

CONTRIBUTORS

Kelly Tang, CFA

Director
Global Research & Design
S&P Dow Jones Indices
kelly.tang@spglobal.com

Jacob Messina, CFA

Head of Sustainability Investing
Research
RobecoSAM
jacob.messina@robecosam.com

The S&P LTVC Global Index was designed as a vehicle to identify the companies that embody long-termism.

Long-Termism: Index Impossible?

INTRODUCTION

Short-termism (or 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 at its worst has the potential to be problematic, as underinvestment can impede future economic growth, manifesting in low GDP growth, higher unemployment levels, and lower future investment returns for savers. In our previous paper in this two-part series, "[Long-Termism Versus Short-Termism: Time for the Pendulum to Shift?](#)", we wrote about short-termism and how market participants are responding to this issue.

Market participants have begun to realize that one of the most effective ways to deal with short-termism is by changing the strategies and approaches of those who control the capital: the asset owners. Focusing Capital on the Long Term (FCLT) was set up in 2013 by McKinsey & Company and Canada Pension Plan Investment Board (CPPIB) in order to develop practical frameworks, metrics, and approaches for promoting longer-term behaviors in the investment and business worlds. Since then, many leading global asset owners, asset managers, and companies have joined the initiative, and together they have put forth their detailed recommendations on how the asset-owner community can adopt the principles of long-termism.

Their recommendations encourage market participants to select and construct benchmarks that are focused on long-term value creation (LTVC). Against that backdrop, S&P Dow Jones Indices and its sustainability research partner RobecoSAM worked extensively with CPPIB to create an LTVC benchmark.

The [S&P LTVC Global Index](#) was designed as a vehicle to identify the companies that embody long-termism and give long-term market participants an index that seeks to track the performance of these like-minded companies. The index also aims to engage companies on the issue of long-termism in order to motivate them to improve disclosure on their sources of LTVC.

This paper provides our philosophy and rationale on the objective, process, and structure that went into creating the index, as well as its engagement

role in influencing companies to improve their reporting to market participants.

CREATING A LONG-TERMISM INDEX

The FCLT initiative developed the asset owner core action plan (see Exhibit 1). The third recommendation advises asset owners to implement long-term-oriented benchmarks to align asset managers in the management and execution of portfolios that reflect the long-termism principle. Due to the lack of availability of long-term-oriented indices, creating a thoughtfully constructed LTVC benchmark was important, as the process of selecting constituents can influence corporate behavior. An index that highlights a company's suitability for long-term investment could direct corporate management to focus on metrics that are of interest to long-term market participants.

Recently, progress has been made relating to the creation of nontraditional factor-based indices that are not solely focused on market capitalization. However, more can be done to design and use benchmarks that foster a longer-term orientation. If widely adopted by asset owners and managers, such benchmarks may influence company boards and management teams, potentially resulting in more efficient deployment of corporate strategies and capital aimed at long-term growth rather than the short-term impact on stock price.

Prior to delving into the details of how the [S&P LTVC Global Index](#) was constructed, it is helpful to list the ideals behind what long-termism represents, as this will highlight some of the themes behind the structural considerations taken in creating this index.

Long-term investing is a frame of mind rather than a holding period.

- According to FCLT, long-term investing is a frame of mind rather than a holding period, and it is a culture rather than a directive.
- It is about making investment decisions with a sustainable future-oriented perspective.
- It takes advantage of opportunities created or unable to be taken by short-term market participants.
- It emphasizes process and fundamental long-horizon corporate research rather than focusing solely on quantitative data analyses.
- It requires persistence through periods of short-term underperformance and reaps the rewards of patience.
- It is neither a continuing sequence of short-term investments nor simply about buying and holding assets.
- It is not driven by rankings or benchmarks (it is not a “beauty contest”), but rather it focuses on long-term expectations and outcomes.

- It is consistent with the time horizons and ultimate needs of most savers by providing asset owners with the ability to meet liabilities today and for many years into the future.

Exhibit 1: Asset Owner Core Action Plan

FIVE CORE ACTION AREAS FOR INSTITUTIONAL INVESTORS	INSTITUTIONAL MARKET PARTICIPANTS 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 LTVC; 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.

Source: FCLT. Table is provided for illustrative purposes.

The metrics that encapsulate LTVC should encompass both long-term operational excellence and long-term business viability, which, together, result in a company’s sustainable long-term earnings growth. In collaboration with CPPIB, the metrics behind S&P Dow Jones Indices’ quality framework—return on equity (ROE), balance sheet accruals ratio (BSA), and financial leverage—and RobecoSAM’s Economic Dimension Score (EDS) were chosen as quantitative and qualitative measures for operational excellence and long-term business viability.

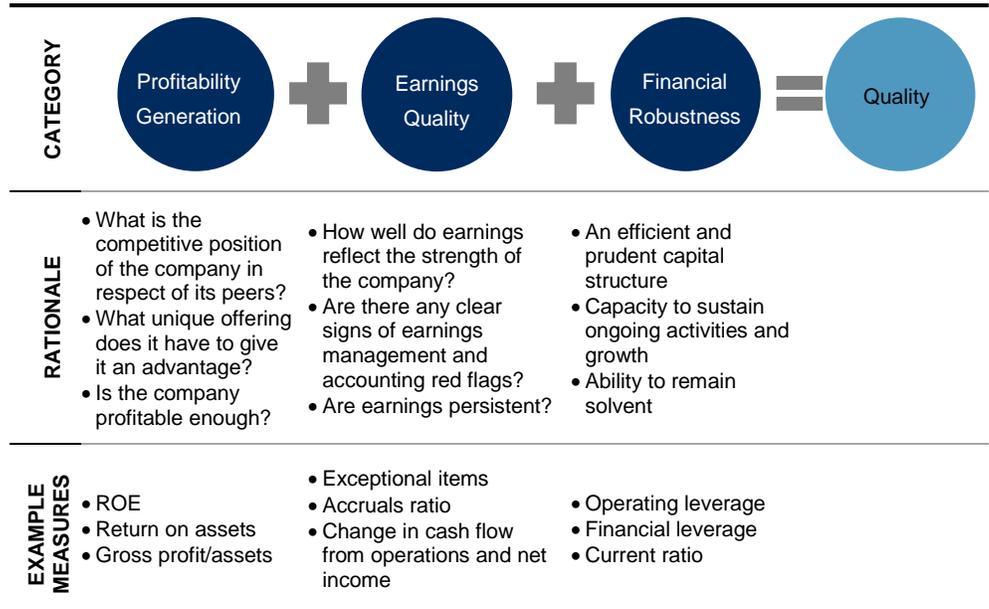
STEP 1: WHAT ARE THE METRICS THAT SERVE AS PROXIES FOR LONG-TERM OPERATIONAL EXCELLENCE?

A company’s ability to generate long-term earnings growth is dependent upon its future profitability and the source of risk to which it is most subjected. Broadly speaking, “high-quality companies” share similar characteristics of seeking to generate higher revenue and cash as well as enjoying more stable growth than the “average” company. Equally important, high-quality companies generally seek to adopt a conservative, yet effective, capital structure that allows them to grow. Finally, high-quality companies are often run by managers who tend to exercise prudence in the administration of the companies’ affairs. Together, these favorable traits could shield these companies from the vagaries of the economic cycle, potentially making them slightly more immune to downturns.

High-quality companies generally seek to adopt a conservative, yet effective, capital structure that allows them to grow.

Often, there is much overlap among quality factors that can be gauged through company-specific analysis. In light of this, S&P Dow Jones Indices seeks companies that exhibit Graham and Dodd’s definition of sustainable earnings power and uses a three-pronged approach to identify such companies. We determine quality in a systematic manner in which each of the attributes identified are accorded equal importance (see Exhibit 2). In the end, and as outlined by the paper, “[Quality: A Distinct Equity Factor?](#)” (Ung and Luk, 2014), the decision of selecting ROE, BSA, and leverage was made coinciding with the launch of the S&P Quality Index Series in 2014.

Exhibit 2: Systematic Framework for Determining Quality Companies



ROE is one of the most commonly used measures for reviewing a company’s profitability.

Source: S&P Dow Jones Indices, LLC. Table is provided for illustrative purposes.

ROE

ROE is one of the most commonly used measures for reviewing a company’s profitability. A typical way of assessing ROE is through examining the 12-month income scaled by the company book value. Many industry professionals advocate this measure not only because it is simple to calculate and interpret, but also because it produces meaningful results. Others are more cautious about the informational value of ROE, given its widespread adoption in the investment community. Some have even cast doubt on whether ROE can really contribute to distinguishing high-quality companies.

