



How to Pick Winning Value and Growth Stocks

A guide to using the Piotroski Score and the Mohanram Score

The Piotroski Score (F-Score) for Value Investing

Introduction

Value stocks are attractive to investors for many reasons. They have delivered solid returns over the years...and who doesn't want buy things at a discount?

However, what you may not know is that Value stocks are inexpensive for a reason. Some are good companies currently experiencing tough times. Others are on the verge of bankruptcy and should be avoided. The question is how to pick the true Value stocks and avoid the ones destined for continued trouble.

Luckily, one of the brightest academic minds has answered that question. Dr. Joseph Piotroski's influential research resulted in an accounting-based score (F-Score) that tells you which Value stocks are "buys" and which ones are "sells."

With the F-Score, or Piotroski Score, you can stop guessing which Value stocks are the best. Continue reading to learn the facts that distinguish the true Value winners from the losers.

Methodology

While at the University of Chicago, Joseph Piotroski developed what he coined the "F-Score." The thought behind the F-Score is that although Value stocks (lowest 20% of stocks based on Price/Book) outperform as a group, a wide dispersion of returns exists; some stocks do much better than others. Because there truly are some very distressed companies that are Value stocks for a reason, Piotroski questioned if additional financial variables could be reviewed to separate the wheat (Value stocks that will likely recover) from the chaff (companies that are in serious peril). He then hypothesized that changes in a firm's economic condition could indicate both future corporate and stock performance.

Accordingly, he identified nine variables to measure three areas of a company's financial condition: profitability, financial leverage, and operating efficiency. Each of these nine variables is calculated from corporate financial statements and leads to isolating the best performing stocks out of the Value peer group. He views each variable using a binary classification: 1 is good and 0 is bad. The sum of these nine individual variables is the composite F-Score, which is designed to measure the overall quality of a firm. Thus, F-Scores can range between 9 (very strong financial health) and 0 (very weak financial health).

In Piotroski's research, he shows that portfolios of high (8 or 9) F-Score stocks outperform portfolios of low (0 or 1) F-Score stocks by about 23% per year. Additionally, he finds that, on average, 9's outperform 8's, 8's outperform 7's and so on. Since the F-Score is already calculated and ready to use in Zacks Quant Lab, we'll use that system to run simulated portfolios. Through these tests, we discover that high F-Score stocks also outperform the S&P 500 on average. So let's take a closer look at the Piotroski F-Score components.

Parameters

ROA Signal (Net income must be positive; the company as a whole should be profitable)

ROA Gr. Signal (Current Return on Assets (ROA) must be greater than last year's ROA indicating income is increasing)

CFO Signal (Cash flow must be positive, which indicates a company is able to generate funds through its operating activities)

Accrual Signal (Cash flow must be greater than net income; this shows a company is less likely to be managing or manipulating its earnings)

Leverage Signal (Debt must be less than last year's debt; an increase in leverage is usually a bad sign as it places additional financial constraints on the firm)

Liquidity Signal (Current Ratio should be greater than last year's Current Ratio; this is a good sign about the firm's ability to service current debt obligations)

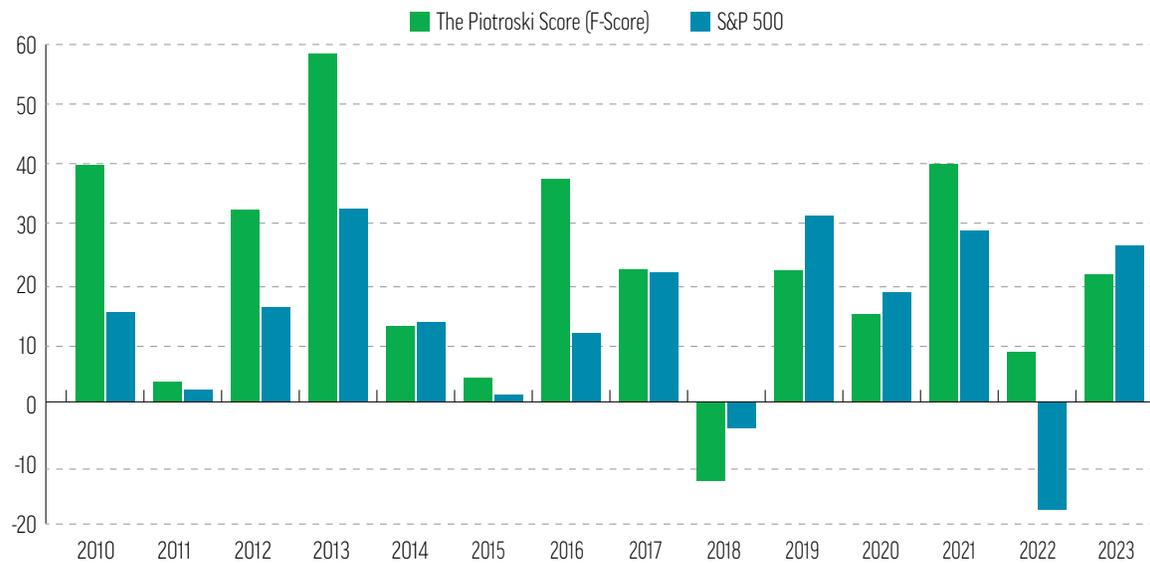
Eq Issue Signal (Shares outstanding should not have increased compared to last year; it is a good signal if a firm is not raising external capital to fund its operations)

