mathematical, so much so that it was hard for me to understand what the intuition was in that discipline about organizations. I was curious about how this was the case and why the qualitative factors that really drive the performance of organizations were not incorporated into investment and financial education.

BM: This intersects with fields like venture capital and private equity where the qualitative side plays an important role…

AS: Yes, in those cases, it is all about potential of the business and quality of people in leadership roles. You can have a great business idea but if you don't have the right people, the idea will not go anywhere. So I was studying these issues – the intuitions about people and how organizations function and evaluating how to include qualitative factors in stock analysis and portfolio construction.

BM: If you look out over the history of your research interests in academia, what has the path been to your work today?

AS: My interests are pretty broad, but I became interested in value investing many years ago, when a friend of mine introduced me to how Warren Buffett invested in companies. So I developed a course on value investing around 2000-2001. It was clear to me that pure mathematical valuation techniques were not really enough for investing because markets behave in many strange ways and price dynamics are sometimes driven by psychological and other factors altogether.

So I went on a long detour – I have been reading about crowd psychology for a long time and as a discipline, it was in vogue about 100 years ago during the late 19th and early 20ths centuries. Much of that thinking is about how people behave in large numbers and clearly there are parallels with the behavior in the financial markets, so I wanted to get some insights on that.

BM: In a way this is old wine in new bottles - if everyone is thinking how the Wisdom of Crowds is brand new, but it's not – it's 100 years old!

AS: Yes, exactly. While that book is essentially arguing that large numbers of people can produce good estimates, other studies of crowd psychology suggest that the opposite is also true, that large numbers of people develop a tendency towards herding; therefore, as we have seen a number of times over the course of financial history, large numbers or people and their opinions can distort valuations significantly to create bubbles and panics.

These days, in finance and economics, the mathematical framework of analysis have roots in physics, a natural science; the tools of hard sciences are incorrectly imposed on understanding financial markets which are largely human constructions. So this inevitably leads to a disconnect between what is happening out there and what our models tell us. Physicists view the natural world as something that can be revealed through mathematical tools because there mathematics is the language with which to reconstruct the physical world. So, physicists use the notions of equilibrium, efficiency, and symmetry, for example, to formulate their models. Unfortunately, these concepts from physics, a natural science, have all entered into finance theory and practice. However, in the financial markets, there are so many feedback loops and additional influences that by leaning too much on a purely scientific approach, there is a potential for gross misunderstandings and misallocation of capital.

As a result, mathematical formulations now so dominate investment research and education that human side of the equation goes missing. As Thomas Kuhn eloquently argued in The Structure of Scientific Revolution, a great deal of social and institutional pressures develop to push researchers to continue with what they are already doing – what he calls "normal science." It then becomes very difficult for outside views to gain any traction.

Because of all this, I'd say that there has been a narrowing of intellectual content in finance and that is unfortunate. The discipline does not allow for voices that could be insightful, but are using a different language and propose an alternative perspective/approach. As a counterpoint to the current mathematical view though, value investing provides insight into aspects that are not visible from the mathematical or quantitative approaches to investment analysis. This alternate approach to investment analysis is of central interest to me and I explain and develop this view in the Book of Value.

When we look back to Markowitz and the Chicago University of the late 1940s and early 1950s, that was a time and place in history where mathematical tools were creating advances in various fields, so people such as Markowitz wanted to extend them to investing as well. In a way, this was a historical accident that turned investment education and practice away from intuition and subjectivity and towards presumed objectivity of price data and, accordingly, to mathematics. They were, in effect, forcing the tools of the hard sciences to a largely human endeavor, viz., buying and selling financial products. And then Markowitz made the fateful decision to define risk as the standard deviation of returns and from there to variance-covariance matrices. By defining risk in a strictly quantitative fashion, he enabled the application and development of mathematical approaches that have since dominated investment theory and practice. In practice, combined with computing power, mathematical allowed investment theory to be delivered on an industrial scale, because there was so much money coming into the financial markets after the Second World War.

However, risk is a much more complex construct; if you assume that the markets are efficient, then then perhaps standard deviation of returns correctly reflects true investment risk. But this is a significant assumption. And if you think about risk in broader terms – the quality of the management, strategic clarity, competitive positioning, the rate of innovation in the company, or the culture of the firm … once you begin to incorporate those softer qualitative factors into your understanding of investment risk, it changes the picture dramatically. The quality of your investment decisions will be better from incorporating subjective into your analysis; math alone will not do the trick.

BM: Speaking to our CAIA members some of whom are quite engaged in this type of debate, what are some of the key takeaways of your book and what is your advice to them in their continuing financial endeavors?

AS: I want to emphasize that investors should focus on the qualitative factors that make businesses great. In the investment valuation process, when you are assessing the potential of individual stocks and other securities issued by a company, you need to understand these qualitative factors very well. Doing so systematically will considerably strengthen your investment process and capital allocations.

There is an important related issue to this discussion: Mathematicians have been interested in the problems of gamble for hundreds of years, so when they came to investing, they cast investing as a problem of gamble, defined price as a random variable and then went about essentially optimizing random variables. Reducing complex subjective information to seemingly objective numbers allowed them to turn investing into a mathematical problem of gamble. While this is certainly

an approach, it is based on ignoring important qualitative information necessary for a subjective understanding of the investment thesis.

To right this wrong, I recast investing as a problem of choice, one that requires incorporating qualitative information into the analysis. No doubt there is a gamble in every choice and a choice in every gamble, but a strictly quantitative point of view very likely leads investors to ignore important information and derive wrong conclusions from focusing too much on randomness in the markets.

In Book of Value, I show how investors can recast investing as a problem of choice and then improving the quality of choice by following a systematic process of disconfirmation – by systematically trying to refute the investment thesis. Work in cognitive neuroscience has shown how difficult it is to make good choices on a consistent basis, so what investors need is a systematic process in which they play their own Devil's Advocate and evaluate their investment thesis using calibrated skepticism. Applying this process repeatedly across securities can help build powerful but manageable portfolios.

The bottom line for value investors is to pay attention to the qualitative factors that create economic value for firms, and this certainly includes the people at the helm of these companies. Investors can build very good investment portfolios that don't have to be too large; if investors are careful and selective, and focus on quality not quantity, they can attain very good diversification with only a handful 10-15 securities in the portfolio.

Author's Bio

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Professor Anurag Sharma teaches strategy at the Isenberg School of Management, University of Massachusetts Amherst. He has published in California Management Review, Harvard Business Review, Academy of Management Review, Academy of Management Journal, Strategic Management Journal, and Journal of Applied Corporate Finance. He has also published well over 20 business cases. In his current work, Professor Sharma seeks to incorporate qualitative factors in investment analysis and portfolio construction.

Do Alphas Have Betas?

Keith E. Gustafson, CFA
Managing Director
Chicago Equity Partners, LLC

Introduction

In the Capital Asset Pricing Model, or CAPM (Miller-Lintner-Sharpe[1]), the performance of an asset is related to the performance of the total market based upon its composition of systematic, or market-based, risk. The returns of the asset are decomposed through a linear regression into two primary components of systematic risk: beta (the slope term) and alpha (the intersection term), as well as a residual error term. Essentially, the CAPM beta relates the portion of the total return explained by the market's movements, while the alpha—as well as the residual error term—attempts to isolate the elements entirely unrelated to market movements.

In the world that has evolved from the CAPM framework, a greater number of systematic exposures have been used to explain asset returns better, and obtain a better regression fit for the data. These models have evolved from the generic multi-factor Pricing Theorem, or APT (Roll and Ross[2]), through the latest 5-factor Fama-French model, which is most commonly used in academia. In parallel development are the multi-factor alpha/risk models used for both asset management and attribution by practitioners, such as Barra and Northfield, among others.

In these multi-regression models, the market is decomposed into a number of systematic beta factors, instead of just one catch-all market beta. The widely recognized additional beta factors encompass traditional valuation metrics, like Price-to-Book, as well as factors that are more growth-related, such as Price Momentum, as well as factors related to a stock's market capitalization. Just because these other factors have been identified as separate beta factors in stock returns doesn't necessarily mean they have no relationship to the traditional market beta, though. In technical terms, it means these factor betas are not perfectly orthogonal to each other or to the market beta. In fact, there is often multicollinearity of these systematic factors with each other and with the market.

Even casual market observers will agree that there is a positive correlation between the systematic factors of size and value, for instance.

In other words, there are relationships between variables that can be complex, and these factors are not completely independent from each other. One such interconnection that is often overlooked is the relationship between the well-known factor betas (i.e. value, size, momentum) and the overall market beta. Perhaps a more intuitive way of understanding this is to state that some of these factors are pro-cyclical (positively related to the economy/market), while others are counter-cyclical (negatively related to the economy/market). Investors who understand these essential relationships can gain valuable insight.

This article will explore Value and Momentum factors, which are widely identified in related literature as systematic betas, as well as Quality factors, which are not as well publicized. It will demonstrate that Value and Momentum factors are pro-cyclical with positive market betas, while Quality factors are counter-cyclical with negative market betas. Furthermore, most active investment strategies have a strong pro-cyclical element, and therefore, have "betas" in their alphas. This is true even for supposedly uncorrelated strategies, such as "market neutral," that employ such factors. Although the market beta may be removed from a portfolio by stripping out the market benchmark, a residual market beta-related component often exists in the remaining alpha. However, active value and active momentum/growth strategies do tend to be pro-cyclical at different stages of the market cycle. These differences are beneficial in portfolio structuring. While Quality is counter-cyclical, very few active strategies exhibit this pattern as the primary characteristic, which explains some of the appeal of specific low-volatility, low-beta approaches.

The Beta in Value and Growth/Momentum Alphas–Pro-Cyclical
Value Strategies

Value factors are among the betas well recognized for their long-term efficacy in contributing to excess returns above the market. Not surprisingly, value managers will outperform when valuation factors (P/B, P/S, P/E, P/CF, P/FCF, etc.) are working well. These factors provide the best returns when there is wide dispersion in valuations between stocks and/or sectors. This dispersion is generally widest after a recession or bear market, and it subsequently shrinks over the course of an economic/market expansion. As the multiple dispersion across sectors and stocks contracts, and as those multiples revert to the mean, it means the valuation factors are working. Valuation factors generate their return through reversion to the mean.

Therefore, there is a pro-cyclical element to traditional valuation factors. They work best when the market is climbing from the trough of the market at a very steep rate of ascent. As such, these strategies can actually have high correlations with market beta at certain times. This is confusing to most investors because there is a distinction between the components of "value" that are pro-cyclical and those components of "value" that are counter-cyclical. Both elements are present in value indexes, but active value managers usually emphasize the pro-cyclical sectors and stocks.

This distinction between pro-cyclical "value" and counter-cyclical "value" is intertwined with volatility. Historically, Value factors are associated with both anomalous excess returns over the market, as well as concomitant lower risk, as measured by standard deviation. This is an anomaly that it is a violation of the CAPM – simultaneous higher returns and lower risk. Interestingly, this often results from combining cyclical and counter-cyclical components in a quasi-asset allocation framework.

Pro-cyclical "value" is comprised of stocks that are actually higher volatility/beta and lower quality. Counter-cyclical "value" is composed of stocks that are lower volatility and higher quality. Generally, these different types of value have strong sector-related elements to them. Over time, the value indices tend to have substantially higher average sector weights to Financials, Energy, Basic Materials and Utilities and somewhat higher weights to Consumer Staples and Health Care. The growth indices tend to have higher average weights to Technology, Industrials and Consumer Discretionary.