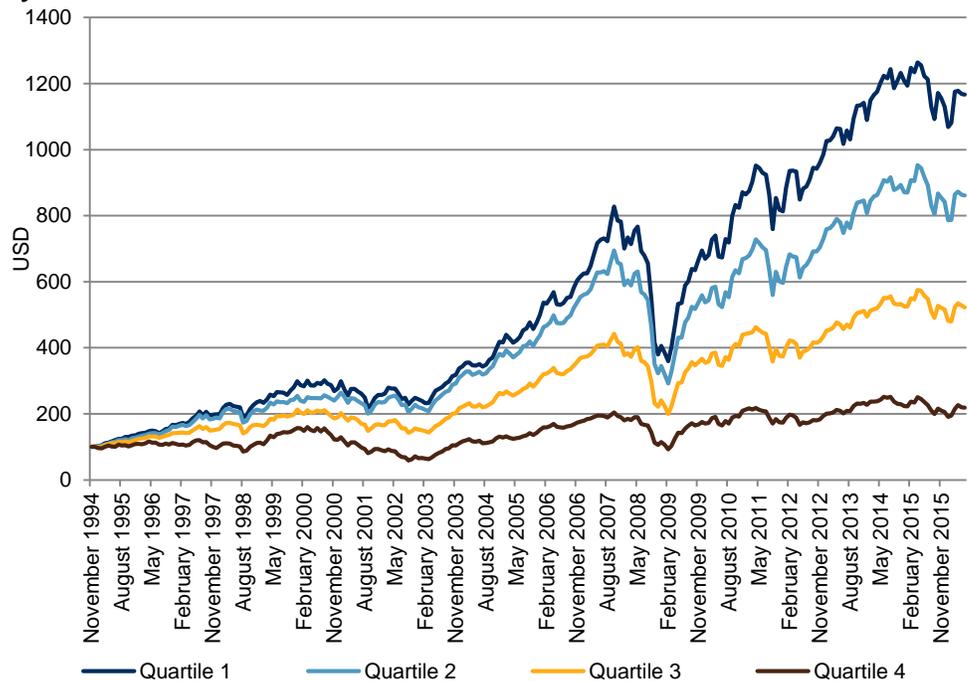
According to Joyce and Mayer (2012), there are microeconomic reasons why companies with higher ROE tend to perform well. They argue that these companies are often able to sustain competitive advantages, thereby creating an oligopoly within their sector. These advantages can take many forms, from superior branding to intellectual property value. As a result,

companies that were profitable in the past are seen as likely to remain profitable in the future.

In order to test the efficacy of these factors on a longer-term basis, we sorted the universe of the [S&P Global LargeMidCap](#) by ROE, BSA, and leverage into quartiles over a 20-year period. We then rebalanced this selection on a monthly basis, and Exhibit 3 shows the cumulative returns of quartiles from the S&P Global LargeMidCap universe based upon ROE. As shown in the exhibit, there is a distinct delineation in returns by quartiles, with higher ROE companies outperforming lower ROE companies.

There is a distinct delineation in returns by quartiles, highlighting the efficacy of ROE as a factor.

Exhibit 3: Cumulative Returns of S&P Global LargeMidCap Quartiles Sorted by ROE



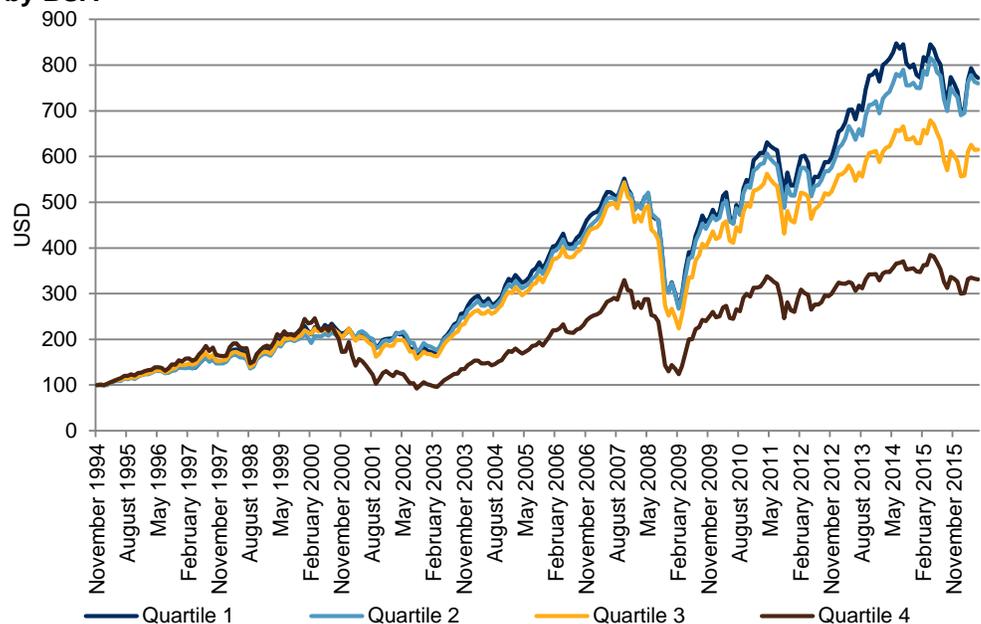
Source: S&P Dow Jones Indices, LLC. Data from November 1994 to June 2016. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

BSA

The usefulness of BSA has been the subject of much analysis. Interest in this topic stems mainly from the desire to probe whether information reported in financial statements is truly reflective of the underlying performance of companies. Academic research conducted by Sloan (1996) indicates that the more a company’s accounts are made up of non-cash items, the more error-prone their financial statements. This may be a result of accruals being transient and subject to considerable estimations and potential misrepresentations. For this reason, the accruals ratio can also be seen as an indirect way of stressing the primacy of cash earnings.

Using the ratio of the change in the net operating assets over the last 12 months and the average net operating assets over the same time period as our definition for BSA, we sorted companies in the [S&P Global LargeMidCap](#) universe into quartiles, with companies with lower accruals ratios ranking higher. From the results in Exhibit 4, we can see that the quartile of global stocks with the lowest BSA ratios outperformed those with higher accruals on average by over 4% (annualized) between 1994 and 2016. The first and second quartiles were relatively equal in performance, but they steadily beat the third and bottom quartiles, suggesting that the worst offenders in accounting accruals are duly penalized by market participants.

Exhibit 4: Cumulative Returns of S&P Global LargeMidCap Quartiles Sorted by BSA



High-quality companies are seen as those that can keep a steady course in times of crisis.

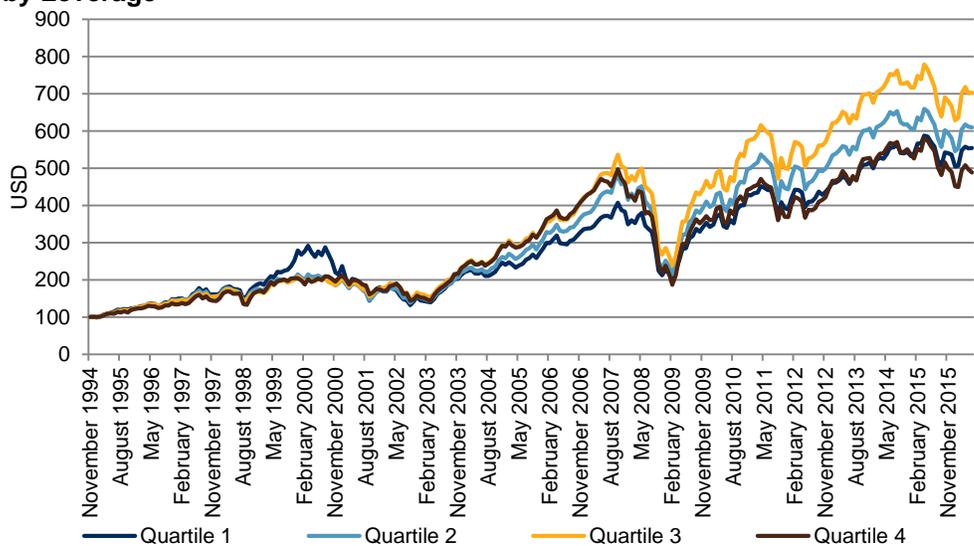
Source: S&P Dow Jones Indices, LLC. Data from November 1994 to June 2016. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Financial Leverage

The third aspect of any quality measure includes considering risk reduction in times of uncertainty. In other words, high-quality companies are seen as those that can keep a steady course in times of crisis because their earnings would generally be less sensitive to the volatility of the business cycle. In addition, high-quality companies appear to be able to finance their ongoing business activities without overexposing themselves to debt financing. Therefore, studying the financial leverage (debt-to-equity ratio) of a company can potentially yield instructive clues about its financial health and whether its financing arrangement is sustainable.

