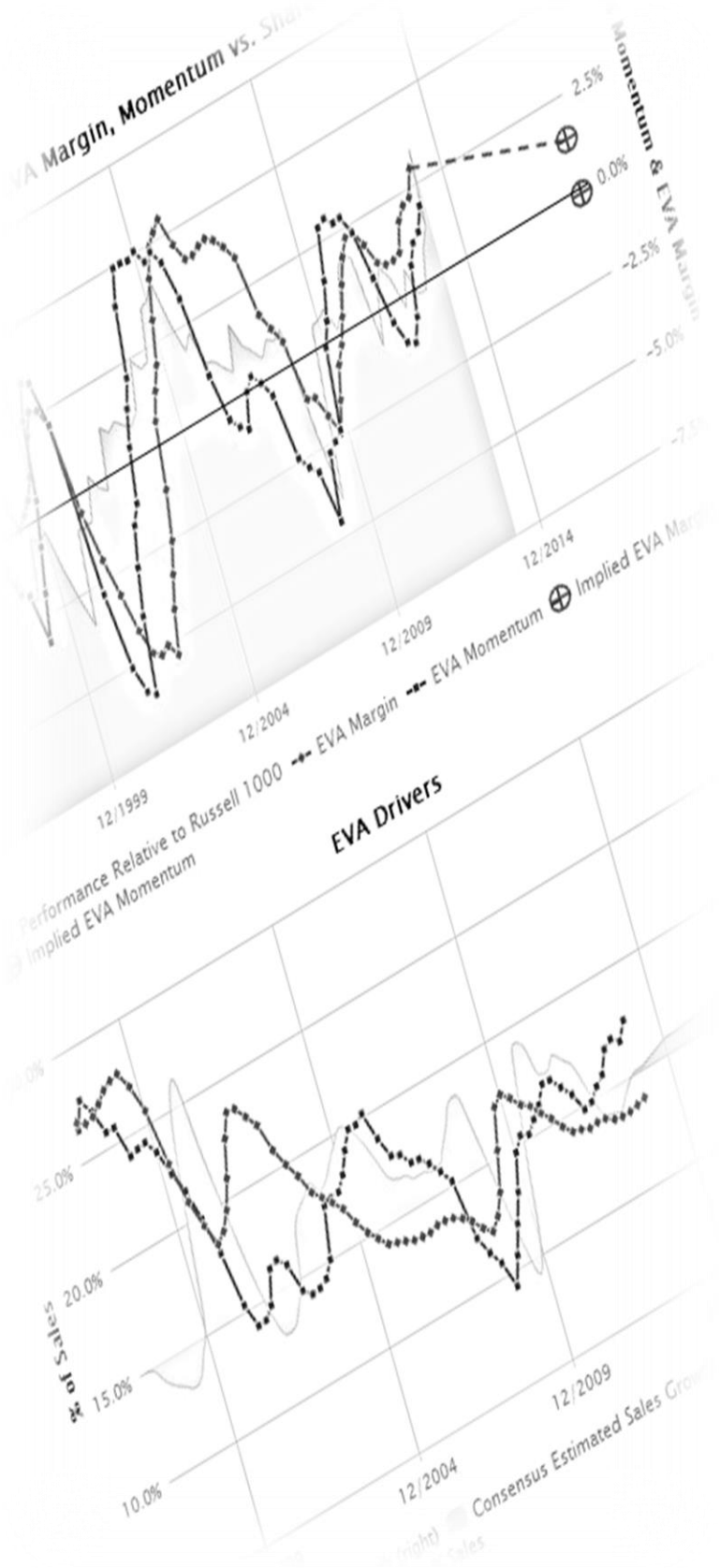
ISS EVA
EQUITY RESEARCH

The path to financial truth



EVA®-based PRVit Stock Selection Model

Casey Lea
Global Director of Quantitative Research
(301) 556-0602
Casey.Lea@issgovernance.com

Gavin Thomson
Global Director of Fundamental Research
+44 (0) 203 192 5791
Gavin.Thomson@issgovernance.com

About ISS-EVA

We are an independent equity research provider offering investing insights through the use of our proprietary Economic Value Added (EVA) framework. Our experienced team of analysts offers both fundamental and quantitative company analysis on our 23,000- stock universe.

