This whitepaper details the Reality Shares DIVCON® and how it can potentially assist in predicting future dividend changes

DIVCON

Research Paper

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What is DIVCON?

Reality Shares created the five-tier DIVCON® (Dividend Condition) rating system to provide investors with a clear and concise snapshot of companies' dividend health and to predict next 12 month (NTM) dividend actions for paying companies. Like the U.S. Armed Forces' DEFCON system, which rates the country's defense readiness condition from one to five, DIVCON uses five graduated levels to portray companies' dividend health.

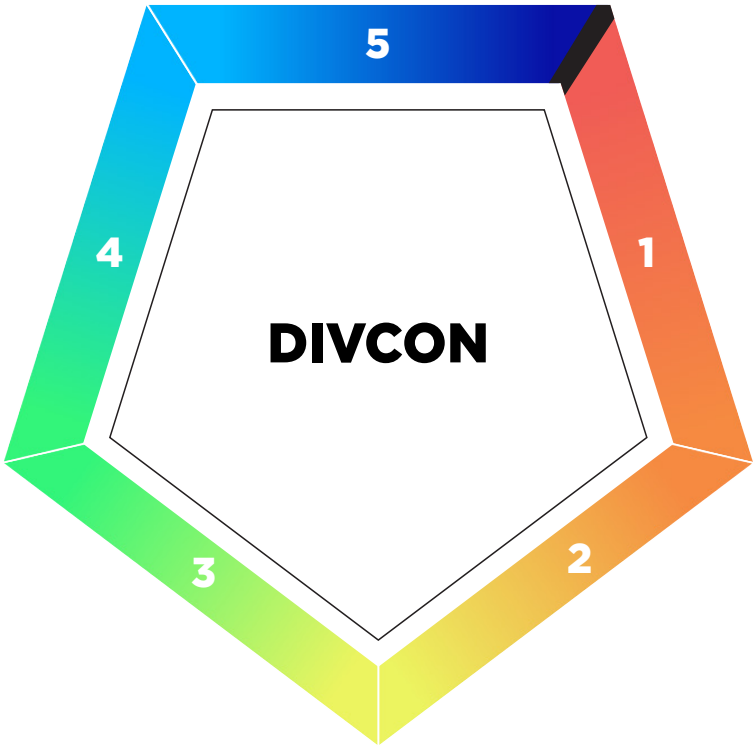
Historically, dividends have been an important parameter in equity markets for investors as well as the issuing companies. For investors, dividends are a stable source of income complementing capital gains. They are also viewed as an indicator of future corporate performance. For companies, dividends are a means for rewarding shareholders. For investors, dividends also serve as an indicator of the financial health and stability of companies. Predicting dividend actions is therefore of great interest to investors and issuers alike.

The DIVCON system generates predictions and dividend health scores based on seven key factors, including the ratio of analysts' consensus estimated NTM dividend per share versus the last 12 month (LTM) dividend per share. All of the factors are statistically correlated to dividend growth as evidenced through our historical back-testing. Some features of the DIVCON system:

A DIVCON Score is calculated each year for every dividend paying company comprising the Benchmark Index.

The scores range from 0 to 100. Companies are ranked DIVCON levels 1 (Very Risky) through 5 (Very Healthy) based on their individual scores.

The higher the DIVCON Score, the higher the probability of a dividend increase in the next 12 months. In contrast, companies with lower DIVCON Scores have a greater risk of cutting their dividends in the next 12 months.



Our back-tested results from 2001 through 2016 illustrate the effectiveness of the DIVCON rating system in predicting dividend actions. The next section provides more details on the back-tested performance.

Why DIVCON?

The table below summarizes the back-tested results of the DIVCON rating system from 2001 through 2016, with the model run at the end of each year. Over the past 16 years, there were 293 instances[1] where companies achieved DIVCON 5 ratings. Of these 293 instances, companies increased their dividend per share over the next 12 months 97.6% of the time, while none of them announced a dividend cut. Over the same timeframe, there were 264 instances where companies fell into DIVCON 1 status. Of these, companies cut their dividend per share over the next 12 months 29.2% of the time.

Effectiveness of DIVCON

2001-2016	# of instances	Dividend increase (%)	Dividend decrease (%)	No change (%)
DIVCON 5	293	**97.6%**	0.0%	2.4%
DIVCON 4	1,862	90.5%	2.3%	7.1%
DIVCON 3	1,952	74.2%	4.8%	21.0%
DIVCON 2	1,559	47.2%	11.8%	41.0%
DIVCON 1	264	25.0%	**29.2%**	45.8%

Our statistical analysis further confirms the efficacy of the DIVCON rating system. We set the dividend action[2] to be the dependent variable, and Reality Shares' DIVCON Scores to be the independent variable. Based on the results (see Appendix 1) we observed, if a company's DIVCON Score increases by 1 point, the probability of that company increasing its dividend in the next 12 months increases by 2.7%, and this result is statistically significant.

[1] One company may represent more than one instance of the total.
[2] If a company increases its dividend in the next 12 months, the dividend action variable is set to 1; If a company does not announce a dividend change, the value is set to 0; In the case of a dividend cut, the value is set to -1.

How DIVCON works

The DIVCON system is based on seven key factors, which combine corporate fundamentals with analyst estimates. Independently and statistically, each factor has significant dividend predictive power. The factors, standardization, and score generation are described below.

FACTORS

The factors include fundamental factors such as dividend payment trends, the Altman Z-Score and a third-party indicator.

