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Literature Review of Empirical Relation between Value Investment Strategy and Superior Returns

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Abstract

This study reviews peer-reviewed academic research on the empirical relation between value investing criteria of common stocks proposed by Benjamin Graham and "abnormal" returns. Three criteria are reviewed: (1) relation between earning yield or P/E ratio, size and returns, (2) relation between book value and returns and (3) relation between contrarian strategies and returns. This research found: (1) strong support for the price-ratio hypothesis that was shown to continually yield above-average risk-adjusted return, (2) support for the abnormal performance of high book-to-market stocks and (3) support for contrarian strategies that are capable of showing higher-than-average returns. Academic explanation of such "abnormal" returns is also examined, and three main academic views are discussed: (1) examined variables act as a proxy for more fundamental unknown value, (2) CAPM is misspecified, (3) markets overreact due to expectational errors made by its participants. The conclusion is made that all examined criteria proposed by value investing – be in low P/E and high B/M values – are some signals for the fact that stock is undervalued relative to its "intrinsic" value, which provide convincing support for value investment strategy.

1. Introduction

Value investing is an investment approach that many professionals adopt today for their portfolios. The approach was originated in 1934 with the publishing of Graham and Dodd's textbook "Security Analysis." Later Benjamin Graham has been credited as a "father" of value investing. The fundamental point of Graham approach is the concept of the intrinsic value of a business that is a derivative of a company's assets, financial strengths, earnings, and dividends. Graham believed that focusing on intrinsic value can protect an investor from being misled by the misjudgment of the market during periods of deep optimism or pessimism that happens in the market from time to time. The complete philosophy of value investing was finally formed in his book "The Intelligent Investor," first published in 1947.

Put this into perspective, the starting point for the modern theory of finance is the fact that capital markets are fully effective - the price of a particular stock reflect, and therefore there is no opportunity for market participants to obtain a superior return in the market other than accepting higher risk. While there is some degree of misconception

among academia professionals when it comes to ideas of value investments strategy - most common is that value Investment assume that markets are inefficient and abnormal profit is easily attainable - such explanation would be some simplified and judgemental.

1.2. Purpose of the review

Ideas and investment strategy proposed by value investing are sound and logical, and over decades many market practitioners successfully used principles documented by Graham in his book "Security Analysis" and "Intelligent Investor." Yet value investing strategy is not supplemented by justifiable systematic statistical work to test its reliability and therefore can be suggested to not beings persuasive. While academic literature offers a wide range of studies on a cross-sectional pattern of returns as well as on abnormal returns of one or another investment strategy, no study, at the best of the author's knowledge, had been conducted to test the relationship between different stock selection criteria proposed by value investing and return. There are, however, studies that test the relationship of a particular fundamental variable to a cross-sectional pattern of returns, but those studies focus on one particular variable, usually some ratio.

The purpose of this literature review is to narrow the gap between statistically untested ideas of value investing and empirical academic studies of the relationship between value investing criteria in stock selection and returns. The new perspective this paper offers is the systematization of a wealth of academic literature conducted to examine the empirical relationship between particular common stocks factor and returns in the framework of value investment strategy. Author attempt, therefore, to examine, in a systematic manner, whether there is academic support for value investment strategy and whether there is empirical evidence that this strategy is capable of producing above-average returns. When such evidence is found, different academic explanations and opposing opinions of this phenomena are discussed.

1.3. Academic attention and problem description

The academic support for value investment strategy followed only late 1970 when accounting professor Sanjoy Basu published a thoroughly competent study of value investing strategy. Since that time, the value investing has been open to discussion and of particular interest for financial economists, professors, researchers and practitioners as

confirmed by the vast body of studies conducted. Even if many tried to find the truth whether the value investing works, no ultimate conclusion exists. There are many opposing opinions regarding this investment approach; for each article that confirms the approach, there is another that invalidates it. As a result, the question of whether a value investment strategy is capable to consistently show a superior return or not remains unanswered.

The focus of this article are studies that attempted to determine empirically whether the value investing strategy is capable of showing better than average returns. For this purpose, an extensive literature review of articles focusing on testing the performance of stocks satisfying "value" criteria is conducted. The findings of those articles are summarized in Section 3 in a table. The author hopes to find whether there is some consensus among academic professional and scholars on value investment strategy and whether it is possible to conclude from those studies that value investment is capable of outperforming the market. In order to make it easier for readers to link conducted studies on the original idea of value investing, Graham's criteria for selecting value stocks are given with the situations that Graham believed could bring above-average returns. The author hopes that this will allow readers to see the source and understand the reasons for the possibilities of above-average returns in an efficient market.

1.4. Description of value investment strategy, methodology, and source of realizing superior returns

In order for a reader to better understand the reasons of why value investment strategy is still a topic of debate among both academic professionals and practitioners, some explanation of value investment approach is required. Value investment accepts the idea that it would be difficult for any market player to find a stock that would perform better than the market average. There are two problems for any market participant. First, even if the investor will be able to find a promising stock with excellent growth probability, there is a likelihood that the price already reflects such prospect and thus it will be difficult - if not impossible - to realize returns higher than the market average. Second, there is a great chance that an investor will be wrong about the growth perspective in the first place and thus realize loss rather than a profit.

Instead of seeking to produce a superior return, value investing focuses of methods to minimize the risk of misjudgment caused by "tides of pessimism and euphoria which sweep the market" that could mislead investor into overvaluation or undervaluation of a particular stock. The method to do so is to determine, by using fundamental analysis techniques and significant analytical judgment, the "intrinsic" value of a stock independent of the market price. While efficient market hypothesis (EMH) assumes that market price of a stock is an intrinsic value of a business, value investing suggests that true value of a stock can be undervalued or overvalued relative to the market price. Therefore, value investing approach suggest purchasing stock lower or not far from this intrinsic value so that investors can achieve a "margin of safety" in case of unpredictable market moves or in case an analyst was wrong in his judgment.

Value investing thus has a different view on the market when compared to modern finance theory. While EMH assumes that market is always efficient, even in time of Internet "bubble" and "crash of 2009" value investing believed that market are efficient most of the times, but there are periods of deep pessimism or euphoria for a particular market and for a particular stock, that provide investors with possibilities of earning above-average returns. As Graham liked to say, the market is a voting machine in the short run, but is a weighing machine in the long run. Graham came up with an anecdotal explanation of the market. He wrote: "Imagine that in some private business you own a small share that cost you $1,000. One of your partners, named Mr. Market, is very obliging indeed. Every day he tells you what he thinks your interest is worth and furthermore offers either to buy you out or to sell you an additional interest on that basis. Sometimes his idea of value appears plausible and justified by business developments and prospects as you know them. Often, on the other hand, Mr. Market lets his enthusiasm or his fears run away with him, and the value he proposes seems to you a little short of silly. If you are a prudent investor or a sensible businessman, will you let Mr. Market's daily communication determine your view of the value of a $1,000 interest in the enterprise?" [Graham, 1973, p. 204-205]

The primary focus of value investing is thus finding an intrinsic value of a business and comparing it to the market price. Graham himself summarized his philosophy by stating that value investing consists of analyzing potential purchases according to sound business principles and having judgment independent to prevailing market opinion. Graham believed that investor is not right or wrong because his opinion is identical to that of the

crowd. He believed that an investor is right only if his data and reasoning are correct, irrespective of the opinion of the market.

1.5. Research Method

Academic literature on the topic of above-average return is generally concentrated on the finding an effect of correlation of a particular variable to the returns. The academic literature distinguishes between several variables: price, beta, size, prior returns, earning yield and book-to-market ratio. The theme in most of those study is whether a return of stocks satisfying criteria of "value" stocks according to one or another parameter is higher than the return of "glamour" stock, which usually is some opposite of the former group. There are also generally two types of explanations in a case when an above-average return is realized: (1) stocks that show superior return carry higher risk compared to the general market. (2) Higher return can be realized due to an overreaction of the market. Supporters of first explanation believe that superior return can be incorporated to and thus explained by the capital asset pricing model (CAPM), while supporters of second explanation believe that there are some variables in the stock that are not incorporated, and thus cannot be explained by rational pricing model.

CAPM states that the price for a particular stock accurately reflects all available information at any time regarding this stock, so that any individual can randomly choose any stock from a list and realize the same rate of return, given the risk level, so that employing sophisticated analytical techniques for stock selection is impractical activity. In other words, in the CAPM framework the price does not matter because it reflects all future earnings and prospects of a stock accurately – i.e., the stock whose price is high relative to its earnings and stock whose price is low relative to its earnings will yield the same relative returns in relation to the price paid, assuming that both stocks carry the same amount of risk. Value investing approach is some different here: no matter how good a prospect of stock of a particular company might be, its purchase by an individual is not justified if the price paid is too high. In other words, CAPM states that price of any stock reflects its value accurately at any time, while value investing states that price is what you pay for the stock, while the value is what you get for the stock and those two variables are not the same.

1.6. Stock selection criteria for value investor according to Graham

In order to provide readers with quantitative parameters according to which a particular stock can be considered being "value," criteria as defined by Graham himself and later adjusted to the new emerging conditions of the market are presented.

