

## Value Investing Analysis Based on America Stock Market

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**Abstract:** Value investment plays an important role in stock investment for individuals or enterprises. This paper checks the robustness of Value Investing, with the theories proposed by Warren Buffett, Benjamin Graham, and David Dodd. Enterprise Value Multiples and Equity Value Multiples are applied for comparative analysis on the samples from 2018 to 2019. By calculating the equity value index, enterprise value index, corporate growth index, etc., the values of two stocks (McDonald's and Shake Shack) were analyzed, and the value of identifying corresponding stocks is also identified from multiple dimensions, so as to provide the decision basis for investors.

### 1. Introduction

Value investing is an investment strategy that involves picking stocks, which appear to be trading for less than their intrinsic or book value. Value investors actively ferret out the stocks that they think the stock market is underestimating. They believe the market overreacts to good and bad news, resulting in stock price movements, which do not correspond to a company's long-term fundamentals. The overreaction offers an opportunity to profit by buying stocks at discounted prices—on sale.

Warren Buffett is probably the best-known value investor today, and he is also a business tycoon, philanthropist, and the chairman and CEO of Berkshire Hathaway. Besides Warren Buffett, there are many others, including Benjamin Graham (Buffett's professor and mentor), David Dodd, Charlie Munger, Christopher Browne (another student of Graham), and billionaire hedge-fund manager Seth Klarman. The success of those investors demonstrates that value investing deserves more concentration to research and explore.

Within the portfolio of high BM firms, the benefits to financial statement analysis are concentrated in small and medium-sized firms, companies with low share turnover, and firms with no analyst following. Yet, this superior performance is not dependent on purchasing firms with low share prices [1].

A concise empirical model is outlined to assess the relative usefulness of accounting and stock market information to explain corporate credit spreads [2][3].

There is evidence that value investing produces higher returns, even after taking into account the experience of the late 1990s [4][5].

Following previous researches, in this paper, the robustness of Value Investing is examined using stock data in fast food industries in America. The reason why the research target is fast food industries in America is that the revenue was \$200 billion in 2015 and the revenue in 2015 is 33 times that of 1970, which was \$6 billion. The revenue in 2015 accounted for over 50% of sales in the entire restaurant sector. The revenue ought to attract more attention from researchers. The hypotheses in this paper to be tested are: (1) whether value investing is still alive in the fast-food industry market? (2) which ratio is more important and accurate to prediction? (3) which strategy is better in the fast-food industry.

In this paper, Enterprise Value Multiples and Equity Value Multiples are applied to make a comparative analysis on McDonald's and Shake Shack. In the empirical analysis, daily prices from 2018 to 2019 are studied. These two stocks are selected because McDonald's and Shake Shack are well-known in the world, and their data are easily accessible.

The organization of this paper is as follows. Section 2 explains Value Investing and methodology. The empirical analysis is conducted in Section 3. And finally, Section 4 is the conclusion.

## 2. Model and Methodology

### 2.1 Value Investing

In the stock market, the equivalent of a stock being cheap or discounted is when its shares are undervalued. Value investors hope to earn profits from the shares they perceive to be deeply discounted.

Investors attempt to use various metrics to find the valuation of the intrinsic value of a stock. Intrinsic value is a combination of using financial analysis, such as studying a company's financial performance, revenue, earnings, cash flow, and profit and fundamental factors, including the company's brand, business model, target market, and competitive advantage. Some metrics are also used to value a company's stock, including Price-to-book, Price-to-earnings, and Price-to-Sales.

Besides equity value multiples, there are many enterprise value multiples that are used in this paper, including analyzing debt, equity, sales, and revenue growth. After reviewing these metrics, the value investor can decide to purchase shares if the comparative value—the stock's current price vis-a-vis its company's intrinsic worth—is attractive enough..

### 2.2 Value Investing Strategies

One side of value investing is to look at the price of what investors buy, and the other one is to look at the quality. To be specific, quality investing means purchasing “good” companies. Quality investing can be combined with value investing, which can be called “quality at a reasonable price” [6][7].

A classic dividend discount model (DDM) implies that the following are signs of good firms [8][9]. The dividend discount model provides a means of developing an explicit expected return for the stock market. By comparing this return with the expected return on bonds, as derived from a yield to maturity calculation, the investor can calculate a return spread between these two classes of securities that can be used to assess the relative attractiveness of each [10][11].

## 3. Empirical Analysis

### 3.1 Data

Two stocks named McDonald's and Shake Shack are selected and comparatively analyzed, respectively. The data is downloaded from Bloomberg database. The sample period is from January 2018 to December 2019 [12]. The stock returns are the log returns and are calculated by following formula:

$$R_{i,t} = \ln P_{i,t} - \ln P_{i,t-1}. \quad (1)$$

where  $P_{i,t}$  is the stock  $i$  spread at time  $t$ .  $R_{i,t}$  is the returns of stock  $i$  spread at time

A comparison analysis is conducted about the descriptive of McDonald's and Shake Shack in the following to speculate the rate of return and risk of two stocks [13][14]. Some results are summarized in Table 1.

