

Is There Value to Value?

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Abstract: *The Value style of investing is explored in this paper. The analysis is segmented into four parts: historical considerations are briefly noted, and then an extensive review is conducted of the literature on various price to value indicators. Next, the reasons for value outperformance are examined. The paper concludes with a review of performance measures of value-oriented investments.*

Introduction and History. Benjamin Graham is considered today as the father of value investing. In his landmark *Security Analysis* written in 1934, Graham advocated Net Cash Asset Valuation techniques and buying in cases of reasonable earnings valuation multiples. A few years later, John Burr Williams developed intrinsic valuation methods based upon present value concepts in *The Theory of Investment Value* (1938). In the wake of the Depression, determining a fundamental value for a business was of paramount importance, and this was reflected in financial writings at the time.

Starting in the 1950's, several theoreticians experimented with extensive mathematical models on portfolio analysis and the capital markets. Markowitz (1952, 1959) developed complex models on efficient frontiers and diversification. Sharpe, Lintner, and Mossin, writing independently between 1964 and 1966, advanced the standard form of the Capital Asset Pricing Model (CAPM). Eugene Fama (1965, 1970) wrote on efficient markets. Burton Malkiel in 1974 penned a great book aimed directly at the investing public in which he advocated the newer theories. Gradually, a theoretical construct took hold: People quickly react to new information hitting the market, thereby driving market pricing to an equilibrium point where rational investors could find little or no opportunity for "arbitrage", or a riskless return. All available information would be quickly and adroitly built into the current market pricing structure, usually before many opportunities for easy profit could be achieved. The markets were efficient, with all information ever known about an asset being already built in to that asset's pricing structure. It was therefore best to emulate the market, instead of trying to beat it through various trading strategies and techniques. By the 1970's, market efficiency had become widely accepted in almost all theoretical circles. Index funds sprang up that offered easy access to the entire capital asset market place.

Only the most hardened investment managers and analysts of the day continued to believe in the older writings of Graham and others. The theoretical arguments were so powerful that they became sort of a dogma in the financial arena. But objections to the theories continued to surface. Graham wrote into the mid-1970's, still discussing fundamental notions of valuation. Warren Buffett provided great analytical and practical ammunition to the debate with his unique style of writing and investment. Starting in 1979, Kahneman and Tversky wrote on the psychological make-up of individuals that

produced “non-rational” decisions in times of uncertainty, and David Dreman forcefully advanced the case of investor psychology in the late 1970’s. Many valuation studies had been conducted over the years, some as early as the 1950’s, that showed value strategies could work, and that under-valuation of assets would persist over time. And, certain market “anomalies” seemed incapable of reconciliation through either the CAPM or EMH. Then in 1987, the US domestic equity markets dropped precipitously without any major, abrupt news announcements, much to the disbelief of efficiency proponents. Indeed, the Brady Task Force that reported on the 1987 crisis felt that computer trading programs and portfolio insurance products favored by many theoreticians were causative factors for the market drop. By the early 1990’s, there was mounting disbelief in the Efficient Market Hypothesis (EMH), especially among financial practitioners. While index funds were continuing to develop as popular investment vehicles, many professionals believed that the indexes were difficult to beat, not because of theoretical market efficiency, but because of the more practical realities of low expense ratios.

Faced with growing controversy over the theoretical models, Eugene Fama and Kenneth French conducted a study in 1992 that dramatically changed the investing landscape. Style, size, and country of equities were all found to produce superior returns. Price-to-book value indicators consistently were more powerful in explaining returns than other factors, including beta. In one famous passage of the article, Fama said that: “beta as the sole variable in explaining returns on stocks ... is dead.” A multifactor risk calculation should be explored, instead.

The French and Fama article, authored by one of the very architects and originators of the efficiency hypothesis, proved to be a turning point in the debate over investing styles and portfolio theory. Hundreds of articles appeared over the next several years, all probing the financial data bases for statistical clues on various investment strategies and finance theories. Practical financial advisors quickly reacted, too. For example, Morningstar developed an investing style matrix containing combinations of value versus growth and small versus large size. Many country, sector, size, and style types of active and index funds materialized. More recently, Behavioral Finance has started to be taken seriously in some circles. Complex mathematical utility theories have even entered the stage, some with the hope of producing an eventual merger or synthesis between market-level pricing factors and individual-level risk and preference factors.