Visit our website evaExpress.com

Contents

PRVit Stock Selection Model

Differentiated Alpha with a Clear Link to Fundamentals

WHAT IS EVA?

- EVA, or **Economic Value Added**, measures firm profit after *all* costs, including the cost of giving shareholders a decent return.

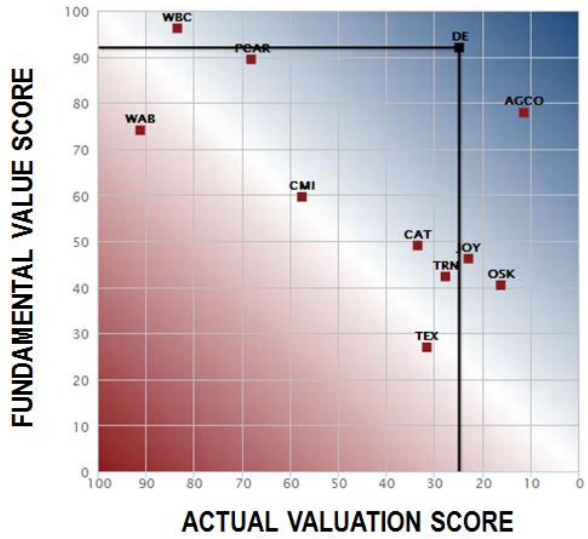
WHY IS IT VALUABLE?

- EVA cuts through accounting distortions and charges for the use of capital.
- EVA is comparable across companies, countries and industries.
- EVA provides an unbiased view of quality, growth, risk and value.
- EVA metrics are predictive of future stock prices.

WHAT IS PRVIT?

- PRVit is a 24-factor quantitative **stock selection model** based on EVA-centric measures of Performance, Risk and Valuation.
- It first estimates the **Fundamental Value** of a company based on its risk-adjusted EVA performance, and then compares it to its **Actual Valuation**.
- Companies with high Fundamental Value relative to Actual Valuation are considered the most attractive. See the graphical **Heat Map** below.
- All factors in PRVit directly correspond to economically meaningful, **fundamental** concepts of profit, risk, or valuation in the EVA framework.
- Factors were chosen heuristically based on common sense and years of industry and consulting experience, and not by data mining.
- Coverage of over 15,000 companies in over 80 countries.
- Strong and statistically significant backtests in the U.S. and globally.

Example **PRVit Heat Map** for industrial companies



Companies in the upper-right hand (blue) portion of the graph are considered more attractive.

EVA is the Definitive Measure of Corporate Performance

EVA Definition

EVA is unique among all performance measures in measuring all the ways that a company is improving its performance and adding to its value, or is deteriorating. EVA is net operating profit after taxes, or NOPAT, less a "capital charge" one computes by multiplying the amount of invested capital by the overall, weighted average cost of the capital:

$$\text{EVA} = \text{NOPAT} - \text{CAPITAL} * \text{COST OF CAPITAL}$$

The capital charge is the key to understanding the significance of EVA to investors. It represents the amount a firm must earn to cover its interest expense – after-tax – and leave a net income remainder that provides shareholders with a minimum fair return on their investment. Because the capital charge is deducted from operating profit, **EVA is the only profit metric where an increase always leads to an increase in the NPV of the company**. None of the following have that property: EPS, ROC, ROE, EBITDA, FCF, or Sales Growth.

EVA is the only profit metric where an increase always leads to an increase in the NPV of the company.

Other advantages of EVA include:

- **True measurement of economic profits:** In calculating EVA, we make over 20 conceptual adjustments to fix accounting distortions, such as capitalizing R&D.
- **Unified framework:** EVA is truly comparable across companies, countries and industries.
- **Unique measurement:** EVA provides an unbiased view of quality, growth, risk and value.
- **Leading indicators:** EVA metrics are predictive of future stock prices.