(1) Price to Earnings ratio of not more than 9. (2) Current assets at least 1.5 times current liabilities. (3) Debt not more than 110% of net current assets. (4) Earnings stability: no deficit in the last five years. (5) Stable dividend record. (6) Earning growth: last year's earnings more than those of 1996. (7) Price: less than 120% net tangible assets. (8) Price: less than 1.5 times book value. Some discussion on why Graham proposed such criteria for value stock is required. The cornerstone of value investing philosophy is a statement that the price of a common stock consists of the actual value of an enterprise plus the sentiments of market participants regarding this stock. EMH propose that there is no such thing as "market sentiments" in asset pricing, thus, immediately reject the statement hypothesis of value investing. There is a wealth of academic literature that document the presence of sentiments phenomena on a financial market and document its effect on securities valuation and price [Fisher & Statman, (2000); Baker & Wurgler, (2006, 2007)]. Therefore, Graham believed, that it is possible to find two similar companies with similar fundamentals and risk but traded on the lower price relative to earnings and/or book value when compared to more expensive firm, only because the later enjoy better sentiments among market participants and those sentiments are not related to the fundamental value of a given enterprise. Graham's metaphor of "Mr. Market" that visit you every day and offers his opinion on what your $1,000 interest in a particular business is worth is the description of this particular market sentiment. Just like "Mr. Market's" opinion on what $1,000 interest in a business is worth does not change the value of this interest, the same way sentiments of market participants do not change the fundamental value of an enterprise.

So, the combination of eight above-mentioned value criteria proposed by Graham should provide investor with, on the one hand, financially strong company, satisfying criteria number (2), (3), (4), (5) and (6), and on the other hand, ensures that the price paid for the enterprise is relatively low, compared to a fundamental or "intrinsic" value of an enterprise, satisfying criteria number (1), (7) and (8). In combination, such systematic approach ensures that investor buys a financially strong company with adequate growth perspective and satisfying investments returns, and on the other hand assure the investor

that he does not overpay for the company due to market sentiments. Value of 9 for P/E ratio might vary depending on the value of the price-to-book ratio, but the product of two should not, according to Graham, exceed 22.5 since Graham already considers product higher than this number as a sign for overvaluation.

To better understand the source of undervaluation and thus superior earnings proposed by value investing, several areas that Graham believed could bring better than average profit to an investor are presented. One area was to investigate among large companies for one or another reason unpopular on the market. Such stocks are indicated by a low price to earnings ratios. The idea is that the market's neglect of these firms results in the slow recognition of better earnings, extending the period of unpopularity. The second area Graham suggested was to look for "bargains," particularly among secondary stocks. Graham defined a "bargain" as a stock that is selling for 50% or less than its "intrinsic" value. The most apparent bargain, according to Graham, was one selling for less than its net working asset alone—in other words, the investor would be buying a company without paying for its assets such as buildings and machinery, or any other intangible assets. The third area is buying secondary companies at a bargain. Graham believed that, on the one hand, there is a tendency of the market to undervalue these enterprises and on the other hand, the size of those companies was large enough to maintain its business operations and ability to earn a satisfactory rate of returns in case of bad economic conditions. With such stock, investors would be expected to profit both from earnings paid in dividends and those that were reinvested. Moreover, in bull markets, he noted, the price of these firms often advances to full valuation.

In general, Graham believed that investor should base his investment judgment on quantitative, rather than qualitative factors. Such quantitative parameters allowed academic professionals to test the value investment approach empirically. Value stocks criteria chosen for this literature review consist of P/E ratio, book value and book-to-market ratio and prior performance of a stock relative to its historical and current price, implemented in contrarian strategy framework. There are three reasons for such specific selection of criteria: firstly, P/E ratio and book-to-market ratio subtract a substantial amount of information from the income statement and balance sheet respectively, which are the primary source of information for fundamental analysis proposed by value investment strategy. Secondly, Graham himself proposed that the starting point for stock valuation is the calculation whether "product of the earning multiplier times ratio of price

to book value is not exceeding 22.5" (Graham, 1973, p.349); therefore it is wise to focus on those variables. Thirdly, those criteria are easy to measure quantitatively and to test empirically, yet the simplicity of the test does not depreciate the value of results. In addition, many scholars chose P/E ratio, book-to-market ratio and prior performance relative to price as differentiating criteria of "value" stock compared "glamour" stock, as will be demonstrated further by studies of Chan, Hamao, & Lakonishok (1991), Lakonishok, Shleifer, & Vishny (1994), La Porta, Lakonishok, Shleifer & Vishny, (1997), Piotroski, (2000) and others.

With this in mind, we should proceed to the empirical examination of the above-mentioned "value" criteria concerning returns documented in academic literature over the course of last 40 years. Section 2.1 examines the relationship between earning yield or P/E ratio, size and return. Section 2.2 examines the relationship between a book and book-to-market value and return. Section 2.3 examines the relation between contrarian strategies and return. The research results for each criterion in light of the value investment strategy, as well as the implementation of those results to the value investing framework, are then discussed at the end of each section. Section 3 concludes results and provide a summary table of reviewed academic literature as well as make a suggestion for further studies.

2.1. Relationship Between P/E ratio, Size, and Returns

In this section, the relation between P/E ratio, Size, and Returns is analyzed. The reason why those three variables are grouped is that they interrelate to each other and, as a set of empirical studies would discover it, one variable turns out to be a proxy for another variable. It is worth to mention that following empirical studies of the relationship between one or another variable to return are neither mutually exclusive nor collectively exhaustive. Considerable overlap exists among some studies, but they have sufficiently different motivations.

Nicholson (1960) was a pioneer to test whether the P/E ratio is related to stock performance. He tested whether there will be a significant difference in performance of stocks with the current P/E ratio of over 25 compared to those stocks with the ratio of below 12 over the period of 3 to 10 years. For this purpose, he conducted two studies:

1. The first study covered 100 common industrial stocks, consisting of high-quality issues of large companies. For this study, prices and P/E ratios were collected for every stock for years 1939, 1944, 1949, 1954 and 1959 and the percentage of price appreciation was calculated from each of these dates to following dates so that 11 periods were formed in total.
2. The second study covered 29 common chemical stocks. Prices and P/E ratios were observed for the years 1937 to 1959, and the percentage of price appreciation was computed for each stock as follows: 3-year periods following each of the years 1937-1954, inclusive; 6-year periods following each of the years 1937-1950, inclusive; and 10-year periods following each of the years 1937-1947, inclusive.

The findings were as following: for the first study, in all 11 periods, 20 stocks with lowest P/E multipliers showed a significantly higher rate of appreciation compared to stocks with 20 highest multipliers. On the average, appreciation level of high P/E stocks were only 58% of low P/E stocks. For the second study, 50% lowest P/E stocks showed 50% higher level of appreciation compared to 50% highest P/E stocks. Nicholson has stated that it is assumed among market participants that high P/E ratio of a stock was an indicator of growth and therefore such stocks were bought for appreciation, while low P/E stocks were bought only for income – so that it is nearly ten-to-one in favor of high P/E stocks. However, the results of Nicholson' study indicate that on average the purchase of stocks with low P/E ratio will result in greater appreciation in addition to the higher income provided.

Nicholson has explained such result by a conclusion that investor satisfaction with high P/E stocks reflects investors satisfaction with high-quality companies or with companies that experienced strong prior earnings growth. Such stocks quickly become "popular" on the market, and its price rises quicker than its earnings, often running to the extreme. Such situation led to slowing-down or reversal of upward price trend of high P/E stocks, which make such stocks less favorable compared to low P/E stocks that have not yet experience price increase to vulnerable levels. This conclusion is consistent with the idea of Graham that the price of stock showing strong growth in the past and expecting to continue to grow at a rapid rate in the future already reflect this expectation, and therefore, by buying such stocks, that is typically reflected by high P/E ratio, investor is paying for the future earnings expectations that are yet to come and by no means can be guaranteed.

The first empirical academic study of value investing was conducted only late 1970 when accounting professor Sanjoy Basu published a paper where the relationship between stock performance and P/E was tested. Results show that portfolios consisting of low P/E stocks earned on an average higher risk-adjusted return (13.5% and 16.3% per annum on average) compared to a portfolio consisting high P/E stocks (9.3-9.5% per annum on average) over the period of 1957 to 1971 (Basu, 1977). Such abnormal return of low P/E stocks was not captured by capital asset pricing model (CAPM) therefore it can be concluded that the information that carries P/E ratio was not fully reflected on the stock price in as rapid and effective manner as suggested by semi-strong efficient market hypothesis. Such results also signal of some disequilibria that were present on the market at least during the period of the study sample. Based on the obtained results Basu concluded that stocks selling at different ratios of price-to-earning was inappropriately valued and priced vis-à-vis one another and abnormal risk-adjusted returns possibilities were present on the market. Basu claimed that for investor employing simple techniques of fundamental analysis in assessing stock buying decisions and activities toward annual rebalancing of portfolio in accordance to buying low P/E stocks – one of the critical criteria of "value" stock as proposed by Graham – such strategy could bring above-average returns over the period of 1957 to 1971.

The fact that portfolio consisting of low P/E stock yield above-average risk-adjusted return consistently over the period of 14 years studied provide support for a price-ratio hypothesis that suggests that there is a strong relationship between P/E ratio and stock performance. In an attempt to explain existence of such relationship, Basu suggested that it is dues to lags and frictions related to the process of incorporation of publicly available information towards the stock price that leads to the conclusion that publicly available P/E ratio carries "information content" that provide investors with opportunity of realization of superior returns. From the perspective of the goals of this literature review, Basu's study fully supports a price-ratio hypothesis of Graham. Consistent with the idea of Basu that P/E ratio carries "information content" that is not adequately reflected in the price, value investing states that markets are correct in pricing securities most of the time, but there are times of abnormal pessimism or optimism when market undervalue particular stock, providing opportunity for patient investor to exploit such mispricing on the market. In general, the sample period of Basu's study can be called well-representative as 14 years of study covers a full business cycle, with the highly volatile

and uncertain characteristics of the market. Around the same time the shrinkage of most popular growth (usually high P/E) stocks was vividly observed (decrease of IBM stock price from high of 607 in December 1961 to a low of 300 in June 1962). At the same time this period was characterized by launches of new common stocks of small companies that were popular among investment public, usually traded at high P/E ratios. Due to market down drift of 1962, many of those newly-launched stocks lost more than 90% of its quotation in just a few months. Later 1962 market reversed and continued a course of stock-prices averages upward.