The Value Investing Style – Does it Outperform? So, we come to the present-day, so many years after Graham, wondering whether there is any merit to the value style of investing. Is there value to “value”?

Many studies and articles done at the empirical level strongly suggest that the value style does indeed produce superior results. While numerous studies are referred to in this paper, they are meant to be illustrative of the findings of value-oriented papers, and are not to be exhaustive.

Price to Earnings. Low P/E stocks have been noted in the literature for some time. Graham (1934) argued for a reasonable multiple of average earnings. Schneider (1951)

reviewed the period 1917 to 1950, and concluded that low price to earnings did not outperform until 1933, but from that time until 1950, the strategy worked very well. Paul Miller, Jr (1966) studied firms from 1948 to 1964 having over \$150 million in sales. He found that low PE stocks had higher returns than equities with high PE ratios. Francis Nicholson (1960, 1968) initially found outsized returns in the chemical industry from low PE firms, and then described a low PE effect from all types of firms as producing superior returns. McWilliams (1966) found better performance from low PE stocks for the period of 1953 to 1964. Breen (1968) also studied low PE ratios after eliminating all firms with low growth of under 10%. Graham (1974) commented upon an in-house study done by Drexel Firestone, covering the periods of 1933 to 1969 on the NYSE. Drexel discovered that equities with low price to earnings outperformed the high PE equities and the DJIA in 25 of 28 years.

In more recent time frames, Basu wrote three papers in 1977, 1978, and 1983 that looked into PE ratios. In the earliest study, he found that the lowest price to earnings stocks had greater returns than high price to earnings stocks going forward over a 14 year study period. Basu felt that low PE stocks were not associated with higher systematic risks, contrary to conventional market theory. In the 1983 paper, the NYSE was ranked into deciles by market cap and price to earnings, and showed that the lowest price to earnings stocks outperformed stocks for every market size. Basu also found that small size outperformed large cap stocks at most price to earnings deciles, suggesting both a size and style effect. Goodman and Peavy (1983) examined firm size, industry effects, and infrequent trading, and found that risk-adjusted returns for stocks in the lowest P/E quartiles were superior than those in the highest quartiles. Goodman and Peavy (1985) then examined industry performance between 1962 and 1980 and found that the lowest price to earnings firms in each industry had higher annual returns and cumulative returns, across each industry. Ibbotson (1986) ranked the NYSE stocks into deciles and found that the compound return for the lowest price to earnings ratios significantly outperformed the NYSE return.

Dreman Value Management (1989) studied the Compustat data base for a 202 year period ending 1989, and produced similar findings to that of Basu, namely that small decile stocks outperformed large stocks for the lowest three price to earnings deciles (but then large caps outperformed small caps for the two highest price to earnings deciles). Dreman also showed that the low price to earnings did considerably better for each market size decile, again implying both a size and value effect. Lakonishok, Vishny & Shleifer (1994) used NYSE data between 1968 and 1990, and concluded that low price to earnings stocks performed better than the highest decile price to earnings firms on both the average five return and the cumulative five year returns. O'Shaughnessy (1998) used the Compustat data base, and also determined that stocks with low PE ratios do much better than those with high PE ratios. Dreman (1999, at 194-195, 201), in conjunction with Eric Lufkin, examined both PE and price to dividend ratios within industries and discovered that low industry-relative PE's and price to dividends outperformed the broader markets and the higher price to value ratios in each industry. Just as importantly, four separate industry-relative price to value indicators (P/D, PCF, PBV, & PE) performed better than the markets. Tweedy, Brown (2003) was of the belief that

companies with low price to earnings often had above average cash dividend yields, and retained earnings were often reinvested in the business for the benefit of the shareholders.

Levis (1989) studied UK companies between 1961 and 1985 and concluded that annual and cumulative return of the lowest decile price to earnings performed better than the highest decile price to earnings equities. Chisholm (1991) examined price to earnings effects for four European countries covering the period 1974 through 1989 and found that the lowest price to earnings quintiles outperformed the highest price to earnings quintiles for all four countries.