FACTOR STANDARDIZATION

Each factor is standardized into a number from 0 to 20. See an example in Appendix 2.

DIVCON SCORE GENERATION

Once the factors have been standardized, aggregate DIVCON Scores are calculated for each company as the sum of the weighted factor scores. Rather than weighting the factors equally, we weight them based on their statistical impact on dividend changes. The higher the coefficient, the greater weight the respective factor will be given. Factor weightings sum up to 100.

Factors	Weight (%)
NTM DPS / LTM DPS	25
Levered FCF / Dividend	5
EPS growth	15
Count of DPS growth	30
Repurchase / dividend	5
BBG dividend health	10
Altman Z-score	10

DIVCON potential inconsistency
Data Availability and Error: Bloomberg, S&P Capital IQ and Compustat are the main data sources for the model factor calculations. However, the data for the factor components are not always available or correct from our providers. See below for more details:
(1) The third-party indicator started getting published in 2008. Therefore, before 2008, DIVCON Scores were based on six factors for back-tested results and the third-party indicator's factor weight was redistributed to the other six factors based on statistical impact.
(2) Altman Z-Score factor limitation. The Altman Z is not appropriate for the financial sector as financial companies tend to be highly levered and their operating risks and exposures are not well disclosed, we chose Net Income / Total Asset as an alternative factor for predicting bankruptcy for the financials. Because the two are not identical comparisons, this score does not identically compare the financials to the non-financials.
(3) Some companies' financial data are missing or incorrect. We have made every effort to limit the number of missing data points and to maintain a margin of error below 5%.

POWERED BY DIVCON®

Access tomorrow's dividend growth... today

Reality Shares sought to develop an analytical tool utilizing a forward-looking dividend growth-based security selection. We created an entirely new corporate dividend health rating system called DIVCON. The DIVCON methodology allows Reality Shares to evaluate dividend health in the pursuit of more intelligent and predictive security selection. DIVCON forecasts and ranks a company's ability to increase or decrease its future dividends by evaluating each firm on seven quantitative factors. It seeks to deliver a more accurate picture of a company's fiscal health and better predict the probability of an increase or decrease in a company's dividend over the next 12 months. These factors give DIVCON a picture that is more consistent with future prospects rather than past dividend changes.

The seven DIVCON factors – expected dividend growth, free cash flows, earnings per share growth, recent dividend actions, buybacks and repurchases, Bloomberg fundamentals, and Altman Z-scores – are weighted, scored and categorized according to their importance. What this means is DIVCON is able to dynamically evaluate each company's financial ability to grow their dividend in the future based on a substantial range of fundamental factors. In short, while a company's dividend history is often a good indicator of whether a dividend may rise or fall, investors not paying attention to the many other factors potentially impacting a company's payout decisions can easily be hurt.

DIVCON evaluates and assigns a rating from 1 to 5 to each stock based on its assessment of financial health relative to prospects for future dividend growth. The healthiest companies earn the highest DIVCON scores and a rating of DIVCON 5, which means they exhibit the strongest likelihood of increasing their dividends in the next 12 months. The least financially stable companies are given the lowest DIVCON scores and are rated DIVCON 1, indicating their future dividend prospects are at risk. This presents to investors an easy to understand forward-looking ranking of dividend paying stocks, much like the buy-hold-sell ratings other ratings agencies might issue on securities.

Click here to find out more about DIVCON-based indexes and to check dividend health scores for your stock at www.realitysharesadvisors.com

Appendix

(1) The regression result of RS DIVCON Scores to Dividend Actions.

Regression statistics	
R square	0.195
Standard error	0.541
Observations	5,930

	Coefficients	Standard error	T Stat	P-value
Intercept	-0.731	0.037	-19.743	0.000
RS DIVCON scores	0.027	0.001	37.857	0.000

(2) An example of factor standardization

Nucor Corp.'s EPS growth on 12/30/2005 was 62.5%, within the 60%-80% interval. As a result, the growth is converted into a score of 13 using the table.

PART OF THE CONVERSION TABLE

Factor Scores	Est. NTM DPS / LTM DPS	Levered FCF / Dividend	EPS Growth
16	200%	100	200%
15	150%	60	100%
14	120%	20	80%
13	100%	10	60%
12	80%	8	40%

EXAMPLE OF CONVERTING FACTOR RAW RATIOS INTO STANDARDIZED SCORES

Company	Run Model Date	NTM DPS / LTM DPS	Levered FCF / Dividend	EPS Growth	NTM DPS / LTM DPS	Levered FCF / Dividend	EPS Growth
Nucor Corporation	12/30/2005	326.9%	4.6	62.5%	18	10	13
Nucor Corporation	12/29/2006	433.3%	2.7	32.5%	19	9	11
CF Industries Holdings, Inc.	12/30/2011	148.6%	33.0	443.6%	14	14	18
Costco Wholesale Corporation	12/31/2012	230.2%	5.1	23.8%	16	10	10
PACCAR Inc.	12/29/2006	528.3%	0.2	38.7%	20	6	11
Texas Instruments In.	12/31/2010	1.9%	3.8	127.8%	7	9	15
Peabody Energy Corporation	12/31/2008	243.8%	12.1	119.5%	16	13	15
Airgas, Inc.	12/30/2011	166.7%	1.6	28.9%	15	8	10
Robert Half International Inc	12/30/2011	6.1%	2.0	153.3%	7	9	15
DeVry Education Group Inc.	12/31/2010	41.7%	17.5	47.8%	10	13	12

Raw ratios

Standardized scores