Exhibit 1: S&P 500 Sectors (October 1989 - March 2015)

S&P 500 Sectors	Total Return	Standard Deviation	Beta
Value-Oriented Sectors:			
Financials	8.11	21.88	1.26
Materials	8.21	19.82	1.07
Energy	10.89	18.20	0.77
Health Care	12.44	15.57	0.71
Utilities	8.26	15.00	0.44
Consumer Staples	11.50	13.24	0.59
Growth-Oriented Sectors:			
Technology	10.54	25.24	1.39
Consumer Discretionary	10.10	17.81	1.09
Industrials	9.95	17.33	1.08

Source: Morningstar EnCorr and Chicago Equity Partners

Exhibit 2: Relative Sector Weights

	Technology	Cons Disc	Telecom	Health Care	Finance	Energy	Basic Matls	Cons Staples	Industrials	Utilities	Real Estate
MS LCV Deep Value Universe Average	12.46	8.77	3.33	14.37	23.87	10.58	2.75	6.38	9.50	3.27	1.75
Russell 1000 Value Index	10.11	6.82	2.18	14.10	23.80	10.85	3.37	7.07	10.61	6.09	4.88
Relative Overweight/ Underweight	2.35	1.95	1.15	0.27	0.07	-0.27	-0.62	-0.69	-1.11	-2.82	-3.13

Source: Morningstar Direct, Chicago Equity Partners

Within value indices, Financials and Basic Materials –and to a lesser degree, Energy— are more pro-cyclical. It is not surprising to think of these segments of the market as being highly related to the economic and earnings cycle. Certainly, Basic Materials represents the raw inputs of production, and are often considered very early cycle stocks while the Financials are highly related to the overall level of economic activity. These sectors have relatively higher demonstrated market volatilities and market betas that are comparable to those sectors traditionally considered growth-oriented. Conversely, Utilities and Consumer Staples are clearly counter-cyclical and defensive. They have lower demonstrated volatilities and market betas. Health Care is also somewhat defensive.

Pro-cyclical components of value primarily drive value index outperformance of the market in periods of low-quality, high beta, cyclical recovery rallies, like 2009. Counter-cyclical components of value drive the outperformance of value indexes in periods of market downturns, like 2008, which emphasize low beta, higher quality and lower volatility. Distinguishing between these different components that comprise value indexes is critical to understanding the performance of most active value strategies.

Most traditional active value managers do well when valuation spreads are wide and narrowing. Active value managers usually have more exposure to the pro-cyclical sectors, rather than the counter-cyclical sectors. They tend to have lower weight to defensive stocks and also more weight to smaller cap stocks, on average.

Exhibit 2 shows the average sector weights for those mutual funds classified as Large Cap Deep Value by Morningstar relative to the Russell 1000 Value Index as of March 2015. There is a consistent overweight in high volatility, high beta sectors—especially growth-oriented sectors—and a consistent underweight to low volatility, low beta sectors. So, the highest overweights are to Technology and Consumer Discretionary, which are high volatility, growth-oriented segments. Among traditional value-oriented sectors, the largest underweights on average are in the low-volatility, defensive Utilities, as well as Real Estate.

On the following page, Exhibit 3 shows the monthly returns for the Book-to-Price (B/P) value factor, and Exhibit 4 shows the performance pattern of the median active value strategy in Evestment Alliance. As demonstrated in the exhibits, the best median value manager performance is during periods when the B/P factor return surges. These surges follow periods of market distress when valuation spreads are wide. The factor returns to B/P accompany the market rebound that follows these downturn periods as valuation spreads revert to the mean. Therefore, the alpha is pro-cyclical. In other words, there is a market beta in the alpha.

To empirically demonstrate this, we construct simple factor portfolios and measure the correlation between their excess returns and the market return. The result is shown in Exhibit 5. This graph shows the market correlations of high tracking error (HTE), factor based portfolios for Momentum, Value and Quality factors. These portfolios emphasize a mixture of factors within each group, based upon Chicago Equity Partners' (CEP) factors. They are meant to represent more extreme tail exposures, which allows for higher standardized exposures to the factors.

The average correlation between the Value factor portfolio and the market index is positive 0.27, on average, from 2001 to 2014, which is not very different from that of a Momentum factor portfolio, which is positive 0.28. The difference between them, with respect to their market relationships, lies in timing.

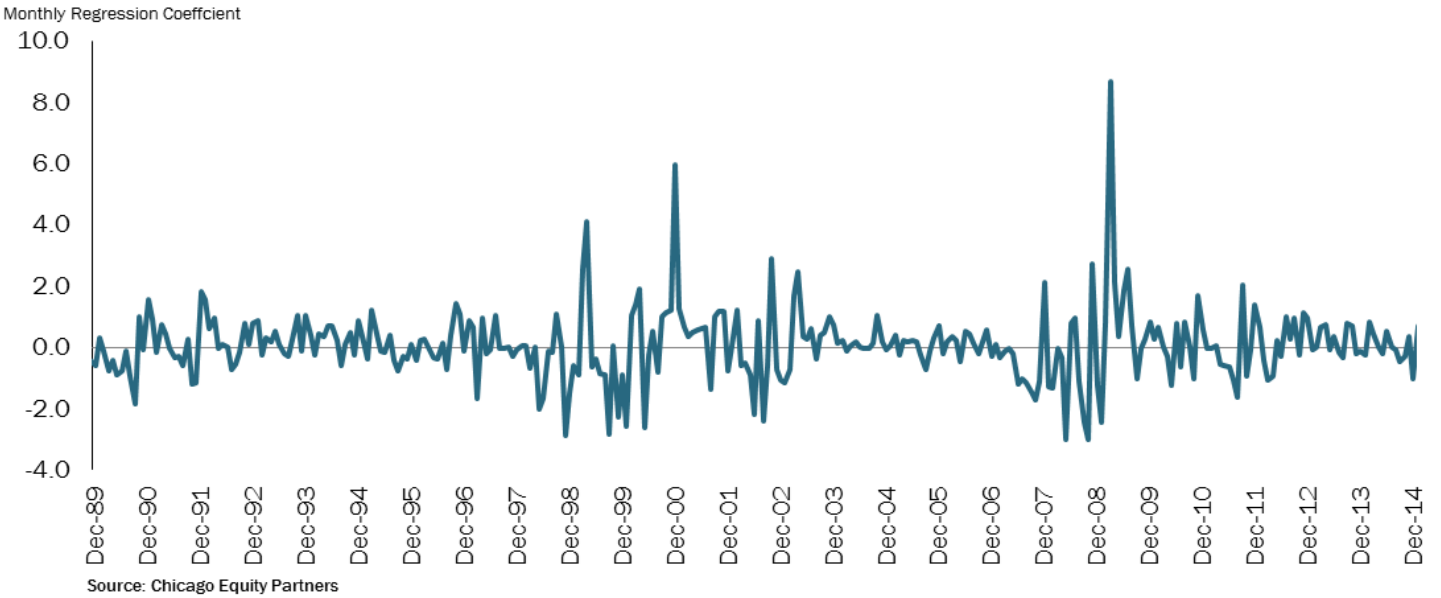
Therefore, for value strategies we see: 1) Active value managers emphasize higher volatility, higher beta sectors; 2) Value factor returns are best when the market returns are the highest in early stage recoveries, which are key data leverage points; and 3) Empirically, a Value factor portfolio demonstrates a market beta, on average, similar to that of a Momentum factor portfolio.

Momentum / Growth Strategies

Although a positive beta exposure for value portfolios may seem counterintuitive, it seems very intuitive for growth portfolios. Growth managers will typically outperform when momentum and growth factors are working (Price Momentum, Estimate Momentum, Expected Earnings Growth, Earnings Surprise, etc.). This generally occurs during sustained economic and market expansions, when market returns are also positive. As shown earlier in Exhibit 1, volatility and beta characteristics of growth-oriented S&P sectors are intuitively higher than the market average. Growth managers maintain higher weights to these sectors, on average.

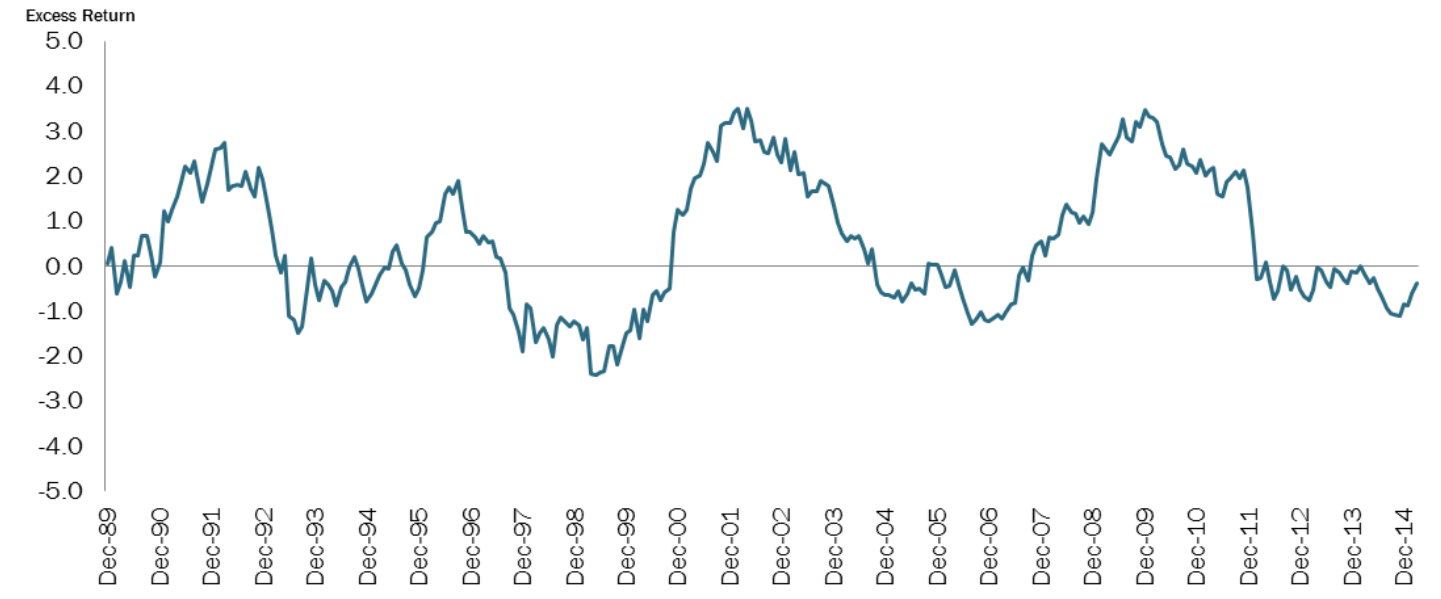
As Exhibit 5 illustrates, momentum factors are largely pro-cyclical—meaning that there is a positive market correlation. The notable exception to this general rule is when a market inflects

Exhibit 3: Return to B/P Factor, Monthly Regression Coefficient



Source: Chicago Equity Partners

Exhibit 4: Evestment Large Cap Value Universe Median Excess Returns Rolling 3 Year Excess vs Russell 1000 Value Index



Source: Chicago Equity Partners, Evestment Alliance U.S. Large Cap Value Universe. Data is gross of fees. Past performance is not indicative of future results.

from a downturn into a subsequent sharp rebound, like 2003 and 2009. Early in the cycle, momentum factors will tend to have a brief negative relationship with market returns as the primary trends inflect. In fact, there is actually an inverse correlation between returns to a traditional value factor, like B/P, and factors like Price Momentum or Estimate Revisions.