While aggregate level information highly suggests the usefulness of a low PE ratio, significant problems may be encountered when the methodology is applied at the firm level. Damodaran (1996, at 307) notes that PE ratios are not overly helpful when they are negative; that the PE will change across periods for the same firm, across industries, and across national boundaries; that the discount rate should decrease across time; and that the earnings growth rate, interest rates, and firm volatility risk all dramatically affect a firm's PE ratio. For instance, studies generally show a direct relationship between the PE ratio and earnings growth, and an inverse relationship between PE ratios and interest rates as well as PE ratios and volatility risk. Investors attempting to utilize a low PE (or low PEG or even PCF ratio) must keep these variables in mind, lest they go astray.

PEG Ratios. Several PE to Growth ratio studies have been conducted recently. Peters (1991) discovered an inverse relationship between the between PEG and average rates of return in the period 1982-1989. Reilly and Brown (2000, at 228) cited to several additional studies also showing the existence of an inverse relationship. The significance of such a finding is a refutation to the EMH, similar to that of a low PE ratio generating future period higher returns. But, when Reilly and Marshall (1999) used Value Line data and exempted low beta and low growth rate stocks, they found that no inverse relationship existed between the PEG and forward returns. Instead, the study supported both a small cap effect and a P/E effect.

NCAV studies. Employing Graham's original valuation technique of selecting stocks with low price to Net Cash Asset Values, Oppenheimer (1986) studied calculated NCAV types of stocks from 1970 to 1983, and concluded that such stocks outperformed the general markets. Tweedy & Brown research (2003) has suggested that a NCAV strategy not only produced superior stock performance, but firm pricing was often below liquidation value for the entire corporation.

Price to Book. Stattman (1980) felt that price to book ratios were even more significant than PE ratios in predicting future stock returns. DeBont & Thaler (1982) demonstrated that the lowest 20% of stocks in terms of price to book outperformed the market indexes by 8.9%. The paper pointed out that pricing and earnings were mean reverting over time. Rosenberg, Reid, & Lanstein (1985) found that a low price to book strategy did better than firms having high price to book as well as the overall market. Ibbotson (1986) showed that low price to book ratios had significantly better returns of an 18 year test period did than high price to book equities. Leverage (i.e. debt to equity ratios) explained

the cross section of returns after both beta and size were considered (Bhandari, 1988). French and Fama (1992) showed that for every market cap category, the best returns were produced by stocks with low price to book, and this method was consistently more powerful for explaining returns than beta, market cap, price to equity, leverage, price to book percentage. Lakonishok, Vishny & Shleifer (1994) showed that the average five year returns and average cumulative five year returns were much higher for stocks with the lowest price to book value. Low price to book outperformed high price to book equities in 16 out of 22 years, or 73% of the time. For five-year holds, low price to book outperformed in all periods. O'Shaughnessy (1998) found that low PBV performed better than an all-stock universe, but with much greater pricing volatility. Risk was moderated when large stocks with low PBV's were selected. Chan, Lakonishok, Sougiannis (2001) incorporated tangible assets in book value and discovered that this improved the results. Tweedy, Brown (2003) also confirmed out-performance with a low price to book philosophy. Chan & Lakonishok (2004) showed that book to market value outperformed, even after size was controlled.

Internationally, several studies have also shown a price to book effect. Morgan Stanley (1991) studied an internal data-base with 80% of the companies being outside of the US. Low price to book significantly outperformed. Chisholm (1991) studied firms in UK, JA, France, Germany. In all four countries, low price to book outperformed high price to book equities. Chan, Hamao, and Lakonishok (1991) found positive returns for BV / MV ratios in Japan. Capaul, Rowley, and Sharpe (1993) examined several countries and found that value stocks outperformed growth stocks in each country studied during the test period, both absolutely and after risk adjustment.

The price to book ratio is dependent upon several accounting items, namely the Return on Equity, the required rate of return, and the dividend growth rate. PBV will generally be higher for high firms with high ROE (Damodaran, 1996). An "undervalued" portfolio of low PBV and high ROE's was found to substantially outperform an overvalued portfolio of high PBV and low ROE's (Damodaran, at 334). Thus, a low PBV may not matter so much as a low PBV compared with a high ROE. Other researchers have generated lists of undervalued firms from Tobins's Q (Lang, Stulz, and Walkling, 1989), and from a consolidation of ROE, growth, and PBV ratios, referred to as the Estep T Score (Estep, 1985, 1987). In general, mismatches between a low PBV and high ROE may present value opportunities.

