S&P Dow Jones Indices

A Division of S&P Global

Research

Benchmarking Corporate Effectiveness:
How the S&P Drucker Institute Corporate Effectiveness Index Captures a More Complete Picture

Contributors

Zach First, EdD
Executive Director
Drucker Institute
zach.first@cgu.edu

Rick Wartzman
Director
KH Moon Center for a Functioning Society
Drucker Institute
rick.wartzman@cgu.edu

Kelly Tang, CFA
index_services@spglobal.com

"I do not believe that one learns much about, let us say, a human hair just by cutting it lengthwise…Going around an object tells you more than any schematic drawing can, and that is all the single guide is."

- Peter Drucker[1]

EXECUTIVE SUMMARY

- Since the 1970s, U.S. corporate executives have emphasized shareholder value over stakeholder capitalism. This has lately come to be seen as overdone and unwise for a company's long-term benefit. The intangible aspects of corporate performance emphasized by stakeholder capitalism are important factors in value creation.
- The Drucker Institute created an intangibles-focused model based on the principles of management theory's definitive thinker, Peter Drucker, to assess corporate effectiveness in five dimensions: employee engagement and development, customer satisfaction, innovation, social responsibility, and financial strength.
- S&P Dow Jones Indices has combined the Drucker Institute's four non-financial dimensions with S&P DJI's definition of financial quality, the quality factor, to provide a holistic approach.
- The S&P Drucker Institute Corporate Effectiveness Index calculates a combined average score for each stock in the S&P 500®, then further selects the stocks with the best blend of combined average score and consistency across dimension scores.
- The index exhibits an improved risk/return profile compared with the S&P 500 and offers a uniquely differentiated approach to capture companies that reinvest in stakeholders.

[1] Drucker, Peter F., Notes on a talk summing up the ADELA Management Meeting, January 1969.

INTRODUCTION

This paper details the investment rationale and the construction of the S&P/Drucker Institute Corporate Effectiveness Index. This index is designed to measure the performance of companies in the S&P 500 using the Drucker Institute's holistic model for valuing corporate intangibles based on managerial effectiveness.

Between the early 1970s and today, shareholder capitalism overtook stakeholder capitalism…

The Drucker Institute is not alone in its work in this area. Among the most prominent current players is the Embankment Project for Inclusive Capitalism (EPIC), led by Ernst & Young and 19 of the world's largest asset managers and owners, including Vanguard, State Street, and CalPERS. In 2018, EPIC wrote, "Nearly two decades into the 21st century, businesses worldwide are still reporting to financial markets based on accounting principles and concepts that were first codified in accounting standards in the 1970s to record financial transactions...Today, it is not uncommon that as little as 20% of a company's value is captured on its balance sheet—a staggering decline from about 83% in 1975."[2]

The EPIC report is a reaction to the period between the early 1970s and today, when shareholder capitalism overtook stakeholder capitalism as the most profitable business principle for corporations and their investors. From the 1940s through the 1970s, America's leading executives spoke frequently about their responsibility to address the needs of all of their constituents.[3] However, by the early 1980s, buoyed by the theories of the University of Chicago's Milton Friedman,[4] the University of Rochester's Michael Jensen,[5] and other academics, "maximizing shareholder value" became the new standard.

…although this mindset can prompt executives to trade long-term growth for short-term returns.

As shareholder primacy took hold across the business landscape, evaluation of corporate performance was boiled down, in many respects, to a single number: a company's daily share price. Although some still applaud "maximizing shareholder value" as consistent with a company flourishing over the long run,[6] this mindset often prompts executives to behave in short-sighted ways that reward them for trading long-term growth for short-term returns.[7]

[2] "Embankment Project for Inclusive Capitalism," November 2018, Coalition for Inclusive Capitalism and EY.

[3] Wartzman, Rick, The End of Loyalty: The Rise and Fall of Good Jobs in America, May 2018.

[4] Friedman, Milton, "The Social Responsibility of Business is to Increase its Profits," *The New York Times Magazine*, Sept. 30, 1970.

[5] Jensen, Michael and Meckling, William, "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure," *Journal of Financial Economics*, 1976.

[6] See, for example, Mauboussin, Michael J. and Rappaport, Alfred, "Reclaiming the Idea of Shareholder Value," *Harvard Business Review*, July 1, 2016.

[7] Martin, Roger L., Fixing the Game, May 2011; Graham, John R. et al., "The Economic Implications of Corporate Financial Reporting," June 2004, National Bureau of Economic Research.

Economist William Lazonick found that in the 1970s, big companies typically paid out about half of their profits to stockholders. The other half was reinvested in research and design, worker training, employee compensation, and other areas meant to improve the fortunes of the company over time. Over the next four decades, this share dropped steadily, bottoming out in the past decade, when more than 94% of profits among companies in the S&P 500 went to benefit shareholders directly through stock buybacks and dividends.[8]

Peter Drucker warned that "corporate managements are being pushed into subordinating everything to immediate earnings."

Peter Drucker, an early critic of putting shareholders first, warned in 1986 that "corporate managements are being pushed into subordinating everything (even such long-range considerations as a company's market standing, its technology, indeed its basic wealth-producing capacity) to immediate earnings and next week's stock price."[9]

Yet even those who agreed with Drucker's statement have long been challenged by the difficulties of accurately measuring the intangibles that stakeholder capitalists believe drive long-term value. Fortunately, both new and existing data providers have begun to develop a wide range of metrics that look past purely financial matters to focus on other areas: human capital, customer relationships, innovation, and environmental, social, and governance (ESG) indicators.

However, it can be difficult to accurately measure the intangibles that stakeholder capitalists believe drive long-term value.

Not surprisingly, the producers of these measures tend to imply that all anyone needs to understand how well a company is positioned for the future is the particular indicator they offer. In this way, the situation is not unlike the one that Peter Drucker found more than 60 years ago, when he first tried to figure out how companies were being run. Much to his frustration, he could find books on individual slices of operating a business—finance, for instance, or human resources—but there was nothing that connected all of the pieces. What was out there "reminded me of a book on human anatomy that would discuss one joint in the body—the elbow, for instance—without even mentioning the arm, let alone the skeleton and musculature," Drucker later recalled.[10]

Similarly, most measures today assess a single aspect (or at most, a few aspects) of how a company is faring, with relatively little regard to how everything fits together. By definition, ESG metrics take into account a variety of factors, from a company's carbon footprint to its safety record to the diversity of its board. However, even then, ESG is a rather narrow gauge and does not assess a company's entire position.

[8] Wartzman, Rick and Lazonick William, "Don't Let Pay Increases Coming out of Tax Reform Fool You," *Washington Post*, Feb. 6, 2018. See also Lazonick, William, "Profits Without Prosperity," *Harvard Business Review*, September 2014.

[9] Drucker, Peter F., "A Crisis of Capitalism," *Wall Street Journal*, Sept. 30, 1986.