This is best illustrated in Exhibit 6, which shows the return to a broad-based momentum factor (consisting of both Price Momentum and Estimate Momentum) applied in a sector-neutral fashion. Dips in the momentum factor return in 2002-2003, 2008-2009 and 2012-2013 correspond with dips in the beta of the momentum portfolio in Exhibit 5.

Therefore, growth/momentum strategies are not correlated with the market during the early stages of recoveries. That's when value factors do the best and have the highest market correlation. Instead, momentum factors have the highest correlation later in the market cycle, when clear trends have already been established. Paradoxically, both traditional growth/momentum and traditional value strategies are pro-cyclical over a market cycle, but not with each other! Each factor strategy peaks in terms of correlation with the market at slightly different points in the cycle. They both have betas in their alphas, but those betas are not synchronized.

Value was actually more pro-cyclical (higher beta) during the decade 2000-2009, when performance was essentially sideways, because there were multiple opportunities for market downturns

and subsequent market rebounds. It was much less pro-cyclical during the sustained expansionary period of the 1990s. During a sustained expansion, value factors will exhibit lower betas, while momentum factors will have consistently positive returns and consistently positive market betas.

Importantly, while there is some positive market beta in both respective alphas, neither active value nor momentum/growth strategies are expected to consistently outperform in market downturns. This is because neither set of factors, on which these strategies are based, is truly counter-cyclical.

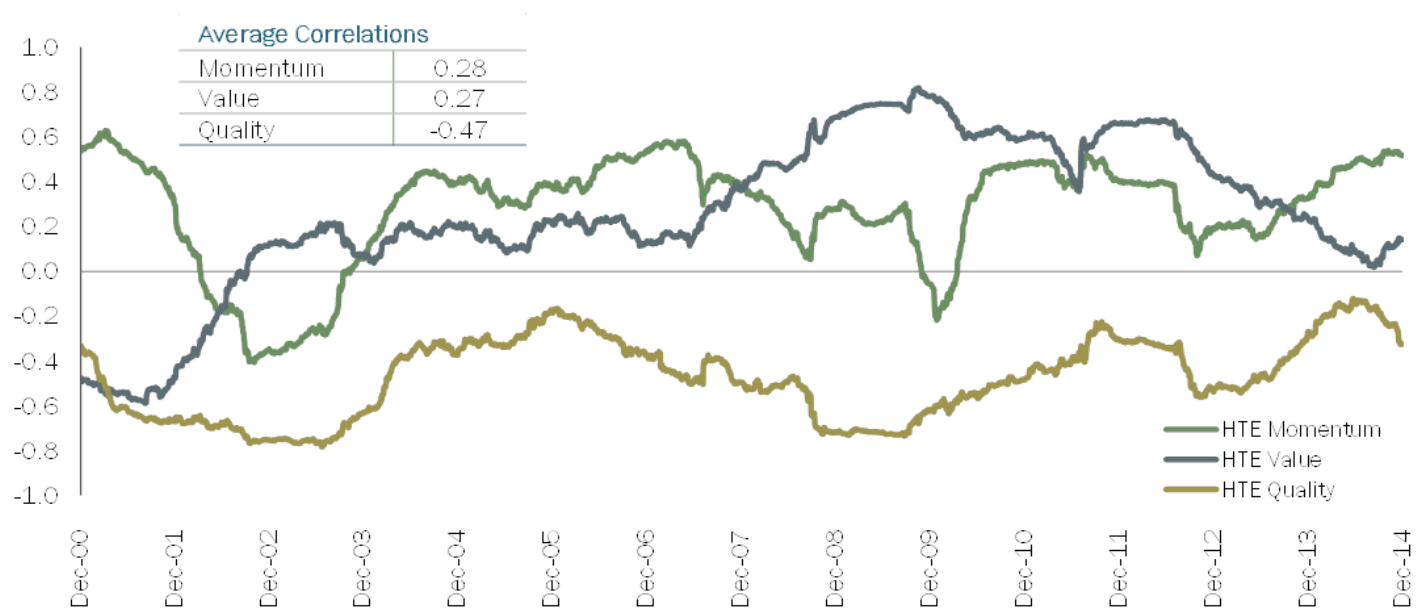
Counter-Cyclical Approaches – Low Volatility vs. Quality

One specific sub-set of value strategies is counter-cyclical. This sub-set encompasses low-volatility and low-beta strategies.

Almost without exception, these strategies employ heavy tilts toward the sectors with the lowest betas and volatilities, such as Utilities and Consumer Staples. It is important not to confuse these strategies with fundamental indexing or similar Smart Beta approaches that tilt to higher volatility components, Value and Size. There are numerous active low volatility strategies in the marketplace, as well as more passive ETF approaches.

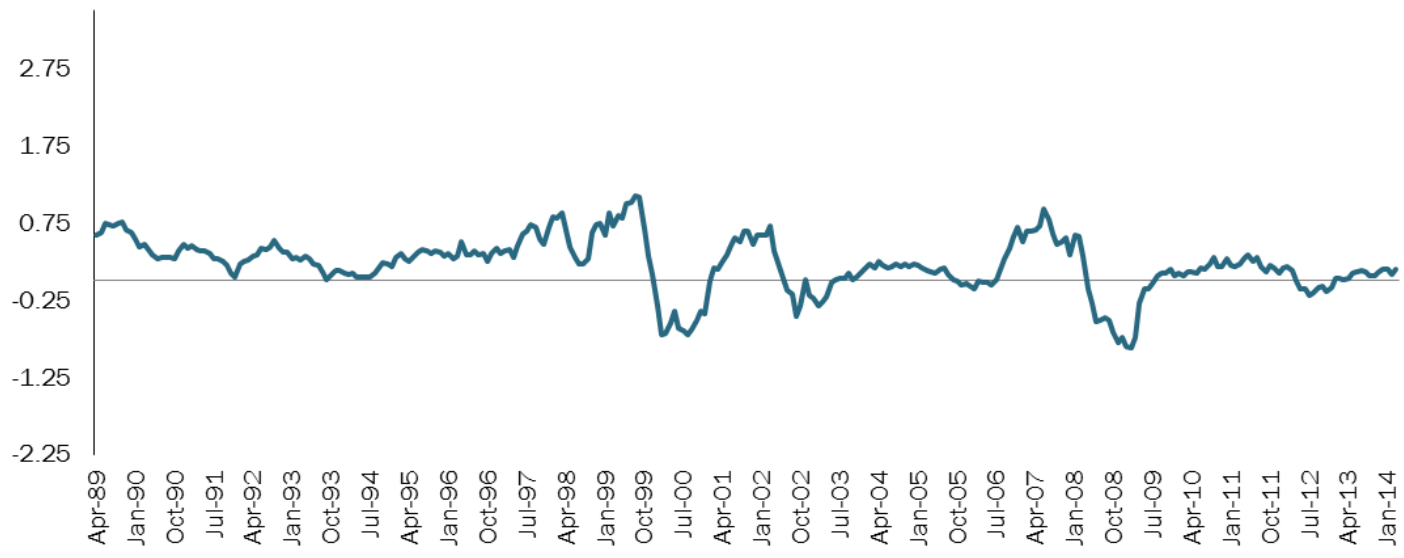
Exhibit 7 shows one such ETF strategy— Powershares S&P 500 Low Volatility ETF (ticker: SPLV). It is heavily overweighted to Utilities, Consumer Staples and Real Estate sectors, which exhibit lower volatility and lower beta versus the value index. It is heavily underweighted to Energy, Technology and Financials, which are higher volatility and higher beta sectors.

Exhibit 5: Beta of Factor Alpha – Pro-Cyclical vs. Counter-Cyclical Factors
Rolling 3 Year Excess vs Russell 1000 Value Index



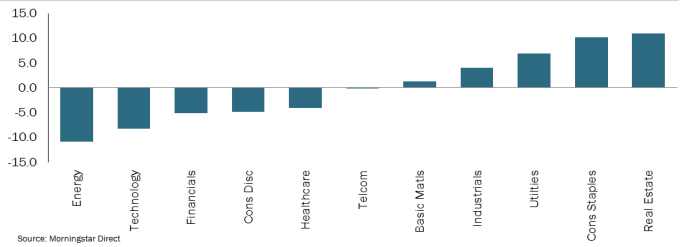
Source: Chicago Equity Partners

Exhibit 6: Momentum Factors, Forward 12-Month Regression Coefficient



Source: Chicago Equity Partners

Exhibit 7: PowerShares Low-Volatility ETF (SPLV), 3/31/15 Sector Over/Underweights vs Value Index

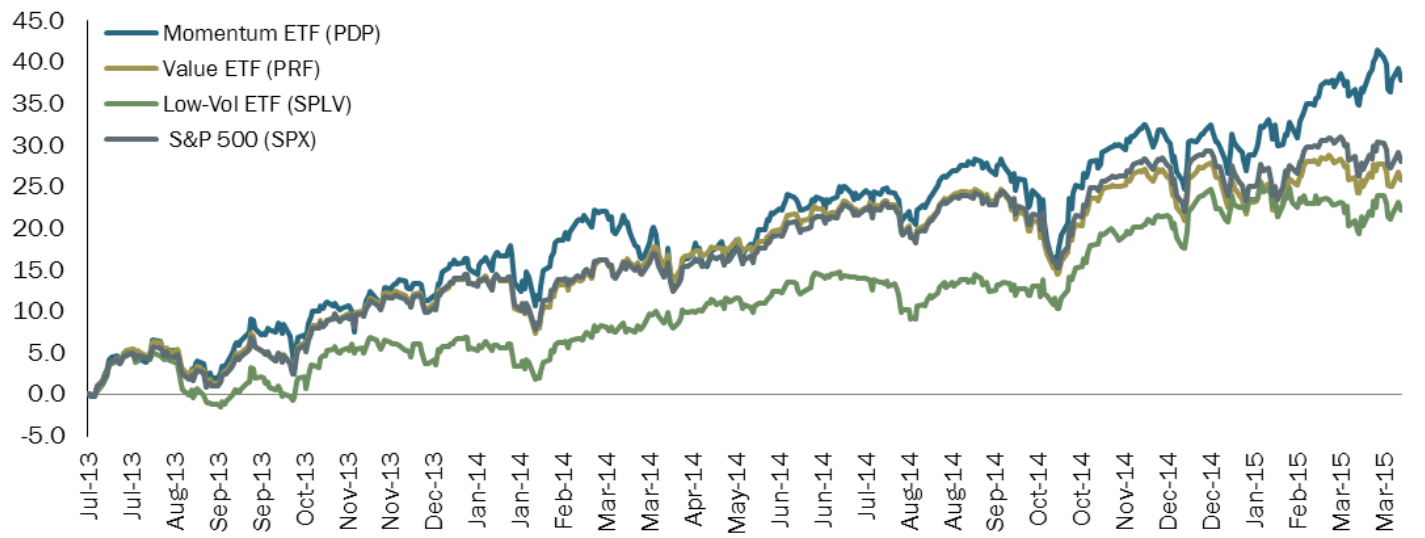


So far, so good. If an investor is looking for downside protection that will do relatively better than pro-cyclical growth and value strategies in a market downturn, these low volatility strategies will provide some protection. Many of these strategies, however, are marketed as long-term alpha plays capitalizing on "low beta, low volatility" anomalies. If an investor is expecting to outperform the market in the long run through such an approach, we think that they are likely to be disappointed. Certainly, such strategies will not work on a consistent basis. Value indices have outperformed in the long run with lower volatility because they mix pro-cyclical, beaten-down stocks that are actually high volatility and beta at attractive prices along with lower volatility, lower beta counter-cyclical stocks. The favorable long-term results stem in part from a quasi-asset-allocation effect.

