

BIF-Strategy & BIF-Algorithm

*Explanation of algorithm and construction of score to establish the
BIF rating*

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What makes the BIF-Algorithm unique?

The following points illustrate what makes the BIF algorithm unique compared to other fundamental tools:

1. Application of the Value Investing method

The algorithm is based on the philosophy of value investing, embodying the motto "a good company at a good price." Our definition of value investing can be found later in this document (refer to the chapter "Philosophy behind the Algorithm"). However, many aspects of this philosophy are qualitative in nature. We strive to transform these qualitative aspects into quantitative measures using various internally developed techniques. Examples of these techniques include the competitive advantage indicator, determination of growth assumptions, stock classification, and valuation. Emphasizing conservatism in assumptions is pivotal in this process. These techniques have been devised with applied econometric expertise and have been internally developed.

2. Application of Classification & No One-Size-Fits-All Approach

Classifying stocks simplifies the process of evaluating them more effectively. Utilizing techniques developed in-house, based on Peter Lynch's classifications, we believe our tool is the first to practically implement his theories. The approach to each classification at BIF differs. At BIF, we do not adopt a one-size-fits-all approach. The classification immediately indicates how a stock should be approached. This approach is unique and, to our knowledge, has not been done before. Additionally, we have developed our own technique for recognizing cyclic patterns. Apart from stock classifications, the algorithm contains numerous exceptions to correct outliers within the data. This is done because we aim neither to be excessively negative nor overly optimistic when evaluating a stock. This aspect also sets the algorithm apart. For instance, what often happens on other websites is that during challenging times, a stock receives a poor score due to overly pessimistic analyst expectations. This is not the case with this algorithm

3. Risk-Reward Rating (BIF Rating)

BIF assigns a risk-reward rating to each stock. This score is built upon the following factors:

- Classification
- Fundamentals
- Valuation (underlying value vs. stock price)

These three factors are combined to create a score, which in turn determines the BIF Rating of a stock. The construction of the BIF score will be explained later in this document. Additionally, it will be clarified how this score translates into a BIF Rating.

As far as we know, this method of constructing a stock rating has not been done before

4. Bottom-Up approach for research

In the development of the algorithm, a bottom-up approach was applied. We first implemented the philosophy we had in mind and then assessed whether companies scored well according to our own analysis. Only after that did we conduct backtests and determine the results. This approach helps us avoid a significant problem in this market: "Overfitting during backtesting." Overfitting is a statistical term that refers to a modeling error that occurs when a function fits too closely to a particular set of data. As a result, the model or strategy may fail with additional data, affecting the accuracy of predicting future observations. With a top-down approach, there is a much greater risk that the model may perform worse or not work at all in the future. This is something that must be absolutely avoided in the development of an algorithm.

5. Fundamental long-term approach

The algorithm examines fundamental data to determine the score and rating. We focus solely on the underlying company in this analysis. Ultimately, we consider the stock price. In case of a mismatch between the underlying value and the stock price, a margin of safety is established, which can be positive or negative. Most algorithms only rely on historical price data and engage in short-term trading, whereas our approach emphasizes a deep analysis of fundamental factors for long-term investment decisions.

6. Focus: Accurate evaluation of quality stocks

Instead of attempting to accurately score every stock, we concentrate on evaluating the well-performing stocks correctly. This approach allows us to stay within our own circle of competence. Additionally, we focus on the long-term price movements of the stock, which over the long run align with the valuation of the underlying company. A savvy long-term investor leverages the short-term volatility in stock prices when it creates excellent buying opportunities. The BIF algorithm is designed to identify and capitalize on such opportunities.