Price to Cash Flow. Keppler (1991) found that low price to cash flows outperformed high price to cash flow equities among stocks listed on 18 national indexes of Morgan Stanley. Lakonishok, Vishny & Shleifer (1994) determined that low price to cash flow produced far greater returns than did equities having high price to cash flow. This was true over each year of a five-year hold, the average return for a five-year hold, and the cumulative return for a five-year hold. O'Shaughnessy (1998) also determined that low price to cash flows outperform on an absolute basis, but at a much higher risk level. Selection of large caps with low PCF could reduce the volatility significantly.

Dividend Yield. Litzenger and Ramaswamy (1979) established a correlation between dividend yield and future returns. Williamson (1985) came to the conclusion that excess returns could be obtained through a portfolio of undervalued stocks, as calculated by the Dividend Discount Model. Fama and French (1988) showed that aggregate stock market returns were higher when the dividend yield was high, and Campbell and Shiller felt that the yield could actually predict forward returns. Levis (1989), using over 4,000 companies on the London exchange, demonstrated that high dividend yield equities produced far greater cumulative value than did stocks with lower yields. Lenhoff (1990) found an inverse relationship between price to net asset value (as well as price to earnings ratio), and the dividend yield. Lenhoff believed that high yield companies were often takeover targets. Keppler (1991), using 18 Morgan Stanley International equity indexes and equally weighting them, discovered that investments in the highest yielding stocks provided far greater total returns than low dividend yield stocks. When using a Dividend Discount Model, Haugen (1993) showed that 250 undervalued large-cap equities produced excess returns on a risk-adjusted basis. James O'Shaughnessy (1998) showed that the 50 highest dividend yielding stocks had 1.7% higher annualized return than an all-stock universe for deciles of medium to large size companies. But then an all-size, high dividend screen failed to beat the benchmark, implying that a high yield strategy should be confined to mid-size to larger firms. Siegel (1998) indicated that a high dividend yield selection of 10 stocks on the Dow Jones (the strategy is often referred to as "Dow 10" or "Dogs of the Dow") generated higher returns and at lower risk levels than either the DJIA or S&P 500. Miller (1999) strongly believed in dividend growth investing preferences, maintaining that companies with dividend growth exhibited strong cash flows, superior quality, and usually, reasonable to low valuation levels.

There is some evidence to suggest that high dividend-yielding stocks may only be a proxy for low PE ratios, however (Jacobs and Levy 1988), so it is unclear whether a dividend strategy would generate different results from a tactic based on a low PE effect.

Price to Sales. Ken Fisher (1984) believed in PSR's as a measure of value, and felt that a stock's price to sales ratio was "almost a perfect measure of popularity". Senhack and Martin (1987) found that low PSR equities out-performed high PSR's, but not a low PE strategy. There was also a determination that low PE's provided more consistent returns than a low PSR, and that low PS ratios were biased towards smaller-caps. Jacobs and Levy (1988) used an industry analysis, and believed that low PSR's generated excess returns. Studies suggest that a direct relationship exists between the PSR and profit margins. Damodaran, (1996), suggested that under-valuation (or over valuation) may exist with equities having low PSR and high profit margins (or high PSR's and low profit margins). This is due to PSR's being greatly affected by profit margins. O'Shaughnessy (1998) indicated that a low PSR strategy had outstanding results, better than any other value ratio. The results were very consistent, as well, with 90% of all rolling ten-year periods outperforming an all-stock portfolio. This was true for both small and large caps having low PSRs.

Stocks with Large Price Declines. DeBondt and Thaler (1985) studies the NYSE between 1932 and 1977, and showed that the worst performing stocks over a past five

year period produced an average cumulative of 18.2% return in excess of the market index in 17 months after portfolio formation. The best performing stocks in the preceding five year period generated a cumulative average of 6% less than the market index. Poterba and Summers (1988) studied large price declines internationally. They discovered that stocks tended to revert to the mean average over periods of time in excess of one year. Power & Lonie (1988 ?) studied 200 UK companies, and found the same effect.

Distressed Businesses. Firms that have had recent difficulties with negative earnings, low or negative book value and equity, and having no dividends ironically may develop the greatest returns into the future. The effect was long ago noted by Kenneth Van Strum (1925). Assuming the firm survives the distress and ultimately resumes a profitable future course, it would seem that excess returns are in store for an investor. More recent evidence shows that the ability to generate excess returns from businesses in distress still exists today (Siegel, 1998).