Strictly relying on the lower volatility, lower beta, counter-cyclical value constituents is likely to provide those exact benefits, but not the overall outperformance associated with traditional value strategies. Exhibit 8 illustrates the recent performance of the low-volatility ETF (ticker: SPLV) compared with the broad market (SPX), along with momentum (ticker: PDP) and value (ticker: PRF) ETFs from the same fund family of PowerShares. Each of these strategies largely expresses their factor bets through sector tilts, rather than at the stock level within each sector. The low-volatility approach, not surprisingly, has underperformed in this recent market upturn.

Over the last couple years that these ETFs have been available, the market has largely continued in a solid upward trajectory,

Exhibit 8: Cumulative Returns of Factor ETFs vs. Market (6/30/13 – 3/31/15)



Source: Thomson Reuters Baseline, (PDP) Powershares DWA MOTM, (SPLV) Powershares S&P 500 Lo Vol, (PRF) Powershares FTSE RAFI Value

Exhibit 9: Cumulative Excess Return vs. Russell 1000 index (6/1/95 – 12/31/14)

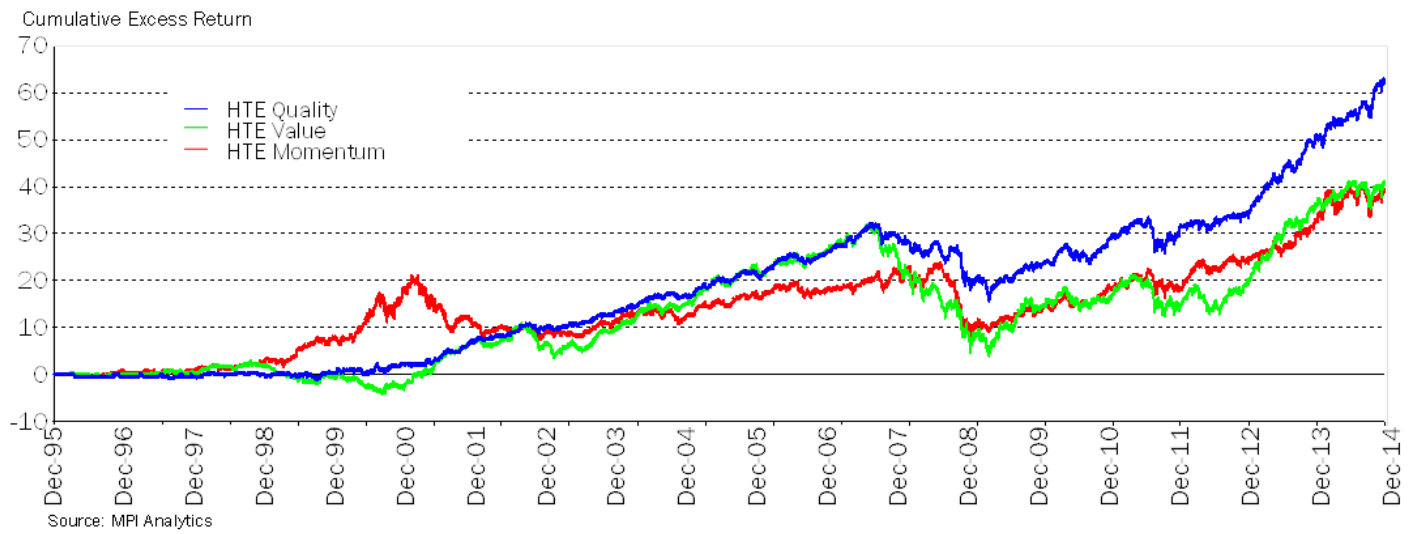


Exhibit 10: Statistical Summary (6/2/95 – 12/31/14)

	Alpha%	Beta	Sharpe Ratio	Treynor Ratio	Batting Avg	Up Mkt Capture%	Up Mkt Batting Avg	Down Mkt Capture%	Down Mkt Batting Avg
HTE Momentum	2.426	1.084	0.510	0.087	52.4%	117.6	60.9%	104.7	42.3%
HTE Value	2.582	1.085	0.509	0.088	52.9%	110.3	55.5%	102.2	49.7%
HTE Quality	4.404	0.861	0.655	0.124	52.8%	82.7	39.1%	90.0	69.1%

Source: Chicago Equity Partners

as represented in the chart. The momentum ETF has handily outperformed, as would be expected because of the overweight to higher volatility, higher beta sectors. In an up market, high beta should pay off. The low beta, low volatility ETF is the worst performer, as expected. It performed the best over the short time frames in which the market pulled back in this longer-term expansion, but not over the entire timeframe. Once again, in an up market, low beta should not pay off! If an investor is expecting long-term outperformance from specifically constructed low volatility, low beta strategies, this is only likely in an extended sideways market as we experienced in the 2000s. Once low volatility, low beta strategies have established an extended track record, investors are likely to be disappointed with the returns generated if we remain in an extended bull market.

If an investor is interested in counter-cyclical alpha production, downside market protection and long-term market outperformance, quality-oriented strategies may be more appropriate. Among traditional alpha factors, the Quality group is the most defensive in its orientation, and is the most counter-cyclical in its alpha—see Exhibit 5. It is the factor set that works best in market downturns. This tends to be true in short-term downturns, but even more pronounced in extended downturn regimes. There are not many active quality-oriented managers. Pure quality portfolios are almost non-existent in a marketplace full of active value and growth strategies with largely pro-cyclical alphas. As such, investors can add quality-oriented strategies in a multi-manager framework to counterbalance more typical pro-cyclical alpha production.

If an investor is specifically sensitive to downside protection, approaches can be designed that encompass a quality-oriented defensive approach with beta controls. This type of strategy has the potential to outperform the market in the long run, unlike strict low volatility, low beta strategies, while actually providing similar downside protection and a similar volatility profile.

Quality is comprised of factors focusing on the balance sheet and income statement that encompass a range of metrics, including earnings quality and corporate leverage, among other things. Exhibit 9 shows the same factor portfolios that we utilized in Exhibit 5 to illustrate the market beta behavior. This chart shows the cumulative excess return for the factor portfolios. In the long run, the quality alpha-factor portfolio is just as efficacious as momentum-based or value-based alpha factor portfolio strategies.

Yet, a quality-oriented portfolio has some unique and desirable properties in terms of its beta and volatility profile, as well as its complementary relationship with other pro-cyclical strategies.

Exhibit 10 shows an overall daily excess return batting average similar to that of momentum or value. The composition of up and down market capture ratios and batting averages is completely different, however. The beta is also much lower, which leads, of course, to a higher concomitant measured alpha (excess return adjusted for beta). The lower beta also leads to a higher Treynor Ratio, while the lower variance leads to a higher measured Sharpe Ratio.

Therefore, investors that are interested in simplistic low volatility, low beta approaches because of the attractive risk/return trade-off should explore alternative quality-based factor strategies, which have a much better long-term return profile with similar counter-cyclical properties.

Conclusion

What does it mean for alphas to have betas? Quite simply, it means that the timing of alpha is related to the market. Some strategies are pro-cyclical and produce their alpha mostly when the market itself is generating returns. This pro-cyclical alpha production applies to most active strategies. Although this is somewhat intuitive for momentum and growth approaches, it is less intuitive for value approaches. This paper has attempted to explain that conundrum through a decomposition of typical sector bets, as well as the return pattern of value factors in relation to market returns. Empirically, momentum and value approaches are both pro-cyclical. In other words, they do have betas in their alphas. The exact timing of this alpha production is different, and each approach is most correlated with the market at different points in the economic/market cycle.

Investors have always had a desire for some counter-cyclical alpha production. "Why can't managers outperform when markets are going down and I need that outperformance the most?" is a typical investor refrain. Unfortunately, there is not a copious supply of such investment vehicles. In light of this, the rising popularity of low volatility, low beta approaches is not surprising. These are available in various vehicles, through either active management or more passive ETFs. While they are counter-cyclical and afford downside risk protection, the likely trade-off is underperformance in up markets. In the long run, we expect markets to go up, which is a potential problem for these strategies.

One viable alternative is a quality-oriented factor portfolio. Rather than simply creating a portfolio based on stock volatility characteristics, a quality-based strategy selects securities based on alpha characteristics that are also associated with less downside risk and lower volatility. With some additional volatility and beta controls, the end result can achieve the desired end goal without sacrificing long-term excess return potential.

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Author's Bio

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Keith Gustafson is a member of Chicago Equity Partners' quantitative analysis group, which is responsible for the firm's proprietary quantitative model and its ongoing developmental efforts. Prior to joining our firm, he held positions at Ibbotson Associates and SEI Corporation. Mr. Gustafson earned bachelor's degrees in history and economics from University of Pennsylvania, an MBA from Loyola University Chicago, and a master's degree in financial economics from the University of London. He holds the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute, the CFA Society of Chicago, the Chicago Quantitative Alliance, the American Finance Association, and the American Economics Association.

Future of Fintech in Capital Markets

Brad J. Bailey
Research Director
Celent Securities

Moving to a Digital Capital Market

The bank has traditionally sat in the center of the financial world. The changing regulatory environment and the explosion of data have allowed fintech firms to capture market share in traditional banking endeavors such as payments, lending, investments, and financial planning. Firms with no asset base or legacy banking infrastructure have made significant inroads into challenging banks in their core businesses. Banks have reacted in a variety of ways to these challenges with disparate degrees of success, but only those actively partnering with and supporting fintech innovators have gained a competitive edge.

Access to connectivity, alternative models, and acceptance, combined with the earth-shaking changes in the ability of firms to access capital and a global regulatory model that has focused on risk mitigation, have created an ideal world for disruptors to partner with capital market firms. Fintech in the capital markets is driven by the needs of incumbent market participants who want to gain deep insight into technologies and alternate business models. Recent funding and innovation are centered on creating a better and more robust financial center, impacting the core of trading, markets and security servicing — the entire value chain of the capital markets.

Many of these fintech disruptors are modeling entirely new conceptions of investing, trading, clearing, settlement, and custody in the search for a means to create a robust infrastructure; some of these players have created technology solutions in other verticals, or other parts of financial services, and are bringing their solutions to the capital markets. Others are creating more effective point solutions to address critical pain points in market infrastructure, post-trade, and access to capital to create new efficiencies.

— Brad Bailey, Research Director, Celent

At its heart, Capital Market Fintech is about data — leveraging the multitudes of data sources that are resident or available to create alternative business models for disrupting the capital markets. Accessing, processing, and analyzing data is the essential undertaking of capital market fintech firms.