After the publication of Basu, an academic reaction followed. Most financial economists explained anomaly returns of low P/E stocks documented by Basu as a statistical artifact. Ball (1978) argues that the study of Basu (1977) failed to control for risk. He examined twenty studies of excess-returns documented in the academic literature and provide alternative explanations of anomaly returns reported by Basu (1977) by suggesting that P/E ratio act as a proxy for some omitted variable not specified on two- parameter asset pricing model. He also suggested that low P/E stocks carry a higher level of risks compared to higher P/E stock that explains the superior return of such stocks. However, Ball could not define the source of this risk among low P/E stocks.

Reinganum (1981) considered methodological flaws in academic studies of excessive stock returns as was reported by Ball (1978) and conducted a study to analyze abnormal returns realized due to E/P effect in a framework that avoids such flaws. He found that the P/E effect is a proxy for the size effect and that such effect, as reported by Basu (1977) disappears when the control for size variable is experienced. At the same time, even when he controls for the P/E ratio, the significant size effect is still present, suggesting that P/E is a proxy variable for the size and not vice-versa. Nevertheless, when Reinganum formed portfolios on the basis of the ranked quarterly E/P ratios and size, he found that those portfolios show average return systematically higher than predicted by the CAPM. He concluded that while the E/P anomaly and size anomaly exists when each variable is considered separately, they appear to be related to the same set of omitted factors that seem to be associated with firm size more than with E/P ratio.

Banz (1981) conducted a study that examines the empirical relationship between the return and the size of NYSE common stocks and found the full support of Reinganum's (1981) results. He found that smaller firms have had higher risk-adjusted returns, on

average, than larger firms and such return for small firms is too high given their risk estimates, and too low respectively for large firms. His results also suggest that the side effect is not linearly distributed among firm: the size effect arise among very small firms, while there is no significant return difference when a comparison is made between middle-sized firms and large-sized firms. However, Banz could not conclude whether it is a size that is responsible for abnormal return among small firms or whether size acts as a proxy for unknown variable correlated with size.

To summarize two studies mentioned above, empirical work by Banz (1981) and Reinganum (1981) have clearly shown information on firm size can be used to create a portfolio that yields superior returns of around 40% annually. Results have suggested that the smaller size of the firm, the more substantial superior returns are realized. Reinganum (1981) and Banz (1981) argues that the size effect dominates P/E effect, while Baus (1977) concluded that it is vice versa. While Basu (1977) believed that abnormal return of low P/E stocks was a sign of market inefficiency, Reinganum (1981) and Banz (1981) argued that P/E effect is just a proxy for the side effect that is more likely related to the asset pricing model misspecification, rather than to the market inefficiency. Although results of Banz (1981) and Reinganum (1981) oppose price-ratio hypothesis of Graham in a sense that they suggest that P/E ratio cannot be used to earn superior risk-adjusted return because excessive return realized by investing in low P/E strategy carries some omitted variables responsible for risk, the problem with such argumentation, however, is that those omitted variables could not be clearly defined, which makes the omitted variable hypothesis empirically untestable.

In response, Basu (1983) considered methodological flaws and criticism reported by studies mentioned above and conducted a study in which empirical relationship between earnings' yield, firm size and returns on the common stock of NYSE firms was tested while simultaneously, experimental control for the size and risk effects was exercised. When controlling for the size effect, results show that from 1963 to 1980 the difference in risk-adjusted returns of high E/P firms compared to a low E/P firm is significant and higher in high E/P firms. At the same time, similar to Reinganum (1981) and Banz (1981), Basu (1983) found that common stocks of small firms earn substantially higher returns compared to common stocks of large firms, but when control is exercised for the differences in E/P ratios and risk, the size effect virtually disappear. However, results lead Basu to conclusion that the E/P effect is not fully independent of the size effect, and

therefore the relationship between P/E ratio, earnings' yield, size and returns is considerably more complex than previously documented in the literature and most likely, two variables are just proxies for more fundamental determinants of expected returns for common stocks.

What generalizes all abovementioned studies so far is the fact that although neither E/P ratio nor firm's size can be directly considered to cause above-average returns, the evidence suggests that both factors are proxies for more fundamental determinants of superior returns for common stocks. In another world, conducted studies suggest that low P/E and small market value stocks indeed show superior return compared to large P/E and market value stocks and there is no theoretical foundation to explain such an effect.[1]

Some attempts were made by scholars to explain the size effect, most notably by Mayshar (1983). He suggested a hypothesis that while CAPM assumes full diversification for all market participants, in reality, because of such factors as transaction costs and other barriers to trade, CAPM is misspecified and thus an inappropriate measure of risk is being used to calculate risk-adjusted returns. Mayshar suggested that since stocks of

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[1] Consider the words of Reinganum, Banz, and Basu that concludes their study:

"Portfolios formed on the basis of unexpected standardized earnings exhibited no 'abnormal' return behavior ... on the other hand, the same earnings data were used to create high E/P portfolios that systematically outperformed low E/P portfolios, even after beta risk adjustment. The 'abnormal' returns of about six to seven percent per quarter persisted for at least six months … for evidence in this study clearly demonstrates that, at least for portfolios based on firm size or E/P ratios, the simple one-period capital asset pricing model is an inadequate empirical representation of capital market equilibrium" (Reinganum, 1981, p.45).

"To summarize, the size effect exists, but it is not at all clear why it exists" (Banz, 1981, p.17).

"The E/P effect is clearly significant even after effect of size, as measured by the market value of common stock, was randomized across the high and low E/P groups … further analysis for possible effects of interaction between E/P ratios and market values of common stock suggests that firm size may have an indirect effect on the risk-adjusted returns of NYSE common stocks" (Basu, 1983, p.150).

small firms are not generally widely held by market participants, they tend to be more affected by their variance compared to widely held stocks and therefore, total risk, rather than systematic risk, play a more important role in explaining superior return among small firms.

However, Lakonishok & Shapiro, (1986) using monthly data from the period 1962 to 1981 and a variety of procedures to examine the relationship between various measures of risk (size, beta and either total or unsystematic risk) and return tested Mayshar's hypothesis and reject his suggestion that total risk, as opposed to systematic risk, is more important in explaining superior return among small firms. They concluded that neither the traditional measure of risk (beta) nor the alternative risk measures (variance or residual standard deviation) could explain the cross-sectional variation in returns at a statistical significance and concluded thus that it is only the size that appears to matter.

Jaffe, Keim, & Westerfield (1989) re-examine the relation between the size and E/P effects with (a) an extended sample period of 1951-1986, (b) data that have no significant survivor biases, (c) both portfolio and seemingly unrelated regression (SUR) tests, and (d) an emphasis on the important differences between January and other months. It is worth to mention here that several studies showed that a significant amount of superior return was in months January, and thus assign such superior return to "January effect." Jaffe, Keim, & Westerfield found that over the entire period, the earnings yield (E/P) effect is significant in both January and other eleven months and therefore, they suggested that "January effect" does not explain the abnormal return of high E/P stocks and small-sized stocks.

It is important at this point to relate studies mentioned above to the value investment strategy and repeat the area of interest for a search of investment opportunities capable of showing above-average returns from the value investing point of view as written by Graham:

1. Large companies unpopular on the market and indicated by a low P/E ratio
2. Secondary companies sold at bargain indicated by low P/E ratio and price of 50% or less than its "intrinsic" value

While the empirical evidence to support the first group of interest – large companies unpopular on the market – support only low P/E "part" of the Graham statement, there is clear evidence of empirical support of second group – secondary companies sold at a

bargain. Such group as defined by Graham is characterized by two factors – size and low P/E ratio – that show clear academic support provided by the studies mentioned above. While the goal of this section was to test whether there is empirical support for value investing, it seems that there is substantial academic support to suggest that secondary companies sold at bargain - that is, at low P/E ratio and small market value - can, when tested empirically and controlled for risk, provide better-than-average returns. Therefore, it can be suggested that academic literature provide strong support for the price-ratio hypothesis of Graham since most of the studies agree that low P/E stocks yield significantly higher return compare to high P/E stocks, and the risk premium cannot explain such excessive return.

2.2. Relationship Between Book Value of Stock and Returns

Benjamin Graham emphasizes the importance of book value when evaluating the attractiveness of a particular stock. Graham wrote: "The development of the stock market in recent decades has made the typical investor more dependent on the course of price quotations and less free than formerly to consider himself merely a business owner. The reason is that the successful enterprises in which he is likely to concentrate his holdings sell almost constantly at prices well above their net asset value (or book value, or "balance-sheet value"). In paying these market premiums the investor gives precious hostages to fortune, for he must depend on the stock market itself to validate his commitments." (Graham, 1973, p.198)

As Graham acknowledged himself, there is some contradiction in a relationship between the book value of a stock and price: as the earnings prospect and financial health of a company improve, the relationship between the book value of a common stock and its price weakens. In other words, the more stock price advances, the less confident investor can be in a determination of an "intrinsic" value of business since that value will depend more on the swings and changing moods of the market that would inevitably have an effect on the price. Graham tried to emphasize the fact that the greater quality of a firm, as measured by prior and expected earnings, the more speculative its shares become, driving the price further away from the book value of its shares and causing its price to be more likely to fluctuate compared to an average-grade issue. Still, Graham suggested that the current price of a stock should not be more than 1.5 times the book value last reported. However, a higher multiplier of assets can be justified if the P/E ratio is below

15. The total amount of P/E ratio times P/B ratio should not be more than 22.5. In this section, an empirical test of relationship in the academic literature between book value and return is examined. Variables that are not considered by CAPM show the reliable explanatory power of cross-sectional average returns.