7. No analyst estimates

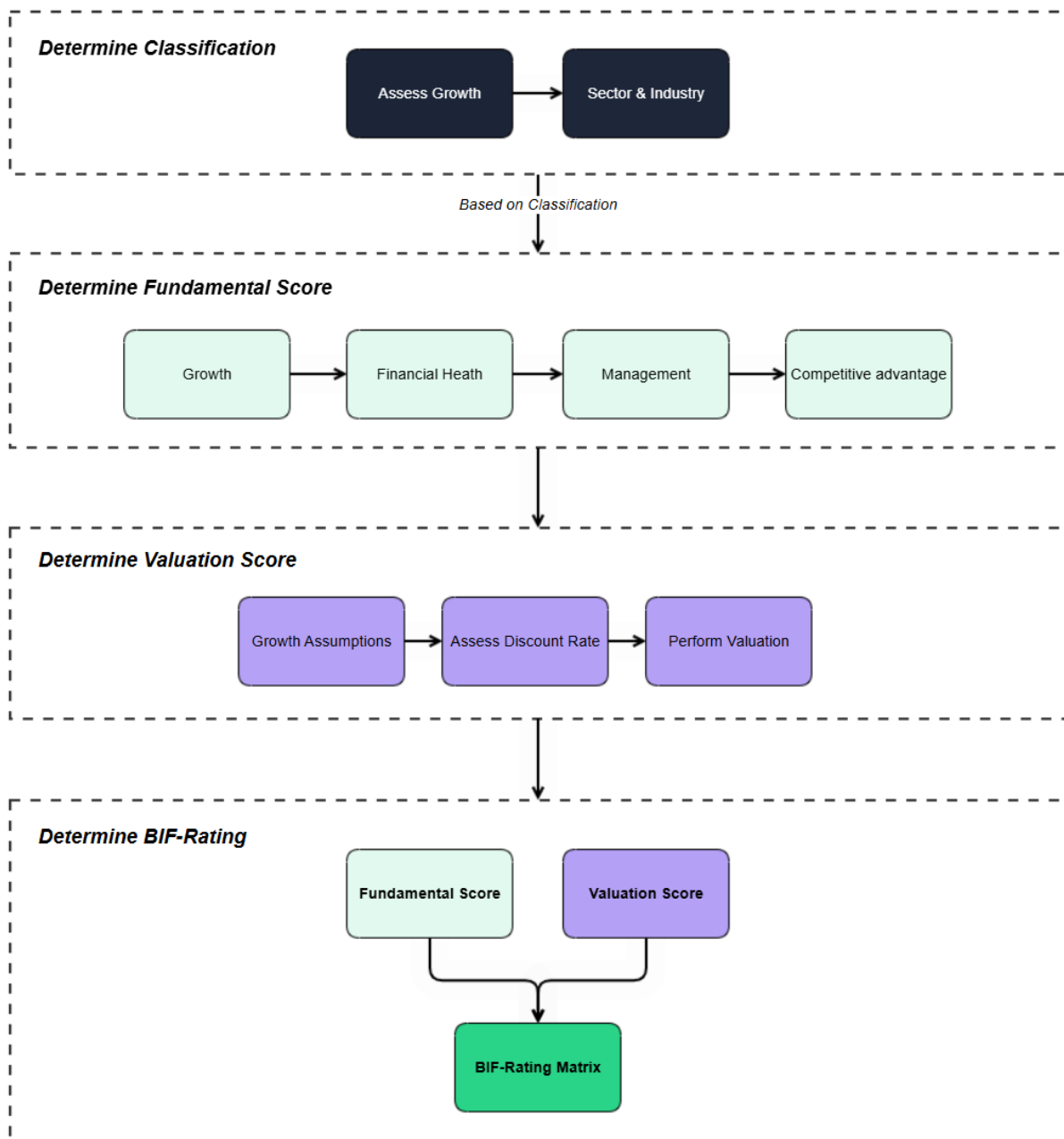
BIF does not use analyst forecasts or estimates. Analyst price targets often merely follow the stock price and their predictions can be overly optimistic or pessimistic. BIF refrains from utilizing analyst estimates due, in part, to these discrepancies.

Construction of BIF Score & BIF Rating

This chapter visualizes the functioning of the algorithm and the process for determining the BIF Rating using the models provided below. It demonstrates how a model portfolio is constructed based on the BIF Rating. Additionally, it provides a detailed explanation for each component of the score's construction.