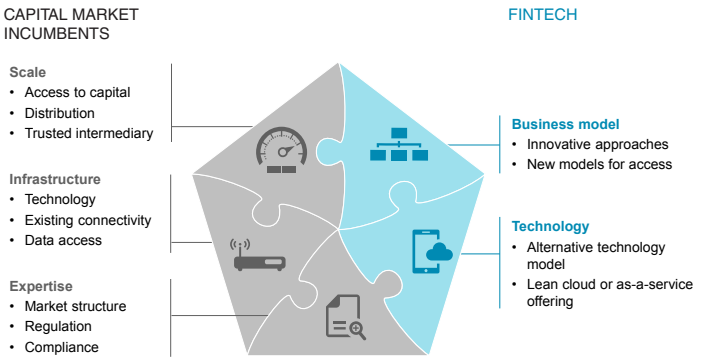
Fintech is a term used to describe how a new generation of cloud and mobile technologies impact processes in financial services. Fintech is closely related to open service architectures using application programming interfaces (APIs) along with business models found in the internet economy. In the first phase, fintech was seen as a disrupter for large established financial companies. Now that these companies as well as regulators are responding to raise the level of customer protection, we are at the cusp of a next wave, where the financial incumbents become platforms-hosting and interoperating with newer, smaller players. Without a doubt, the financial industry will change its technology model, and will foster the integration of services, as long as the customer protection is maintained.

Technology has been a source of structural change for exchanges. In recent years, the pace of change has dramatically increased as a confluence of regulatory, capital, and business model factors has disrupted the financial market ecosystem

This looks at the value accretion that can be achieved through partnerships between fintech firms and market infrastructure players, in terms of connectivity, distribution, technical, and regulatory expertise across areas that are core to the future of a well-functioning financial system.

Capital Flow

Since 2008, capital flow into fintech investments has grown sixfold. Last year, there was a drop from the record fund raising in 2015, with about $19 billion in capital was invested in fintech across approximately 1,200 deals, nearly doubling funding flows in 2014. At the same time, strategic firms have developed innovation centers of excellence, laboratories, and their own CVC funding vehicles to invest and guide in areas of core interest to these firms. CVCs now represent 25% of global fintech capital flows. European CVC rates are closer to 15% and expected to rise. We have seen banks partnering with fintech, filling gaps and bringing critical experience and enterprise scale to these endeavors. Major parts of the financial services ecosystem run the risk of being transformed by pioneering financial technology firms.



The changes in the ability of firms to access capital in the post-crisis world, combined with a global regulatory model that has focused on risk mitigation and deleveraging, has put significant pressure on incumbents' margins and negotiation power, creating a generational shift in the relationship between the sell side, buy side, and infrastructure firms.

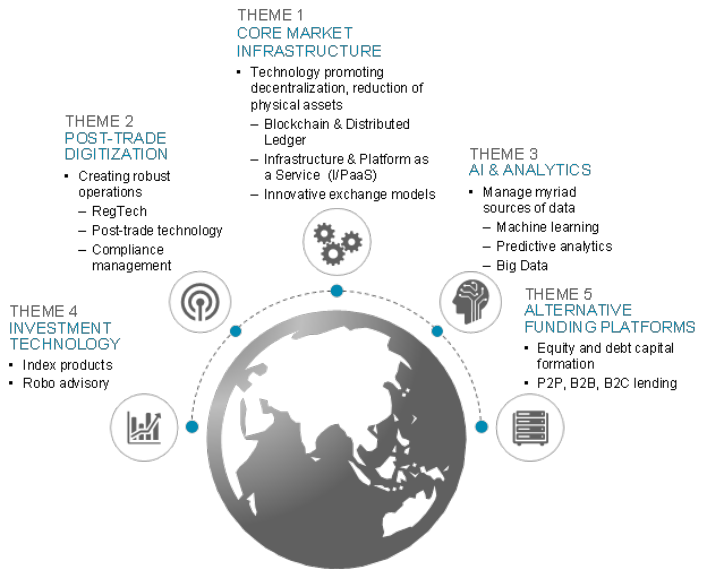
A Formula For Successful Partnerships

Incumbents offer expertise, connectivity, infrastructure, scale, and regulatory licensing and know-how. Fintech firms bring innovative business models, deployed through state of the art tools and technology stacks. Not only does the ability of the fintechs to leverage cloud-based technology increase, their go to market speed increases and capital requirements drop, but new APIs allow them to collaborate more easily with both incumbents and clients.

Financial innovators are looking to drive efficiencies and increase proximity with direct and indirect customers across all financial verticals. Fintechs increasingly have the flexibility, customer proximity, and technology understanding necessary to address business challenges across the entire value chain of capital markets. Solutions that address critical points around market infrastructure (including associated software and cloud-deployment solutions), post-trade processes, and access to capital are among the priority clusters where DB1 Ventures will actively source for investment and partnership opportunities.

- Core Market Infrastructure: Creating safer and more transparent access to liquidity; developing efficient and intelligent platforms for trading and clearing; creating/expanding new asset classes; leveraging new technologies in the cloud and API interactivity in order to seamlessly manage market infrastructure or connectivity as a service.
- Post-Trade Digitization: Automating the heavily manual processes that still exist within the compliance, regulatory, collateral management, and securities lending; increasing capital efficiencies, clearing and settlement businesses; and launching innovative solutions to manage enterprisewide stress testing, risk attribution, and reporting processes.
- AI & Analytics: Developing solutions that that utilize in-memory computing and machine learning to leverage the massive swell of structured and unstructured data to make predictions, and build analytics at the point of trade. Similarly, innovation is changing the way investment and funding is provided and consumed:
- Investment Technology Digitization: Software and tools that enhance investment decision-making, as well as contribute to accelerate the shift towards passive investments.
- Alternative Funding Platforms: Platforms that allow alternative models for capital formation across the capital structure of both large institutions and SMEs.

CAPITAL MARKET FINTECH CLUSTERS



THEME 1

Core Market Infrastructure

The backbone of the capital markets is the infrastructure that connects asset holders and their intermediaries. This infrastructure is undergoing a transformation to drive greater transparency and efficiency.

The reaction to the financial crisis has been an improved but still fragmented global regulatory environment, with an underlying theme of systemic stability and transparency, which has created a renewed interest in new models for market engagement and access to products. Furthermore, contraction in the banking sector has placed the sourcing of and search for liquidity with a wider group of players.

The retrenchment in traditional dealer balance sheets, tied with endemic cost-cutting programs, is creating a favorable environment for new players with lower regulatory burdens to come in and work towards solving some of the industry's most difficult problems. For instance, Oliver Wyman estimates that the unsecured repo market shrunk 50% between 2010 and 2015, triggering bank and infrastructure player investment in blockchain startups working to create new models for repo liquidity.

The traditional broker-dealer and client relationship has been turned upside down in the post-crisis world. Strict requirements for capital and risk weighted assets (RWAs) have continued to drive down bank RoEs, which have recently been below the cost of capital. The implications are new market structures and new models for transferring risk.

While the sell side is smaller today, the buy side has grown dramatically since the crisis. Buy side firms want to access liquidity in the most effective way possible, while maximizing best execution and minimizing capital costs. The largest asset managers want alternative models for execution and clearing that obviate the traditional reliance on broker-dealers.

Broker-dealer revenue has decreased with a CAGR of –2.4% since before the financial crisis, while the buy side has grown assets from US$50 trillion to US$80 trillion in 2015, and grown revenue with CAGR of +4.3%.

Market participants continue to demand more electronic trading across asset classes. Celent has seen the adoption of electronic trading move with increasing rapidity as more and more asset classes become available through virtualized trading environments. The global fragmentation of liquidity in equity, FX, fixed income, energy, and commodities across both cash and derivatives increases demand for concentration of disparate market centers (highlighting the benefits of potential exchange consolidations). Clients in these markets want tools and services to aggregate liquidity from all available sources as well as flexible market structure models in order to ensure best execution. Clients also want greater access to data for analysis as well as speed of connectivity to each new, innovative trading venue that has the potential to lower total cost of ownership.

The traditional broker-dealer and client relationship has been turned upside down in the post-crisis world. Strict requirements for capital and risk weighted assets have continued to drive down investment banks' and brokers' returns, forcing a reevaluation of their methodologies for engaging with counterparties and clients. The implications are new market structures and new models for transferring risk.

Electronic trading venues are focusing their resources on market microstructure and product innovation. Reduction of TCO and the need for speed are fostering outsourcing of operations and infrastructure in order to allow focusing on core competency. Connecting clients to liquidity and other venues is driving the need for connection in the fastest and cheapest fashion available.

The Role of Distributed Ledger Technology In Less Complex And More Secure Financial Markets

One topic that is currently being given a great deal of attention is blockchain or distributed ledger technology (DLT). In the current discussion, blockchain is treated as one of the most disruptive technologies available at present and in the near future. It is marketed as a technology that would be able to simplify the value chains around trading, payment, and market infrastructures in general. Due to its decentralized character, blockchain enables direct peer-to-peer interactions and thus removes complexity of value chains through disintermediation of existing players.

What is Blockchain?

The short answer: It is the technology behind Bitcoin. This answer, however, is too superficial. While Bitcoin is the grandfather of blockchain and certainly the most prominent example of a blockchain application, the technology has emerged to be much broader. Blockchain is a network of distributed databases where the complete content of the database is replicated across the whole network. The consistency of the updates is ensured through

consensus algorithms that not only prevent faults in replication through technical malfunction, but also prevent malicious attacks from users of the network and outside intruders. Secure copies of the data are replicated across network nodes and ensured through cryptography. Depending on the design of the blockchain, transactions are signed cryptographically using state-of-the art public/private key encryption. These digital signatures prevent fraud and thus allow the distribution of a shared encrypted truth. Technically blockchain is a write-once database. This feature plus the distributed character assures that data stored in a blockchain cannot be forged, altered, censored, or deleted without the other participants noticing. As with traditional databases, blockchain allows for the possibility to embed logic in the database — this feature is typically called smart contracts.

Proof of concepts and/or prototypes have been reported for use cases around post-trading: i. e., settlement systems and payments (e. g., cross-border payments, trading and handling of less liquid financial instruments such as single name CDS, issuance of private securities).

Currently, the barriers in adoption of blockchain technology fall broadly under two categories: a) technology and b) regulation,

a) The technology is not yet mature enough to replace current core production systems of financial services firms or market infrastructure providers. The technology looks promising but it is faced with constraints such as a lack of scalability and the potential for conflict between transparency and the confidentiality of information.

b) The regulation of blockchain technology is at the moment unclear, but it will be important to ensure stability and integrity. Regulators are currently evaluating this new technology.

Despite these barriers, capital flows into blockchain technologies surged in the last two years with nearly a billion dollars allocated directly into blockchain infrastructure technology, with the lion's share coming from strategic investors and CVCs. Financial market infrastructure organizations are leading the investment into DLT firms to create new underlying infrastructures and market models for the creation, issuance, and distribution of private securities, democratizing both processes and access.

The Key Components Of A Distributed Ledger And The Implications

The potential implications of DLT on core market infrastructure are far-reaching for the capital markets, offering a path to a more efficient market infrastructure. Changing models in technologies directly impact the capital market value chain, changing the nature of issuance, and changing the exchange's role in price discovery, creating a network of firms, accessing liquidity, diminishing frictional costs by mitigating capital usage, and speeding settlement. There have been numerous use cases reported and proofs of concept (POCs) across the spectrum of the capital markets, and the reasons make sense. Blockchain, with its built-in tracking and tracing of data, is a natural solution to many of the challenges that capital market firms are faced with on a daily basis. The numerous POCs across securities processing, issuance, and value transfer are keying in on major pain points as well as envisioning a rearchitected capital markets. Managing identify on an immutable blockchain is an area of concentrated effort as the industry grapples with cybersecurity and KYC.