Stattman, (1980) and Rosenberg, Reid, & Lanstein, (1985) found a positive relationship between the book value of common equity (BE) and market value of equity (ME). Chan, Hamao, & Lakonishok, (1991) confirmed these findings and found that book-to-market equity (BE/ME) has a strong explaining power of the cross-section of average returns on stocks traded on the Japanese market. Ramakrishnan & Thomas (1992) used a sample of 511 firms to estimate firm-specific excess earnings regression for book value, market value, and earnings. The result showed that among three variables, book value provides the strongest explanatory power for superior earnings and corresponding relative explanatory power for the price. Rosenberg, Reid, & Lanstein, (1985) tested 1400 largest companies listed on NYSE, AMEX or NASDAQ over the period of 1980 to 1984 to test whether buying stocks with a high ratio of book/price (B/P) ratio per share and selling stocks with a low B/P ratio per share will produce statistically significant abnormal performance. They reported a statistically significant (t-statistics of 3.7) abnormal performance of a book-to-price strategy. They concluded that "the success of such instrumental variables signals of market inefficiency and suggest that there are still larger potential profits to be made, provided that the security analyst can identify the valuation errors that correlate with these instruments" (Rosenberg, Reid, & Lanstein, 1985, p.16). Those results of a positive relationship between book value and superior return provide support for Graham proposition that book value and book-to-market value play an important role in value stock selection.

The most influential empirical evidence of a relationship between book-to-market equity (BE/ME) and returns was provided by a series of studies by Fama & French. In 1992 they found that two variables, size (ME) and book-to-market equity (BE/ME) have strong explanatory power of the cross-section of average stock returns for the years from 1963 to 1990, and those two variables seem to be capable of describing the cross-section of average stock returns persistently (Fama & French, 1992). Their results also confirmed the hypothesis of Graham that high BE/ME stocks tend to be poor earners compared to low BE/ME stocks. In 1993, Fama & Franch employed different regression approach as well as an increased set of variables to extend the asset-pricing test documented in 1992.

This time, Fama and MacBeth (1973) regression approach was substituted for the time-series regression approach of Black, Jensen, and Scholes (1972). Their findings fully support their previous results that BE/ME has strong explanatory power in cross-sectional stocks returns (Fama & French, 1993).

In 1995, in support of Graham hypothesis, Fama & French proved empirically that high BE/ME ratios signal persistent poor earnings while low BE/ME signals strong earnings. Also, after firms are ranked on the size and BE/ME ratios, the reversion of earning growth is observed. Also, they found that similar to those in return, market, size and BE/ME factors are present in earnings so that market and size factors in earnings can be used to explain those in returns. What generalizes all those three studies by Fama & French is the interpretation that relationship between size and book-to-market equity is a proxy for sensitivity to common risk factors in returns that go back to the idea of rational asset pricing model that systematic differences in average returns are due to differences in risk. "Size and BE/ME remain arbitrary indicator variables that, for unexplained economic reasons, are related to risk factors in returns" (Fama & French, 1995, p.131). Such interpretation confronts proposition of Graham.

Lakonishok, Shleifer, & Vishny (1994) tested whether value stocks, defined as, among other criteria, by high book-to-market (BM) value, yield higher returns compared to low B/M glamour stocks. They found that on average, high B/M stocks have an annual return of 19.8% while the low B/M stocks have an annual return of only 9.3%. If portfolios are held through Year 1 to Year 5 with limited rebalancing options, the cumulative average return of high B/M stocks outperforms the return of low B/M stocks by 90%, which suggest strong support for high book-to-market "story" of value investing. The result is still significant when experimental control is exercised on size: the size-adjusted average annual return is 7.8% for high B/M stocks and - 4.3% for low B/M stocks, for a risk-adjusted difference of 7.8% compared to a difference of 10.5% when control for size is not exercised. Such results support Graham's proposition.

Barth, Beaver, & Landsman, (1998) test predictions whether explanatory power of book value, as well as different pricing multiples on book value, increases as the financial health of an enterprise decreases. By doing so, they intended to determine specific predictions book value and net income play in explaining financial distress. Using a sample of 396 US companies from 1974 to 1993 that subsequently file for bankruptcy,

they find that in the five years preceding bankruptcy, the coefficient on an incremental explanatory power of equity book value increase and the coefficient on an incremental explanatory power of net income decrease. Also, using a more extensive, pooled sample of firms which varies with respect to degree of financial health, they find that the coefficient on and incremental explanatory power of equity book value (net income) are higher (lower) for more financially distressed companies than other firms, supporting presumption of Graham that the better a company's record, the less relationship the price of its shares will have to their book value since the value of the financially distressed company will gradually approach to its liquidation value.

Piotroski (2000) examines whether a simple accounting-based value investment strategy, when applied to a broad portfolio of high B/M firms, can increase the rate of returns earned by market participants. Results show that investing in financially healthy high B/M stocks can yield at least 7.5% higher annual return compared to returns of the market average. Besides, he found that investment strategies that involve taking long positions in expected winners and a short position in expected losers yield 23% annual return for the period of 1976 to 1996. The superior return is not dependent on acquiring low share price' stocks, and the results are robust when control for other investment strategies as well as when tested across time. The financial statement analysis was most beneficial for small and medium-sized enterprises, for companies with low shares turnover and companies with no extensive attention from financial analysts. Piotroski suggests that a positive relationship between the sign of historical earning information and both expected firm performance and reaction of a market on quarterly announcement appear to the underreaction on the financial market to the historical information available. In particular, when comparing annual return difference between financially strong and financially weak companies, almost 20% of the difference is earned over the surrounding of four three-day periods.

Piotroski, (2000) concluded that firms with high B/M characteristics provide an opportunity to examine the predictive power of simple fundamental analysis techniques to analyze firms, supporting, therefore, approach to securities analysis suggested by value investment strategy. Piotroski highlight three explanations for that: firstly, as a history of financial markets shows, value stocks tend to be neglected by the market and are not widely followed by the market analysts. Such low investment interest lead to the lack of coverage and lack of reliable analytical forecast and recommendation for such stock,

making them more independent on swings and changing moods of the stock market and more dependable on its own "intrinsic" value. Secondly, because of limited resources of such companies to access the "wide" information distribution channels as well as lack of credentials from market participants for the voluntary disclosures of such companies, financial statement presents the most accessible and most reliable source of financial information for investors in analyzing such companies. Thirdly, since high B/M firms tend to be financially distressed, the most effective and beneficial way to analyze such companies is to look at accounting fundamentals such as book value of equity, net asset value, liquidity, solvency, and cash flow adequacy. All this information can be easily obtained from financial statements. All this makes financial statements reliable source of required information for analyzing high B/E companies.

Overall, the findings of Piotroski are inconsistent with the common characteristics of risk because the observed patterns of superior returns around announcement dates should not take place in an efficient market. While Fama and French (1992) suggest that B/M firms are likely to be financially distressed, Piotroski showed that among high B/M firms, the most financially strong companies seem to generate the highest returns. Based on results and provided evidence, Piotroski, consistent with the proposition of value investing, conclude that financial markets tend to incorporate the available historical information slowly and that this fact is particularly apparent among small, low-volume firms not showing particular interest among investment public. This conclusion provides support for value investing.

While many studies show that there is a strong relationship between high B/M ratio and a superior return of a firm, it should be noted that B/M ratio is not an "all-inclusive" variable because it can signal many facts regarding a particular company and interpretation in each particular case is necessary. For example, capitalizing R&D costs can lead to excessive intangible assets on the balance sheet and high rate of B/M ratio, while if the same R&D costs are cured as expenses, they would be reflected on the income statement which would lower B/M ratio. Similarly, in the natural recourses business, an oil company that does not experience growth but still manages to have strong temporal profitability might have a low rate of B/M after an increase in oil prices. Companies with low B/M ratios might have attractive growth perspective that is not reflected in the calculation of book value but is reflected in determining the price. Low B/M stocks might also be glamour stock selling at a price above its "intrinsic" value. The

point here is that B/E is not an unadulterated variable uniquely associated with the economic and financial characteristics of a firm and therefore, practically, it would be imprudent to base the whole investment strategy on one ratio that is subject to many interpretations in each particular case.

Graham, in his book "Interpretation of Financial Statements," has identified that the book value (or "asset protection" as he called it) of a stock is in most situations a somewhat incomprehensive variable. This value supposes that in case of bankruptcy and following liquidation, the shareholders would receive cash equivalent to the amount of various tangible assets carried in the accounting book. In fact, in case of such liquidation investors would get smaller amounts than shown on the book value, because tangible assets, most likely, would be sold at a discount and substantial shrinkage on the sale of the fixed assets would be realized. Therefore, rather than showing what the shareholder could get out of the business in case of bankruptcy (that is liquidation value), book value shows reliably what business owners have invested in the company. Nevertheless, the book value and all related ratios such as B/M discussed in this section play an essential role in a common stock analysis in the context of superior return, because there may be some relationship between the amount invested in a business and its future average earnings or its realizable value. Besides, as some studied in this section documented, B/M value can be proxy for a more fundamental value related to return. For example, there is a possibility that substantial earnings on the invested capital may attract competition and thus be short-term. On the other hand, substantial assets, not earning profits at the moment, may later be made more productive. Such situations, identified by book value, can be reverted and can bring positive or negative earnings surprise leading to a realization of an abnormal rate of returns.