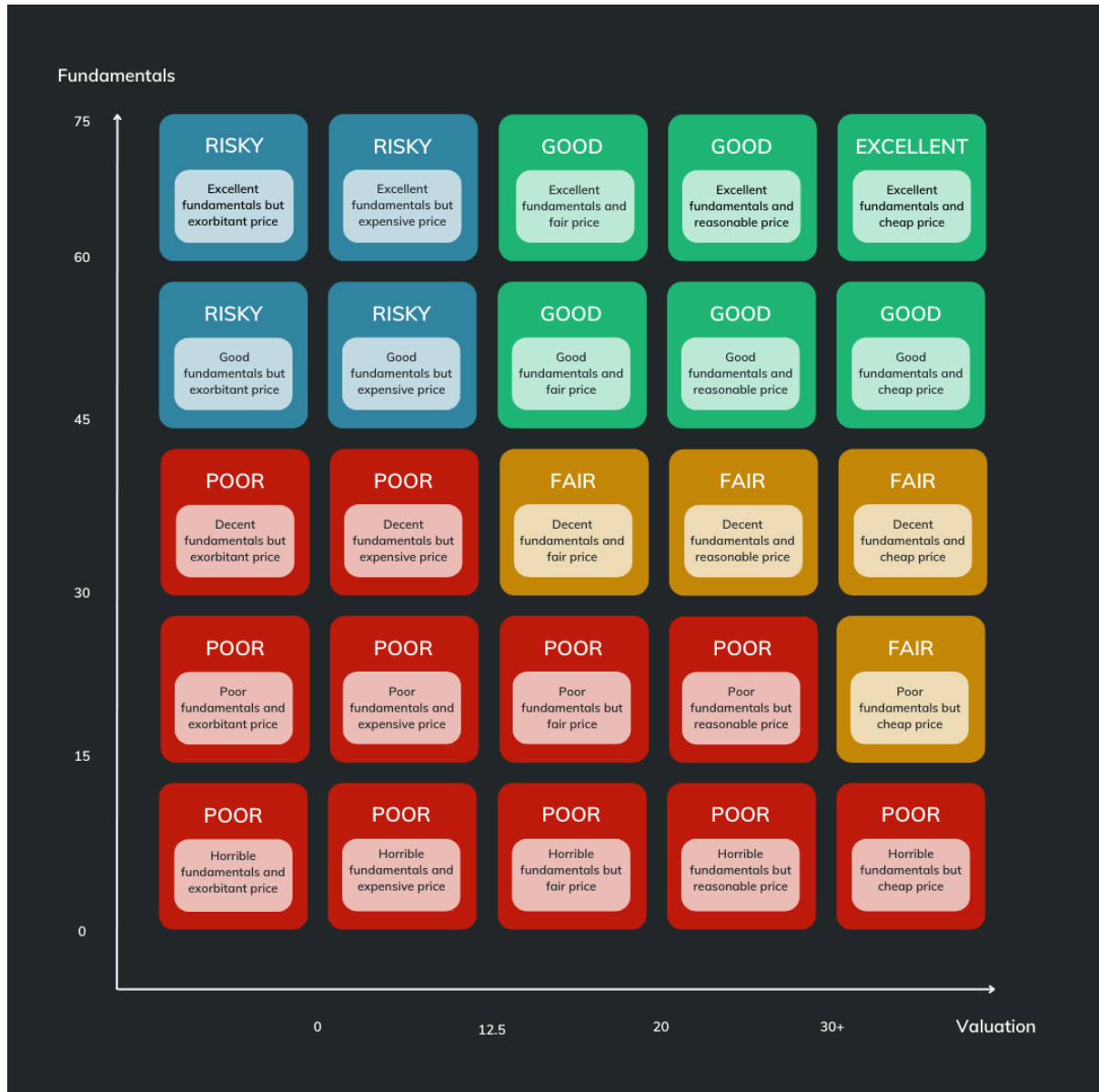
Assigning BIF Rating to a Stock

The model below illustrates the process through which the algorithm assigns a BIF Rating to a stock.



BIF-Rating Matrix

To determine which stocks are selected for the strategy, we employ a comprehensive scoring system that encompasses both fundamentals and valuation metrics. Our scoring system, known as the BIF-Score, comprises two components: fundamentals and valuation (price). See the matrix below.



For fundamentals, we assess various company-specific factors, including growth, financial health, profitability, quality of management, and the strength of the company's competitive advantage. Stocks are scored based on their fundamental performance, with a higher score indicating stronger fundamentals.