Similar to our prior analyses, we ranked all the companies in the [S&P Global LargeMidCap](#) by their financial leverage ratio. From the results in Exhibit 5, we can see that the lowest-leveraged companies on an annual rolling basis beat the highest ones by an average of 0.6% per year, which is almost negligible and outweighed by the reduction in return volatility (1% per year), which may imply that lower indebtedness offers companies downside protection. Further analyses suggest that low leverage is not always associated with higher-profit companies. In fact, in calmer markets, companies with less leverage often tend to lag behind those with high leverage, but the low-leverage ones usually prevail in financial downturns, as their “safer” characteristics come to the foreground.

Exhibit 5: Cumulative Returns of S&P Global LargeMidCap Quartiles Sorted by Leverage



In calmer markets, companies with less leverage often tend to lag behind those with high leverage.

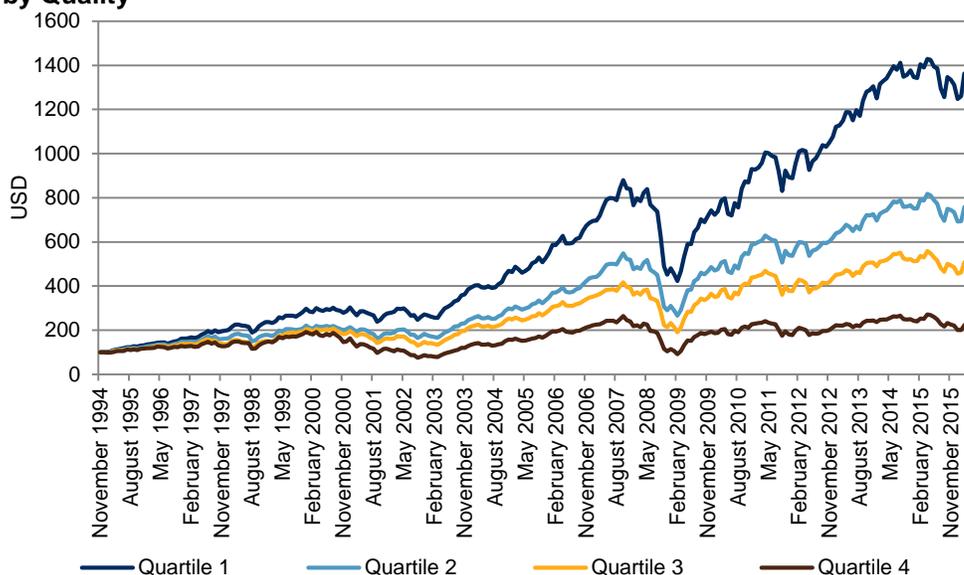
Source: S&P Dow Jones Indices, LLC. Data from November 1994 to June 2016. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Quality

We combine the three metrics to arrive at the financial quality framework. The final quality score is computed by averaging the scores of the three components. Based on the combined quality score, we fractile the universe into four groups, with higher quality companies ranking better.

Exhibit 6 shows the cumulative returns of the quartiled quality portfolios. It can be seen that, on average, companies with higher quality scores outperformed those with lower quality scores. The signal is monotonic across all four groups. The spread for outperformance between the top and bottom quartiles is the most pronounced for the overall quality score compared to its component metrics, with the top group generating an excess return of 9.0% per year over the period from November 1994 to June 2016.

Exhibit 6: Cumulative Returns of S&P Global LargeMidCap Quartiles Sorted by Quality



Source: S&P Dow Jones Indices, LLC. Data from November 1994 to June 2016. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 7: Returns and Risk-Adjusted Returns Sorted by Quality Metrics

QUARTILE	ROE (%)	BSA (%)	FINANCIAL LEVERAGE (%)	QUALITY (%)
ANNUALIZED RETURN				
Quartile 1	12.26	10.18	8.48	13.10
Quartile 2	10.72	10.06	8.99	10.06
Quartile 3	8.17	8.99	9.67	8.01
Quartile 4	3.95	5.93	7.84	4.05
STANDARD DEVIATION				
Quartile 1	17.07	16.41	17.64	15.50
Quartile 2	16.94	15.36	17.27	15.76
Quartile 3	16.32	16.84	16.73	17.12
Quartile 4	19.93	21.08	18.57	21.14
RISK-ADJUSTED RETURN				
Quartile 1	0.72	0.62	0.48	0.85
Quartile 2	0.63	0.65	0.52	0.64
Quartile 3	0.50	0.53	0.58	0.47
Quartile 4	0.20	0.28	0.42	0.19
SPREADS				
Quartile 1 Minus Quartile 4	8.31	4.25	0.64	9.05
Quartile 2 Minus Quartile 4	6.77	4.13	1.15	6.01
Quartile 3 Minus Quartile 4	4.22	3.06	1.83	3.96

Source: S&P Dow Jones Indices, LLC. Data from November 1994 to June 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

We believe that companies that exhibit operational excellence create long-term value, and we define operational excellence as continued profitability, accounting conservatism, and financial prudence. The multiple analyses conducted using these metrics confirm that together, they did generate excess return and were viable risk factors that merit consideration in developing a long-termism index.

It is worth noting that the concept of being rewarded for owning high-quality stocks may seem counterintuitive, as risk premium is usually offered for assuming some form of risk. For instance, the size risk premium can be regarded as compensation for illiquidity. On one hand, market participants that choose high-quality stocks appear to be getting a “free lunch.” Some researchers have advanced an explanation for this supposed conundrum. For instance, Assness, Frazzini, and Pedersen (2013) posited that the reason why high-quality stocks do well is similar to why low-volatility stocks do well; namely, that in the search for lottery-type payoffs, the prices of low-quality, high-risk stocks are driven up beyond their fundamental value, whereas high-quality, low-risk stocks are neglected.

We believe that the companies that create long-term value embody operational excellence.

STEP 2: WHAT ARE THE METRICS THAT SERVE AS PROXY FOR LONG-TERM BUSINESS VIABILITY?

There is substantial empirical evidence to suggest that good governance ultimately yields better corporate returns. Gompers, Ishii, and Metrick (2003) constructed a Governance Index (G-Index) consisting of 24 governance provisions that weaken shareholder rights and ranked companies based on their scores. To achieve high governance scores, companies must have provisions against contracts or behaviors associated with bad governance, such as golden parachutes, poison pills, unequal voting rights for shareholders, and greenmail transactions. Proper executive compensation structures focused on the long term should also be an aspect of good governance.

Subsequent research from Bebchuk, Cohen, and Ferrell (2009) identified six provisions of the 24 that mattered most, such as staggered boards, poison pills, and supermajority requirements, and they called this subset the “E-Index.” Researchers (Bebchuk, Cohen, and Wang 2012) have found that while the G-Index and E-Index would have resulted in abnormal returns in the 1990s, the premium dissipated in the 2000s as the markets learned to distinguish between firms with good governance and those with poor governance and to figure the differences into stock prices.

Research by Eccles, Ioannou, and Serafeim (2011) also demonstrated a link over the long term between financial returns and the quality of a company’s management as measured through its sustainability performance. When examining returns over an 18-year period, companies identified as leading in sustainability outperformed their sector peers not only in terms of stock market performance but also in terms of underlying

financial metrics such as ROE and return on assets. This was consistent with findings from quantitative research by Robeco and RobecoSAM (2014) that demonstrated financial outperformance of more sustainable companies, which is particularly strong in time periods of higher volatility and more challenging economic conditions. Recent research by Khan, Serafeim, and Yoon (2015) provides further evidence of the link between sustainability and financial outperformance, demonstrating that this relation is most significant for those companies that focus their strategies on the most material issues.

RobecoSAM EDS

For sustainability research, S&P Dow Jones Indices partners with RobecoSAM.

For sustainability research, S&P Dow Jones Indices partners with RobecoSAM, an asset manager known for its Corporate Sustainability Assessment (CSA). The CSA consists of an industry-specific tailored survey that analyzes the overall sustainability performance of companies, and it results in three underlying dimension scores that measure the economic, environmental, and social performance of companies.

The EDS specifically evaluates the corporate governance performance of companies, but it does so in the broader context of additional key measurements of the quality of a company's management that are often overlooked by more traditional fundamental and sustainability research frameworks. The EDS includes a series of criteria that evaluate the quality of a company's management systems as well as its ability to manage long-term risks and opportunities. Through the measurement of the quality of management, the EDS provides an important basis for screening high-quality companies that tend to outperform over the long term, regardless of their sector and business activities.