The conclusion thus can be made. This section has examined the behavior of high B/M stocks and the performance of a value investing strategy that involves acquiring common stocks, that, apart from other criteria, holds a high book-to-market ratio. Reviewed studies provide strong support for Graham hypothesis that high B/M stocks are positively correlated with a return and show that portfolio consisting of high B/M stocks persistently outperform portfolio consisting of low B/M stocks, even when controlling for risk and size. It is, therefore, possible to suggest, that risk and size cannot explain cross-sectional variation in returns between high B/E and low B/E stocks. Although all reviewed studies acknowledge the fact that such returns cannot be captured by CAPM, there is

nevertheless two set of explanation of such phenomena. First explanation emphasizes the fact that high B/M stocks, as an empirical result suggest, tend to be more financially distressed, and therefore such stocks carry higher risk compared to financially strong enterprise and therefore, an abnormal rate of return realized by high B/E stocks is compensation for systematically higher risk. Such interpretation is supported by a consistently low level of return on equity observed among such stocks [Penman, (1991) and Fama & French, (1995)] as well as strong relationship between B/M ratio, leverage and other measures of financial risk [Fama & French, (1992) and Chen & Zhang, (1998)]. The second explanation, in opposite to the first, explain the superior return of high B/E stocks by the inefficiency of market participants to correctly price such kind of stocks, so high B/E stocks are mispriced. This can be either due to fact that markets tend to incorporate the available historical information slowly [Piotroski, (2000)], or due to the fact that market tend to "overreact" to the poor prior performance of such stocks and build "too pessimistic" expectation of the future of such stocks [Lakonishok, Shleifer, & Vishny (1994)]. This explanation is supported by patterns of superior returns as well as by positive earnings surprises observed around quarterly earnings announcement dates [La Porta, Lakonishok, Shleifer, & Vishny, (1997), Piotroski, (2000)]. Besides, Stickel, (2007) documents that analysts sympathy recommending firms with strong recent performance – that is low BM "glamour" enterprises and strong positive momentum firms. This section provided academic support for Graham suggestion that book and book-to-market values, among other criteria, play an important role in predicting returns of a particular group of stocks. In addition, similar to Graham, the academic literature supports the group of stocks for which high B/M effect yield highest superior return - small and medium-sized enterprises not popular on the market. The most reliable explanation of these phenomena found on the academic literature, that recognize the widest support among scholars, is that high BM stocks tend to be unpopular on the market and thus selling for the price below their "fair" or, in a terminology of Graham, below their fundamental or "intrinsic" value. Graham believed that where there is an undervaluation, the profit by value investor can be realized.

At this point, the author would like to highlight that gradually the whole idea behind value investing becomes visible: all parameters, such as low P/E ratio and high B/M ratio tends to signal of some unpopularity and thus undervaluation relative to the "intrinsic" value of a business. While the interpretation, as we have just seen, of why portfolios with low P/E ratio and high B/M ratio shows superior return differs among scholars, we begin

to see academic support for the idea that stocks, in general, might experience waves of unpopularity from the market and thus be undervalued relative to their fundamental value which is the main philosophy and field of value investment strategy in generating profits.

2.3. Contrarian strategies and empirical evidence of market overreaction

Value investment suggests that in an effort to interpret publicly available information regarding the stock of one or another company, market participants tend to either overreact or underreact to it. The reason for that being is the belief that market participants are not always fully rational in making investment decision since their decisions might be influenced by phycological factors such as greed and fear. Stock market overreaction hypothesis state that due to the waves of optimism or pessimism, stock market quotations take temporally swings away from their fundamental value. For example, a situation of overreaction might be the case when market participants expect a particular company to show superior earnings in a given period, but the most recent reporting shows below-than-expected levels. There is a possibility that the market would overreact to a new available earning information in such case and the market price of the company would likely to be temporarily undervalued compared to its "intrinsic" value. However, since the fundamental value of a business is not likely to be interrupted by lower-than-expected earnings, a market would incorporate this information and "correct" itself so that the price would be around "intrinsic" value again. While the academic view on market overreaction hypothesis is discussed later in this section, value investment philosophy suggests that when a market reaction to particular information exceed the actual negative effect the event, a superior return can be realized by buying undervalued stocks and selling it when the market "correct" itself. In other words, value investing argues that as long as "intrinsic value" of a company – that is, among other things, the ability to earn a satisfactory rate of earnings – remains uninterrupted, there are opportunities for an investor to exploit such sub-rational behavior of the market. The goal of this section is to find academic support or disproof from the literature of whether the overreaction hypothesis is predictive. If that statement of value investing is correct, there should be some reaction that is judged to be suitable, taking all information into account. Moreover, if investor acts in according to a suitable reaction, he should, value investing argues, spot undervalued stocks that will enjoy above-average returns once the market corrects significant undervaluation. In this section, the academic support of market overreaction hypothesis is tested.

At this point, to better understand the further discussion, it is important to explain the relationship between the overreaction hypothesis and contrarian strategies. The way to determine stock overreaction used by most studies is to start with formation of portfolio at time t = 0, consisting of stocks that are influenced by some particular event, say earning statement and then test whether later at t > 0 the expected residual return of portfolio deviate significantly from zero when measured relative to the CAPM. Statistically significant deviation from zero bear evidence of overreaction, whether the result is due to misspecification of the CAPM, misestimation of relevant risk or some form of market inefficiency. When the overreaction is empirically determined, contrarian strategy acts as a way to exploit such a market situation for profit.

The first empirical test of the overreaction hypothesis was conducted by Bondt & Thaler, (1985). They constructed a test to find out whether overreaction hypothesis is predictive and if so, whether such sub-optimal behavior of market participants has an influence on stock prices. They formed two portfolios, one consisting of 35 "winner" stocks characterized by good prior excess returns, and one consisting of 35 "losers" stocks, characterized by poor prior excess returns. The returns of those two portfolios were then measured and compared with the performance of the market index over the period of three years. The results have shown that portfolios consisting of prior "losers" outperform prior "winners" by about 25% even though the "winners" portfolio, as it turned out, consisted of significantly riskier stocks. Apart from strong empirical support for overreaction hypothesis, those results suggest that overreaction hypothesis is also predictive because, after portfolio formation at t > 0, a nonzero residual return of both portfolios was related to the residual returns in the preformation months at t < 0. Bondt & Thaler interpret their results by emphasizing the fact that when there is bad news regarding a particular stock -for example, earning expectations were not met, the market tends to overshoot to this information if prior expectations of the earnings prospect of a given firm were too optimistic and were not eventually matched. Market price falls below a fundamental value of the enterprise and eventually must experience a correction. If their findings are empirically correct and have no biases, such findings signal the stock overreaction and thus support the view of value investing that, firstly, markets can overreact and secondly, when such situation happens, a patient investor can achieve above-average risk-adjusted returns. It is also worth to emphasize the point made by Graham, that was empirically supported by Bondt & Thaler that "glamour" or "winner"

stocks tend to be riskier compared to "value" or "loser" stocks. While Bondt & Thaler only mention that "winners" portfolio in their study consisted of significantly riskier stocks compared to stocks in "losers" portfolio, Graham explain such phenomena due to the fact that high price for "winner" stocks are less adequately protected by a conservative projection of future earnings which makes them more vulnerable to price fluctuations. The further section will explore an academic view on a relationship between past performance and future returns in a context of overreaction and contrarian strategy.

Fama & French (1992) examined critically the irrational pricing findings documented by Bondt & Thaler, (1985) and criticized their findings. Firstly, they proposed that a simple test of the relationship between size and book-to-market effect and return not confirm market overreaction hypothesis proposed by Bondt and Thaler. Secondly, when the Fama-MacBeth regressions approach for individual stocks is used, 3 years lagged return shows no power in explaining average returns. Results suggest that the univariate average slope for the lagged return is negative six basis point but less than 0.5 standard deviations from zero implying no support for overreaction hypothesis.

Conrad & Kaul (1993) disapproved findings of Bondt & Thaler, (1985) and argued, that their results bear methodological shortcomings which lead to inflation of the reported profitability of their contrarian strategy. Conrad & Kaul measure performance of contrarian strategy using buy and hold strategy, rather than cumulative average returns (CARs) strategy employed by Bondt & Thaler. They report that the CARs strategy of measuring monthly returns over long intervals lead to upward bias and measurement errors and therefore such strategy tends to cumulate true value, leading to inflation of reported performance. Also, their evidence suggests that prior "loser" stocks have a smaller price and larger bid-ask spread, as was evidenced by significant explanatory power for future returns of the logarithm of price for the 1929 to 1988 period, suggesting that overreaction is instead caused by the low price of a stock. Therefore, they concluded that most of Bondt and Thaler's long-term overreaction findings could be endorsed to a combination of bid-ask effects when monthly cumulative average returns (CARs) are used, and price, rather than prior returns. However, in direct test, Loughran & Ritter (1996) found no significant difference in test-period returns whether CARs or buy-and-hold strategies are used. They also found that price had little predictive power in cross-sectional regressions and reported that survivor bias drives Conrad and Kaul's (1993) conclusion regarding Bondt & Thaler's findings.