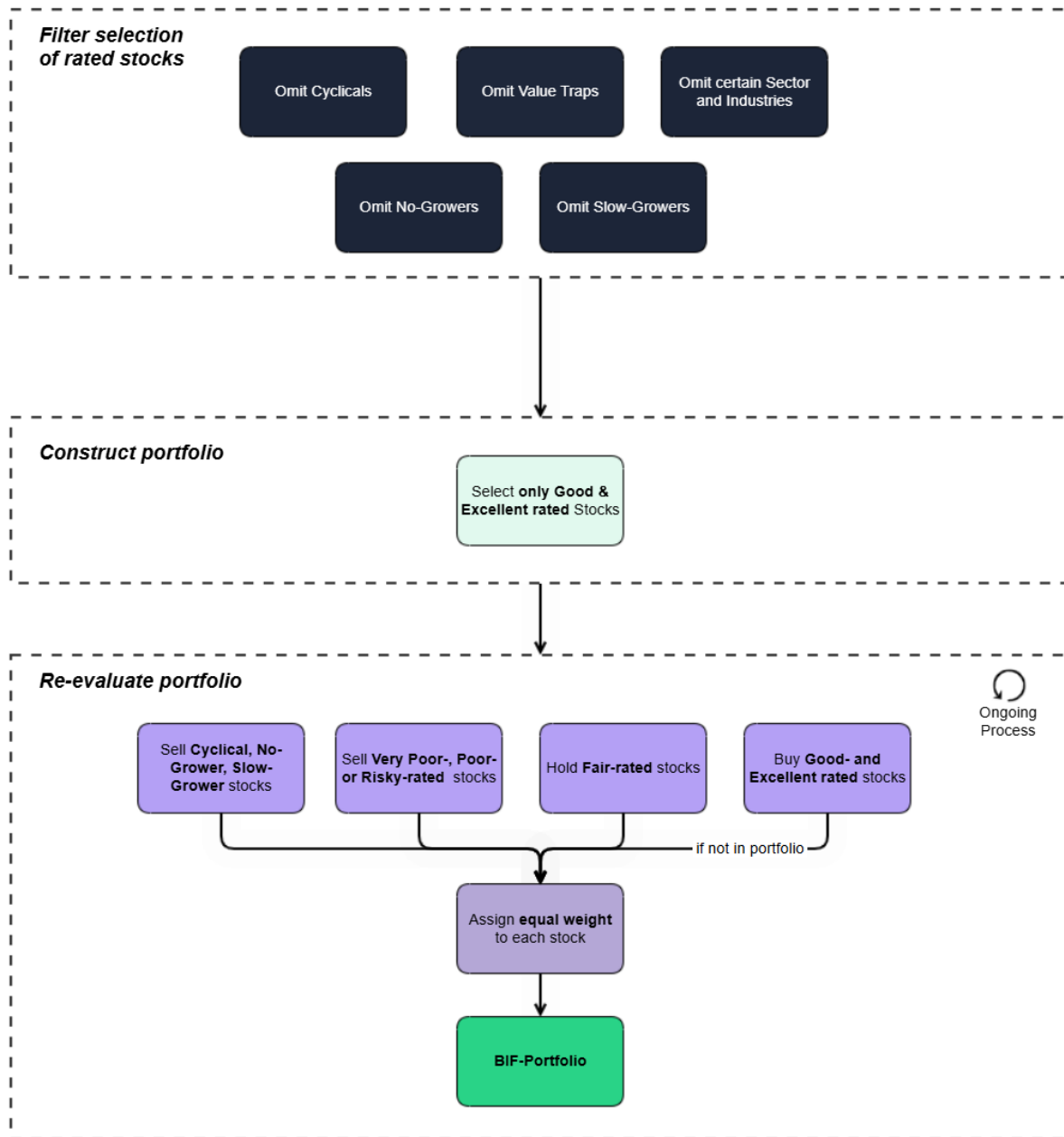
In terms of valuation (price), we evaluate whether a stock is trading at a significant discount to its calculated intrinsic value. A score is assigned based on relative valuation metrics, with higher scores indicating more attractive valuation levels. The combination of the fundamental score and the valuation score results in an overall BIF-Score. A score of 100 represents the

highest score, indicating stocks with excellent fundamentals and attractive valuations, while a score of 0 represents the lowest score, indicating stocks with poor fundamentals and overvalued prices.