The Size Effect. In addition to French and Fama (1992) and others cited above, numerous articles have examined whether size matters in the returns of equities. Ibbotson (1980) computed returns for all stocks other than large companies in the S&P 500 from 1958 to 1979 at twice the total return as that of the entire S&P. Rolf Banz (1981) found that small stocks systematically outperformed large cap equities, even after adjusting for risk. Reinganum (1983) studied the NYSE and American Stock exchange between 1963 and 1980. Smaller market cap equities considerably outperformed large caps. (Chisholm (1991) also found a small size effect in his four country study. Levis (1988) looked at only the UK market, and also determined that a size effect exists. Small cap stocks have also been found to outperform in Canada (Berges, 1984); Australia (Brown, 1983); and Japan (Nakamura and Terada, 1984).

Some studies suggest that the small size effect is actually being generated by low price to valuations, and therefore may ultimately be part of the value style (Basu, 1983). In fact, BARRA ranked firms in the S&P 500 and discovered that value stocks tended to be actually smaller in size than most growth stocks, implying that any small cap study would, by the vary nature of data sampling, pick up value styled stocks within the study group (cited in Siegel, at 103). Dreman (1999, at 319-330) critiqued the work of Banz, Reinganum, and Ibbotson, and concluded that except for 1931 to 1935 and 1941 to 1945, small stocks did historically outperform the markets, but they had a far greater risk of insolvency. Dreman's statistical runs showed that excess returns were being generated by small firms having low PE's.

O'Shaughnessy (1998, at 42-43) believed that almost all of the small cap effect was due to a boosting of returns from micro-caps with under 25 million in market capitalization. Once micro-caps are removed from a statistical sort, the return rate of the small caps is greatly lowered to levels more closely aligned with large cap issues. Even worse, small-caps without the micro-sized companies underperformed larger firms on a risk adjusted basis (Id., at 47). Siegel (1998, at 254) showed that the entire small cap gain came almost exclusively as part of a January Effect. Once the returns for January were deleted from

the data, small caps showed no more promise than any other stock. In fact, small caps under-performed large caps and the S&P for all months *except* January. Siegel also demonstrated that small caps have only outperformed since 1975. Before that, small caps returns were quite close to that of large-caps (Id., at 94). Some studies have also concluded that the small size effect is not overly stable, with small size firms going through irregular periods of higher or lower rates of returns. (Brown, Kleidon, and Marsh, 1983).

Other writings (contained above) note that both size and value effects are going on simultaneously, while still other researchers are of the opinion that a basic interrelationship among several styles may be involved with size and value criteria (contained below).

Neglected Firms. The lack of information and limited institutional interest in certain equities, especially small-cap issues, may generate out-sized returns for those investors that can identify under-analyzed firms. Arbel and Strebel (1983) found a small sized effect but also an effect for those businesses not extensively followed by investment professionals. Arbel (1985) showed that the January effect was the greatest for under-researched firms. Another study however found no evidence of a neglected firm effect after controlling for size (Beard and Sias, 1997). Barry and Brown (1984) suggested that firms with less information require higher returns in order to account for the higher levels of uncertainty of forecasting. Damodaran (1996, at 185) noted that return rates decreases as the number of analysts following an equity increases.

Quality Firms. Concentrating on businesses having a dominant position in their respective industries is favored by some value investors, including Warren Buffett. The Standard & Poors Company has maintained an earnings and dividend ranking of stocks since 1956. The rankings with a high quality rating, based on superior earnings and dividends, have outperformed on both an absolute and risk adjusted basis, and with lower amounts of variance and semi-variance or downside risk (S&P Report on Earnings & Dividend Ranking System, 2003). Statistical studies have also shown that quality matters. O'Shaughnessy (1998, at 47) found that market leading businesses outperformed the S&P 500, while having much less risk. They provided excellent performance over a variety of market conditions.