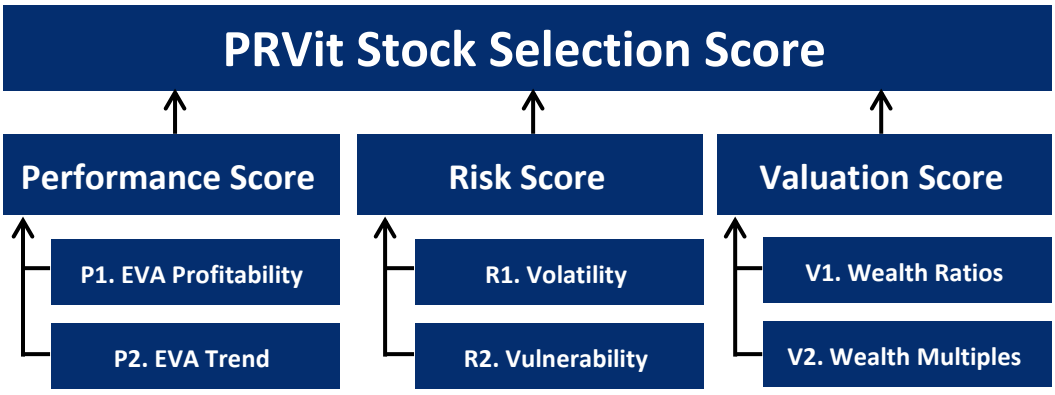
Factors Used in the PRVit Model

PRVit is a quant model that remains intuitive and directly linked to fundamentals

Other quantitative models are designed by data mining to find any factor with certain historical return patterns. The PRVit model was instead designed heuristically from the bottom up from a fundamental investor's standpoint. Accordingly, all factors in PRVit directly correspond to economically meaningful, fundamental concepts in the EVA framework. Factors were chosen heuristically based on common sense and years of industry and consulting experience and not by data mining. Also, **no dynamic weighting, factor timing, or other "black-box" statistical procedures are used**.

No dynamic weighting, factor timing, or other "black-box" statistical procedures are used.

In PRVit, factors are grouped into three categories, **Performance**, **Risk**, and **Valuation**. Each company has a composite 0-100 score in each category, where higher is better for Performance and lower is better for Risk and Valuation. Each of these scores is itself derived from two sub-scores, as depicted below. The rest of this document describes these in further detail.



Measuring Performance Through the EVA Lens

The Performance score derives from two sub-scores: the **EVA Profitability** score (**P1**) and the **EVA Trend** score (**P2**). These are based on the two most important metrics in the EVA framework, **EVA Margin** and **EVA Momentum**, respectively.

EVA Margin – The Most Reliable Margin Measure Imaginable

EVA Margin**,** or **EVA / Sales,** is the percent of revenue that remains as true economic profit -- after all operating costs, including depreciation, amortization and taxes, after a full charge for all capital invested in the business, after isolating operations results from non-operations and financing decisions, and after correcting accounting distortions. A lower margin is generally a sign that operations are truly becoming less efficient, all things considered, and an increase in margin is a strong sign of overall performance improvement, which is particularly valuable when coupled with revenue growth.

The composite **EVA Profitability** (**P1**) score ranks companies according to both EVA Margin (EVA / Sales) and a similar concept, EVA Spread (EVA / Capital) over the most recent available trailing four quarters (TFQ). PRVit scales EVA by both sales and capital ratios to neutralize across different capital intensity business models. A higher **EVA Profitability** (**P1**) score is better.