Furthermore, the BIF-Score is used to assign a corresponding BIF-Rating to each stock. The BIF-Rating provides a qualitative assessment of the stock's attractiveness as a potential bargain. The available BIF-Ratings include Excellent, Good, Fair, Risky, Poor, and Very Poor (See image). These ratings aid in quickly identifying stocks with a favorable combination of fundamentals and valuation.

Constructing BIF Model Portfolio (BIF Strategy)

To create a BIF model portfolio based on a trading strategy, the following process is applied:



Explanation of each component for BIF-Rating

1. Classification

Firstly, we classify stocks using our proprietary classification system. This initial classification process is crucial as BIF does not believe in a one-size-fits-all approach. This classification system is based on a theory by Peter Lynch and grounded in extensive econometric knowledge. We examine factors such as growth

and the type of business, categorizing the company into one of our stock classification categories. We then use this classification and other company-specific attributes to determine how we will approach the company in terms of fundamentals and valuation (price).

We perform this classification at BIF using our own complex algorithms. For each category, we use various (proprietary) valuation methods. Additionally, company-specific adjustments are made to better assess a company's core growth. Stock classification is based on the philosophy of the world-famous value investor Peter Lynch, who achieved an average return of 29.2% over 13 years. BIF has 7 different classifications, and below is an explanation for each classification along with an approach recommendation:

- **Fast Growers**

Fast Growers are companies growing their earnings at a rate exceeding 15% annually. These stocks have the potential to multiply your investment several times over a 10-year period. However, not all Fast Growers make good investments. Look for stocks with strong balance sheets, substantial profits, smaller market capitalization, and the ability to sustain their growth in the future. If these stocks fail to meet estimates or their growth slows, their prices often plummet. Seek stocks with good fundamentals, honest management, and pay a fair price.

- **Stalwarts**

Stalwarts are established companies growing their earnings annually by 8 to 15%. These are typically more defensive investments at the right price. You often find the right price in Stalwarts currently experiencing excessive negative sentiment. However, do not expect your investment to triple easily since these are larger established companies. Aim for a 30 to 50% profit on your position and do not hold onto them for an extended period. They are too defensive for the risk involved.

- **Medium Growers**

Medium Growers are companies growing their earnings annually by approximately 8 to 15%. These are companies with smaller market capitalization, not heavily established, or operating in a niche market. If they have a sustainable competitive advantage, assess them similarly to Stalwarts. Focus on how they can maintain their profit growth. Also, check if they are not wasting money on unnecessary acquisitions. Aim for a 30 to 50% profit on your position and do not hold onto them for an extended period. They are too defensive for the risk they pose.

- **Slow Growers**

SSlow Growers are companies with annual earnings growth ranging from 0 to 8%. If they have a strong market position, they can be interesting defensive stocks for the portfolio. However, these stocks are not meant to be held for a

long time. Look for companies with solid profits, as low-profit margins might not justify the growth. A healthy balance sheet is also crucial.

- No Growers

No Growers are companies losing ground, showing declining earnings over the past 10 years (on average). However, this doesn't mean they are entirely worthless. When evaluating these companies, you might adopt the "cigar butt" investment approach (finding a few free puffs). You aim to find the very cheap ones. Look for a good return to shareholders (through share buybacks and dividends) as they might not have a very optimistic future. Therefore, free cash flow and a healthy balance sheet are both very important. These might not be the most exciting stocks for your portfolio, but sometimes real bargains can be found.