Specifically, the EDS includes six to eight underlying criteria that comprise individual questions or key performance indicators (KPIs), each of which is scored. The weighted average of the question and criteria scores leads to the overall EDS for each company. Although there are several sector-specific criteria within the EDS, there are nonetheless several key criteria that are more general and applied across all sectors. These are corporate governance, risk & crisis management, business ethics, customer relationship management, innovation management, supply chain management, and tax strategy.

The corporate governance criterion addresses board structure, board diversity, and executive compensation. The questions are designed to ensure that the company has a well-balanced and diverse board, with checks and balances and clear policies to ensure that the company is managed with regard to long-term shareholder interests. Executive compensation issues are also assessed by evaluating the extent to which compensation is based on a diverse range of performance metrics that are transparently reported to shareholders in addition to timeframe targets with

higher scores assigned to companies with performance and vesting periods longer than three years.

Risk & crisis management examines the effectiveness of the company's risk management organization and practices, including the independence of risk management from business lines and the training practices on risk management throughout the organization. Finally, it examines the longer-term orientation of a company's risk management, with higher scores given to those that can disclose long-term risks as well as explain the potential impact of these risks on the business and the mitigating actions that the company has undertaken.

Business ethics addresses the company's code of conduct and compliance practices.

Business ethics addresses the company's code of conduct and compliance practices, as well as its ability to prevent bribery and corruption in the organization. Customer relationship management measures customer satisfaction levels, in addition to whether the company clearly links customer satisfaction with long-term retention of clients and its business performance over time.

Innovation management assesses the quality of the innovation management process, along with a company's ability to measure the effectiveness of its innovation spending and its impact on sales and profitability growth.

Both supply chain management and tax strategy are becoming increasingly important, as companies expand to operate on a global level. The tax strategy criterion examines the degree to which companies are transparent regarding these long-term risks to shareholders. The questions address whether the company has a clear policy on its approach to taxation issues and an awareness of the extra-financial risks associated with the company's tax practices. In addition to these general criteria, the EDS includes a number of sector-specific criteria, each of which addresses a company's ability to manage the business for long-term success.

Effectiveness of EDS in Predicting Financial Performance

We tracked the future five-year returns for the quartiles as sorted by EDS for each year (see Exhibit 8), and we formed quartile portfolios assuming annual rebalancings with scores available as of the rebalance date. Based on the results (see Exhibit 9), the future five-year performance analysis does not appear to confirm major distinctions in performance among the quartiles, and in fact, it should be noted that in six of the 16 years of data, the top quartile actually underperformed the bottom quartile.

However, tracking the returns of a hypothetical, annually rebalanced quartile portfolio conveys a more interesting story—especially when analyzing the longer time frames, such as 10 years and from inception (approximately 16 years). Looking at the period from inception, there was

little distinction between companies in the top three quartiles, but there was a clear distinction between these quartiles and the bottom ones (see Exhibit 9).

The asymmetrical downside risk profile would seem to suggest that companies that rank well below average in managing long-term economic issues are particularly prone to mismanagement and risk the ability to capitalize on business opportunities over time. Companies must attain an acceptable level of governance and management quality to be considered for a long-term investment strategy. This back-tested result is consistent with the conclusion that governance issues represent a minimum baseline that companies must not fall below, or they risk significant underperformance.

Companies must attain an acceptable level of governance and management quality to be considered for a long-term investment strategy.

Exhibit 8: Future Five-Year Returns Sorted by EDS

PERIOD	2000	2001	2002	2003	2004	2005	2006	2007
Quartile 1 (%)	84.21	135.69	252.92	20.69	44.24	38.47	0.08	-6.00
Quartile 2 (%)	108.81	177.36	262.71	13.29	30.57	42.46	-0.25	0.27
Quartile 3 (%)	98.56	160.35	278.23	21.99	29.88	25.67	-3.29	4.58
Quartile 4 (%)	61.12	130.69	224.30	19.58	31.45	39.83	-0.08	-0.47
Quartile 1 Minus Quartile 4 (%)	23.09	5.00	28.61	1.11	12.79	-1.36	0.16	-5.53
Quartile 2 Minus Quartile 4 (%)	47.69	46.67	38.40	-6.29	-0.88	2.63	-0.17	0.74
Quartile 3 Minus Quartile 4 (%)	37.44	29.66	53.92	2.42	-1.57	-14.16	-3.21	5.04
Number of Stocks Per Quartile	96	183	235	180	250	267	288	299

PERIOD	2008	2009	2010	2011	2012	2013	2014	2015
Quartile 1 (%)	126.66	49.26	54.04	60.98	31.11	6.34	3.87	15.51
Quartile 2 (%)	140.19	73.51	46.53	55.85	38.56	13.33	6.08	11.86
Quartile 3 (%)	145.06	67.29	52.88	64.51	38.28	12.29	5.32	9.22
Quartile 4 (%)	156.03	62.22	44.25	49.21	30.56	7.84	7.62	9.06
Quartile 1 Minus Quartile 4 (%)	-29.37	-12.96	9.79	11.77	0.55	-1.50	-3.75	6.45
Quartile 2 Minus Quartile 4 (%)	-15.84	11.29	2.28	6.64	8.00	5.49	-1.55	2.80
Quartile 3 Minus Quartile 4 (%)	-10.97	5.07	8.63	15.30	7.72	4.45	-2.30	0.16
Number of Stocks Per Quartile	324	516	526	549	654	719	703	953

*Quartile 1, Quartile 2, Quartile 3, and Quartile 4 are hypothetical portfolios. Source: S&P Dow Jones Indices LLC and RobecoSAM. Data as of July 30, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Exhibit 9: Economic Dimension Quartiles Companies				
ANNUALIZED RETURN (%)	QUARTILE 1 EDS EQUAL WEIGHTED	QUARTILE 2 EDS EQUAL WEIGHTED	QUARTILE 3 EDS EQUAL WEIGHTED	QUARTILE 4 EDS EQUAL WEIGHTED
1-Year	4.62	3.43	3.05	5.14
3-Year	4.86	5.70	6.47	6.22
5-Year	5.63	5.34	6.67	5.32
10-Year	7.09	8.05	7.81	6.53
Cumulative (Dec. 31, 2000)	10.08	10.32	10.00	8.57
ANNUALIZED VOLATILITY (%)				
3-Year	13.52	14.01	13.21	12.79
5-Year	15.86	16.30	14.92	13.94
10-Year	20.76	20.56	19.84	19.40
Cumulative (Dec. 31, 2000)	19.13	18.90	18.30	17.87
RISK ADJUSTED RETURN (%)				
3-Year	0.36	0.41	0.49	0.49
5-Year	0.35	0.33	0.45	0.38
10-Year	0.34	0.39	0.39	0.34
Cumulative (Dec. 31, 2000)	0.53	0.55	0.55	0.48
MONTHLY RETURN (%)				
Best Monthly Return	20.58	21.77	19.27	19.43
Worst Monthly Return	-23.67	-24.83	-24.88	-24.46
Average Monthly Return	0.96	0.97	0.94	0.82

*Quartile 1, Quartile 2, Quartile 3, and Quartile 4 are hypothetical portfolios.
 Source: S&P Dow Jones Indices LLC and RobecoSAM. Data as of July 30, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

A key theme in the design for an LTVC index was implementing structural considerations that would further promote a longer-term orientation.

STEP 3: STRUCTURAL CONSIDERATIONS FOR THE S&P LTVC GLOBAL INDEX

A key theme in the design for an LTVC index was implementing structural considerations that would further promote a longer-term orientation. In order for an index to abide by the principles of long-termism, we believe that the structural features of such an index should include the following characteristics.

- (1) An assessment period that represents a longer time period (at least three to five years).
- (2) An evaluation window that is also longer term (at least three years).
- (3) A weighting scheme that reinforces long-term value creation.
- (4) A rebalancing frequency that is long-term oriented without resulting in a stale portfolio.
- (5) A structure that does not introduce forced caps or limitations, which can hinder the overarching goal of creating long-term value.

Longer-Term Assessment Period

In consideration of a longer time horizon, the assessment period to determine stock selection should also be long term, and therefore a company must be a constituent of the benchmark index for at least the prior three years.

The [S&P LTVC Global Index](#) selects from stocks that rank in the top 50% of their respective RobecoSAM EDS and their three- or five-year average S&P Dow Jones Indices quality scores. A minimum of three years of quality scores are averaged and required, and a stock with five years of historical data will use a five-year average instead. Using short-term ratios for financial metrics, such as ROE, can be distortive and may discourage long-term investment, and therefore it is more beneficial to implement three- to five-year average data. The goal of a longer assessment period is to steer the focus from short-term share price movement to long-term intrinsic value creation.