[10] Drucker, Peter F., *The Practice of Management*, preface to the 1985 edition.

THE DRUCKER INSTITUTE MODEL

The Drucker Institute aimed to combine the best of the data on intangibles…

In 2013, the Drucker Institute set out to address what it deemed to be an overemphasis on shareholder value. It sought to create a model that would use Peter Drucker's principles as the basis for a stakeholder-focused, holistic assessment of corporate performance. The institute aimed to combine the best of the newly available data on intangibles to calculate an overall score that would take into account the entire corporate anatomy.

…and calculate an overall score that would take into account the entire corporate anatomy.

The Drucker Institute's final model analyzes not one dimension of corporate performance, but five: customer satisfaction, employee engagement and development, innovation, social responsibility, and financial strength. Taken together, these five areas represent a company's overall "effectiveness," which the institute defines as Peter Drucker himself did: "doing the right things well." Each of the five areas rests on a set of principles taken directly from Drucker's writings, 15 in all, spread across the five dimensions (see Appendix A.).

The model never relies on a single piece of data to reflect any one Drucker principle. Each of the five dimensions is built on multiple indicators from a variety of sources. Before settling on the model's final indicators, 169 individual measures were tested and judged against the following criteria (see Exhibit 1):

- Rigorous development based on sound statistical methods;
- Capturing the essence of a specific Drucker principle; and
- A sufficiently high correlation with the other indicators of the same dimension—providing assurance that each one was actually measuring the same aspect of corporate effectiveness. For example, each indicator in the area of customer satisfaction had to correlate highly with other indicators in that category.

The final model analyzes five dimensions of corporate performance.

To build its model (see Appendix B for a summary of the process), the Drucker Institute used a statistical technique (structural equation modeling) that combines factor analysis and multiple regression analysis to examine the relationship between measured variables and latent constructs. In this case, corporate effectiveness is the latent variable, meaning that it cannot be directly observed. However, it can be inferred from other variables that can be observed (namely, the 37 indicators).

This approach allowed for the analysis of the entire model simultaneously, including all proposed indicators, as well as all five dimensions of corporate performance and overall corporate effectiveness.

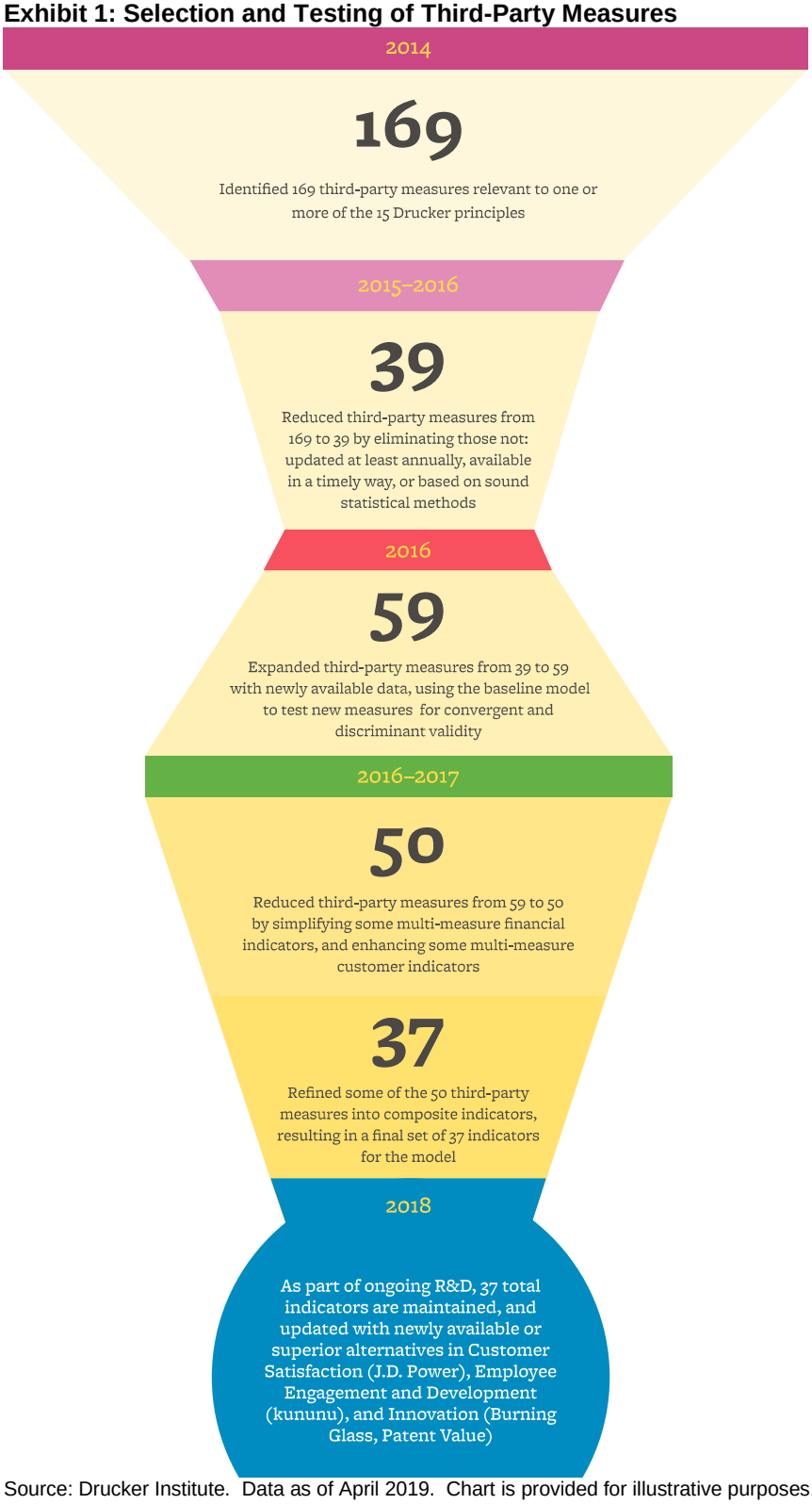
A series of tests was run to ensure:

- The degree to which the indicators actually measured what they claimed to measure (construct validity);

- Freedom from random error (reliability); and
- Fit between the approach taken and the data examined (goodness of fit).

The Drucker Institute tested 169 measures across the 5 dimensions of corporate effectiveness…

Exhibit 1: Selection and Testing of Third-Party Measures



…which are obtained from a wide range of third-party providers.

The model analyzes measures simultaneously to maximize convergence within each dimension and minimize overlap across dimensions.

Source: Drucker Institute. Data as of April 2019. Chart is provided for illustrative purposes.

Safeguards were also built into the model so that if a single source was used in various places (such as one provider's data going into both the customer satisfaction and innovation dimensions), it would not be overweighted.

As the Drucker Institute built its model, it decided not to give extra weight to any of the five dimensions.