- Cyclical

A Cyclical is a company whose revenue and earnings rise and fall in a pattern, which may or may not be consistent. Timing is crucial with a Cyclical. When things are good, the stock price rises faster than other stocks. But when things turn sour, the price seems to plummet much faster. Evaluating cyclical stocks requires the ability to detect early signs that the company's cycle is shifting. In this case, you might consider a contrarian approach. However, investing in Cyclical requires a lot more industry-specific knowledge and is generally discouraged by BIF. Paraphrased (due to translation) from a paper by Mr. & Koller (2001), "Companies in sectors sensitive to significant fluctuations in profitability pose a particular challenge for managers and investors trying to understand how they should be valued." Additionally, Peter Lynch wrote the following about Cyclical in his book "One Up On Wall Street": : *"Cyclical stocks are the most misunderstood of all types of stocks. It is here that the inattentive stock picker is most easily separated from his money, and in stocks he thinks are safe. Because the big cyclical companies are large and well-known, they naturally get lumped together with the faithful stalwarts. Because Ford is a blue-chip, one might assume the company will behave the same way Bristol-Myers, another blue-chip company, will. But this is far from the truth."*

- Turnarounds

Turnarounds are companies that are in worse shape (at the time of purchase) than before. They might have had a difficult year or multiple bad years. If these poor results are temporary, Turnarounds can offer excellent return opportunities because when things get better, the stock price rises quickly. The approach for Turnarounds is to determine whether the bad years of results are temporary or structural. A Fast Grower that has a year of poor earnings but still maintains strong revenue growth is the most interesting type of Turnaround. With such companies, you can buy a rapidly growing business

at a low price. This distinction (the type of Turnaround) is also made in the background of our algorithm.

This classification of stocks also includes corrections for outliers. This ensures that a different classification does not happen immediately in a bad year, distinguishing us from other tools that change course with small fluctuations. Long-term trajectory is central to u

2. Fundamentals

With the fundamentals of a stock, BIF looks at the underlying company behind the stock to determine if there is a "good" fundamental company behind the stock. Within the determination of the foundation, we look at several sections:

Growth

In addition to determining the classification, we also look at growth in the foundation. We approach the historical growth of the company and try to determine conservative growth. This growth is determined using linear regression methods combined with our proprietary techniques to correct for outliers. This requires econometric knowledge and is one of the more challenging aspects of the algorithm.

Financial Health

To assess financial strength and profitability, we focus on the Altman Z-Score. This is a scientifically supported metric that help us assess the financial health and assess the bankruptcy risk.

Altman Z-Score

Since BIF is focused on the long term, it is important for a company to have a healthy balance sheet. The Altman Z-Score helps assess this. The Altman Z-score (Altman et al., 1983) is a formula used to determine if a company is headed for bankruptcy. It takes into account profitability, leverage, liquidity, solvency, and activity ratios. Generally, the lower the Z-score, the higher the chance of a company going bankrupt. A value of less than 1.81 indicates a high probability of the company going bankrupt or being in severe distress. If the value is between 1.81 and 2.99, the company has an average chance of going bankrupt or being moderately distressed. An Altman Z-Score greater than 2.99 indicates that a company is in the safe zone. We are referring to the 1983 Altman Z-Score, which is best suited for general use. More recent studies have proven that the Altman Z-Score coefficients are robust and work well in international settings across various countries (Altman et al., 2016). Hence, BIF has chosen the Altman Z-Score for its assessment.

Management

To assess how management allocates capital, BIF looks at three different points. Not all managers or executives effectively allocate capital and consider their shareholders. This is because short-term financial reporting goals influence their "real" decisions, even if these decisions are costly in the long run (e.g., Dechow and Sloan, 1991; Lys and Vincent, 1995; Bushee, 1998; Ayers et al., 2002). Therefore, BIF examines the trend of outstanding shares, dividends, and acquisitions of other companies.

Buybacks

One of the aspects BIF considers when evaluating management is the growth or reduction in outstanding shares. At BIF, consistent share issuance is viewed negatively (and consequently has a negative effect on the score within this component) because it reduces shareholders' ownership due to dilution.

However, companies can also repurchase their own shares if they believe the company is undervalued by the market (Dittmar, 2000). If the company is undervalued, it is advantageous for the company to repurchase shares if it cannot achieve a better return on its capital elsewhere. However, many companies do not repurchase shares for these reasons. As stated by Bens et al. (2003), "Executive share repurchase decisions are specifically driven by incentives for financial reporting." It is essential to consider these factors.

For companies with certain classifications (such as Stalwarts, Slow Growers, Medium & No Growers), share buybacks can be attractive, especially if the company is not experiencing rapid growth. Again, it is emphasized that this is only attractive if the stock is undervalued. This underscores why BIF always considers both a strong foundation and a low stock price in its evaluations.