EVA Momentum – The Only Ratio that Tells the Whole Story

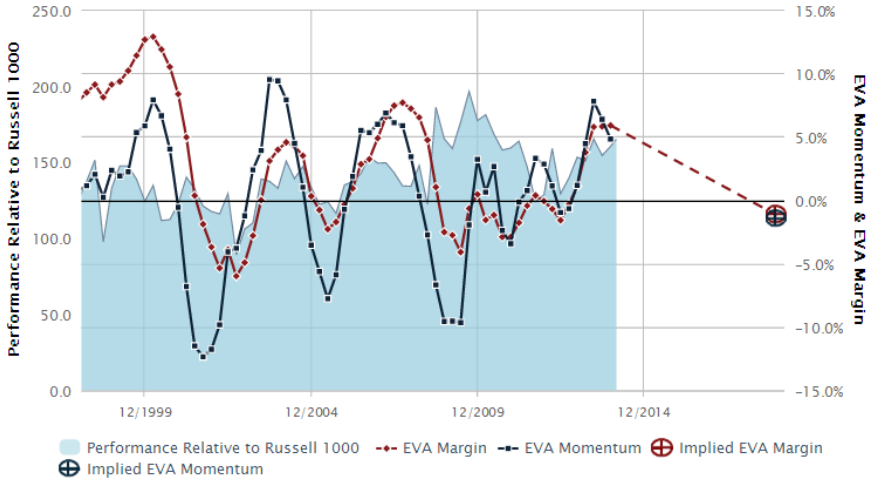
EVA Momentum is defined as the **change in EVA over a period, divided by the sales in the prior period**. It is an incredibly important metric that has a number of very useful and unique qualities to gauge business model momentum. First, it is the only ratio in all business, finance or investment research where bigger is always better. Why? Because the Momentum ratio gets bigger when EVA does, which means that the firm's NPV, MVA and share value are expanding and management is doing things that make economic sense. That cannot be said of any other ratio metric. Also, more than any other measure, EVA Momentum levels cross-company comparisons by scaling results according to size and by focusing on changes in EVA – which means that legacy assets or liabilities that are already reflected in the base level of EVA are ignored. Think of it as "Business Model Momentum"**.**

EVA Momentum is the only ratio in all business, finance or investment research where bigger is always better.

The composite **EVA Trend** (**P2**) score ranks companies according to EVA Momentum as computed over three time frames: the most recent trailing four quarters (TFQ), the three-year regression trend growth, and for the most recent quarter compared to the same quarter in the prior year. A higher **EVA Trend** (**P2**) score corresponds to a faster EVA-growth company.

The graph below shows the time series of EVA Margin and Momentum for JP Morgan Chase & Co.

JP Morgan Chase & Co. (JPM): EVA Margin, EVA Momentum and share price.



Measuring Risk Through the EVA Lens

The Risk score derives from two sub-scores: the **Volatility** score (**R1**) and the **Vulnerability** score (**R2**). PRVit looks at metrics which convey the degree of confidence – or the lack thereof – that the observed EVA performance levels and trends can be sustained.

Volatility Metrics

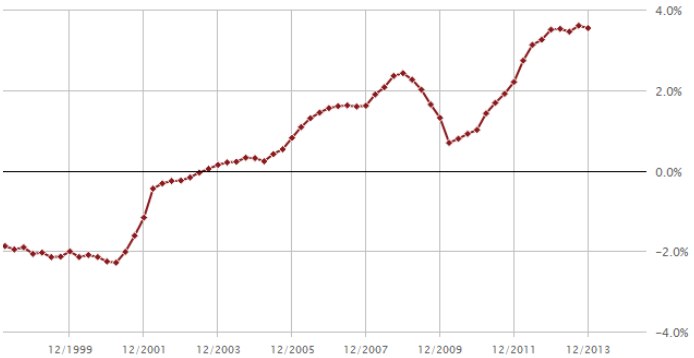
A volatile stock price and variable EVA Margin decrease confidence levels and hence increase the **Volatility** (**R1**) risk score: stable stocks and business models are lower risk. Volatility of stock price is a "classic" volatility measure which measures risk from an equity investor's standpoint. However, evaDimensions has found that looking at the volatility of EVA Margin, i.e., of economic profits, is additive to alpha for several reasons:

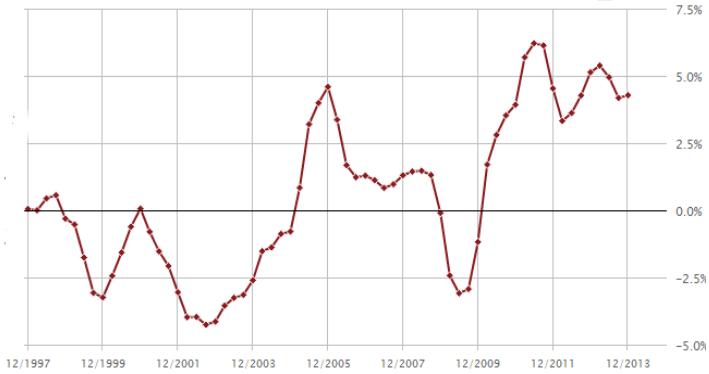
- Volatility of EVA Margin measures operational business risk across the entire capital structure, not just the risk of equity.
- Volatility of EVA Margin values change more slowly than volatility of share price ones, reducing turnover.
- In certain cases when low-volatility strategies have fared poorly, low volatility of EVA Margin strategies have held up better than low volatility of share price ones.

As an investment metric, Volatility of EVA Margin is an attractive alternative / supplement to volatility of share price.

The charts below contrast two companies, a low-EVA Margin volatility one (ARG) and a high-EVA Margin volatility one (EMN). A lower **Volatility** (**R1**) risk score corresponds to a safer company.

EVA Margin of **Airgas (ARG)**, to left, and **Eastman Chemical (EMN),** to right. The former has exhibited lower volatility of EVA Margin (business risk) than the latter.





Vulnerability Metrics

PRVit also assesses a firm's financial strength and staying power in the **Vulnerability** (**R2**) score. The following metrics are considered:

- **FCF Rate** = FCF / Capital = (Return on Capital – Capital Growth Rate). Positive FCF generation indicates the company is self-financing after all capital investment, and thus lower in risk.
- **Operating Cash Generation** is FCF before Capex spending, but net of working capital build up.
- **Total Debt / Total Capital** is informational; **Total Debt / EBITDA** gauges repayment horizon. The longer it is, the more cash flow is consumed in debt service and is unavailable for growth.

A lower **Vulnerability** (**R2**) score corresponds to a less vulnerable and safer company.

Measuring Valuation Through the EVA Lens

The Valuation score derives from two sub-scores: the **Wealth Ratios** score (**V1**) and the **Wealth Multiples** score (**V2**). These are based on the two main valuation metrics in the EVA framework, **MVA Margin** and **Future Growth Reliance**, respectively.

MVA is the Measure of Shareholder Wealth

An exact formula explains stock prices as a function of the EVA profit that a company is projected to earn. It does that via a measure called MVA, or **Market Value Added**. MVA is defined as the difference between the total market value of a company, given its share price, and the capital employed on its balance sheet -- measured the EVA way. For example, a firm that trades for a $1 billion market value and that has a $700 million capital base has an MVA of $300 million.

MVA measures the amount of wealth that a company has created for its shareholders, since the start of the company, because it compares the total cash amount that investors have put or left in the business with the present value of the cash they can expect to take out of it. And that is where EVA comes in, because to be "fairly" valued, a firm's MVA should equal the total sum of EVA profit it can earn over its projected life, discounted to a present value:

Just like free cash flow, EVA can be discounted to arrive at firm value. In particular, Market Value Added (MVA), or the firm value above invested capital, is equal to the present value of EVA.