In addition, during the prototype phase of the model's development in 2015, the Drucker Institute worked with the firm PayScale to field a series of survey questions to the employees of 41 companies. These surveys aimed to assess how well these employees exhibited behaviors and mindsets that were aligned with the various Drucker principles. An analysis of the results showed that companies in which employees self-reported adhering to the Drucker principles also scored relatively high on the corresponding indicators used in the model. This convergence gave further support to the model's validity.

As the Drucker Institute built its model, it decided not to give extra weight to any of the five dimensions. Its hypothesis—based on Peter Drucker's theories—was that these key areas should be highly correlated. In other words, the Institute theorized that all five should rise and fall together to a substantial (that is, to a statistically significant) degree.

Its hypothesis was that these key areas should be highly correlated.

Although the idea that each of the five categories would be highly correlated might seem obvious to those who have a "stakeholder" view of the way that corporations should work, few tools have actually proven this in a rigorous way, adhering to the strict rules of good data science. When assessing corporate effectiveness, would social responsibility really correlate with innovation? Would financial strength show a statistical relationship with, say, employee engagement and development? It was quite possible that all of these pieces wouldn't fit together.

As it turned out, the institute's basic hypothesis was correct. The correlations between each of the five dimensions and the measure of total effectiveness ranged from 0.56 to 0.74 (see Appendix C)—meaning that the model adequately explained the majority of the variation in the latent variable of corporate effectiveness. These are significant figures in management science, especially given the diversity of data providers, data collection methods, and outcomes being measured. [11]

In 2017, the Drucker Institute publicly unveiled its model in partnership with the *Wall Street Journal*. The *Journal's* annual special section on the "Management Top 250" list—which highlights the Drucker Institute's highest-ranked firms—and its quarterly research articles based on the

[11] For methodology details, see www.drucker.institute/methodology-for-the-drucker-institutes-company-rankings/.

Institute's 2012-2018 historical datastream[12] [13] [14] [15] gave this new model public awareness.

CONSTRUCTING THE S&P/DRUCKER INSTITUTE CORPORATE EFFECTIVENESS INDEX

Drucker's definition of social responsibility includes investments in people, innovations, and long-term profitability.

The foundation of the S&P/Drucker Institute Corporate Effectiveness Index is Peter Drucker's definition of social responsibility as encompassing investments in people, innovations that meet customers' needs, and the long-term profitability necessary to be a good corporate citizen.

With its focus on intangibles, the S&P/Drucker Institute Corporate Effectiveness Index may possibly be labeled as ESG. There is certainly nothing wrong with that label. In fact, the index incorporates several conventional ESG ratings. But even the best social responsibility ratings today are limited to environmental, social, and governance measures.

This index ultimately aims to be a pillar in the new field of long-term-oriented indices. If widely adopted by asset owners and managers, longer-term benchmarks such as this one may influence company boards and management teams. This may result in more effective and efficient corporate strategies and deployment of capital, all aimed at long-term growth rather than short-term impact on stock price.

Given the potential this creates for the index to influence corporate behavior through its selection of constituents, a thoughtful approach to index construction was vital. The following section details and explains the steps and analysis undertaken to arrive at the final S&P/Drucker Institute Corporate Effectiveness Index.

S&P DJI views quality within the framework of "sustainable earnings power."

Capturing Financial Quality

S&P DJI views quality within Graham and Dodd's framework of "sustainable earnings power." Quality companies are identified using three attributes, all accorded equal importance: ROE, balance sheet accruals (BSA), and leverage (see Exhibit 2). This method is detailed in "Quality: A Distinct Equity Factor?"[16] and was made the basis of the S&P Quality Index Series in 2014. Based upon the efficacy of the quality factor, its ability to encapsulate the financial dimension of a company in a concise manner, its established assets under management, and brand recognition, the decision to incorporate quality into the overall index became a plausible scenario.

[12] Wartzman, Rick and Crosby, Lawrence, "The Key to Improving a Company's Financial Health," *Wall Street Journal*, May 20, 2018.

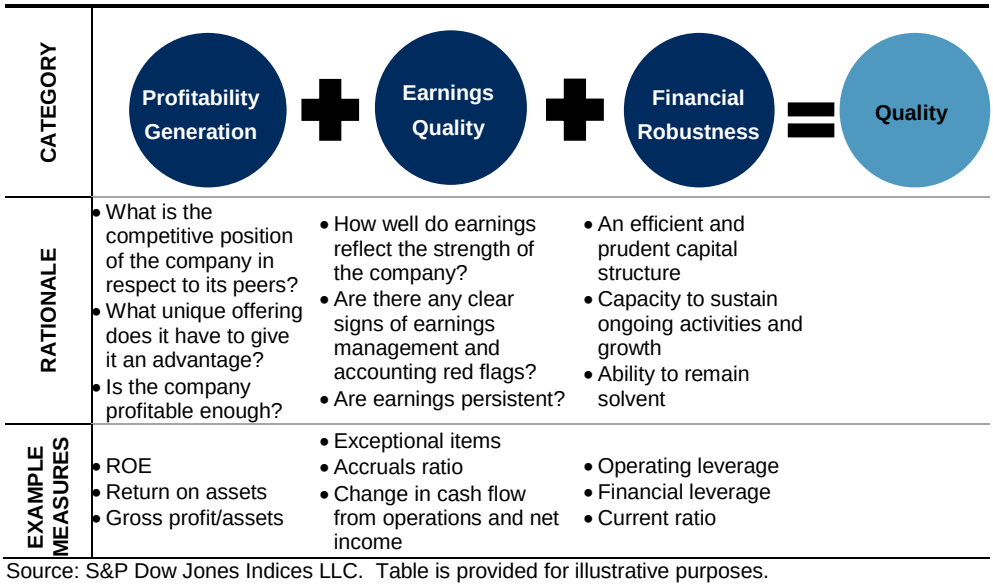
[13] Wartzman, Rick and Crosby, Lawrence, "A Company's Performance Depends First of All on Its People," *Wall Street Journal*, Aug. 12, 2018.

[14] Wartzman, Rick and Crosby, Lawrence, "Why Some Companies Succeed in Declining Industries," *Wall Street Journal*, Oct. 29, 2018.

[15] Wartzman, Rick and Crosby, Lawrence, "How Executives Can Balance the Long Term and Short Term," *Wall Street Journal*, Feb. 24, 2019.

[16] Ung, Daniel and Luk, Priscilla. "Quality: A Distinct Equity Factor?" July 2014.

Exhibit 2: Systematic Framework for Determining Quality Companies



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

High-quality companies share the characteristics of seeking to generate greater revenue and cash, as well as enjoying more stable growth than the average company.