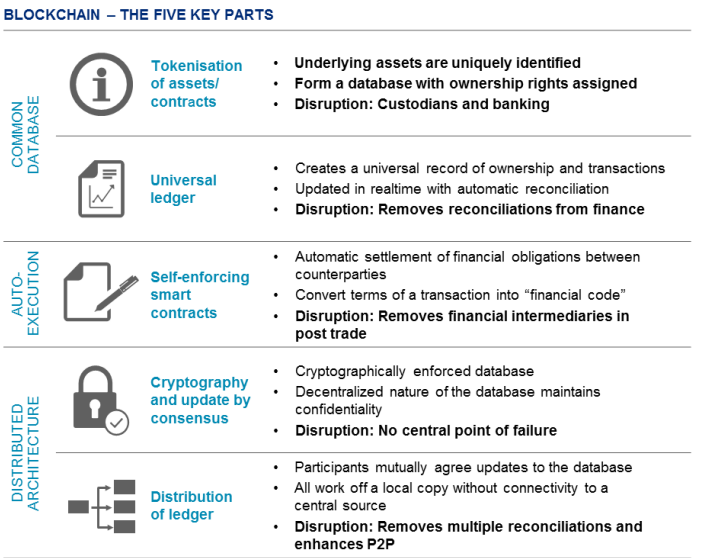
Consistent with the increased focus on DLT, innovative IT stacks that utilize cloud-based technology and API connectivity into incumbents are increasingly driving the development of more agile software solutions for market infrastructure and banking. However, data security and encryption, which are defining imperatives for new technology solutions within financial services, are critical and without them fintech firms will most likely fail to meet the rigorous industry requirements.

THEME 2

Post Trade Digitization

Post-trade operations need to be optimized to maximize capital efficiency and mitigate operational risk.

The systems and environment supporting European post-trade operations are highly fragmented, but both regulators and financial players are starting to mobilize towards the achievement of centralized infrastructures and solutions for the management of post-trade workflows. As an example, T2S is revolutionizing the European post-trade landscape by creating a single settlement environment that should bring domestic market efficiency to the international securities settlement domain. The vision is to build a borderless pan-European infrastructure for real-time securities settlement in central bank money.



Initiatives like T2S were conceived to delocalize and increase process efficiency, but there is still a long way to go for a part of the industry that traditionally underinvested in technological upgrades. Firms relying on manual processes are finding themselves increasingly open to solutions to optimize and automate post-trade processes that were previously deemed as too sensitive to operational risk arising from change. Today financial market infrastructure providers are focused on solving problems for clients by delivering, for example, solutions to optimize the use of collateral and by delivering capital efficiencies to clients. Funding and financing is another area where the market can continue to be supported with new solutions.

Change accelerates in a world where information and capital travel fast. Risk management, compliance, and front office employees require market intelligence and information tools to be able to detect, track, and monitor market developments, therefore, Celent expects global risk management and risk-related regulatory compliance technology spending to hit $72 billion in 2019, a 10.1% CAGR.

In recent analysis Celent found that 80% of OTC derivative reconciliation was still manual: phone- and Excel based.

As transactional value chains begin to be redesigned and digitized, firms will be forced to execute similar transformations for risk, regulatory, and compliance processes, especially those that are directly linked with transactional workflows.

Some of the challenges that innovators are addressing are: non-standardized data such as company reports, PDFs, emails, and a variety of regulatory data formats; silos that diminish effectiveness such as disparate and fragmented internal systems, as is the case with the multitude of internal systems from internal trading systems, across asset classes, as well as myriad internal finance and accounting systems; and complexities in data interchange, as evident in the interaction between counterparties, CCPs, and regulators.

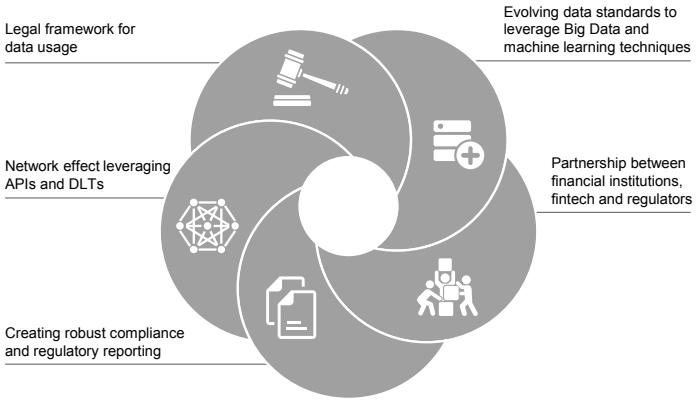
RegTech As A Way To Monetize Regulatory Pressures

Regulators have emphasized better and more transparent reporting. From data management tools to clean and parse internal data, to software as a service solutions that use the latest visualization technologies, fintech is critical in helping firms and institutional investors create the necessary reports for compliance, risk, and regulatory purposes.

The Evolution Of The Regulatory Landscape and Demands for Reporting

Firms are looking to Big Data, AI, and advanced analytics to process and prepare robust informational reports.

The global regulatory environment is providing two unique opportunities for RegTech innovators. On the one hand, providing cheaper and more effective regulatory compliance; on the other, providing firms with an opportunity to make regulatory change an opportunity.



Regulatory Technology (RegTech) is a key growth area, with innovative technology and software applied to assist in intelligently managing the regulatory and compliance processes. Market participants are partnering and engaging with regulators via new compliance architectures that highlight a partner-based relationship with custodians, exchanges, and ARMs. For example, the creation of a nodal point on a blockchain to provide real-time and direct access of trade data to regulatory bodies; or, the creation of predictive tools to analyze structured and unstructured data, short interest, regulatory news flow, social media, and market abuse data, will help to create an environment of regulatory partnership.

RegTech is an opportunity for incumbents to improve their operational efficiency, reduce systemic risk, and provide additional revenue-generating opportunities. RegTech is a key growth area, with innovative technology and software applied to assist in intelligently managing the regulatory and compliance processes. Market participants are partnering and engaging with regulators via new compliance architectures that highlight a partner-based relationship with custodians, exchanges, and regulators. For example, the creation of a nodal point on a blockchain to provide real-time and direct access of trade data to regulatory bodies; or, the creation of predictive tools to analyze structured and unstructured data, short interest, regulatory news flow, social media, and market abuse data will help to create an environment of regulatory partnership.

THEME 3

Artificial Intelligence And Analytics

Processing data to glean intelligence is the defining activity of our age. Firms that can build the analytical architecture to answer today's questions with the embedded flexibility and tools to answer tomorrow's questions will be the leaders of their space.

The explosion of data in capital markets has continued. The data set has also morphed to include not only the traditional pricing data, but semistructured and unstructured data, such as social media, news, and videos. The multifaceted types of data that can now be leveraged present many opportunities, but at the cost of complexities in data curation, distribution, normalization, processing, and storage.

Big Data tools and analytics have gone a long way to providing solutions to the preparation and interpretation of data. The accuracy and speed with which market players can accomplish this is more than ever a clear competitive edge. The savviest market participants are those who can leverage the broadest and deepest data sets for the most complete decision-making. Buy side and sell side firms are looking for more detailed analytics, in real time, on market microstructure, broker/client engagement, and statistically based predictive analytics.

Concurrently, the computing power and advanced statistical modelling advancements have made artificial intelligence (AI) a nascent reality across the financial world. Much of the funding for capital markets AI solutions has been deployed at firms with proprietary IP focused on finding patterns and addressing complex problems that traditionally required vast human capacity to solve. CB Insights estimates that between 2010 and 2015 nearly US$1 billion has been invested into machine learning, cognitive computing, deep learning, predictive APIs, and natural language processing.

AI in the capital market is moving beyond rules-based algos into a generation of bots and machine learning tools that learn to recognize and react to patterns within the data. This might be predictive analytics in the search for alpha, or pattern recognition to mitigate false positives in AML or KYC.

Simultaneously, better text mining tools, rapid increases in in-memory analytics, and the rise of predictive models based on statistical, neural, and other algorithms, are coming of age to provide a new trove of information. Machine learning will be central in driving the industry towards a shift from post-trade and history-based analytics to pre-trade predictive analytics.

While much of the talk has been centered on predictive analytics at the front office, Big Data technologies are having an impact in driving efficiencies in post-trade activities like reporting, compliance, and risk management.

Tools such as Natural Language Generation (NLG) that write research or business reports, for example, could start to make subjective or creative recommendations instead of just writing text based on structured and unstructured data analysis. On the operational side, RegTech firms are utilizing huge data sets for recognizing risk patterns, predictive compliance, predictive risk, and detecting anomalies.

Artificial intelligence and advanced analytics will impact capital markets, providing essential tools to mine data across the value chain. Based on recent conversations with capital market CTOs, Celent sees AI and machine learning mentioned as the number one technology on their radar screen.

At its core, a financial market infrastructure organization is also a data company. New methods of data delivery and tools for insight and prediction will serve issuing companies, trading firms, clearing houses, and central depositories to make better decisions around capital allocation and risk. Better data insights will provide investors with a next generation of index products, ETFs, and other innovative trading and investment products. Big Data has given us a means of processing new data sets and artificial intelligence is giving us the tools to predict and monetize the insights.

THEME 4

Investment Technology Digitization

Investment technology firms are offering investment managers of all sizes tools for monitoring markets and allowing better decisions based on robust data analysis.

Asset managers and their clients want real intelligence and insight around their investment and the sources of its performance. Whether it is quantitative investment decision tools or passive investment products that mirror active management approaches, a next wave of innovation is seeking to change the traditional asset and wealth management businesses. Demand, performance, and regulation continue to drive assets into indexed and passive products. Passive index-based asset managers are now among the largest in the world. Passive investing is on its way to represent a third of global assets under management in the next four years. New products like smart beta are blurring the traditional lines between passive and active, and look to accelerate the shift in how assets are managed.

In the past two decades, passive index products under management have risen from $55 billion to over $4 trillion: a twenty year CAGR of almost 24%.

Investment technology is changing the dynamics of the asset management business, as investment products like ETFs expand both globally and into more innovative structures This creates more demand for tools that optimize asset allocation, quant-based investment, and more direct engagement with liquidity by ETF creators. It also allows producers of market data, like exchanges, to create new IP and products aside from traditional benchmarks and indices. The shift towards a technology-driven means of investing has created a situation where brokerages have moved upmarket. RIAs are expected to do the same or be forced to find some sort of accommodation with the automated investment advisors. Large incumbents such as broker custodians, meanwhile, are leveraging economies of scale to roll out low-cost or even zero-cost portfolio management platforms or partner with robo advisors. Bank brokers, are already working with or building scalable, low-cost platforms to address the needs of their less affluent clientele.

On the institutional side, investment technology has gained relevance as we continue to shift towards automation in asset allocation and rebalancing, as well as new deployment mechanisms for the allocation of capital in alternative investments.

On the retail side, the shift of client preferences towards cloud-based user-friendly solutions is fueling the rise of the so-called robo advisory investment platforms. This has an impact upstream as issuers and distributors focus on products that can easily be scaled on platforms such as robo advisory.

Automated investment management is often defined as portfolio construction by algorithm. This definition, while eye-catching,

focuses on execution at the expense of a broader and ultimately more significant transformation: the automation of front end business processes (including rebalancing, monitoring, performance measurement, and reporting) that formerly required human intervention.