For the EDS, we elected to use the most recent score as opposed to incorporating a multiple-year rolling average. Unlike operational excellence criteria and the quality metrics whereby a longer time assessment period is necessary to highlight a company's ability to continue to generate long-term value, EDS and governance scores should be up to date so they reflect the current provisions that will aid in business viability.

EDS and governance scores should be up to date so they reflect the current provisions that will aid in business viability.

Longer-Term Evaluation Period

In conjunction with the longer time period for assessment, a stock should also be given a longer time period for evaluation, and the vintage rebalancing structure achieves this goal. The vintage structure is a unique approach whereby the portfolio consists of three vintages that are constructed over a three-year period. The first-year vintage contains the top 150 stocks as ranked by the combined EDS and quality scores, and these will remain in the index for at least three years. It is possible for a stock to stay in the portfolio for a longer period of time, as long as it continues to make the list of the top 150 stocks. The S&P LTVC Global Index consists of a rotation of three annually formed vintages, wherein each vintage proportionately represents one-third of the overall portfolio.

We note that a decision to use a three-year vintage as opposed to a four- or five-year vintage structure was done on the basis of maintaining simplicity while still achieving lower turnover. The vintage approach is a uniquely novel technique, and in an effort to facilitate greater acceptance and understanding of its implementation, the decision was made to apply a simpler three-year approach instead of a longer time frame. However, this does not preclude a vintage structure longer than three years for other future LTVC regional indices.

Weighting Scheme

The weighting schemes that were analyzed for implementation included using market-cap weighting, equal weighting, or score-based weighting. Ultimately, the weighting scheme that was adopted used the combined EDS and quality scores and weighted stocks accordingly. Due to the deviation from market capitalization weighting scheme, some may raise a concern regarding capacity and trading issues. In light of this, an in-depth capacity analysis was done which resulted in raising the average daily value traded threshold to USD 5 million for the past three months from the previous USD 3 million hurdle.

Ultimately, the weighting scheme that was adopted used the combined EDS and quality scores and weighted stocks accordingly.

Rebalancing Frequency and Sector and Regional Caps

An annual rebalancing frequency was chosen for the [S&P LTVC Global Index](#) in which the index—or more aptly, one-third of the index—is reconstituted after the close of the last business day of April, when the new vintage is incorporated. In addition to the annual reconstitution, the S&P LTVC Global Index undergoes a semiannual review in October, during which the committee reviews the membership of components with substantially negative corporate-governance-related actions in the prior six months. Not surprisingly, due to the annual rebalancing and the vintage structure implementation, the S&P LTVC Global Index has low turnover, which should be a key characteristic of an LTVC approach.

According to FCLT, one of the tenets of long-termism is to not be “driven by rankings or benchmarks (it is not a “beauty contest”), but [instead] focus on long-term expectations and outcomes.” If one can truly abide by this sentiment, then this has a liberating effect, as asset managers are freed from the confines and pressures of tracking error. In following this principle, the S&P LTVC Global Index was designed without country, regional, or sector limitation caps.

STEP 4: CONSTRUCTION OF THE S&P LTVC GLOBAL INDEX

The underlying universe of the S&P LTVC Global Index is the [S&P Global LargeMidCap](#). For each of the companies within the eligible universe, fundamental quality ratios (ROE, BSA, and financial leverage) and a qualitative EDS are computed. The quality ratios are converted into (relative) z-scores and are averaged to provide an overall quality z-score. In addition, the EDS, which ranges from 0 to 100, is also converted into a z-score. For both, the z-scores are capped at +4/-4.

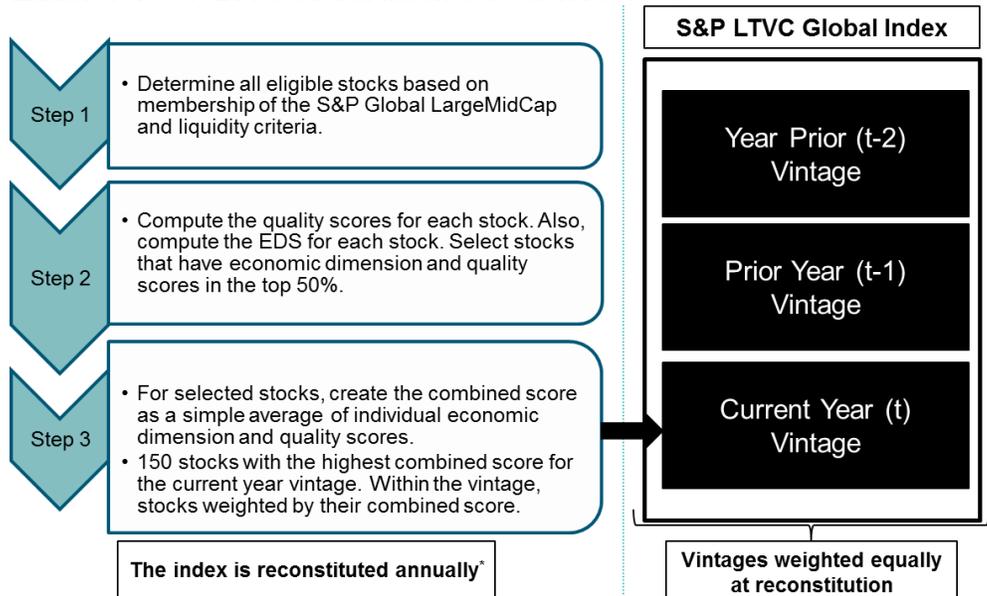
In order to be considered for selection, a company must have been a constituent of the benchmark index for at least the previous three years, with at least USD 5 million three-month average daily value traded in each of those years. The S&P LTVC Global Index selects from stocks ranking in the top 50% of their respective RobecoSAM EDS and their three- or five-

year average S&P Dow Jones Indices' quality scores. A minimum of three years of quality scores are required, but a stock with five years of historical data will use that instead.

Stocks meeting the criteria of ranking in the top 50% of the EDS and quality scores (using the minimum three-year historical average) are the "crossover" stocks. The top 50% were selected instead of the top 25% as a means to widen the initial constituent list. These are then ranked by the combined score of the EDS and quality scores. Annually, the top 150 stocks are selected for the index as a vintage.

Exhibit 10: S&P LTVC Global Index Selection Process

A minimum of three years of quality scores are required, but a stock with five years of historical data will use that instead.



Source: S&P Dow Jones Indices LLC. Data as of September 2016. Chart is provided for illustrative purposes. *In April, based on market data as of the last business day of March. The only action at the October review is the evaluation of membership in the index of constituents with substantially negative corporate-governance-related actions in the prior six months.

Performance Analysis of the S&P LTVC Global Index

In Exhibits 11, 13, and 14, we show the risk/return profiles of the [S&P LTVC Global Index](#). In order to evaluate the benefits of having a vintage rebalancing structure, we also formed a hypothetical portfolio that does not incorporate said feature. The non-vintage portfolio included the top 150 stocks, weighted by their scores and rebalanced annually. This is a major contrast to the vintage portfolio, which has three rotating vintages and results in an overall portfolio of 250 or more stocks.

When measured since inception, the non-vintage structure performed slightly better than the vintage-incorporated form, returning 10.56% per year compared with 9.88% for the portfolio using vintages.

Not surprisingly, the more concentrated, non-vintage portfolio outperformed slightly, by 70 bps per year, but this outperformance was far outweighed by the high turnover figures (see Exhibit 12).