Long-Term Price Movements / Reversion to the Mean. While a consensus exists that short-term pricing movements cannot be predicted (see below), longer period pricing becomes remarkably predictable. The overestimation of growth possibilities and the underestimation of value-oriented equities noted in behavioral studies are consistent with reversion to the mean principles. Shiller (1981) indicated that market prices exhibit excessive volatility compared to intrinsic valuation, implying initial overreaction to news and information. DeBondt and Thaler (1985, 1987) demonstrated that reversion to the mean concepts was being experienced at the individual stock level, and not just in the aggregate markets. Fama and French (1988) found significant serial correlation with five-year return data (but little correlation in a one-year period), and the effect was more pronounced with the small cap firms. Poterba and Summers (1988) also found negative

long-term serial correlation. Chopra, Lakonishok, and Ritter (1992) discovered that poorly performing stocks exhibited strong reversals in future time frames, leading to significant outperformance. Reichenstein & Dorsett (1995) showed that bad periods of market behavior were *predictably* followed by good periods, and visa versa. This suggests that initial overreaction to information is followed by mean reversion when the market eventually recognizes the overreaction (Haugen, 1995). Substantial negative correlation exists in longer-term price behavior, in apparent contradiction to market efficiency (Damodaran, 1996, at 164). Carhart (1997) found that almost all mutual funds revert to the mean within 5 years of initial year performance measurement, with some evidence that a few funds will continue to be persistently good or bad in their performance. Studies indicate that stock predictability exists across time horizons (Barberis 2000). Siegel (1998, at 12, 33) attributed the stability of real returns on stocks over extraordinarily long periods (of 195 years) to mean reversion tendencies in equities.

The degree of serial correlation in equity returns is so strong that profit opportunities may be possible, while other anomalies (such as the calendar effect) are not sufficient in their correlations to consistently allow abnormal profits. (Bodie, Kane, and Marcus, 2004, at 656). Thus, initial overreaction to information noted in behavioral studies may be sufficiently large to generate excess returns from value-oriented buys, with a gradual mean reversion then occurring until market equilibrium is established between market pricing and intrinsic valuation levels. This line of reasoning would be consistent with not only mean reversion studies, but behavioral finance research and the value style, generally.

Macro Effects. All types of investors, whether value-oriented or otherwise, should be aware of certain macro-economic factors which influences investment returns. Several studies have shown that most changes in a firm's earnings can be traced to changes in aggregate corporate earnings and changes in a firm's industry. Studies consistently demonstrate that the economic environment has a significant effect on firm earnings. (Reilly and Brown, 2000, at 442). A relationship exists between stock prices and economic expansions and contractions (Siegel, 1991). Most of the changes in rates of return for individual businesses can be explained by changes in the rates of return in the aggregate stock market and a firm's industry (Meyers, 1973), and interest rates are considered the single most important macroeconomic factors for investment analysis purposes (Bodie, Kane, and Marcus, 2004). The direction and magnitude of business cycles are also important factors to analyze, and stock pricing normally leads economic activity (Jones, 2004, at 347). Further, evidence exists of an inverse relationship between the rate inflation and price to value multiples (Id., at 434).

Accordingly, a three-step process in the valuation and selection of assets is often advocated: first, analyze the country-level economic environment; second, review industry factors; and third, identify firm characteristics. (Reilly & Brown, 2000). While many value investors prefer a bottoms-up investing approach due to their focus on the individual selection of businesses, looking to various macro-economic factors is quite consistent with blending value indicators together to form an overall appraisal of business prospects.

Blending Various Value Indicators. The literature suggests that incorporating several value indicators into an overall stock selection strategy reinforces valuation characteristics in the assets chosen by the strategy. Indeed, value and size indicators may be interrelated, and show the same or similar undervaluation of firms. For example, Keim (1988) reviewed pricing data on the NYSE between 1964 and 1982, and found that lower price to book ratios were associated with lower price to earnings ratios, smaller size, and lower stock prices. In another study, Keim (1988), showed that price to earnings were associated with smaller market capitalizations over a period of 35 years. And, many of the value factors may overlap as well, with the same stocks possessing several low price to valuation indicators (O'Shaughnessy, 1998).