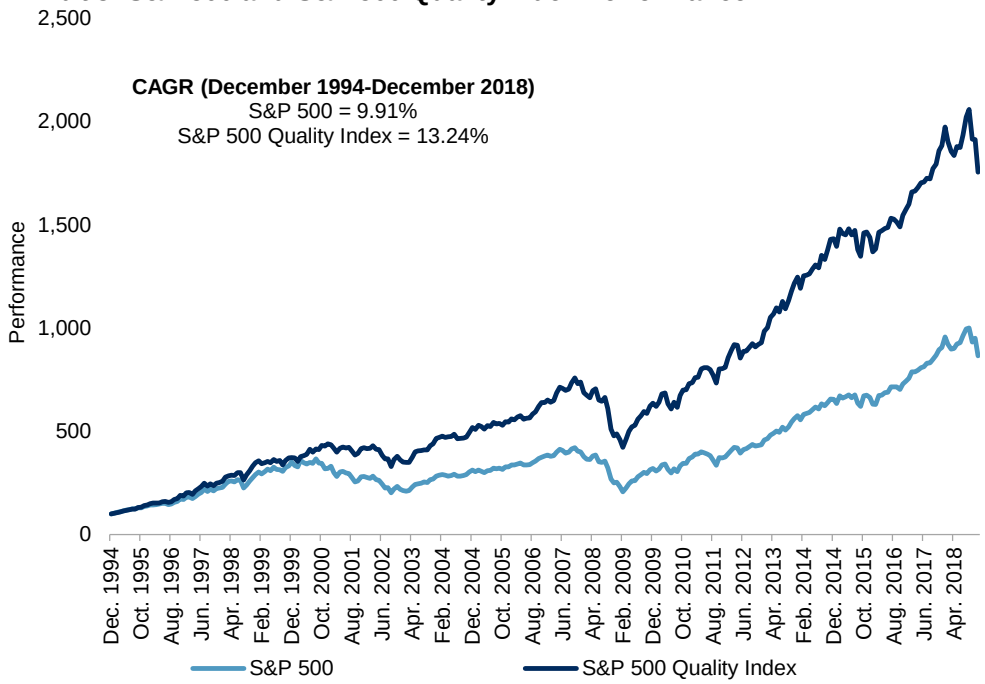
A company's ability to generate long-term earnings growth is dependent upon its future profitability and its sources of greatest risk. Broadly speaking, high-quality companies share the characteristics of seeking to generate greater revenue and cash, as well as enjoying more stable growth than the average 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.

Financial quality as a factor has historically earned higher absolute and risk-adjusted returns than the broad market.

Financial quality as a factor has historically earned higher absolute and risk-adjusted returns than the broad market since its inception in 1995 through 2018. Exhibit 3 shows the S&P 500 Quality Index generating a total return of 13.24% on an annual basis versus 9.91% for the S&P 500, a considerable excess return of 3.33% annually.

Exhibit 3: S&P 500 and S&P 500 Quality Index Performance



Source: S&P Dow Jones Indices LLC. Data from December 1994 through December 2018. 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.

The S&P DJI quality factor was chosen to be used in place of the Drucker Institute's financial strength dimension.

The S&P DJI quality factor's proven track record, its alignment with Drucker's principles, its prior implementation in other long-term, investor-focused indices, and its succinct ability to identify quality companies led to the decision to use it in place of the Drucker Institute's financial strength dimension.

A mix of the Drucker Institute's dimensions and the S&P DJI quality score weighting had the best performance.

Using the four non-financial Drucker Institute dimension scores (customer satisfaction, employee engagement and development, innovation, and social responsibility) plus the S&P DJI quality factor, we formed a portfolio constructed of 100 stocks.

This portfolio size is in keeping with Peter Drucker's view, explicitly following the Pareto Principle, that in all social situations, including the market, "a very small number of events—10% to 20% at most—account for 90% of all results." The proposed index expresses this logic by selecting the 20% of firms (100 from the S&P 500) that would be most likely to produce 90% of the results.

A comparison of portfolios constructed with the highest-ranking 100 stocks using only the Drucker Institute's scores versus the combination of Drucker Institute dimensions excluding financial strength plus S&P DJI quality scores are presented in Exhibits 4 and 5. Various percentage levels for quality were tested, including 20%, 33%, and 50%, and ultimately the 33% quality weighting was selected, as it maximized the benefits of its

contribution to index performance without overshadowing the contribution of the Drucker Institute dimensions. In Exhibits 4 and 5, both construction portfolios and their respective weighting schemes are presented with return and risk data. Focusing on the cumulative time horizon, all scenario portfolios outperformed the S&P 500 with similar tracking error ranges of greater than 200 bps. The Drucker Institute dimensions excluding financial strength plus S&P DJI quality scores combination employing score weighting performed the best, generated the highest risk-adjusted return in addition to posting the lowest tracking error (234 bps).

The 33% quality weighting was selected, as it maximized the benefits of its contribution to index performance…

Exhibit 4: Drucker Institute-Only Portfolios

ANNUALIZED RETURN (%)	SCORE WEIGHTED	MARKET CAP WEIGHTED	EQUAL WEIGHTED	S&P 500
1-Year	16.14	19.07	14.54	16.23
3-Year	14.44	14.76	13.37	12.51
5-Year	14.66	14.24	14.04	13.06
Cumulative (From Dec. 31, 2012)	16.14	15.20	15.58	14.37
ANNUALIZED VOLATILITY (%)				
1-Year	8.97	10.21	9.03	8.95
3-Year	10.41	10.69	10.32	10.26
5-Year	10.03	10.18	10.02	9.71
Cumulative (From Dec. 31, 2012)	9.82	9.93	9.85	9.57
RISK-ADJUSTED RETURN (%)				
1-Year	1.80	1.87	1.61	1.81
3-Year	1.39	1.38	1.30	1.22
5-Year	1.46	1.40	1.40	1.34
Cumulative (From Dec. 31, 2012)	1.64	1.53	1.58	1.50
INFORMATION RATIO				
1-Year	-0.04	1.06	-0.73	
3-Year	0.81	1.03	0.36	
5-Year	0.72	0.52	0.42	
TRACKING ERROR				
Cumulative (From Dec. 31, 2012)	2.15	2.24	2.26	

Score Weighted, Market Cap Weighted, and Equal Weighted are hypothetical portfolios.
Source: S&P Dow Jones Indices LLC. Data from December 2012 through July 2018. 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.

…without overshadowing the contribution of the Drucker Institute dimensions.