Margin Signal (Current Operating Margin should be greater than last year's Operating Margin; this indicates a firm is either reducing costs or raising revenue by price increases or the quantity of sales)

Turnover Signal (Current Asset Turnover should be greater than last year's Asset Turnover; this indicates that a company is experiencing greater productivity from its asset base)

Results

Simulating Piotroski's tests by selecting stocks with a Price/Book in the bottom 20% of all stocks and keeping those with an F-Score of 8 or 9 created a list of about 179 stocks on average over time. The simulated F-Score portfolio, on average, outperformed the S&P 500 from 2010-2023. Rebalancing weekly, the annual returns are shown on following page:



Over this timeframe, the backtested F-Score portfolio averaged 20% against the S&P 500's 13% and outperformed that index 9 out of the 14 years.

Trading the Strategy

For our example, all stocks are purchased with an equal dollar amount. At the end of the holding/rebalancing period (4 weeks), the screen is run again, keeping the stocks that remain qualified, selling the stocks that no longer qualify and buying the new stocks that newly qualify. However, you may decide to change the trading frequency depending on your own preference and backtest that scenario as well.

Conclusion

Piotroski's accounting based F-Score truly is capable of discerning winning stocks from losing stocks. The results we've shown are very conclusive and indicate the Piotroski custom portfolio outperforms the market over time. The effectiveness of these results is the reason why the F-Score is so revered among both individual and institutional investors.

Remember, the final score and every component is available and ready to use in Zacks Quant Lab. Also included is a built in screen that truly takes this monumental research and creates a trade list in just a couple of clicks of a mouse. You can also find the Piotroski Score in the key stats section for individual equities in Advisor Tools, and use it in custom screens and tables.

Start using the F-Score in Zacks Quant Lab or in Advisor Tools today, and take the next step toward being a smarter Value Investor.

The Mohanram Score (G-Score) for Growth Investing

Introduction

Have you ever been burned by a high flying Growth company that didn't live up to expectations? Or wish you had more information about hyped, newly-trading public companies with little operating history? Did the tech boom or the AI frenzy entice you into stocks that you wouldn't have bought if you only had a method for scoring Growth stocks?

Those are just some of the issues Growth Investors are faced with since they are in the habit of purchasing the stocks of companies with above average growth rates and expectations.

But there is a way to use fundamental analysis on Growth stocks and actually separate the good and the bad. Dr. Partha Mohanram conducted the research that removes the smoke and mirrors of glamour stocks and identifies which Growth stocks are for real and which ones are duds.

With the Mohanram G-Score, you can stop guessing which Growth stocks are the best. Continue reading to learn the facts that distinguish the true Growth winners from the losers.

Methodology

Three years after Piotroski created the F-Score, which helps filter the cream of the Value stocks, Partha Mohanram wondered whether fundamental analysis could also be effective for Growth stocks? Mohanram set about creating a combination of accounting based factors to see if a scoring system could separate winners from losers among low book-to-market Growth stocks.

Despite the fact that many of these stocks are considered overvalued or high-flyers and, thus, deviate significantly from their fundamental value, Mohanram discovered that fundamental analysis is indeed useful in differentiating between winner and losers among Growth stocks.

His research indicates that Growth firms with stronger fundamentals are more likely to realize earnings growth than Growth firms with weak fundamentals. A firm with strong fundamentals is also more likely to outperform a firm with weak fundamentals if the stocks revert back to being valued based on fundamentals.

Since these stocks consist of both hyped firms with little history of profitability and firms with established track records of success, fundamental analysis is also useful to evaluate Growth stocks. So it's clear that an investor

needs an indicator that separates the good from the bad. The end product of Mohanram's study is the G-Score indicator.

In general, the G-Score considers three categories of signals: Earnings and Cash Flow Profitability, Naïve Extrapolation, and Accounting Conservatism.

Earnings and Cash Flow Profitability is measured in three ways. The first is Return on Assets, the second is Cash Flow Return on Assets and the third is the quality of those earnings as measured by accruals. If firms are not profitable, it greatly diminishes their chances of success.

Naïve Extrapolation is based on the premise that investors tend to naively extrapolate growth rates into the future without regard to the variability in those growth rates. Therefore, a firm's earnings variability is a signal in the G-Score. Likewise sales variability is also a signal. Low variability in sales and earnings is conducive to more accurate forecasts.

Accounting Conservatism contains three signals that indicate the company is expensing in current periods with the hope of higher future income. The three signals are R&D, capital expenditures, and advertising all scaled by assets. The idea here is to invest now for a brighter future.

Each of these eight signals is classified as either 1 (good) or 0 (bad). The sum of these individual signals is the composite G-Score, which is designed to measure the overall quality of a firm. Thus, G-Scores can range between 8 (very strong financial health) and 0 (very weak financial health).