While the dawn of active management could have an impact on trading volumes for exchanges, the rise of passive investments generates monetization opportunities for firms with the technology infrastructure and data necessary for the construction of innovative indices, as well as the provision of investment decision tools.

THEME 5

Alternative Funding Platforms

Alternative funding platforms and peer-to-peer (P2P) business models are reshaping traditional relationships by filling some of the funding gaps created after the financial crisis of the last decade. Both from the perspective of a retail client or small business facing challenges to raise working capital, as well as that of an institution willing to syndicate risks or an investor looking forward to allocate capital in illiquid assets, the evolution of crowdsourced loans and investments has opened a new myriad of possibilities.

What started with a network for individuals getting car loans from an online loan portal and making equity investments via a crowdfunding site is increasingly institutionalizing. A new ecosystem for direct issuance of private shares, access to debt financing, and FX trading is emerging.

Alternative funding platforms that provide capital and liquidity for corporates that traditionally have only relied on banking relationships, have put significant pressure on financial institutions to adapt their business models and gain proximity to the customer. Now lenders and borrowers are able to connect directly through online platforms bypassing all types of intermediaries that are unable to justify their fees. This space has attracted considerable venture investment, garnering over 40% of VC capital in 2015, fueled by the multi-trillion size of the addressable markets, the acceptance by millennials of the P2P model, and some of the largest bank/fintech partnerships. Recent developments centered on credit policies and KYC-related topics are, however, also leading to an increase of interest from regulators around the world on what traditionally have been lightly regulated business models.

In Europe, it has specially been the case that consumers and SMEs have traditionally relied solely on banks for financing. Alternative funding platforms are permeating through the ecosystem, though they are still in their early days, to create a lasting and viable business model for consumers and small and midsize enterprises (SMEs) looking for financing, as well as for investors looking for exposure to higher yielding opportunities.

The securitization market in Europe has been slowly recovering. New models for alternative online platforms will create an opportunity for established incumbents to partner with fintech firms to create a new market for securitized products.

To improve capital markets systems, European governments have supported the use of alternative financing methods to stimulate and direct investment to their people and businesses. In tandem, private enterprise has taken it upon itself to develop the mechanisms capable of connecting a diversity of investors/lenders and borrowers with a wide range of financing needs. Through these combined efforts, crowdfunding has emerged as a viable form of alternative financing for many startups and individual investors. Nonetheless, as the space becomes increasingly institutional, it is increasingly capturing the eye of regulators in the US and Europe. A merger of alternative funding platforms with firms with strong regulatory relations looks to be the future.

There is a movement globally today by exchanges to ease access to private capital by bringing together capital providers, with new alternative funding technology to create a new network for the underserved SME.

There is nothing precluding large market infrastructure providers from leveraging their market operation expertise in financial and large corporate domains, in order to act as the point of encounter between idle capital in hands of private investors and cash-rich corporations, and the need for growth capital from small businesses across the world. This is a trend for financial market infrastructure organizations to capitalize on for many years, providing new solutions to the market in the realm of funding and financing.

Conclusion

Fintech disruption will continue across the financial market value chain. In 2003 less than 1% of global investment capital was in fintech, while in 2015 it made up over 8% of the capital pool. Market participants will react in a variety of ways to create a new vision for the capital markets of tomorrow. The forces of regulation, market structure change, and repositioning of capital market participants will continue for the next decade.

Trends in digitization will accelerate, and the challenge for established technology firms and market operators will be to find the correct means of collaborating with new business models and innovative technologies. Concurrently, partnerships are growing and the fintechs are attracting more and more talent from the broker-dealer and investment banking world to work to create new models for the next wave of innovation.

The financial market infrastructure provider of tomorrow will have leveraged its leadership in regulation, market structure, trading, clearing, and settlement to guide startup fintech firms in the journey towards creating an effective and safe capital market for the twenty-first century and beyond.

Market participants need to continually evolve and innovate their business models.

Fintechs can help incumbents to transition to new business models and access additional growth pockets.

Author's Bio

Brad J. Bailey

Brad J. Bailey is a Research Director with Celent's Securities and Investments practice, based in the firm's New York office. He is an expert in electronic trading and market structure across asset classes and is a recognized thought leader in emerging front office technology and capital markets fintech.

Brad's research focuses on the evolution of market structure, trading, data analytics, and innovations in trading technology architecture and deployment. His research looks at legacy trading architecture and how firm's best incorporate alternative business and digital models. He has published research on FX, fixed income, cross-asset trading, DLT in the capital markets, exchange technology, and cloud models for deploying trading and data infrastructure. His recent consulting work involves advising clients on key capital market trends, trading platforms in listed and OTC markets, and alternative models for interacting with fragmenting liquidity. He has also advised and performed due diligence for venture and private equity investors.

An authority on capital market fintech, Brad has been widely quoted in the press, including the Wall Street Journal, American Banker, Financial Times, Institutional Investor, Forbes, USA Today, and the New York Post as well as appearing on Bloomberg TV, BBC News, Sirius Radio, and NPR. He is also a frequent speaker at industry conferences and client gatherings globally.

Prior to joining Celent, Brad spent over 20 years in the capital markets in trading, technology systems, product, market structure, strategy, analysis, and consulting at investment banks and broker dealers that include KCG Holdings, Aite Group, RBC Carlin, Citigroup and ICAP. He also served on the boards of markets technology start-ups and the Equiduct exchange based in Brussels. He began his career as a software engineer.

Brad holds an MSc from University of Colorado in Boulder, and a BS in mechanical & aerospace engineering from Rutgers University. Outside of work, he has taught skiing to Special Olympic Athletes and sailed across the Atlantic Ocean on a 13 meter ketch.

VC-PE Index

A Look at North American Private Equity as of Q1 2016

Mike Roth
Research Manager
Bison

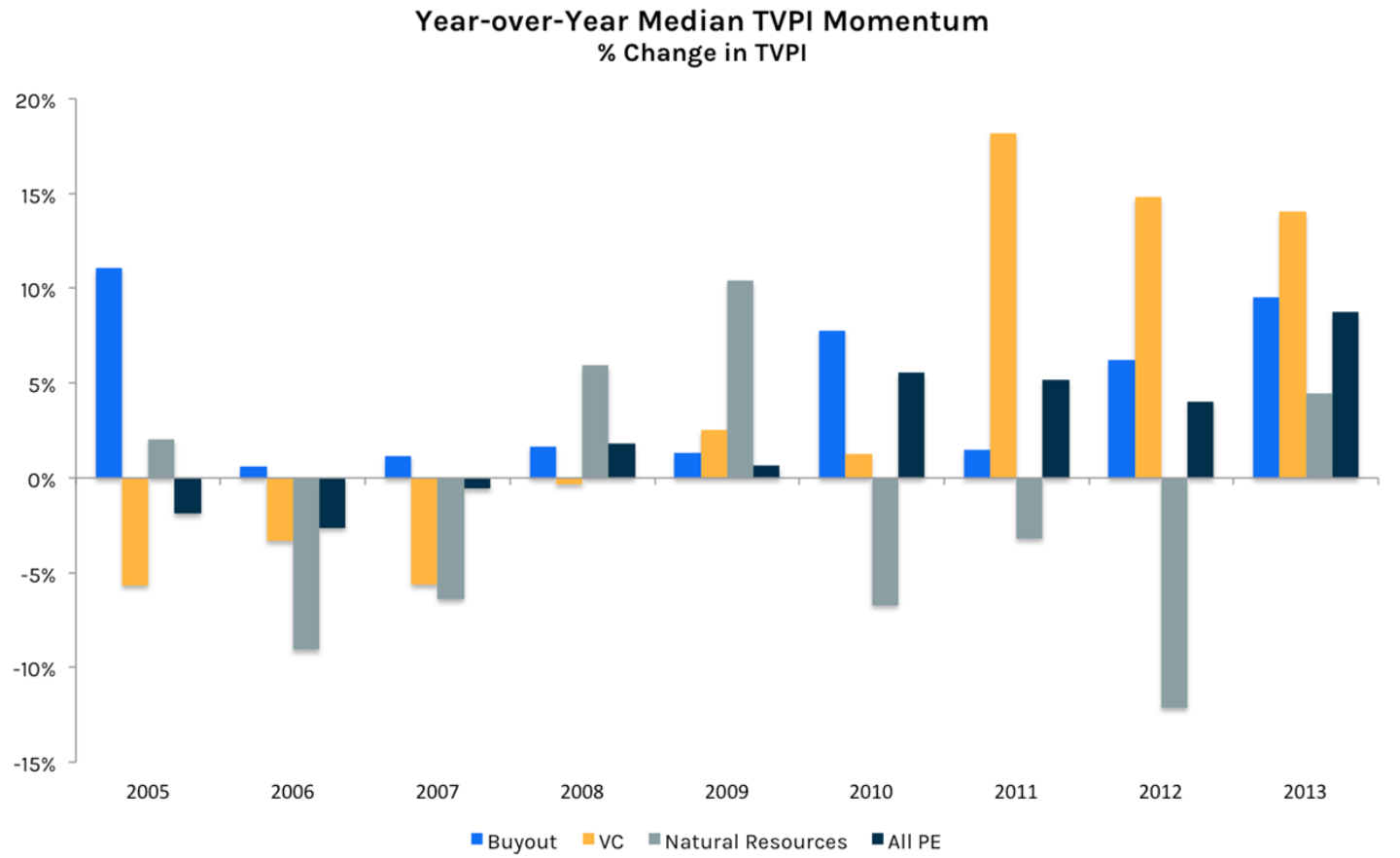
[The median TVPI metrics for North American All PE increased by 2.3% over the last four quarters ended in Q1 2016. North American buyout's median TVPI metrics grew at a slightly faster pace than their venture peers for the 2005 – 2013 period, on average.]

TVPI Momentum

The one-year TVPI momentum (% change in TVPI y-o-y) was relatively modest for the North America All PE and buyout segments. For the vintage years 2005 – 2013, All PE increased by 2.3%, buyouts increased by 4.5%, and venture capital/growth equity grew by 4.0%. Meanwhile, natural resources' TVPI momentum fell 1.6% for the 2005 – 2013 vintage years.