Exhibit 5: Drucker Dimensions Excluding Financial Strength Plus S&P DJI Quality Factor (33% Weight) Portfolios

ANNUALIZED RETURN (%)	SCORE WEIGHTED	MARKET CAP WEIGHTED	EQUAL WEIGHTED	S&P 500
1-Year	17.86	20.54	16.62	16.23
3-Year	15.74	14.89	14.84	12.51
5-Year	14.93	14.04	14.43	13.06
Cumulative (From Dec. 31, 2012)	16.74	15.15	16.35	14.37
ANNUALIZED VOLATILITY (%)				
3-Year	10.37	10.60	10.15	10.26
5-Year	9.99	10.11	9.84	9.71
Cumulative (From Dec. 31, 2012)	9.83	9.88	9.75	9.57
RISK-ADJUSTED RETURN (%)				
3-Year	1.52	1.40	1.46	1.22
5-Year	1.49	1.39	1.47	1.34
Cumulative (From Dec. 31, 2012)	1.70	1.53	1.68	1.50
INFORMATION RATIO				
1-Year	0.87	1.61	0.18	-
3-Year	1.37	0.88	0.95	-
5-Year	0.80	0.37	0.57	-
TRACKING ERROR				
Cumulative (From Dec. 31, 2012)	2.34	2.54	2.41	-

Score Weighted, Market Cap Weighted, and Equal Weighted are hypothetical portfolios.
Source: S&P Dow Jones Indices LLC. Data from December 2012 through July 2018. 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.

A company can have an effective year by emphasizing its dimensional strengths and diminishing its dimensional weaknesses.

Importance of Overall Consistency

Inconsistency in dimensional scores must also be understood as a future risk.

The Drucker Institute corporate effectiveness score is multi-dimensional and "compensatory"—meaning that a company may score highly overall in any given year through a mix of extraordinary and mediocre dimensional scores. In recognizing corporate performance at a moment in time, this compensatory method follows Peter Drucker's standard that measures be "appropriate to the character and nature of the phenomenon measured." In short, a company can have an effective year by emphasizing its dimensional strengths and diminishing its dimensional weaknesses.

However, it is also in keeping with this same Drucker standard that, whatever the nature of a company's recent performance, inconsistency in dimensional scores must also be understood as a future risk. A simple overall ranking of companies by average Drucker Institute and S&P DJI quality scores may erroneously select companies with high average scores based on one or two extremely high dimension scores over companies with barely lower average scores based on strong dimension scores across the board. To build an index that selected the 100 companies that had the best

To build an index that selected the 100 companies that had the best combination of highest total average score and consistency in dimensional scores…

combination of highest total average score as well as consistency in dimensional scores, it was necessary to create a nuanced calculation of "consistency."

To do so, the index employs a percent-rank function whereby each of a company's five dimensional scores is assigned a percent rank in relation to the other companies in the sample (although the S&P DJI quality score uses winsorization to cap outliers' distance from the mean, the combined average of the Drucker Institute and S&P DJI quality scores does not). Then, all dimensional percent ranks for a company are averaged to calculate its overall consistency score.

The combined average score and the overall consistency score are calculated for each company and incorporated into the stock selection process in the following procedure.

1. From the S&P 500, the top 200 stocks by highest combined average score (Drucker Institute non-financial dimensions plus S&P DJI quality factor) are selected.
2. These 200 stocks are then re-ranked in descending order by the consistency score.
3. The top 100 stocks are selected for inclusion in the index.

…it was necessary to create a nuanced calculation of "consistency."

Exhibit 6 shows the returns, risk measures, and portfolio characteristics of the hypothetical portfolios that were created using this consistency calculation method. At this point, we ceased calculating the equal-weight scenario; it was evident that an equal-weight scheme was not consistent with differentiating among companies based on combined average scores and consistency.

For index implementation, we analyzed market-cap-weighted and score-weighted methods.

Exhibit 6: Combined Average Score Plus Consistency Score Portfolios

ANNUALIZED RETURN (%)	SCORE WEIGHTED	MARKET CAP WEIGHTED	S&P 500
1-Year	18.14	23.26	17.90
3-Year	18.84	18.79	17.30
5-Year	15.20	14.95	13.88
Cumulative (From Dec. 31, 2012)	17.42	15.88	15.45
ANNUALIZED VOLATILITY (%)			
3-Year	9.20	9.47	9.18
5-Year	9.67	9.96	9.56
Cumulative (From Dec. 31, 2012)	9.75	9.73	9.54
RISK-ADJUSTED RETURN (%)			
3-Year	2.05	1.98	1.88
5-Year	1.57	1.50	1.45
Cumulative (From Dec. 31, 2012)	1.79	1.63	1.62
INFORMATION RATIO			
3-Year	0.67	0.51	-
5-Year	0.57	0.40	-
Cumulative (From Dec. 31, 2012)	0.84	0.16	-
TRACKING ERROR			
Cumulative (From Dec. 31, 2012)	2.34	2.60	-

Score Weighted and Market Cap Weighted are hypothetical portfolios.
Source: S&P Dow Jones Indices LLC. Data from December 2012 through September 2018. 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.

Other Considerations

The final index was based on score weight, specifically the combined average score for each stock.

For index implementation, we analyzed market-cap-weighted and score-weighted methods (see Exhibit 6.). The final index was based on score weight, specifically the combined average score for each stock. Though capacity might be an issue were this index based on a lesser universe, having the S&P 500 as its basis more than satisfies this potential concern.

The proposed index is rebalanced, including updating constituent stock weights, semiannually after market close on the third Friday of June and December. Because the Drucker Institute releases its scores annually in December, the June rebalance only updates each company's S&P DJI quality score. The rebalance reference dates are the last business day of May and November, respectively. Weights calculated as a result of the reference date data are implemented in the indices using closing prices as of the Wednesday prior to the second Friday of June and December.

Drucker Institute-Only Plus Consistency Score Scenario

This testing process established the S&P/Drucker Institute Corporate Effectiveness Index as a blend of the Drucker Institute non-financial dimensions with the S&P DJI quality factor.

This testing process established the S&P/Drucker Institute Corporate Effectiveness Index as a blend of the Drucker Institute non-financial dimensions with the S&P DJI quality factor, expressed as a portfolio of the 100 stocks selected for both combined score and dimensional score consistency, and weighted by score. The result is a transparent and thorough expression of Peter Drucker's principles as applied to an investment instrument.

Nevertheless, the inclusion of the S&P DJI quality factor might lead the more passionate of Peter Drucker's readers to ask about an index that uses the exact same construction, including the consistency screen, but only the Drucker Institute's scores (without the S&P DJI quality factor). Exhibit 7 compares the return and risk characteristics for the Drucker-only and Drucker-plus-S&P-DJI-quality methods. Since inception, both outperformed the S&P 500. They also showed similar risk-adjusted returns and tracking errors, with an advantage in cumulative return for the method that includes the S&P DJi quality factor.

The result is a transparent and thorough expression of Peter Drucker's principles as applied to an investment instrument.