Dividend

At BIF, dividend payouts do not carry significant weight in the score construction. Dividends are seen as an exit strategy for management when they are uncertain about better capital allocation opportunities. Dividends do not generate returns for the company, and they are subject to double taxation (at the corporate and shareholder levels). In some cases (such as with No-Growers), points are awarded if the payout ratio is reasonable. This is one of the few ways value can be returned to shareholders, especially if a company is no longer experiencing growth.

Acquisitions

Acquisitions, especially larger ones, have a negative impact on the BIF score. In theory, overvalued companies can create value for shareholders by exploiting their overvaluation. They do this by using their stocks as a means to acquire less overvalued companies. However, overvalued companies often pay too much for the companies they acquire. Moreover, these acquisitions seem to be concentrated among acquirers with significant governance issues.

CEO compensation, not shareholder value creation, appears to be the primary driver behind acquisitions by overvalued acquirers (Fu et al., 2013).

Furthermore, companies with low earnings quality (i.e., companies that use stock splits more often to manipulate their stock prices) exhibit poorer long-term returns following acquisitions, especially when these acquisitions are financed through stock issuance. This is not the case for companies with higher earnings quality (Guo et al., 2008).

Competitive Advantage

BIF's unique approach involves evaluating a company's competitive advantage, a crucial aspect in value investing embraced by renowned investors like Warren Buffet, Charlie Munger, Peter Lynch, Monish Pabrai, and Guy Spier. A competitive advantage shields a company's market share over a specific period. This qualitative aspect isn't readily apparent in raw data. Drawing on Bruce Greenwald's ideas, an authority in competitive advantage, BIF developed its proprietary competitive advantage indicator.

Bruce Greenwald, an esteemed economist, value investing expert, and Columbia Business School professor, has influenced finance and investments significantly. He's known for his research into business strategy and competitive advantage, authoring books like "Competition Demystified: A Radically Simplified Approach to Business Strategy," outlining his insights and strategic approaches. The method he describes is highly defensible.

BIF's competitive advantage indicator compares a company's Earnings Power Value (the value if the company maintains its past years' profits) with its Net Reproduction Value (the value if the company were to be rebuilt from scratch). If the Earnings Power Value significantly exceeds the Net Reproduction Value, it indicates a moat. Consistent Earnings Power Value higher than the Net Reproduction Value over several years suggests other companies struggle to enter the market and share in this higher profitability, potentially lowering profits. Models are employed to account for outliers, ensuring a single bad year doesn't immediately strip a company of its competitive advantage.

3. Valuation

Valuing a company is more of an art than a science. Conservatism is central to BIF. For valuations, we utilize a Discounted Cash Flow (DCF) model. In a DCF model, the assumptions provided as inputs are crucial. The principle applies: "Garbage in, garbage out." The intrinsic value derived from the DCF is compared to the current stock price. If the intrinsic value is higher than the stock price at that moment, it indicates a positive margin of safety. Points are assigned based on this. Below is a general description of how the valuation process is undertaken.

Determining growth assumptions and initial start value

Firstly, based on the previously calculated growth (see Growth under Foundation), we establish the growth assumptions for the DCF. Warren Buffet expresses this as follows: "All the money a company would give you between now and Judgment Day, discounted back to today." These growth assumptions are adjusted (if necessary) to remain conservative given the nature of the company. This conservatism is also applied to the initial value of the DCF, a corrected Earnings Per Share (EPS) determined by BIF. The Terminal Multiple (the multiplier used in calculating the residual value after the forecast period) is determined based on the company's growth. The forecast period for our DCF is 10 years. BIF aims to maintain a conservative approach in these calculations.

Apart from adjusting outliers to align with BIF's conservatism principle, for companies experiencing a temporary downturn (Turnarounds), a slightly more positive initial value can be used. Sometimes, the market exaggerates in such situations, and the algorithm can identify these potential opportunities.