Exhibit 11: Performance of the S&P LTVC Global Index, Vintage Versus Non-Vintage

RISK/RETURN PROFILES			
ANNUAL RETURN (%)	S&P LTVC GLOBAL INDEX VINTAGE STRUCTURE	S&P LTVC GLOBAL INDEX NON-VINTAGE STRUCTURE	S&P GLOBAL LARGEMIDCAP
1-Year	6.11	4.88	0.23
3-Year	8.03	8.66	6.36
5-Year	8.13	8.84	4.88
10-Year	8.36	9.04	2.76
Since Inception	9.88	10.56	4.72
ANNUAL VOLATILITY (%)			
3-Year	10.77	11.32	11.74
5-Year	13.68	12.91	13.65
10-Year	17.33	17.29	19.59
Since Inception	16.02	16.03	17.87
INFORMATION RATIO (%)			
3-Year	0.58	0.82	N/A
5-Year	0.95	1.12	N/A
10-Year	0.80	0.92	N/A
MAXIMUM DRAWDOWN (%)			
Since Inception	-0.50	-0.51	-0.59

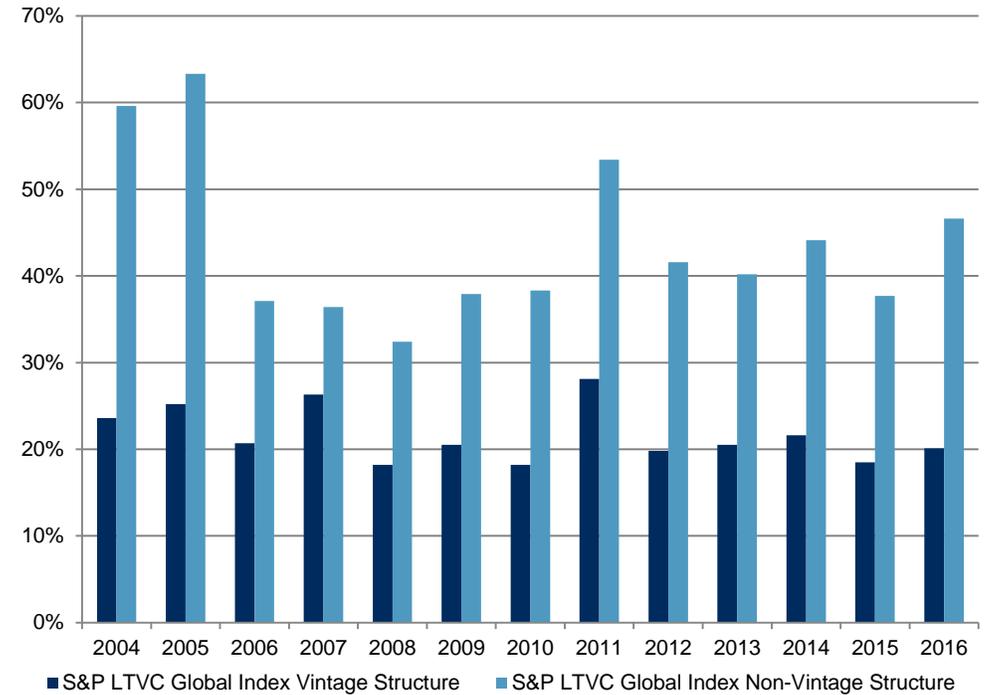
The non-vintage structure performed slightly better than the vintage-incorporated form.

Source: S&P Dow Jones Indices LLC. Data from Jan. 1, 2004, through July 31, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 11: Performance of the S&P LTVC Global Index, Vintage Versus Non-Vintage (cont.)			
STATISTICAL SUMMARY			
RATIOS	S&P LTVC GLOBAL INDEX VINTAGE STRUCTURE	S&P LTVC GLOBAL INDEX NON-VINTAGE STRUCTURE	S&P GLOBAL LARGEMIDCAP
Sharpe	0.54	0.58	0.19
Sortino	0.67	0.73	0.25
Information	0.82	0.94	N/A
Treynor	0.10	0.11	0.03
Percent of Months With Positive Returns	62.91	62.25	56.95
EXTREME RISK STATISTICS			
Best Monthly Return (%)	12.77	13.72	18.09
Worst Monthly Return (%)	-20.77	-20.11	-19.81
Average Monthly Return (%)	0.90	0.95	0.52
Minimum Rolling 12-Month Return (%)	-45.39	-46.14	-53.36
Maximum Rolling 12-Month Return (%)	63.43	68.59	77.47
PERFORMANCE RELATIVE TO BENCHMARK INDEX			
Monthly Alpha	0.00	0.01	0.00
T-Stat of Alpha	3.47	3.90	N/A
Beta	0.84	0.84	1.00
Correlation	0.94	0.94	1.00
Monthly Tracking Error (%)	1.82	1.79	N/A
OUTPERFORMANCE HISTORY (USING MONTHLY RETURNS) (%)			
All Months	61.59	61.59	N/A
Up Months	55.81	54.65	N/A
Down Months	69.23	70.77	N/A
AVERAGE EXCESS MONTHLY RETURNS HISTORY (%)			
All Months	0.38	0.43	N/A
Up Months	0.04	0.11	N/A
Down Months	0.83	0.85	N/A

Source: S&P Dow Jones Indices LLC. Data from Jan. 1, 2004, through July 31, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 12: Turnover for the S&P LTVC Global Index, Vintage and Non-Vintage Structures



Source: S&P Dow Jones Indices LLC. Data from Jan. 1, 2004, through July 31, 2016. Chart is provided for illustrative purposes.

The equal-weighting mechanism produced a portfolio that far outperformed the market-cap-weighted one and yet slightly underperformed the eventually selected score-weighted portfolio.

In consideration of an optimal weighting scheme for the [S&P LTVC Global Index](#), we analyzed three portfolios with different weighting schemes—score weighting, float-market-cap weighting, and equal weighting. The portfolio returns since inception were 9.88%, 7.28%, and 9.72%, respectively. The equal-weighting mechanism produced a portfolio that far outperformed the market-cap-weighted one and yet slightly underperformed the eventually selected score-weighted portfolio.

Exhibit 13: Performance of the S&P LTVC Global Index Weighting Scenarios

RISK/RETURN PROFILE			
ANNUAL RETURN (%)	S&P LTVC GLOBAL INDEX SCORE-WEIGHTED VINTAGE STRUCTURE	S&P LTVC GLOBAL INDEX MARKET-CAP-WEIGHTED VINTAGE STRUCTURE	S&P LTVC GLOBAL INDEX EQUAL-WEIGHTED VINTAGE STRUCTURE
1-Year	6.11	5.64	6.25
3-Year	8.03	7.80	8.75
5-Year	8.13	8.42	8.54
10-Year	8.36	6.91	8.52
Since Inception	9.88	7.28	9.72
ANNUAL VOLATILITY (%)			
3-Years	10.77	10.74	10.82
5-Year	13.68	12.28	13.36
10-Year	17.33	15.28	17.32
Since Inception	16.02	14.13	15.98
INFORMATION RATIO (%)			
3-Year	0.58	0.47	0.80
5-Year	0.95	0.90	1.10
10-Year	0.80	0.54	0.86
MAXIMUM DRAWDOWN (%)			
Since Inception	-0.50	-0.47	-0.50
STATISTICAL SUMMARY			
RATIOS	S&P LTVC GLOBAL INDEX SCORE-WEIGHTED VINTAGE STRUCTURE	S&P LTVC GLOBAL INDEX MARKET-CAP-WEIGHTED VINTAGE STRUCTURE	S&P LTVC GLOBAL INDEX EQUAL-WEIGHTED VINTAGE STRUCTURE
Sharpe	0.54	0.43	0.53
Sortino	0.67	0.54	0.66
Information	0.82	0.37	0.82
Treynor	0.10	0.08	0.10
% of Months With Positive Returns	62.91	60.26	63.58
EXTREME RISK STATISTICS			
Best Monthly Return (%)	12.77	10.51	13.04
Worst Monthly Return (%)	-20.77	-16.78	-20.56
Average Monthly Return (%)	0.90	0.67	0.88
Minimum Rolling 12-Month Return (%)	-45.39	-41.85	-45.45
Maximum Rolling 12-Month Return (%)	63.43	48.36	64.81

Source: S&P Dow Jones Indices LLC. Data from Jan. 1, 2004, through July 31, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 13: Performance of the S&P LTVC Global Index Weighting Scenarios (cont.)

STATISTIC	S&P LTVC GLOBAL INDEX SCORE-WEIGHTED VINTAGE STRUCTURE	S&P LTVC GLOBAL INDEX MARKET-CAP-WEIGHTED VINTAGE STRUCTURE	S&P LTVC GLOBAL INDEX EQUAL-WEIGHTED VINTAGE STRUCTURE
PERFORMANCE RELATIVE TO BENCHMARK INDEX			
Monthly Alpha	0.00	0.00	0.00
T-Stat of Alpha	3.47	2.37	3.51
Beta	0.84	0.74	0.84
Correlation	0.94	0.93	0.94
Monthly Tracking Error (%)	1.82	2.02	1.75
OUTPERFORMANCE HISTORY (USING MONTHLY RETURNS) (%)			
All Months	61.59	54.30	62.25
Up Months	55.81	40.70	56.98
Down Months	69.23	72.31	69.23
AVERAGE EXCESS MONTHLY RETURNS HISTORY (%)			
All Months	0.38	0.15	0.36
Up Months	0.04	-0.50	0.01
Down Months	0.83	1.02	0.83

Source: S&P Dow Jones Indices LLC. Data from Jan. 1, 2004, through July 31, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

The S&P Quality Global LargeMidCap had the lowest volatility since inception.