Jegadeesh & Titman (1993) discussion of previous studies conducted on the subject of contrarian strategy and their empirical analysis of relative strength strategy was so influential that Fama & French call their finding "a main embarrassment of the three-factor model" (Fama & French, 1996, p.81). Jegadeesh & Titman conducted an empirical test to examine whether relative strength strategy – strategy opposite to contrarian strategy - that is involving buying a stock that has performed well in the past and selling stocks that have performed poorly in the past generate an abnormal return over the 3 to 12 months holding period. They found that stocks performing well in the past generate a significant abnormal return from 1965 to 1989 period. When stocks are selected base on previous six months performance and are held for six months period, they generate average compounded excess return of 12.01% per year. There is also strong evidence present on the paper to conclude that such abnormal return is not due to systematic risk. Decomposition of profits generated by such strategy showed that the profits are mostly attributable to the delayed stock price reactions to firm-specific information. However, what is particularly important in this study is the evidence of a bias in market expectations characterized by return reversal and negative abnormal returns of relative strength portfolios. For example, relative strength portfolio formed on the basis of prior six months performance generate average compounded excess return of 9.5% over the following 12 months, and in the following 24 months loses more than 50% of the accumulated return. In addition, portfolios formed on the bases of relative strong prior performance generate abnormal return around their earnings announcement dates, in average, for the following 7 months after portfolio formation, and for the next 13 months experience significant return reversal described by significantly higher returns generated by poor prior performance stocks compared to strong prior performance stocks, supporting proposition of Graham that "Mr. Market" tend to swing in its valuations.

Lehmann (1990) has tested the market on the evidence of unexploited arbitrage opportunities caused by an overreaction of its participants. He analyzed costless portfolios on the evidence of riskless profits realized from buying and selling past "winner" and "loser" stocks that should not bring riskless profits if markets are fully efficient. He found that portfolio consisting of "winner" stocks and showing positive returns in the first week after portfolio formation experience significant return reversal in the second week after formation. The same process is observed among portfolios consisting of "loser" stocks. Lehmann concludes that return reversal of "winner" and

"loser" stocks in a such relatively short period is evidence of market overreaction which provides an opportunity for an investor for earning arbitrage profits, again, supporting "Mr. Market" metaphor of Graham.

Lakonishok, Shleifer, & Vishny (1994) tested empirically whether investing in value stocks, defined by poor prior performance, yield higher returns compared to investing in glamour stocks, defined by superior prior performance. Comparing returns of portfolios consisting of two groups of stocks showed that from April 1968 to April 1990, a portfolio consisting of value stocks significantly outperformed portfolio consisting of glamour stocks. While such findings were not new by that time, Lakonishok, Shleifer, & Vishny tested further to explain why contrarian strategy yield significant returns. Firstly, they observed that a portfolio consisting of value stocks is not fundamentally riskier than a portfolio consisting of glamour stocks. Next, they observed that the actual growth rates of glamour stocks were much lower than expected by the market and established a proposition that the reason why glamour stocks underperform value stock is the overestimation of future growth rates of glamour stocks by market participants. They, therefore, concluded that value investing strategies yield higher return not because those strategies carry higher risk, but because such strategies exploit sub-optimal behavior of market participants of overestimation future growth rate of glamour stocks and underestimation future growth rate of value stocks. Those findings are consistent with Graham proposition that market participants tend to set unrealistic prices for glamour (or "hot") stock that is not satisfactorily protected by a conservative projection of future earnings, explained either by enthusiasm, speculative interest or other phycological influence.

Keim, (1983) and Reinganum, (1983) suggested that superior return realized by strategies involving stock buying operations based on past performance is a particular example of well-known size and turn-of-the-year effect. They suggested that factors such as book-to-market and cash flow-to-price ratios are more powerful in predicting returns of stock as opposed to prior performance and proposed further, that reversal effect observed in contrarian-related strategies can be explained by mean-reverting factor risk premia. Fama & French (1992) made a similar proposition. However, De Bondt & Thaler (1987) provided further evidence of a superior return of contrarian strategies and proved empirically that their findings are inconsistent with two alternative suggestions by Keim,

(1983) and Reinganum, (1983) that superior return realized by contrarian strategies are due to risk or side effect.

La Porta, Lakonishok, Shleifer &Vishny, (1997) constructed a test where they examined the hypothesis that superior return documented in previous studies regarding value investing strategy is the result of expectational errors made by market participants. With the sample of stocks traded at NYSE, AMEX and Nasdaq for the period of 1971 through 1993, the core of their research was to study the stock price reaction of value and glamour stock around earnings announcement dates and test whether there is a significant difference between the reaction of those two classes over the period of 5 years after portfolio formation. Their results show that return differences attributable to earnings surprises are significantly higher for value stocks compared to glamour stocks and is not related to risk. Specifically, in the first two to three years after portfolio formation the announcement return of value stocks was 20-25% higher compared to glamour stocks, and for the subsequent four to five years after portfolio formation, the difference was still significantly higher for around 10-15% for value stocks. The empirical evidence of this study provides a strong point that the superior return produced by value stocks compared to glamour stocks is due to expectational errors regarding future earnings prospects and not due to the risk. Results suggest a significant difference in event and nonevent return between value and glamour stocks which is inconsistent with the risk premium hypothesis that both value and glamour stocks should experience higher event returns then nonevent returns (Fama & French, 1992). Results suggest that event return for value stocks are higher than nonevent return, despite lower ex-ante risk premium. Therefore, La Porta, Lakonishok, Shleifer &Vishny conclude that superior return for value stocks can only be explained by higher (lower) earnings surprises for value (glamour) stocks. The persistence of positive earnings surprises by value stock provide support for previously mentioned studies that documented superior return realized by value stocks [De Bondt & Thaler, (1985, 1987), Lakonishok, Shleifer, & Vishny, (1994), Lehmann, (1990)] and therefore provide strong support for contrarian and value investment strategy as a way to earn superior return from exploiting sub-optimal behavior of market participants.

The conclusion from the studies mentioned above can be made. It seems that there are two views on the explanation of the superior return realized by contrarian strategies: the first view focuses on rational asset-pricing framework and explains superior return of contrarian strategy due to well-known relationship between average return, size and

book-to-market equity, or due to the fact that "loser" stocks carry higher systematic risk [Fama & French (1992), Conrad & Kaul (1993), Keim, (1983) and Reinganum, (1983)]. In both cases, it is assumed that all those factors are implementable to the CAPM. The second view suggests that stock prices tend to take temporary swings away from their fundamental values due to waves of optimism and pessimism causing effect called "overshooting" that create an opportunity for an investor to realize an abnormal return. [Bondt & Thaler, (1985) Loughran & Ritter (1996) Jegadeesh & Titman (1993) Lakonishok, Shleifer, & Vishny (1994)] Such a view provide support for value investing strategy.

While two explanations supply both empirical support and logic, the evidence skewing to the market overreaction hypothesis rather than to the risk hypothesis. Bernard & Thomas (1989) run a test to discriminate between two alternative hypotheses in explaining the superior return of value strategy: neglected risk factor and overreaction to a particular event. They reviewed all significant studies done on this topic and concluded that results could not be reconciled with the hypothesis build around risk misspecification, yet provide strong empirical support for overreaction hypothesis and delayed price response of market participants. Even Fama & French, (1996) in an attempt to explain the asset pricing anomalies state that the continuation of short-term returns documented by Jegadeesh & Titman (1993) is the "the main embarrassment of the three-factor model" (Fama & French, 1996, p.81).

What does this mean for the value investing? Value investing suggest that there are periods on the market, when due to swings to over-optimism or over pessimism regarding a particular stock market fall to overvaluation or undervaluation, making the price of a stock to rise (fall) above (below) its "intrinsic" value. When such overreaction happens, a patient investor can realize a superior return once the market corrects itself. In that context, while there are different explanations of the phenomena, all studies mentioned above found that former "loser" stocks showed a reversal effect and above-average returns later, compared to "winner" stocks. While explanations of what exactly causes such abnormal return differs, it seems that academic literature agreed that such a phenomenon exists in the market and that such phenomena are constantly producing above-average returns. The aim of this section was to examine whether there is a support in the academic literature of value investing proposition that buying value stocks can produce above-average return and based on above-mentioned studies it can be concluded,

that there is a strong support for the "overreaction" hypothesis and contrarian investment strategy, that has identical investment approach to value investing strategy and thus providing support for value investing.

The logical question is to ask: if there is a definite empirical academic support for contrarian strategy, why market participants do not exploit this information in their investment decisions? There are different possible explanations here. Investors might merely have preferences for buying stocks of a "good" company with excellent growth and expansion perspectives, excellent financial health and profitability, led by a superior management team. Unsophisticated market participants might equate a good enterprise to a good investment irrespective of how high the price is. The idea that "no price is too high for a great company" is not new on the market and on the various times of the history of financial markets analysts, again and again, propose this idea, shortly before a significant market crash. Investors might also have a belief that the stock of a great company is less risky, making their investments less vulnerable to loses. Finally, even sophisticated institutional investors and mutual funds analysts can have a tendency to recommend well-known popular glamour stock (or "hot issue" as Graham call such kind of stocks) because those are easier to justify to clients as a superior investment. However, whatever phycological bias can drive market participants in choosing glamour stocks with high prices despite the academic support of the opposite, the academic evidence provided on this section postulate strong support to the fact that (1) superior return can be realized by a value investment strategy that cannot be explained by CAPM, (2) the behavioral factors such as rational and expectational errors of market participants seem to play a crucial role in explaining the superior return of those value strategies, supporting same proposition made by Graham. All those facts provide strong support for the value investment philosophy.