$$\text{MVA} = \text{Present Value of (EVA)}$$

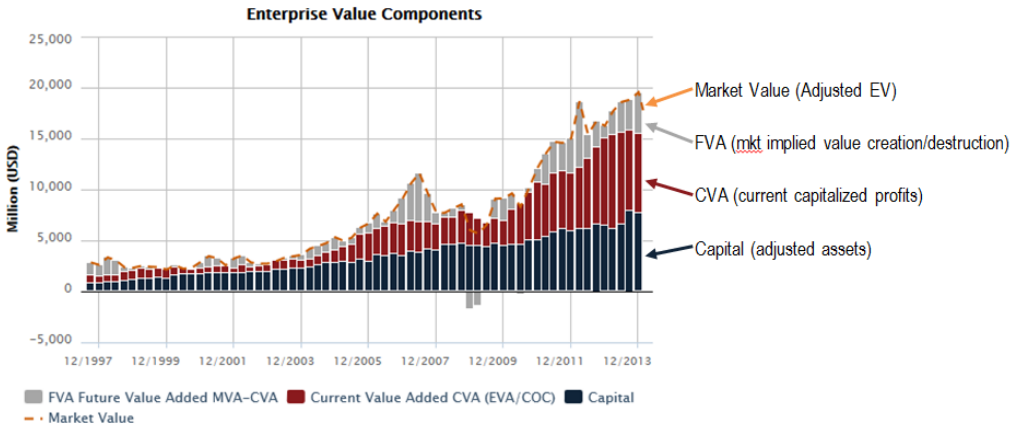
This equation ties EVA to DCF. In using the EVA framework, there is no discrepancy with basic finance present value theory. The composite **Wealth Ratios** (**V1**) score considers MVA as a percent of sales (**MVA Margin**) and capital (**MVA Spread**) – which mirrors the EVA Margin and EVA Spread metrics used as profitability indicators. A lower MVA or V1 score corresponds to a cheaper company.

Deconstructing the DCF to Gain Straightforward Insight

A DCF based on EVA principles can be reverse engineered to gain insight into market expectations. **Future Value Added** ("**FVA**") is the amount of future value creation / (destruction) embedded in today's share price. FVA can be thought of as the difference between market price and current franchise value. The market price is Market Value (adjusted Enterprise Value). The franchise value consists of Capital (adjusted assets), and Current Value Added ("CVA" – which is the capitalized amount of current profits). Thus, FVA = Market Value - Capital - CVA. The graph below shows this decomposition over time for Ralph Lauren Corp.

The composite **Wealth Multiples** (**V2**) score measures valuation using **Future Growth Reliance**, which is FVA / adjusted Enterprise Value, as well as multiples of cash flow (EBITDAR), and enterprise earnings (NOPAT). A lower FVA or V2 score corresponds to a cheaper company.

Ralph Lauren Corp (RL): Enterprise Value Components



Putting it All Together: The PRVit Heat Map

The Fundamental Value Score

Having computed overall scores for EVA Performance, Risk, and Valuation, we now compute a **Fundamental Value Score,** which is a risk-adjusted performance score. The score is based on the value of the firm's comparative (Performance Score – Risk Score). In other words, higher Performance Scores and lower Risk Scores lead to higher Fundamental Value Scores. By risk-adjusting performance metrics, firms with varying degrees of performance can have very similar intrinsic values.

Two firms with nearly identical Fundamental Value scores but different Performance and Risk Scores.

Yelp (P – R) = 61

71 Performance Score (P) — Higher is better

		YELP	25th	50th	75th	% Industry
71	P1 Profitability — Financial strength in generating a return on capital over the full cost					
	EVA Margin (EVA/Sales)	-2.6%	-19.6%	-10.0%	-1.5%	71
	EVA Spread (EVA/Capital)	-4.3%	-17.3%	-8.6%	0.6%	70
65	P2 Trend — The growth rate in the firm's economic profit (its EVA)					
	1-Qtr. EVA Mo. (vs Cap)	1.6%	-6.7%	-2.6%	0.6%	86
	1-Yr. EVA Mo. (vs Cap)	5.6%	-5.7%	-1.1%	1.3%	93
	3-Yr. EVA Mo. (vs Cap)	0.2%	-1.9%	0.3%	2.0%	49