Lastly, we included the [S&P Quality Global LargeMidCap](#) as a basis for comparison and found that the [S&P LTVC Global Index](#) outperformed the S&P Quality Global LargeMidCap by 38 bps per year and the broader [S&P Global LargeMidCap](#) by 5.16% per year over the 16-year period ending July 31, 2016. Interestingly enough, the S&P Quality Global LargeMidCap had the lowest volatility since inception (14.65%), followed by the S&P LTVC Global Index (16.02%) and the S&P Global LargeMidCap (17.87%).

Exhibit 14: Performance of the S&P LTVC Global Index, S&P Quality Global LargeMidCap, and S&P Global LargeMidCap

RISK/RETURN PROFILE			
ANNUAL RETURN (%)	S&P LTVC GLOBAL INDEX VINTAGE STRUCTURE	S&P QUALITY GLOBAL LARGEMIDCAP	S&P GLOBAL LARGEMIDCAP
1-Year	6.11	1.70	0.23
3-Year	8.03	7.39	6.36
5-Year	8.13	8.41	4.88
10-Year	8.36	8.34	2.76
Since Inception	9.88	9.50	4.72
ANNUAL VOLATILITY (%)			
3-Year	10.77	11.38	11.74
5-Year	13.68	12.49	13.65
10-Year	17.33	15.84	19.59
Since Inception	16.02	14.65	17.87

Source: S&P Dow Jones Indices LLC. Data from Jan. 1, 2004, through July 31, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 14: Performance of the S&P Global LTVC Index, S&P Quality Global LargeMidCap, and S&P Global LargeMidCap (cont.)			
INFORMATION RATIO (%)	S&P LTVC GLOBAL INDEX VINTAGE STRUCTURE	S&P QUALITY GLOBAL LARGEMIDCAP	S&P GLOBAL LARGEMIDCAP
3-Year	0.58	0.48	n/a
5-Year	0.95	1.14	n/a
10-Year	0.80	0.77	n/a
MAXIMUM DRAWDOWN (%)			
Since Inception	-0.50	-0.48	-0.59
RISK/RETURN PROFILE			
RATIOS	S&P LTVC GLOBAL INDEX VINTAGE STRUCTURE	S&P QUALITY GLOBAL LARGEMIDCAP	S&P GLOBAL LARGEMIDCAP
Sharpe	0.54	0.56	0.19
Sortino	0.67	0.70	0.25
Information	0.82	0.73	N/A
Treynor	0.10	0.11	0.03
% of Months With Positive Returns	62.91	61.59	56.95
EXTREME RISK STATISTICS (%)			
Best Monthly Return	12.77	11.04	18.09
Worst Monthly Return	-20.77	-18.16	-19.81
Average Monthly Return	0.90	0.85	0.52
Minimum Rolling 12-Month Return	-45.39	-41.69	-53.36
Maximum Rolling 12-Month Return	63.43	58.55	77.47
PERFORMANCE RELATIVE TO BENCHMARK INDEX			
Monthly Alpha	0.00	0.00	0.00
T-Stat of Alpha	3.47	3.72	N/A
Beta	0.84	0.77	1.00
Correlation	0.94	0.94	1.00
Monthly Tracking Error (%)	1.82	1.90	N/A
OUTPERFORMANCE HISTORY (USING MONTHLY RETURNS) (%)			
All Months	61.59	60.26	N/A
Up Months	55.81	51.16	N/A
Down Months	69.23	72.31	N/A
AVERAGE EXCESS MONTHLY RETURNS HISTORY (%)			
All Months	0.38	0.33	N/A
Up Months	0.04	-0.24	N/A
Down Months	0.83	1.09	N/A

Source: S&P Dow Jones Indices LLC. Data from Jan. 1, 2004, through July 31, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Attribution Analysis

As shown previously, the [S&P LTVC Global Index](#) outperformed its benchmark, the [S&P Global LargeMidCap](#), and the [S&P Quality Global LargeMidCap](#), in addition to the hypothetical portfolios that were explored during the development process. The aim of this section is to delve deeper into the sources of the return from a performance attribution standpoint.

According to FCLT, one of the tenets of long-termism is for asset managers to not be beholden to benchmarks but instead to be more concerned with long-term expectations and outcomes. In following this principle, the S&P LTVC Global Index was designed without country, regional, or sector caps. The resulting attribution over the cumulative time frame shows that, on a regional basis, the overweight lies in Europe or EMEA (9.39% higher than the benchmark) and the corresponding underweight is concentrated in North America (-7.78%).

Regionally, more than two-thirds of the outperformance stems from the security selection effect, which is a positive sign, reaffirming the fundamental metrics that were originally selected in building the index. Analyzing the sector attribution, the clear underweight is financials (-16.64% versus the benchmark) and the overweight is in materials (8.70% versus the benchmark). Financials is also underweight in the overall S&P Quality Index Series, as the leverage ratio requirement does not aid in their ability to rank highly in overall quality scores.

Regionally, more than two-thirds of the outperformance stems from the selection effect.

Exhibit 15: Regional and Sector Attribution, S&P LTVC Global Index Versus S&P Global LargeMidCap

REGION ATTRIBUTION ANALYSIS						
REGION	S&P LTVC GLOBAL INDEX WEIGHT	S&P GLOBAL LARGEMIDCAP WEIGHT	AVERAGE WEIGHT DIFFERENCE	ALLOCATION EFFECT	SELECTION + INTERACTION	TOTAL EFFECT
Developed Asia Pacific	15.25	15.50	-0.25	7.66	12.83	20.49
Developed EMEA	37.61	28.22	9.39	2.53	52.01	54.54
Emerging Asia Pacific	2.26	3.09	-0.82	4.26	6.22	10.49
Emerging EMEA	3.04	2.08	0.96	6.34	3.71	10.05
Latin America	1.61	3.11	-1.50	10.40	7.25	17.66
North America	40.23	48.01	-7.78	6.29	26.24	32.53
Total	100.00	100.00	-	37.49	108.25	145.75

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2003, to July 31, 2016. Table is provided for illustrative purposes.

Exhibit 15: Regional and Sector Attribution, S&P LTVC Global Index Versus S&P Global LargeMidCap (cont.)

SECTOR ATTRIBUTION ANALYSIS						
SECTOR	S&P LTVC GLOBAL INDEX WEIGHT	S&P GLOBAL LARGEMIDCAP WEIGHT	AVERAGE WEIGHT DIFFERENCE	ALLOCATION EFFECT	SELECTION + INTERACTION EFFECT	TOTAL EFFECT
Consumer Discretionary	10.87	9.61	1.26	3.50	8.88	12.38
Consumer Staples	12.27	9.14	3.13	5.87	4.08	9.95
Energy	9.25	10.76	-1.51	3.48	11.86	15.34
Financials	9.59	26.23	-16.64	22.26	25.53	47.80
Health Care	11.88	9.68	2.20	3.77	8.30	12.06
Industrials	13.99	9.46	4.53	5.25	7.91	13.16
Information Technology	7.66	11.28	-3.62	1.36	2.30	3.66
Materials	14.71	6.01	8.70	15.07	6.19	21.27
Real Estate	--	0.04	-0.04	2.33	--	2.33
Telecommunication Services	5.32	4.02	1.30	2.11	0.38	2.50
Utilities	4.45	3.77	0.68	2.34	2.90	5.25
Total	100.00	100.00	-	67.35	78.34	145.68

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2003, to July 31, 2016. Table is provided for illustrative purposes.

The S&P LTVC Global Index also serves as an engagement tool to incentivize better disclosure by companies about their sources of LTVC.

CONCLUSION

The major findings in this research paper are as follows.