Determining the discount rate

In addition to determining growth assumptions and the initial value, the discount rate is also established. At BIF, the discount rate for every company is set at a minimum of 10%. This is because BIF demands a minimum annual return expectation of 10% on every investment made. Besides the minimum 10%, this discount rate is also supplemented with a value calculated based on the consistent issuance of shares. Enormous dilution negatively affects the growth of diluted Earnings Per Share (EPS).

Performing valuation and Margin of Safety

After determining the above points, the DCF is executed. This results in an intrinsic value, which is then compared to the current stock price. If the intrinsic value is higher than the stock price at that moment, it indicates a positive margin of safety. Points are assigned based on the magnitude of this margin of safety.

OSometimes, a stock might have a significantly high or low margin of safety. In positive cases (excessively high margin of safety), this could indicate "value traps": stocks that seem like a bargain but are trading cheap for a very valid reason not yet reflected in the data. In negative cases (excessively low margin of safety), it might indicate a company that our algorithm might not be evaluating accurately. In situations of excessively high or low margins of safety, BIF intentionally does not assign points to valuation.

Philosophy behind the BIF Algorithm

While there are numerous investment strategies, value investing has proven to be a reliable and effective approach to long-term investing.

Definition of Value Investing

Compared to other strategies that rely on predicting short-term market movements or following popular trends, value investing is focused on understanding the underlying value of a company and purchasing stocks at a discount to that value. This approach is based on the belief that, over time, the market will recognize and reflect the true value of the company, leading to higher returns for investors who had the patience and discipline to invest in undervalued companies.

BIF views the definition of "value investing" differently than just investing in value stocks. Particularly, fast-growing companies (that are profitable) are intriguing for BIF. From BIF's value investing perspective, a strong and growing company can indeed be a bargain. BIF explicitly states this in this document because there is often a misconception surrounding the concept of "value investing." BIF does not employ the common jargon that distinguishes between, for example, value stocks and growth stocks.

The importance of understanding a company's value

By focusing on a company's fundamentals rather than short-term price movements, value investing also enables investors to avoid getting entangled in the emotional swings of the market, making more rational investment decisions. In value investing, the emphasis is entirely on the company behind the stock, not on price charts, technical analysis, or trading patterns of the stock. When you buy a stock, you are essentially purchasing a fraction of the company. Therefore, understanding the company's true value is crucial to determine whether the stock is a good investment or not. The stock price is not necessarily a reflection of the underlying business value of the company. In other words, just because the stock price changes every second, it doesn't mean the intrinsic value of the company changes at the same pace. As an investor, it's essential to focus on the long-term fundamentals of the company and not be swayed by short-term fluctuations in stock prices.

Core concepts of Value Investing

One of the core concepts in value investing is the margin of safety. This means that when estimating the value of a company, investors always try to be conservative and ensure that the price they pay for a stock is significantly lower than its estimated value. This provides a safety buffer in case their estimation proves to be incorrect.

Another crucial concept in value investing is the idea of a competitive advantage or "moat" that a company has over its competitors. This means the company has a unique advantage that makes it difficult for competitors to challenge its dominance in the market. Value investors often look for companies with a strong competitive advantage because it provides a certain protection against future competition and increases the likelihood of long-term success.

The concept of "Mr. Market" is another important idea in value investing. This analogy, coined by Benjamin Graham, one of the pioneers of value investing, refers to the market's

tendency to overreact to short-term events and fluctuations. Consequently, stock prices can deviate significantly from the actual value of the underlying company. However, in the long term, the company's value will ultimately determine the stock price. Investors can benefit from this by buying stocks when the market undervalues a good company and holding onto them until the market recognizes the company's true value.

BIF-Score & Value Investing

Our BIF-Score is specifically designed based on these principles of value investing. Internally, using econometric knowledge, science, and insights from prominent value investors, we have developed models incorporating various financial ratios and metrics to evaluate companies. By utilizing these models, we can simplify and expedite the research required for value investing, providing our clients with valuable insights into undervalued companies with growth potential.

Backtesting en bewezen resultaten

Additionally, we have conducted our own backtests using historical data to validate the effectiveness of value investing principles. These tests consistently demonstrated that companies meeting our criteria for undervaluation and growth potential have generated higher returns over time. We are confident that by following our BIF-Score and incorporating these value investing principles into your investment strategy, you can become a better investor and achieve your financial goals.

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