Exhibit 7: Drucker Dimensions Only Plus Consistency Score Portfolios

ANNUALIZED RETURN (%)	DRUCKER ONLY	DRUCKER & S&P DJI QUALITY	S&P 500
1-Year	3.30	7.25	4.68
3-Year	16.18	17.74	15.28
5-Year	12.10	12.80	10.65
Cumulative (From Dec. 31, 2012)	15.19	15.90	13.66
ANNUALIZED VOLATILITY (%)			
3-Year	11.60	11.47	11.21
5-Year	11.32	11.33	11.17
Cumulative (From Dec. 31, 2012)	11.15	11.21	11.00
RISK ADJUSTED RETURN (%)			
3-Year	1.40	1.55	1.36
5-Year	1.07	1.13	0.95
Cumulative (From Dec. 31, 2012)	1.36	1.42	1.24
INFORMATION RATIO			
3-Year	0.41	1.09	-
5-Year	0.63	0.88	-
TRACKING ERROR	-	-	-
Cumulative (From Dec. 31, 2012)	2.13	2.32	-

Drucker Only and Drucker & S&P DJI Quality are hypothetical portfolios.
Source: S&P Dow Jones Indices LLC. Data from December 2012 through February 2019. 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.

An attribution analysis of the two methods—both designed without sector caps—shows that their sources of excess return are also similar.

Exhibit 8 shows that for the combined S&P DJI/Drucker Institute method, over the cumulative time period (6+ years), the largest underweight sector was Health Care (-10.90% versus the benchmark), and the greatest overweight was Materials (8.67% versus the benchmark). Financials was the second most substantial underweight (-6.29% versus the benchmark), and was also the most significant contributor to overall outperformance, followed by Materials.

Exhibit 9 demonstrates that the persistent underweight in Financials was evident in both the S&P Drucker Institute combined index and the Drucker Institute-only scenario. The S&P Quality Index Series is well known to have a strong tilt against Financials, since the leverage ratio requirement tends to favor non-financial companies. Therefore, in the absence of sector neutrality constraints, both scenarios exhibited a substantial underweight in Financials.

In the absence of sector neutrality constraints, both scenarios exhibited a substantial underweight in Financials.

Exhibit 8: Sector Attribution, S&P Drucker Institute Corporate Effectiveness Index Versus S&P 500

SECTOR	SECTOR ATTRIBUTION					
	S&P DRUCKER INSTITUTE INDEX WEIGHT (%)	S&P 500 WEIGHT (%)	AVERAGE WEIGHT DIFFERENCE	ALLO-CATION EFFECT	SELECTION EFFECT	TOTAL EFFECT
Consumer Discretionary	0.51	2.63	-2.12	1.91	0.51	2.42
Consumer Staples	13.87	12.62	1.25	0.98	-0.56	0.42
Energy	16.24	9.32	6.92	-0.21	0.25	0.05
Financials	1.62	7.90	-6.29	8.75	0.84	9.59
Health Care	5.22	16.12	-10.90	0.76	-0.56	0.20
Industrials	12.55	13.91	-1.36	0.77	-0.30	0.47
Information Technology	14.76	10.18	4.58	1.01	2.90	3.91
Materials	29.67	21.00	8.67	4.08	3.62	7.70
Real Estate	4.61	3.14	1.47	-0.07	2.18	2.11
Communication Services	0.00	0.00	0.00	0.47	0.00	0.47
Utilities	0.95	3.18	-2.23	0.87	0.00	0.87
Total	**100.00**	**100.00**	**-**	**19.32**	**8.90**	**28.22**

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2012, to Feb. 28, 2019. 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 average market capitalization is double that of the S&P 500…

Exhibit 9: Sector Attribution, Drucker Dimensions Only Index Versus S&P 500

SECTOR	SECTOR ATTRIBUTION					
	DRUCKER DIMENSIONS ONLY INDEX WEIGHT (%)	S&P 500 WEIGHT (%)	AVERAGE WEIGHT DIFFERENCE	ALLO-CATION EFFECT	SELECTION EFFECT	TOTAL EFFECT
Consumer Discretionary	1.61	2.63	-1.01	1.09	0.32	1.40
Consumer Staples	15.80	12.62	3.17	1.17	-1.40	-0.24
Energy	16.38	9.32	7.06	-1.41	0.73	-0.67
Financials	1.70	7.90	-6.20	7.45	0.32	7.77
Health Care	5.84	16.12	-10.28	0.16	-0.01	0.14
Industrials	11.74	13.91	-2.17	0.49	-0.57	-0.08
Information Technology	13.37	10.18	3.19	0.45	-0.08	0.38
Materials	27.92	21.00	6.92	2.55	5.76	8.31
Real Estate	4.74	3.14	1.60	-0.32	1.64	1.31
Communication Services	0.00	0.00	0.00	0.27	0.00	0.27
Utilities	0.90	3.18	-2.28	0.54	-0.20	0.34
Total	**100.00**	**100.00**	**-**	**12.44**	**6.50**	**18.94**

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2012, to Feb. 28, 2019. 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.

…signifying that the index has a large-cap selection bias.

Exhibits 10 and 11 show key fundamental characteristics in addition to ESG metrics for the S&P Drucker Institute Corporate Effectiveness Index compared with the S&P 500. The average market capitalization is double that of the S&P 500, signifying that the index has a large-cap selection bias. The average ROE for the index is also markedly higher, at 30.0%, compared with the overall S&P 500's figure of 22.6%, which is not surprising, given that the S&P DJI quality factor selection comprises high ROE companies (see Exhibit 10). Lastly, as more investors seek to quantify their investments in terms of ESG characteristics, S&P DJI calculates ESG data, especially environmental data, for a majority of our indices. As reflected in Exhibit 11, the carbon and fossil fuel reserve emissions data is improved compared with the overall S&P 500.

Exhibit 10: Portfolio Characteristics

CHARACTERISTIC	S&P DRUCKER INSTITUTE CORPORATE EFFECTIVENESS	DRUCKER DIMENSIONS ONLY PLUS CONSISTENCY SCORE	S&P 500
Number of Securities	100	100	500
Average Market Capitalization	103.6B	131.8B	51.3B
Active Share	63.6	54.3	N/A
Dividend Yield (%)	2.0	2.0	1.9
Price/Earnings	18.4	18.6	19.9
P/E using FY1 Estimation	17.0	16.8	17.2
Estimated 3-5 Year EPS Growth	9.4	10.1	11.4
Price/Cash Flow	12.7	13.0	12.4
Price/Book	4.3	4.5	3.2
Price/Sales	2.1	2.1	2.2
ROE	30.0	30.6	22.6

Source: S&P Dow Jones Indices LLC. Data as of March 31, 2019. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

The Drucker Institute's company ranking system, together with S&P DJI's quality factor, offers an index-based approach to corporate effectiveness that takes into account tangibles and intangibles alike.