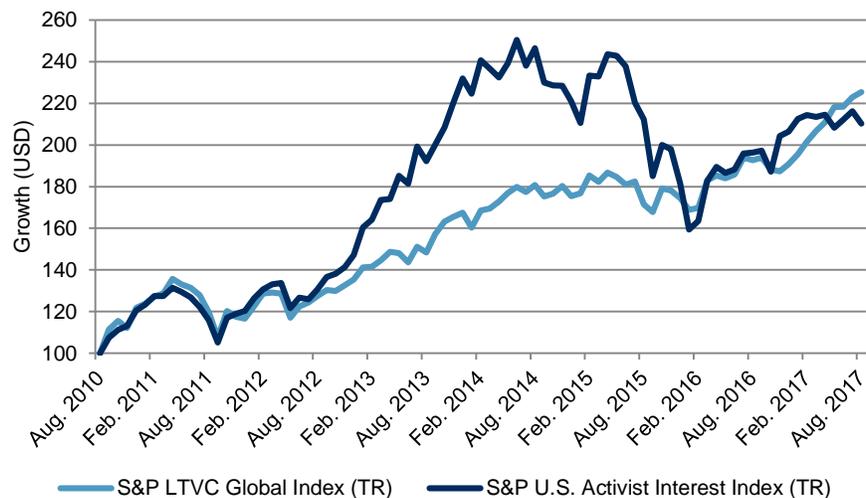
- Constructing an LTVC benchmark is important, as the process and criteria used in selecting constituents can influence corporate behavior. An index that highlights a company’s suitability for investment can direct corporate management to focus on metrics that are of interest to long-term market participants.
- The metrics that encapsulate LTVC encompass long-term operational excellence and long-term business viability, which together result in a company’s sustainable long-term earnings growth. We chose the S&P Dow Jones Indices quality factors (ROE, BSA, and financial leverage) and the RobecoSAM economic dimension metrics as quantitative and qualitative proxies for operational excellence and long-term business viability.
- The structural considerations that would further promote a longer-term orientation were implemented and include a longer time period (at least three to five years) for assessment; a unique vintage structure approach; a weighting scheme that weights stocks by scores rather than by market capitalization; a rebalancing frequency that is long-term oriented without resulting in a stale portfolio; and lastly, a structure that does not implement caps on countries, regions, or sectors.

The research questions underlying LTVC that have been incorporated into RobecoSAM's CSA serve as a powerful engagement mechanism in guiding companies along the path of further disclosing information that underpins LTVC for them.

- The [S&P LTVC Global Index](#) has outperformed its benchmark (the [S&P Global LargeMidCap](#)) as well as the [S&P Quality Global LargeMidCap](#), in addition to a majority of the LTVC variants that were explored during the development process, such as an LTVC non-vintage structure, LTVC with market-cap weighting, and LTVC with equal weighting.
- The research questions underlying LTVC that have been incorporated into RobecoSAM's CSA serve as a powerful engagement mechanism in guiding companies along the path of further disclosing information that underpins LTVC for them.

Lastly, it is interesting to observe how the S&P LTVC Global Index with its long-termism orientation performs against an index that embodies short-term thinking. We selected the [S&P U.S. Activist Interest Index](#) as the basis for comparison, as it is designed to measure the performance of companies within the [S&P U.S. BMI](#) that have been targeted by an activist investor within the last 24 months. 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. Yvan Allaire's research has shown 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. We picked a seven-year time horizon as the reference point to compare performance, and it was interesting to note that, perhaps, slow and steady does win the race (see Exhibit 16).

Exhibit 16: Growth of USD 100



Source: S&P Dow Jones Indices LLC. Data from August 2010 to August 2017. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

REFERENCES

- Asness, Clifford, Andrea Frazzini, and Lasse H. Pedersen. *Quality Minus Junk*. 2013.
- Barton, Dominic and Mark Wiseman. [Focusing Capital on the Long Term](#). Harvard Business Review. January-February 2014.
- Bebchuk, Lucian, Alma Cohen, and Allen Ferrell. *What Matters in Corporate Governance?* 2009.
- Bebchuk, Lucian, Alma Cohen, and Charles C. Y. Wang. *Learning and the Disappearing Association Between Governance and Returns*. 2011.
- Dow Jones Sustainability Index Assessment. September 2015. <http://www.sustainability-indices.com/images/review-presentation-2015.pdf>.
- Eccles, Robert G., Ioannis Ioannou, and George Serafeim. *The Impact of Corporate Sustainability on Organizational Processes and Performance*. 2011.
- Focusing Capital on the Long Term. [Long-Term Portfolio Guide: Reorienting Portfolio Strategies and Investment Management to Focus Capital on the Long Term](#). March 2015.
- Gompers, Paul A., Joy L. Ishii, and Andrew Metrick. *Corporate Governance and Equity Prices*. 2003.
- Joyce, Chuck, and Kimball Mayer. *Profits for the Long Run: Affirming the Case for Quality*. 2012.
- Khan, Mozaffar, George Serafeim, and Aaron Yoon. *Corporate Sustainability: First Evidence on Materiality*. 2015.
- RobecoSAM. *Alpha from Sustainability*. 2014. [http://www.robecosam.com/images/Alpha from Sustainability 06 2014.pdf](http://www.robecosam.com/images/Alpha_from_Sustainability_06_2014.pdf).
- Sloan, Richard G. *Do Stock Prices Fully Reflect Information in Accruals and Cash Flows about Future Earnings?* The Accounting Review. July 1996.

S&P DJI RESEARCH CONTRIBUTORS		
Charles Mounts	Global Head	charles.mounts@spglobal.com
Jake Vukelic	Business Manager	jake.vukelic@spglobal.com
GLOBAL RESEARCH & DESIGN		
AMERICAS		
Aye M. Soe, CFA	Americas Head	aye.soe@spglobal.com
Dennis Badlyans	Associate Director	dennis.badlyans@spglobal.com
Phillip Brzenk, CFA	Director	phillip.brzenk@spglobal.com
Smita Chirputkar	Director	smita.chirputkar@spglobal.com
Rachel Du	Senior Analyst	rachel.du@spglobal.com
Bill Hao	Director	wenli.hao@spglobal.com
Qing Li	Associate Director	qing.li@spglobal.com
Berlinda Liu, CFA	Director	berlinda.liu@spglobal.com
Ryan Poirier, FRM	Senior Analyst	ryan.poirier@spglobal.com
Maria Sanchez	Associate Director	maria.sanchez@spglobal.com
Kelly Tang, CFA	Director	kelly.tang@spglobal.com
Peter Tsui	Director	peter.tsui@spglobal.com
Hong Xie, CFA	Director	hong.xie@spglobal.com
APAC		
Priscilla Luk	APAC Head	priscilla.luk@spglobal.com
Utkarsh Agrawal, CFA	Associate Director	utkarsh.agrawal@spglobal.com
Liyu Zeng, CFA	Director	liyu.zeng@spglobal.com
Akash Jain	Associate Director	akash.jain@spglobal.com
EMEA		
Sunjiv Mainie, CFA, CQF	EMEA Head	sunjiv.mainie@spglobal.com
Leonardo Cabrer	Senior Analyst	leonardo.cabrer@spglobal.com
Andrew Innes	Associate Director	andrew.innes@spglobal.com
INDEX INVESTMENT STRATEGY		
Craig J. Lazzara, CFA	Global Head	craig.lazzara@spglobal.com
Fei Mei Chan	Director	feimei.chan@spglobal.com
Tim Edwards, PhD	Senior Director	tim.edwards@spglobal.com
Anu R. Ganti, CFA	Director	anu.ganti@spglobal.com
Hamish Preston	Senior Associate	hamish.preston@spglobal.com
Howard Silverblatt	Senior Index Analyst	howard.silverblatt@spglobal.com

PERFORMANCE DISCLOSURE

The S&P Global LargeMidCap was launched on December 31, 1997. The S&P Quality Global LargeMidCap was launched on July 8, 2014. The S&P Long-Term Value Creation (LTVC) Global Index was launched on January 11, 2016. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. Complete index methodology details are available at www.spdji.com.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its datafeed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.spdji.com for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

The Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices LLC maintains the Index and calculates the Index levels and performance shown or discussed, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US \$100,000 investment for a 12-month period (or US \$10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US \$1,650), the net return would be 8.35% (or US \$8,350) for the year. Over a three year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US \$5,375, and a cumulative net return of 27.2% (or US \$27,200).

GENERAL DISCLAIMER

Copyright © 2017 by S&P Dow Jones Indices LLC, a part of S&P Global. All rights reserved. Standard & Poor's®, S&P 500® and S&P® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"), a subsidiary of S&P Global. Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"). Trademarks have been licensed to S&P Dow Jones Indices LLC. Redistribution, reproduction and/or photocopying in whole or in part are prohibited without written permission. This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, Dow Jones, S&P or their respective affiliates (collectively "S&P Dow Jones Indices") do not have the necessary licenses. All information provided by S&P Dow Jones Indices is impersonal and not tailored to the needs of any person, entity or group of persons. S&P Dow Jones Indices receives compensation in connection with licensing its indices to third parties. Past performance of an index is not a guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index is available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P Dow Jones Indices makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P Dow Jones Indices LLC is not an investment advisor, and S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. Prospective investors are advised to make an investment in any such fund or other vehicle only after carefully considering the risks associated with investing in such funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or other vehicle. Inclusion of a security within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, nor is it considered to be investment advice.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse-engineered, reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers and licensors (collectively "S&P Dow Jones Indices Parties") do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

S&P Dow Jones Indices keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P Dow Jones Indices may have information that is not available to other business units. S&P Dow Jones Indices has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.