66 Risk Score (R) — Lower is better

		YELP	25th	50th	75th	% Industry
82	R1 Volatility — Variability in stock price and the EVA profit margin					
	Stock Price Volatility	65%	35.4%	43.3%	53.9%	92
	EVA Margin Variability	6.9%	3.5%	5.2%	9.3%	63
57	R2 Vulnerability — Leveraged, negative cash flow firms are suspect					
	Free Cash Flow / Capital	-23%	3.9%	-5.4%	-24.8%	73
	Op Cash Gen / Total Gross Cap	43%	86.4%	53.0%	12.8%	57
	Total Debt/Total Capital	6%	8.0%	15.0%	25.4%	19
	Total Debt/EBITDAR	0.7	0.6	1.2	2.8	33

Verisign (P – R) = 63

53 Performance Score (P) — Higher is better

		VRSN	25th	50th	75th	% Industry
5	P1 Profitability — Financial strength in generating a return on capital over the full cost					
	EVA Margin (EVA/Sales)	-136.9%	-19.6%	-10.0%	-1.5%	0
	EVA Spread (EVA/Capital)	-9.9%	-17.3%	-8.6%	0.6%	45
80	P2 Trend — The growth rate in the firm's economic profit (its EVA)					
	1-Qtr. EVA Mo. (vs Cap)	-0.8%	-6.7%	-2.6%	0.6%	63
	1-Yr. EVA Mo. (vs Cap)	0.5%	-5.7%	-1.1%	1.3%	67
	3-Yr. EVA Mo. (vs Cap)	1.3%	-1.9%	0.3%	2.0%	68

13 Risk Score (R) — Lower is better

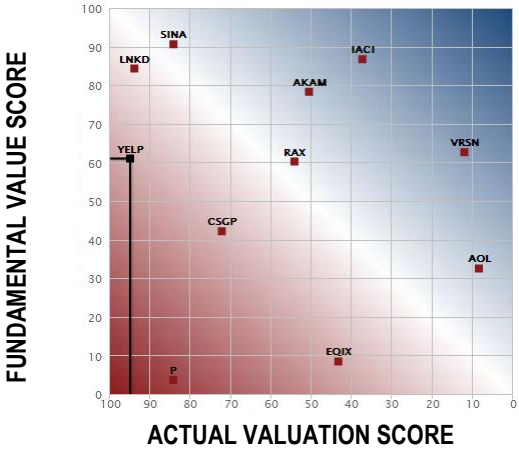
		VRSN	25th	50th	75th	% Industry
29	R1 Volatility — Variability in stock price and the EVA profit margin					
	Stock Price Volatility	17%	35.4%	43.3%	53.9%	0
	EVA Margin Variability	20.8%	3.5%	5.2%	9.3%	89
19	R2 Vulnerability — Leveraged, negative cash flow firms are suspect					
	Free Cash Flow / Capital	6%	3.9%	-5.4%	-24.8%	19
	Op Cash Gen / Total Gross Cap	30%	86.4%	53.0%	12.8%	61
	Total Debt/Total Capital	9%	8.0%	15.0%	25.4%	30
	Total Debt/EBITDAR	2.1	0.6	1.2	2.8	66

The PRVit Heat Map

To come up with the final PRVit score, we now compare the firm's Fundamental Value Score to its actual Valuation Score. This can be visualized on our PRVit "heat map" (see below). Companies with higher amounts of Fundamental Value per unit of Valuation are considered more attractive, appear towards the upper-right-hand corner of the heat map, and have higher PRVit scores. Both high- and low-quality stocks may be tagged as "buys" because we compare Intrinsic Value to actual Valuation – it all depends on the difference between the two. In contrast, **other DCF- or PV-based frameworks tend to be biased towards deep value names and against high-quality or growth names**.

Other DCF- or PV-based frameworks tend to be biased towards deep value names and against high-quality or growth names, but in PRVit both high- and low-quality stocks may be tagged as "buys".

Example **PRVit Heat Map** for Software & Services companies.



Companies in the upper right-hand corner (blue) of the heat map are considered more attractive.

About ISS-EVA

We are an independent equity research provider offering investing insights through the use of our proprietary Economic Value Added (EVA) framework. EVA converts accounting profits into economic profits and charges businesses for the use of Invested Capital. EVA is superior to traditional measures of profit because it is comparable across companies, industries, and countries, links to a consistent, transparent valuation framework, and provides a unique, unbiased view of Quality, Value, and Growth.