Table 1. Descriptive of McDonald's and Shake Shack

	Mean	Med.	St. De
McDonald's	0.14	0.87	147.87
Shake Shack	0.52	0.65	263.59

According to Table 1, it can be found that the Mean of McDonald's is lower than Shake Shack's. Moreover, the Med. of McDonald's is higher than Shake Shack's. Besides, the St. De. of McDonald's is lower than Shake Shack's. Based on the analysis of the result, the rate of return of Shake Shack is higher than McDonald's, and the risk is higher.

In this study, Equity Value of McDonald's and Shake Shack and Enterprise Value of McDonald's and Shake Shack and Sales Growth of McDonald's and Net Income Growth of Shake Shack are all analyzed to decide which stock is more valuable to investors.

### 3.2 Estimation Results

#### 1) Equity Value Multiples

A comparison analysis is conducted about the equity value of McDonald's and Shake Shack in this section, to investigate whether the two stocks are underestimated. Some results are summarized in Table 2 [15][16][17].

Table 2. Equity Value of McDonald's and Shake Shack

	<b>P/E</b>	<b>Forward P/E</b>	<b>P/S</b>	<b>Forward P/S</b>	<b>PSG</b>
McDonald's	0.14	0.87	147.87	28.44	11.02
Shake Shack	0.52	0.65	263.59	18.60	0.66

According to Table 2, it can be found that the earning ability of McDonald's is lower than that of Shake Shack. Moreover, according to the P/S ratio: the price of McDonald's is higher, but the sales of Shake Shack are higher. Since the P/E ratio of McDonald's is lower than Shake Shack, the P/S ratio of McDonald's is higher than Shake Shack, meaning that the liability of Shake Shack is very high, and the McDonald's paid a lot sum of money on scale expansion. The sales of Shake Shack are comparatively lower and the liability is also lower, demonstrating that Shake Shack is a growth type of company.

#### 2) Enterprise Value Multiples

The Enterprise Values of McDonald's and Shake Shack are also comparatively analyzed to investigate which stock has higher liability and which stock spends longer time for recovery [15][18][19]. Some data are reported in Table 3.

Table 3. Enterprise Value of McDonald's and Shake Shack

	<b>D/E</b>	<b>EV/Sales</b>	<b>EV/Net Income</b>
McDonald's	29.05%	9.2	18.58
Shake Shack	9.9%	4.0	32.81

According to Table 3, because the D/E ratio of McDonald's is higher, the liability of McDonald's is higher. The EV/Sales is higher, and it will take longer for the company to recover. In summary, it can be concluded that the liability of McDonald's is higher and it would take longer for the company for recovery.

#### 3) Growth

To deduce each firm's type, this section compares the Sales Growth of McDonald's and Net Income Growth of Shake Shack, as shown in Table 4.

Table 4. Sales Growth of McDonald's and Net Income Growth of Shake Shack

	<b>Sales Growth</b>	<b>Net Income Growth</b>
McDonald's	2.52%	-0.0670
Shake Shack	23.01%	-0.0492

According to Table 4, McDonald's is a profitable type of company since the sales growth of McDonald's is low. Moreover, because McDonald's Net Income Growth is negative, McDonald's Net Income Growth is further below Shake Shack. Furthermore, Shake Shack is a growth type of company, demonstrating Shake Shack's profitable ability will be better than McDonald's.

#### 4) Management

The Revenues of McDonald's and Shake Shack are also compared in the following Table 5 to

infer which type of firm each company is. Some data are reported below.

Table 5. Revenue of McDonald's and Shake Shack

	<b>Operating Margin</b>	<b>EBIT Margin</b>	<b>Net Income Margin</b>
McDonald's	6777.2	6777.2	4453.2
Shake Shack	25197	26154	26210

According to Table 5, on the one hand, since the Operating Profit Margin of McDonald's is 43.09% and the Earning Before Income Taxes Margin is 38.09%, the main expenditure of McDonald's is on the tax. On the other hand, Shake Shack's main expenditure is on the pre-opening cost. All in all, McDonald's is a profitable firm, but Shake Shack is a growth form firm.

Based on the above analysis, it can be concluded that from the perspective of Equity value, Shake Shack's is worth to invest since it is a growth type of company. From the perspective of Multiples, Shake Shake's is worth to invest since the liability of McDonald's is higher and it would take longer for the company for recovery [20][21][22]. From the perspective of growth, Shake Shake's is worth to invest since its profitable ability will be better than McDonald's. From the perspective of management, McDonald's is a profitable firm, which is worth to invest if buyers want to gain more in a short period of time. In contrast, Shake Shack is a growth form firm, which is worth to invest if investors want steady returns in a low-risk way.

#### 4. Conclusions and Future Extensions

Value investing is an investment strategy that selects stocks trading below their intrinsic or book value. Value investors actively search for the stocks they believe are undervalued, and they argue that the market is overreacting to both good and bad news, causing share prices to move out of line with the company's long-term fundamentals. This overreaction offers an opportunity to buy shares at a discount to profit.

This paper makes use of McDonald and Shake Shack's stock data to test the soundness of value investing, and it compares the multiple of enterprise value with the multiple of equity value. The empirical analysis takes the daily price from 2018 to 2019.

All in all, McDonald's is a profitable firm, and Shake Shack is a growth form firm. After evaluating these metrics, value investors can decide which stocks to purchase.

However, there are some drawbacks to the paper. Factors are limited, reflecting in limited number index and few mathematic models. The future plan is to deeply search for more indexes and more mathematical models.

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