3. Conclusion and Summary Table

In this paper, academic literature on the capability of different value investment criteria as defined by Graham to yield superior return was reviewed. 3 key criteria were shown to attract interest of academic scholars: (1) relationship between earning yield or P/E ratio on stock return, (2) relationship between book value or book to market value on stock return and (3) market overreaction hypothesis and contrarian strategies as a way to profit from expectational errors made by investors. This study found: (1) strong support for the

price-ratio hypothesis that was shown to continually yield above-average risk-adjusted return, explained by either misspecification of CAPM, suggesting that this variable act as a proxy for more fundamental variable, such as size, that, in turn, act again as a proxy, or explained by market inefficiency. (2) support for the abnormal performance of high book-to-market stocks and (3) support for contrarian strategies that are capable of showing higher-than-average return due to either, misspecification of CAPM, or due to the behavioral factors as well as rational and expectational errors of market participants.

What generalizes all studies reviewed in this academic review is that value criteria defined in all 3 area mentioned above yield above-average returns that are not captured by capital asset pricing model, providing support for value investing approach. While all studies mentioned above acknowledge the fact that such value criteria are capable of showing a superior return, the interpretation of this fact differs. The interpretations of the reviewed articles generally go as follows: (1) markets are not fully efficient or (2) markets are efficient, but the CAPM is misspecified. While the aim of this study was not to argue regarding market efficiency, it is closely related to the ideas of value investing in a sense that, if markets are not fully efficient or existing modern finance theory cannot predict an above-average return of value stocks, then above-average risk-adjusted returns can be realized.

It is important to note that value investing philosophy make a contribution to the modern finance theory on the topic of cross-sectional returns as a result of studies, which has partly emerged from an attempt to test the empirically untested ideas proposed by Benjamin Graham. Perhaps the most important question to ask is: "does value investing is relevant today"? Didn't three- of five-factor model captured and incorporated such effect as P/E or B/M to the stock return? In search of the answer to this question it is perhaps wise to cite one of the founders of this model: "Our three-factor model is (alas!) just a model, and the continuation anomaly exposes one of its shortcomings ... it surely does not explain expected returns on all securities and portfolios" (Fama & French, 1996, p.82).

Financial markets consist of market participants, who, while in most times can incorporate available information regarding a particular firm to its stock price, sometimes find it difficult to control their emotions. While the efficient market hypothesis assumes that participants are fully rational, presented evidence suggests that it is not always true. If we assume, that apart from logic and rationality there is a place for emotions and deviation from rationality, as was brilliantly showed by Tversky & Kahneman (1974), can any financial model, no matter how sophisticated ever capture the deviation of

market participants form rational expectation assumption? Author leave this question open. While the importance of CAPM cannot be overstated as a model for conducting academic research in the field of Finance, since value investing does not offer any closely such tool for analyzing cross-sectional stock returns, value investing approach yet can yield higher-than-average return. In the end, if that were not true, we would probably never seen any "buy" or "sell" recommendation by financial analyst and mutual funds, as every recommendation would be simply "hold." It means that market participants indeed are constantly trying to produce an above-average return, and value investing is only the one strategy among many others. Benjamin Graham, at the end of his investment career, said: "investing isn't about beating others at their game. It is about controlling yourself at your own game". Based on the academic review provided in this paper, it can be concluded that criteria proposed by value investing as the key for successful investing activity show academic support among scholars as ones capable of showing above-average returns.

Finally, perhaps the most important finding of this literature review is the fact, that all tested criteria proposed by value investing – be in low P/E and high B/M values – are some signals for the fact that stock is undervalued relative to its "intrinsic" value. Review of conducted studies on the topic of contrarian strategies allow for the gradual realization of this fact – most "value" stocks were characterized by low P/E values, high B/M values and poor prior returns. All those factors were reflected in the low stock price and reviewed studies on contrarian strategies suggest that the price was most likely undervalued relative to fundamental or "intrinsic" value in the words of Graham. According to value investing, when that is the case, techniques of fundamental analysis can be employed by an investor to realize such situation and exploit sub-optimal behavior of the market participant for profit. In that sense, provided evidence strongly support a value investment strategy as a way to earn a superior return. It is also important to note that reviewed studies on contrarian strategy were conducted independently of studies on the relationship between P/E, B/M ratios, and returns – they were not founded on the documented studies of the relationship between P/E, B/M ratios and return, yet the results were most of the time consistent with the former studies. This fact might suggest strong reliability of findings documented in the literature on the relationship between different value criteria, contrarian strategy, and return. Therefore, conclusion finally can be made that there is evidence to suggest of the existence of a relationship between P/E, B/M,

contrarian strategy and superior returns and thus value investment strategy, proposed firstly by Graham, is capable of earning risk-adjusted superior returns.

The author believes, that further study of the relationship between value criteria proposed by academic literature and overreaction would help to understand the topic of abnormal returns further as well as would help to explain anomalies on financial markets.

Table 1: Summary of Reviewed Literature 1[2]

Author / Year / Discipline	Purpose	Methods	Sample	Findings
Nicholson, (1960). Accounting.	To test whether there is a significant difference in performance of stocks with P/E > 25 compare to stocks with the P/E < 12	Two studies were conducted where P/E ratios for every stock was collected and % of price appreciation was calculated from each of these dates to consecutive dates	(1) 100 industrial high-quality common stocks for years 1939, 1944, 1949, 1954 and 1959 (2) 29 chemical common stocks for period 1937 to 1959	(1) In all 11 periods, 20 lowest P/E stocks showed significantly higher rate of appreciation compared to 20 highest P/E stocks (2) 50% lowest P/E stocks showed 50% higher level of appreciation compared to 50% highest P/E stocks
Basu, (1977) Accounting.	To determine empirically whether the investment performance of common stocks is related to their P/E ratio.	Five portfolios were formed according to P/E rank with a policy of acquiring securities in a given P/E class on April 1, holding them for a year, and then reinvesting the proceeds from disposition in the same class on the following April.	1400 industrial firms traded on the NYSE between September 1956 to August 1971.	Two low P/E portfolio earned on average 13.5% and 16.3% per annum respectively over the 14-year period; whereas the two high P/E portfolios earned 9.3-9.5% per year.
Ball, (1978). Finance.	To provide alternative explanations of mean excess returns documented by Basu (1977)	A comparison of results from different excess returns studies as a function of differences in experimental design with consideration of several possible sources of bias in the estimates of mean excess returns in those	Twenty studies of excess returns documented in academic literature	The excess returns reported by Basu (1977) is due to earnings acting as a proxy for omitted variables or other misspecilication effects in the two-parameter asset pricing model.

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[2] Purposes, methods, samples and findings were taken from publications or are in close accordance with the meaning of those publications.

			studies.	
Reinganum, (1981). Finance.	To analyse empirical anomalies of superior stock returns realised due to E/P effect in a framework that avoids flaws in methodology reported by Ball (1978).	Portfolios were formed on the basis of the ranked quarterly E/P ratios. The twenty highest and twenty lowest firms in the ranking with positive E/P ratios become the high and low E/P portfolios. Each twenty-security portfolio was constructed to have an estimated beta equal to one (to control for risk).	Net income figures of 577 companies, for the previous twenty quarters beginning from 1975, used to compute E/P ratios.	In a framework that avoids flaws reported by Ball (1978), high E/P portfolio show significant different returns compared to low E/P portfolio and systematically earned abnormal returns of 6-7% per quarter, supporting findings of Basu (1977)
Banz, (1981). Finance.	To examine the empirical relationship between the total market value of the common stock of a firm and its return.	Arbitrage portfolios containing stocks of very large and very small firms was constructed, in combination of long positions in small firms with short positions in large firms. A simple time series regression was run to determine the difference in risk-adjusted returns between small and large firms.	All common stocks quoted on the NYSE for at least five years between 1926 and 1975	In the 1936-1975 period, the common stock of small firms had, on average, significantly higher risk-adjusted returns than the common stock of large firms.
Basu, (1983). Accounting.	1) to re-examine the relationship between earnings' yield (E/P ratios), firm	Earnings' yield and market value portfolios were constructed by controlling for the effect of firm	900 common stocks listed on NYSE for the period of 1962	1) Even after experimental control was exercised over differences in firm size, common stock of high

	size and returns on the stock of NYSE firms. 2) to determine the extent to which the conclusions of Reinganum (1981) are robust with respect to the use different test sample and methodological approach (method adopted to control for the effect of risk on returns).	size and E/P ratios. The risk-return relationships of these portfolios then were compared and their risk-adjusted returns were tested statistically in a multivariate setting in order to determine the existence of a significant earnings' yield and/or size effects.	through 1978.	E/P firms earned, on average, higher risk-adjusted returns compared to low E/P firms. 2) When returns are controlled for differences in risk and E/P ratios, the size effect virtually disappears.
Jaffe, Keim, & Westerfield, (1989). Accounting & Finance.	To re-examines relation between E/P, size and stock returns documented in previous literature with (1) a substantially longer sample period (2) data that are free of survivor biases, (3) both portfolio and seemingly unrelated regression tests and (4) an emphasis on the differences between January and other month.	Portfolios were selected were firms were ranked on E/P ratio at the end of March in each year and placed into one of six groups according to lowest to highest E/P ratios. Each E/P group is then divided into five subgroups on the basis of size so that 30 subgroups of portfolios are formed, each of which is updated annually.	Numbers of firms meeting specified criteria of the study for the period of 1951 to 1986 ranging from 352 in 1951 to 1309 in 1986.	Significant E/P and size effects when estimated across all months during the 1951-1986 period with stock returns being jointly related to both size and the E/P ratio.
Rosenberg, Reid, & Lanstein	To test whether buying stocks with a high ratio of book/price (B/P) ratio per share and selling	Assigning weighted average of the monthly returns for each stock, building portfolio with taking long	1400 stocks of large companies listed in the NYSE, AMEX	Statistically significant (t-statistics of 3.7) abnormal performance of a book/price strategy.