Our experienced team of analysts offers both fundamental and quantitative company analysis through written research, bespoke research, a stock selection model, an online analytical tool offering 15,000 companies as viewed through the EVA framework, custom screening, and portfolio analysis.

Key EVA Concepts

The value of a firm = Capital + PV of EVA

If EVA is increasing then the intrinsic value of the firm is too, suggesting that market value should follow (and vice versa).

EVA = NOPAT - Capital Charge

EVA is profit after all costs, including the cost of giving shareholders a decent return.

EVA Margin = EVA / Sales

A true economic profit margin covering income and asset efficiency. Our EVA Income Statement examines EVA's line item drivers and offers key insights into business profitability.

EVA Momentum = Δ EVA / Sales

An incremental EVA growth rate indicator and key valuation signal and screening measure. The more positive the Momentum, the greater the growth in EVA, and upward pressure on shareholder returns. Inflections in EVA Momentum are an early and more reliable indicator of stock price inflections.

EVA Shock = Δ EVA Momentum

Changes in EVA Momentum is a powerful signal within our framework, with significant relationship with stock price performance.

Future Growth Reliance (FGR) = (Market implied value of future growth in EVA) / EV

Measures the % of a company's total enterprise value represented by expectations for future growth in EVA. FGR is key to understanding embedded expectations today and versus history. A low FGR versus history coupled with improving EVA trends indicates that the market is not pricing in the improving business model.

Additional Resources

evaExpress.com (link):	Our online offering provides a comprehensive suite of fundamental and quantitative tools utilizing the EVA framework
EVA for Investors (link):	A full introduction to the key EVA concepts and metrics
Best Practice EVA (link):	A summary of Bennett Stewart's most recent book on EVA, available for purchase on our website or Amazon.com
What Determines TSR (link):	Insight into the relationship between EVA and stock prices

Research Division
Senior Management Team

Casey Lea
Executive Director
Global Director of Quantitative Research
(617) 571-0362
casey.lea@issgovernance.com

Gavin Thomson
Associate Director
Global Director of Fundamental Research
+44 (0) 203 192 5791
gavin.thomson@issgovernance.com

Client Support and Inquiries
evaanalytics@issgovernance.com
www.issgovernance.com/eva

Analyst Certification - The Research Analyst(s) who prepared this report hereby certify that the views expressed herein accurately reflect the analyst(s) personal view(s) about the subject company and their securities and that they have not been and will not be directly or indirectly compensated for expressing specific recommendation(s) or view(s) in the report.

Disclaimers – The opinions expressed in this report are those of the EVA business unit ("ISS EVA") of Institutional Shareholder Services Inc. ("ISS"). This report is for informational purposes only and reflects our current views. This report has not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body. While ISS EVA exercised due care in compiling this report, ISS EVA makes no warranty, express or implied, regarding the accuracy, completeness or usefulness of this report and assumes no liability with respect to the consequences of relying on this report for investment or other purposes. In particular, the research, analyses and conclusions provided are not intended to constitute an offer, solicitation or advice to buy or sell securities.

ISS Corporate Solutions, Inc. ("ICS"), a wholly owned subsidiary of ISS, provides advisory and analytical services to corporate issuers. Issuers mentioned in this report may have purchased self-assessment tools and publications from ICS, or ICS may have provided advisory or analytical services to issuers mentioned in this report. No employee of ICS played a role in the preparation of this report. If you are an ISS institutional client, you may inquire about any issuer's use of products and services from ICS by emailing disclosure@issgovernance.com.

In February 2021, Deutsche Börse AG ("DB") completed a transaction pursuant to which it acquired an approximate 80% stake in ISS HoldCo Inc., the holding company which owns ISS. The remainder of ISS HoldCo Inc is held by a combination of Genstar Capital ("Genstar") and ISS management. Policies on non-interference and potential conflicts of interest related to DB and Genstar are available at https://www.issgovernance.com/compliance/due-diligence-materials.