Exhibit 11: ESG Characteristics

CHARACTERISTIC	S&P DRUCKER INSTITUTE CORPORATE EFFECTIVENESS	S&P 500
Carbon to Value Invested (metric tons CO_2e/USD 1 million invested)*	75.98	85.83
Carbon to Revenue (metric tons CO_2e/USD 1 million revenue)*	201.37	247.18
Weighted Average Carbon Intensity (metric tons CO_2e/USD 1 million revenue)*	174.78	254.28
Fossil Fuel Reserve Emissions (metric tons CO_2e/USD 1 million invested)*	484.31	793.01

Source: S&P Dow Jones Indices LLC. Data as of March 31, 2019. Past performance is no guarantee of futures results. Table is provided for illustrative purposes. *Operational and first-tier supply chain greenhouse gas emissions.

CONCLUSION

Peter Drucker's emphasis on holistic, humanistic, and long-term values, called for decades ago, is reflected in today's growing calls from investors and executives for measures of corporate performance that do not subordinate reality to short-term financial gain.

However, Drucker's qualitative approach to his work has made it challenging to construct a quantitative expression of his management principles. Until recently, even the raw data needed for such a system was unavailable. Firm-level qualities such as innovation and employee engagement and development were overlooked as "intangibles" because they were hard to measure and quantify.

Together with S&P DJI's quality factor, the Drucker Institute's company ranking system now offers an index-based approach to measure corporate effectiveness, one that takes into account the tangibles and intangibles alike.

APPENDIX A: PRINCIPLES UNDERLYING THE DRUCKER INSTITUTE MODEL

All quotations are from Peter F. Drucker

Customer Satisfaction

- "To satisfy the customer is the mission and purpose of every business."

Employee Engagement and Development

- "The enterprise must be able to give [its employees] a vision and a sense of mission. It must be able to satisfy their desire for a meaningful contribution to their community and society."
- "There…is the task of building and leading organizations in which every person sees herself as a 'manager' and accepts the full burden of what is basically managerial responsibility: responsibility for her own job and work group [and] for her contribution to the performance and results of the entire organization."
- "Whenever excellence appears, it must be recognized…Rewards must be based on performance."
- "Developing talent is business' most important task."

Innovation

- "Every institution…must build into its day-to-day management four entrepreneurial activities that run in parallel:
  1. organized abandonment of products, services, processes, markets…that are no longer an optimal allocation of resources;
  2. systematic, continuing improvement;
  3. systematic and continuous exploitation…of its successes;
  4. systematic innovation, that is, create the different tomorrow that makes obsolete and, to a large extent, replaces even the most successful products of today."

Social Responsibility

- "It is management's…responsibility to make whatever is genuinely in the public good become the enterprise's own self-interest."
- "One is responsible for one's impacts, whether they are intended or not."

Financial Strength

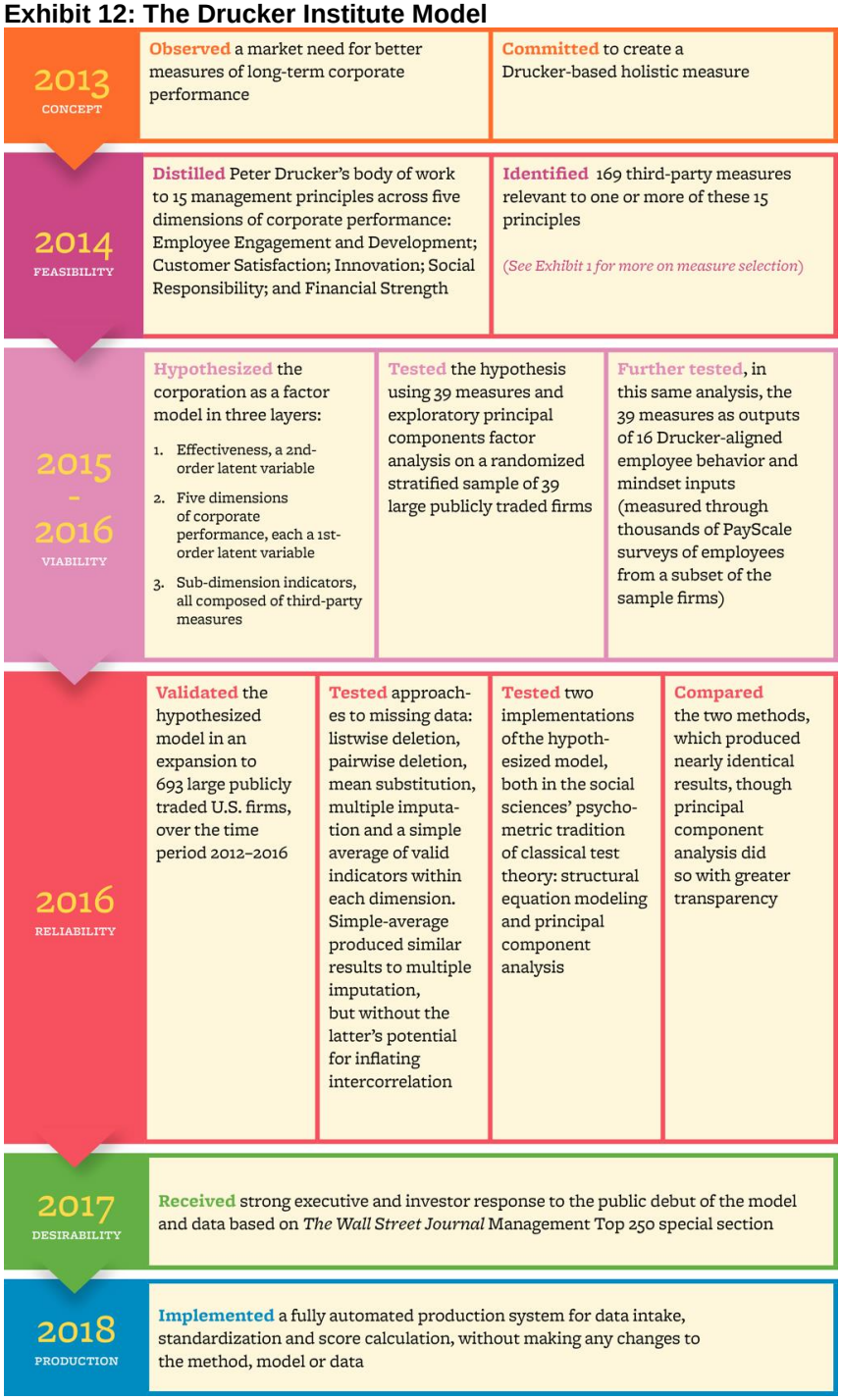
- "There is only one appropriate yardstick of business performance. This is the return on all assets employed or on all capital invested."
- "Productivity is the first test of management's competence…The continuous improvement of productivity [with respect to land, labor, and capital] is one of management's most important jobs…The goal is not to try to find the one perfect productivity measurement, but to use a number of measurements." ("By measuring the value added over all costs, including the cost of capital, EVA measures, in effect, the productivity of all factors of production.")
- "Despite its follies, foibles and fashions, the stock market is a good deal more rational than the 'experts,' at least over any extended period of time." ("Witness the enormous differences in

'price-earnings ratios.'… The stock market tends to value a stock primarily on the basis of…total return rather than on the basis of…'earnings per share.'")