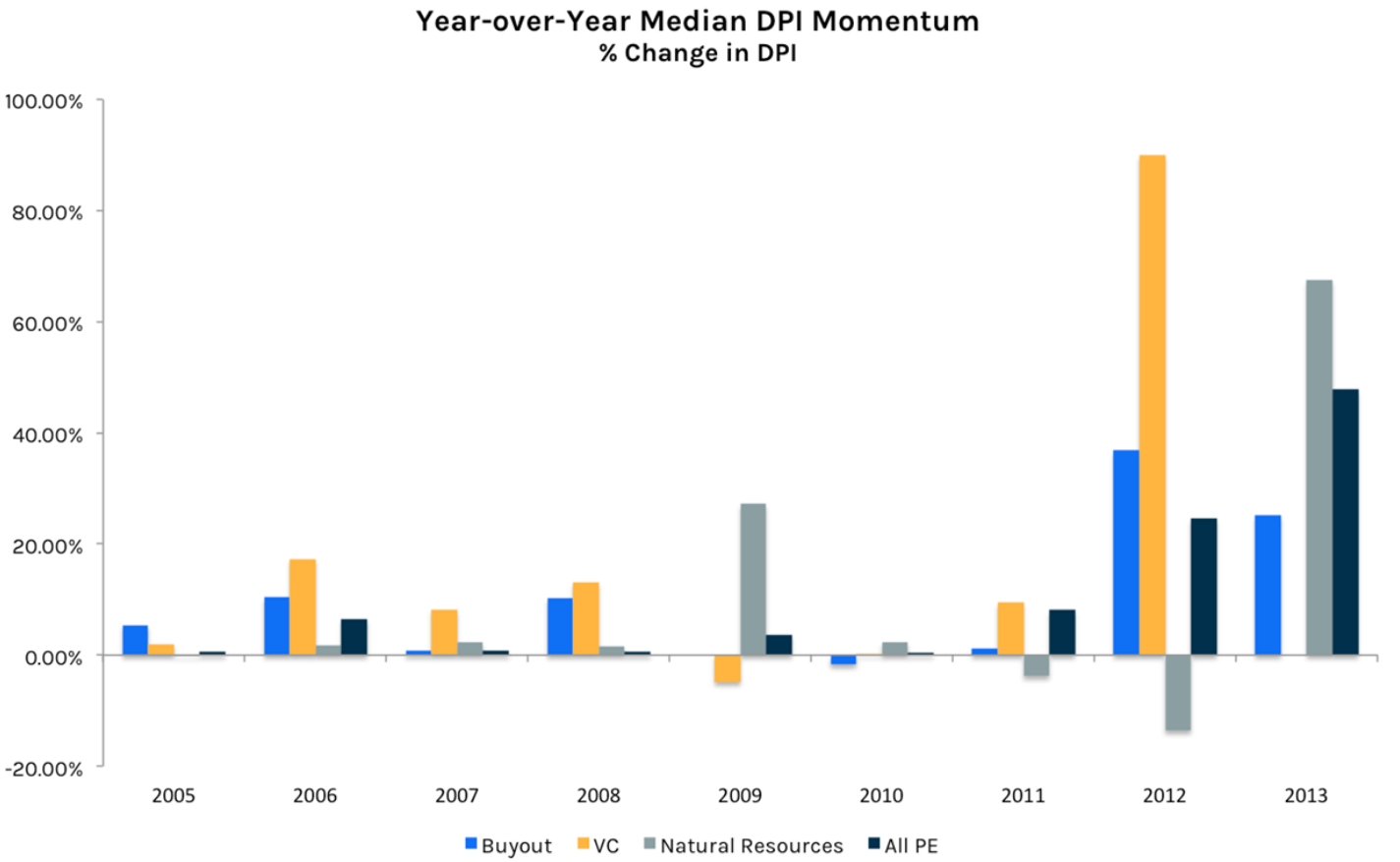
The chart below digs into the 2005 – 2013 vintage years. These are the vintage years that are in the early to late stages of maturation and, therefore, the most meaningful to analyze.

For the 2005 – 2013 time period, buyout's one-year TVPI momentum outpaced venture capital in five of nine vintage years. Venture capital is seeing strong momentum in recent vintages, with 2011 – 2013 outpacing the rest of the private markets.



DPI Momentum

The chart below looks at the one-year DPI momentum (% change in DPI y-o-y) for the 2005 – 2013 vintage years.



North America venture capital led the way with an average DPI momentum of 16.9%. In six of nine years between 2005 and 2013, venture capital's DPI momentum is outpacing the buyout industry. The venture capital industry is finding ways to distribute returns, which must be music to their LPs' ears.

To learn more about Bison and how we can help you execute your LP strategy, please visit www.cobaltgp.com.

Author's Bio

Mike Roth

Mike Roth is the Research Manager at Bison and oversees the data collection and content production. Before Bison, Mike spent six years on the investment team at SVG Advisers. There, he conducted research and due diligence on buyout and venture capital funds in the Americas. Mike received his BA in Economics from Boston College and is a CFA Level III candidate.

MSCI Global Intel Report

Max Arkey
Vice President
Product Management
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After a year of decade-high UK economic growth in 2014, expansion moderated somewhat in 2015. The first two quarters of 2016 have seen growth improve on 2015 levels, driven by consumer spending and investment. The economy advanced by 2.2% year-on-year in the second quarter of 2016 – following a 2% expansion in the previous quarter. Notwithstanding encouraging economic growth – especially when viewed on a quarter-on-quarter basis – the vote to leave the EU has added substantial political and economic uncertainty to the UK outlook.

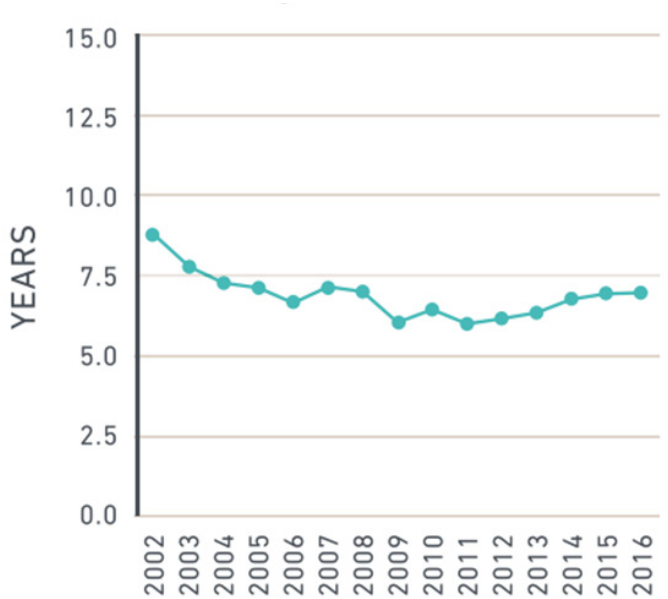
Following the vote many commercial property funds have had to suspend trading in response to capital outflows.

The uncertainty prevalent in the market preceding the Brexit vote saw the rent-weighted UK lease length decline by around half-a-year, meaning that larger occupiers have in aggregate been negotiating for shorter leases.

During the first half of 2016, the average unweighted length of leases granted in the UK market stood at 7.0 years. While only marginally up from 2015, this was a continuation of the upward trend observed since 2011. Average lease lengths have now increased by a full year since the bottom of the cycle in 2011. This follows the broader trend of recent years, in tandem with the economic recovery, with leases lengthening due to supply conditions and growing confidence amongst occupiers competing for space.

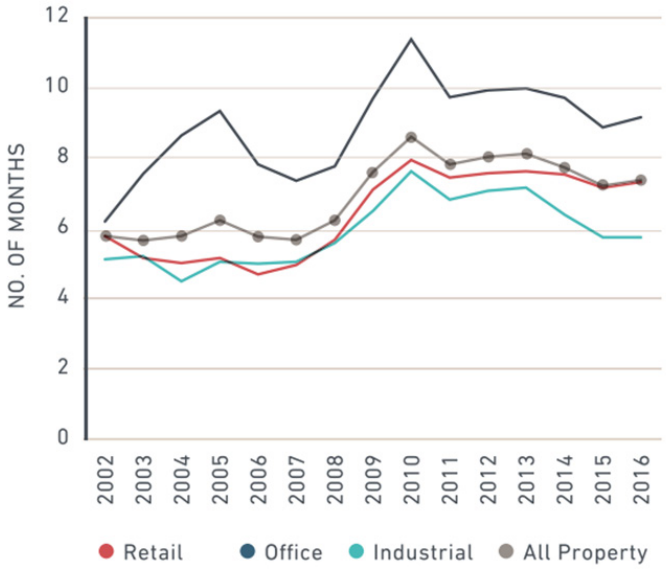
Unweighted lease length

Unweighted full term; ingnoring breaks and inlcuding short leases



Average rent-free periods by sector

Tenancies equally weighted



Source: MSCI

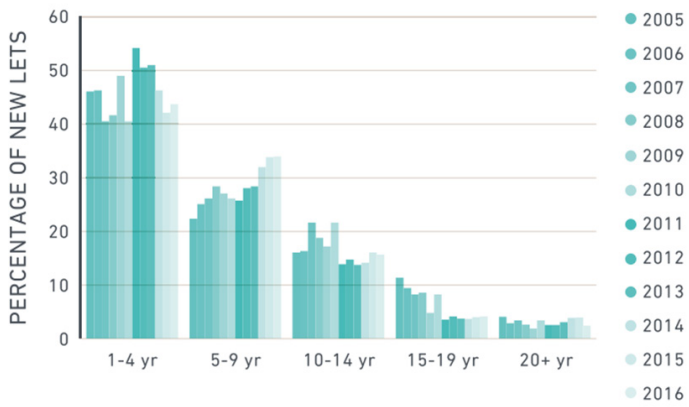
As the fundamentals underlying the UK market have recovered, landlords have been pushing for longer leases in the quest for income security. Since the bottom of the market in 2009, average rent-weighted and unweighted lease lengths have both increased by a year, to 11.0 and 7.0 years respectively. However, there have been significant shifts within the different lease-length brackets.

During the first six months of the year the length of rent free periods increased slightly and the proportion of leases with a break clause also ticked up. To evaluate income streams for investors in commercial real estate, risks such as lease expiries, break clauses, vacancies and defaults have to be assessed.

The main risk to landlords and investors, and one that is quite unpredictable compared to the effect of break clauses or the end of a lease, is tenant default. Tenant default can leave the landlord with significant arrears and a vacant building, with varying levels of recourse depending on the financial position of the defaulting company. Difficult trading conditions for UK retailers over recent years have increased the number of receiverships and liquidations leading to more volatile default rates for all sectors. Through 2015 the rate of default by UK tenants declined, falling to 3.1% of all tenancies weighted by rent passing, a reflection of the improving economic environment. This was the lowest rate of default registered in the UK market since 2007, and compares favorably with the level for 2014, 3.7%. The rate of default had peaked at 6.2% in 2012.

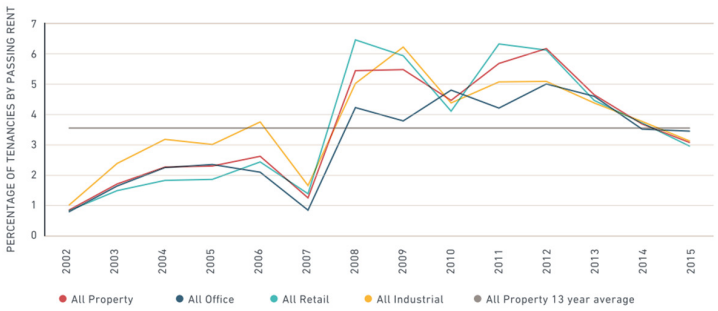
Unweighted lease length distributions

Percent of new lets in each lease length band



Tenants in default by sector, 2002-2015

Tenants weighted by rent passing



Source: MSCI, D&B

To help investors and their fund managers evaluate income streams in commercial real estate, risks such as lease expiries, break clauses, vacancies and defaults have to be assessed. These may be seen as a series of options in the future cash flow from real estate assets. All have a significant impact on the assessment of risk for a cash flow, and as such clear analysis is crucial to help stakeholders understand the potential of the space they manage or own.

The MSCI Lease Events Review for 2015 and year-to-June 2016, in association with Strutt & Parker, provides empirical evidence on the likelihood of the different events. The analysis was based on a sample of over 73,000 extant leases held in the IPD UK Annual and Quarterly Property Universe and more than 9,000 new leases signed over the last year.

Author's Bio

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Max Arkey works in product management at MSCI Real Estate where he heads up indexes and market information products. These analytics are mission critical to the investment process for 19 of the top 20 largest global asset managers, all the way through to specialized domestic investors. For further details contact: max.arkey@msci.com

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