(1985). Finance & Accounting.	stocks with a low B/P ratio per share will produce statistically significant abnormal performance.	and short position in high B/P and low B/P stocks respectively and evaluating performance of B/P strategy by locking at incremental return that an investor can earn by adjusting an existing portfolio in the direction of the strategy.	and NASDAQ over the period of 1980 to 1984.	
Chan, Hamao, & Lakonishok (1991)	To analyse cross-sectional differences in returns on Japanese stocks to the underlying behavior of four variables: earnings yield, size, book to market (B/M) ratio, and cash flow yield	Portfolios were formed where firms were ranked by B/M ratio as of the end of June in each year and placed into one of five groups from lowest to highest B/M ratio. Significance of the B/M variable was then tested by employing Seemingly Unrelated Regression (SUR) model.	Stocks listed on the Tokyo Stock Exchange (TSE) from January 1971 to December 1988.	Of the four variables considered, the book to market (B/M) ratio, among cash flow yield have the most significant positive impact on expected returns.
Fama & French, (1992). Finance.	To evaluate the joint roles of market beta, size, E/P, leverage, and book-to-market equity (BE/ME) in the cross-section of average returns on NYSE, AMEX, and NASDAQ stocks.	Cross-sectional regression approach of Fama and MacBeth (1973) for asset-pricing tests. Each month the cross-section of returns on stocks was regressed on variables hypothesized to explain expected returns. The time-series means of the monthly regression slopes then provided standard tests of whether different explanatory variables are on average priced.	All nonfinancial firms listed on the NYSE, AMEX, and NASDAQ over the period of 1963-1990.	Two easily measured variables, size (ME) and book-to-market equity (BE/ME), provide a simple and powerful characterization of the cross-section of average stock returns for the 1963-1990 period.
Fama &	To extends the asset-pricing tests	Identical procedure to Fama &	Identical data used	For stocks, portfolios constructed to

French, (1993). Finance.	in Fama & French (1992).	French, (1992), only with time-series regression approach of Black, Jensen, and Scholes (1972) used.	in Fama & French, (1992), including U.S. government and corporate bonds.	mimic risk factors related to size and BE/ME capture strong common variation in returns, no matter what else is in the time-series regressions.
Fama & French, (1995). Finance.	To study whether the behavior of stock prices, in relation to size and book-to- market-equity (BE/ME), reflects the behavior of earnings.	Six portfolios with specified characteristics were formed on ranked values of size and BE/ME for individual stocks. The evolution of profitability for a long period before and after firms are ranked on size and BE/ME was studied.	All NYSE, AMEX, and NASDAQ stocks within period 1963 to 1992. satisfying specified criteria.	High BE/ME signals persistent poor earnings and low BE/ME signals strong earnings.
Lakonishok, Shleifer, & Vishny (1994). Finance & Accounting.	To test whether value stocks, defined as, among other criteria, by high B/M value, yield higher return than low B/M glamour stocks.	Divide the universe of stocks annually into B/M deciles, weight all the stocks and compute returns using an annual buy-and-hold strategy for Years +1, +2,...,+5.	2700 stocks listed on NYSE and AMEX for the April 1963 to April 1990 sample period.	High B/M stocks have an average annual return of 19.8% and the low B/M stocks have an average annual return of 9.3 %.
Barth, Beaver, & Landsman (1998). Finance & Accounting.	To tests predictions that pricing multiples on and incremental explanatory power of equity book value increase as financial health decreases.	Running a regression of market value of equity on measures of equity book value and net income and testing for intertemporal changes in coefficients and explanatory power as firms approach bankruptcy starting at Bankruptcy Year -5, -4,...-1.	396 US bankrupt companies during the period 1974–1993.	As financial health of the company decreases, explanatory power of equity book value increases, supporting presumption of Graham that the better a company's record, the less relationship the price of its shares will have to their book value.
Piotroski, (2000). Accounting.	To examines whether a simple accounting-based fundamental analysis strategy, when applied to a broad portfolio of high BM	Specified BM quintiles were formed, the various performance signals were calculated among firms in the highest BM quintile	Sample of 14,043 high BM firms across the 21 year.	The mean return earned by a high BM investor can be increased by at least 7.5% annually through the selection of financially strong high

			BM firms.
Bondt & Thaler, (1985). Finance.	To investigates whether overreaction hypothesis is predictive and if so, whether such sub-optimal behaviour of market participants affects stock prices.	Tests was designed to assess the extent to which systematic nonzero residual return behaviour in the period after portfolio formation (t > 0) is associated with systematic residual returns in the preformation months (t < 0). Then "winner" and "loser" portfolios were formed conditional upon past excess returns.	Monthly return data for New York Stock Exchange (NYSE) common stocks for the period between January 1926 and December 1982.	Strong empirical support for overreaction hypothesis: portfolios of prior "losers" are found to outperform prior "winners by about 25% even though the latter are significantly riskier.
Fama & French (1992). Finance.	Among other purposes, to analyse critically the irrational asset pricing story proposed by DeBondt and Thaler (1985).	See description above.	See description above.	Simple tests do not confirm that the size and book-to-market effects in average returns are due to market overreaction, at least of the type posited by DeBondt and Thaler (1985).
Conrad & Kaul (1993). Finance.	To show that long-term strategy implemented by Bondt & Thaler (1985) suffer from a methodological drawback which lead to inflation of profitability.	Employed method of measuring long-term performance of contrarian strategies using holding period returns of up to three years, that is, a buy and hold strategy.	Sample of NYSE firms over the 1926 to 1988 period.	Report that most of De Bondt and Thaler's (1985) long-term overreaction findings can be attributed to a combination of bid-ask effects when monthly cumulative average returns (CARs) are used, and price, rather than prior returns.
Loughran & Ritter (1996). Accounting.	To demonstrate that Conrad and Kaul's (1993) conclusion is driven by survivor bias and long-term mean reversion in the aggregate stock market, rather than cross-sectional patterns on	Two different methodologies, CARs and buy- and-hold, are used to determine ranking-period returns and to measure test-period performance. Results are then obtained for 58 overlapping three-	The monthly returns, price, and market value data of AMEX and NYSE stocks over the period of 1928 to	Found little difference in test-period returns whether CARs or buy-and-hold returns are used, and that price has little predictive ability in cross-sectional regressions.

	individual stocks.	year period.	1985.	
Jegadeesh & Titman (1993). Finance.	To test whether strategies which buy stocks that have performed well in the past and sell stocks that have performed poorly in the past generate significant positive returns over 3 to 12-month holding periods.	Total of 16 strategies were developed according to which stocks were selected based on their returns over the past 1, 2, 3, or 4 quarters and based on holding periods that vary from 1 to 4 quarters. The profits of the above strategies were then calculated and analysed.	Center for Research in Security Price's daily return data over the 1965 to 1989 period.	Trading strategies that buy past winners and sell past losers realize significant abnormal returns over the 1965 to 1989 period. Stocks that is selected based on their past 6-month returns and are hold for 6 months, realizes a compounded excess return of 12.01% per year on average.
Lehmann (1990). Finance.	To test stock prices for the evidence of unexploited arbitrage opportunities.	Specified costless portfolio strategies were employed and returns over short time intervals and profits on feasible ex ante costless portfolios that should not earn riskless profits in an efficient market was examined.	All securities listed on the NYSE and AMEX between July 1962 and December 1986.	Found evidence of overreaction on the market: winner and losers in one week experience sizeable return reversals the next week in a way that reflects apparent arbitrage profits.
Lakonishok, Shleifer, & Vishny (1994). Finance.	To test empirically whether value investing strategies yield higher returns compared to glamour stocks investing.	Formation of portfolios consisting of "value" stocks and "glamour" stocks, assigning equally weight to all stocks and computation of returns using an annual buy-and-hold strategy for Years +1, +2,..., +5 relative to the time of formation with the portfolio rebalancing at the end of each year.	Universe of stocks traded in NYSE and from the end of April 1963 to the end of April 1990.	Provide support for contrarian strategy: strong evidence that value strategies yield higher returns because these strategies exploit the suboptimal behavior of the typical investor and not because these strategies are fundamentally riskier.
La Porta, Lakonishok, Shleifer &Vishny, (1997).	To examine whether the hypothesis that the superior return to value stocks is the result of expectational errors made by investors.	Portfolios based on book-to-market, cash-flow-to-price and past growth-in-sales ratios were formed. All stocks were ranked and divided into (1) bottom 30%, (2) middle	Universe of common stocks traded on the NYSE, AMEX and Nasdaq for the	Strong support for contrarian investment strategy and the stock overreaction hypothesis: superior return of value stocks compared to glamour stock (25-30% of the

Finance.		40% (3) top 30%. Portfolios were rebalanced to equal weights at the end of each year and annual portfolio returns were obtained.	period of 1971 to 1993.	annual return differences between value and glamour stocks in the first two to three years after portfolio formation) is due to expectational errors about future earnings prospects, rather than risk.

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