- "Market standing has to be measured against the market potential, and against the performance of suppliers of competing products or services—whether competition is direct or indirect…to be a marginal producer is always dangerous."

APPENDIX B: DEVELOPMENT OF THE DRUCKER INSTITUTE MODEL

Exhibit 12: The Drucker Institute Model



Source: Drucker Institute. Data as of April 2019. Chart is provided for illustrative purposes.

APPENDIX C

Exhibit 13: Drucker Institute Principal Components Loadings

DIMENSION	INDICATOR	INDICATOR LOADING ON DIMENSION	DIMENSION LOADING ON CORPORATE EFFECTIVENESS
CUSTOMER SATISFACTION			**0.56**
	American Customer Satisfaction Index	0.93	-
	CSRHub: Product Rating	0.36	-
	J.D. Power: Bain Certified Net Promoter Score	0.84	-
	Temkin Group: Customer Experience Rating, Customer Service Rating, Online Rating, Trust Rating, Forgiveness Rating	0.81	-
	wRatings: Quality Score	0.41	-
EMPLOYEE ENGAGEMENT & DEVELOPMENT			**0.61**
	CSRHub: Comp & Benefits Rating	0.40	-
	Glassdoor: Culture & Values Rating, Career Opportunities Rating, Compensation & Benefits Rating	0.93	-
	Glassdoor engagement metrics: Overall Rating, Recommend Rating	0.91	-
	Glassdoor confidence metrics: CEO Rating, Positive Business Outlook Rating	0.84	-
	kununu: Overall Workplace Rating	0.69	-
	PayScale: Pay Differential	0.56	-
	PayScale: Job Satisfaction	0.74	-
INNOVATION			**0.70**
	Burning Glass Technologies: Cutting-edge Job Postings (Relative)*	0.71	-
	Burning Glass Technologies: R&D Job Postings (Relative)	0.78	-
	Clarivate Analytics: Number of Inventions (Relative)	0.79	-
	Clarivate Analytics: Rate of Patent Abandonment (Relative)	0.48	-
	Clarivate Analytics: Trademark Applications (Relative)	0.79	-
	Clarivate Analytics: Trademark Registers (Relative)	0.73	-
	Clarivate Analytics: R&D Expenditures (Relative)	0.77	-
	“Most Innovative” company listings	0.44	-
	Professors Papanikolaou and Seru: Patent Value (Relative)	0.81	-
	Supply Chain Resource Cooperative: Innovation Rating	0.55	-
	wRatings Innovation Index	0.23	-

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

Exhibit 13: Drucker Institute Principal Components Loadings Cont.

DIMENSION	INDICATOR	INDICATOR LOADING ON DIMENSION	DIMENSION LOADING ON CORPORATE EFFECTIVENESS
SOCIAL RESPONSIBILITY			**0.74**
	CSRHub: Overall ESG Score (Absolute)	0.93	
	CSRHub: Overall ESG Score (Relative)	0.89	
	HIP Investor: Overall ESG Rating	0.86	
	“Shared Value” metric	0.84	
	Supply Chain Resource Cooperative: Social Responsibility Rating	0.67	
	Sustainalytics: Total ESG Score (Absolute)	0.89	
	Sustainalytics: Total ESG Score (Relative)	0.86	
FINANCIAL STRENGTH			**0.64**
	Thomson Reuters Eikon: Share of Market	0.14	
	Thomson Reuters Eikon: Five-Year Average Total Shareholder Return	0.46	
	Thomson Reuters Eikon: Operating Return on Invested Capital	0.94	
	Thomson Reuters Eikon: Return on Assets	0.90	
	Thomson Reuters Eikon: Return on Common Equity	0.79	
	Thomson Reuters Eikon: Earnings for Common Shareholders	0.24	
	Thomson Reuters Eikon: Economic Spread	0.93	

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

S&P DJI RESEARCH CONTRIBUTORS		
Sunjiv Mainie, CFA, CQF	Global Head	sunjiv.mainie@spglobal.com
Jake Vukelic	Business Manager	jake.vukelic@spglobal.com
GLOBAL RESEARCH & DESIGN		
AMERICAS		
Aye M. Soe, CFA	Americas Head	aye.soe@spglobal.com
Laura Assis	Analyst	laura.assis@spglobal.com
Cristopher Anguiano, FRM	Analyst	cristopher.anguiano@spglobal.com
Phillip Brzenk, CFA	Senior 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	Director	qing.li@spglobal.com
Berlinda Liu, CFA	Director	berlinda.liu@spglobal.com
Hamish Preston	Associate Director	hamish.preston@spglobal.com
Maria Sanchez	Associate Director	maria.sanchez@spglobal.com
Kunal Sharma	Senior Analyst	kunal.sharma@spglobal.com
Kelly Tang, CFA	Director	kelly.tang@spglobal.com
Hong Xie, CFA	Senior Director	hong.xie@spglobal.com
APAC		
Priscilla Luk	APAC Head	priscilla.luk@spglobal.com
Arpit Gupta	Senior Analyst	arpit.gupta1@spglobal.com
Akash Jain	Associate Director	akash.jain@spglobal.com
Anurag Kumar	Senior Analyst	anurag.kumar@spglobal.com
Xiaoya Qu	Senior Analyst	xiaoya.qu@spglobal.com
Yan Sun	Senior Analyst	yan.sun@spglobal.com
Liyu Zeng, CFA	Director	liyu.zeng@spglobal.com
EMEA		
Sunjiv Mainie, CFA, CQF	EMEA Head	sunjiv.mainie@spglobal.com
Leonardo Cabrer, PhD	Senior Analyst	leonardo.cabrer@spglobal.com
Andrew Cairns	Senior Analyst	andrew.cairns@spglobal.com
Andrew Innes	Associate Director	andrew.innes@spglobal.com
Jingwen Shi	Analyst	jingwen.shi@spglobal.com
INDEX INVESTMENT STRATEGY		
Craig J. Lazzara, CFA	Global Head	craig.lazzara@spglobal.com
Chris Bennett, CFA	Director	chris.bennett@spglobal.com
Fei Mei Chan	Director	feimei.chan@spglobal.com
Tim Edwards, PhD	Managing Director	tim.edwards@spglobal.com
Anu R. Ganti, CFA	Director	anu.ganti@spglobal.com
Sherifa Issifu	Analyst	sherifa.issifu@spglobal.com
Howard Silverblatt	Senior Index Analyst	howard.silverblatt@spglobal.com

PERFORMANCE DISCLOSURE

The S&P 500 Quality Index was launched July 8, 2014. The S&P/Drucker Institute Corporate Effectiveness Index was launched Feb. 4, 2019. 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. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Complete index methodology details are available at www.spdji.com. 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.

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.

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