Parameters

G1: ROA (A firm's Return on Assets must be greater than the firm's industry median; it's a good sign if companies are more profitable than most of the companies in their industry)

G2: CFOROA (A firm's Cash Flow ROA must be greater than the firm's industry median; it's a good sign if companies have more Cash Flow than most of the companies in their industry)

G3: Accrual (Cash flow must be greater than net income; this shows a company is less likely to be managing or manipulating its earnings)

G4: Earnings Variability (A firm's earnings variability must be less than the firm's industry median; if earnings are more stable, they're more predictable and being able to predict earnings is a good thing)

G5: Sales Variability (A firm's sales variability must be less than the firm's industry median; if sales are more stable, they're more predictable too)

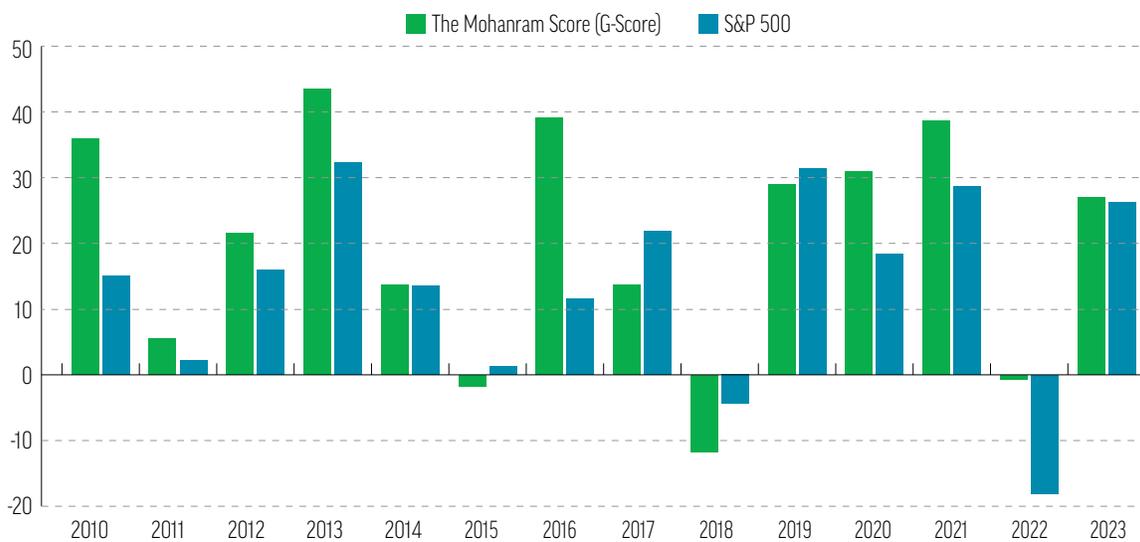
G6: R&D (A firm's R&D/Assets must be greater than the firm's industry median; if R&D is high, it's expected the firm will have higher future revenue)

G7: Capital Expenditures (A firm's Capital Expenditures/Assets must be greater than the firm's industry median; if Cap Ex is high, it's expected the firm will have higher future revenue)

G8: Advertising (A firm's Advertising/Assets must be greater than the firm's industry median; if advertising is high, it's expected the firm will have higher future revenue)

Results

Simulating Mohanram's tests by selecting stocks with a Price/Book in the bottom 20% of all stocks and keeping those with a high G-Score (6, 7, or 8) created a list of about 265 stocks on average over time. The simulated G-Score portfolio, on average, outperformed the S&P 500 from 2010-2023. Rebalancing weekly, the annual returns are shown here:



Over this timeframe, the backtested G-Score portfolio averaged 19% to the S&P 500's 13% and outperformed the S&P 500 in 10 out of the 14 years.

Trading the Strategy

For our example, all stocks are purchased with an equal dollar amount. At the end of the holding/rebalancing period (4 weeks), the screen is run again, keeping the stocks that remain qualified, selling the stocks that no longer qualify and buying the new stocks that newly qualify. However, you may decide to change the trading frequency depending on your own preference and backtest that scenario as well.

Conclusion

The G-Score is the product of extensive research by Mohanram as he built a scoring system, based on fundamental analysis, that separates the Growth winners from the losers. The results indicate that the G-Score is a very dependable measure that beat the S&P 500 in 10 out of the last 14 years. Not many professional portfolio managers can claim those statistics.

And you're in luck. The final score and every component is available and ready to use in Zacks Quant Lab. Also included is a built-in screen that truly takes this monumental research and creates a trade list in just a couple of clicks of a mouse. You can also find the Mohanram Score in the key stats section for individual equities in Advisor Tools, and use it in custom screens and tables.

Start using the G-Score in Zacks Quant Lab today to take your next step toward becoming a smarter Growth Investor.



Take your Value and Growth strategies to a higher level!

Let us show you more about using the F-Score and G-Score in your process—plus learn about many more quant models and analytic tools available in Zacks Quant Lab.

Contact us today for more information or a free demo.

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