Chan, Lakonishok, Sougiannis (2001) found that blending various approaches might allow investors to have larger returns than just with value versus growth distinctions. Chan & Lakonishok (2004), in a review of past valuation articles, noted that French and Fama's book value to market value method was not necessarily an ideal measure in that strategies based on several value signals might enhance portfolio performance. And, mixing various valuation ratios, such as PE and P/BK with size, monetary environments, neglected firm analysis, and the anticipation of earnings surprises has also been recommended (Reilly and Brown, 2000, at 249). O'Shaughnessy (1998) mixed various value factors together to increase returns. In one screen, market-leading firms with high dividend yields substantially outperformed a large stock universe. Another screen composed of both value and growth factors outperformed an all-stock holding of stocks by 4% per year, and with very similar standard deviation. Brown, Tweedy (2003), in an extensive review of the literature, believed that there are recurring and often interrelated value-oriented patterns existing over very long periods of time.

After penning their article in 1992, French and Fama went on to propose a three-factor model incorporating the style, size, and country distinctions (1993). Back-testing of the three factor model has produced some interesting results. In one study (Ibbotson and Sinquefeld, 1989), a large value strategy outperformed both the S&P 500 Index and a large growth grouping of stocks, while small value also generated superior returns over small growth stocks. Further, small caps generally outran the large companies. Very importantly, the value and size effects occurred with no increase in the standard deviation of variance. Size and BV/ MV appear to provide good combinations, but only during periods of expansive monetary policy (Jensen, Johnson, and Mercer, 1996). In another writing (Tanous, 1997), a mix of styles, sizes, and country passive funds (and with a zero weighting for ST or LT bonds) outperformed the S&P 500 by over 5%, and with slightly less deviation risk. Even when the mix of passive equity funds were only 60% of the total allocation, the rate of return still exceeded the S&P Index by 1.5%. Importantly, the standard deviation was then markedly reduced to 8.5% versus the S&P 500's 13.65% deviation. Similar statistics have been generated for active management, so long as there is broad diversification with sub-grouping for the three factors of size, style, and country weighting. For a ten-year back-testing period, active funds sorted by the three factors produced the same to higher rate of return versus the S&P (and by as much as 3%), and with very similar deviation risk compared to the S&P (Tanous, 1997).

Some studies have examined the make-up of the price to value ratios themselves, and have uncovered complex accounting relationships. Fairfield (1994) showed that the Price to Book ratio depends upon the expected levels of future ROE, while the P/E ratio is dependent upon expected future growth in earnings. French and Fama (1995) ascertained that equities with low price to book had low ROE prior to the test period, but increases in ROE after portfolio formation and the test period began. Damodaran (1996, at 292) indicated that the PE ratio was based upon the pay-out ratio, the dividend growth rate, and the required rate of return, while Price to Book Value turned on ROE, the growth rate, and the required rate of return. Price to Sales was composed of profit margins, payout ratios, the growth rate, and the required rate of return. These ratios could vary across nations, industries, business cycles, and various time periods of a firm's development.

Contra Indications on Cross Sectional Studies. While many studies have shown validity to the value style, some other works believe value investing to be a dubious endeavor. Bogle (1999) showed that value and growth styles produce almost identical results over very long time frames of 60 years duration. And, high-grade stocks versus low-priced stocks also had very similar returns. Siegel (1998) found that excluding 1975-1983, large growth stocks actually beat larger value stocks, although smaller value equities still had better performance than small growth stocks. Additionally, a strategy shown to be superior on a back-testing basis may not out-perform when projected into the future. For example, regression analysis has been quite useful in explaining past PE ratios, but has not been particularly helpful in predicting future performance (Damodaran, 1996, at 305-307).

A Review of Studies on Other Styles of Investing and Types of Activities. In addition to cross sectional value indicators, many other market anomalies have been studied in the literature. The following is a summary of conclusions taken mostly from Reilly and Brown (2000), except where noted otherwise.

Various trading rules and systems have been devised over the years in an attempt to outrun the markets. Some of these attempts go back many decades. Graham (1934) even noted activities of "Chartists" before the Depression. A widespread consensus exists in the literature that technical methods resting solely on past data and information cannot beat a buy and hold policy. The biggest risk of market timing may be that investors will not be in the market at critical periods (Jones, 2004). There is some evidence (O'Shaughnessy, 1998, at 234-235) that one-year pricing performance (also known as relative strength) outperforms, but the volatility risk is extraordinarily high. There is also some recent evidence that a 200 day moving average, when used with a 1% filter rule, may possibly be used to improve returns (Siegel, 1988, at 250-252; Brock, et al, 1992). Jegadeesh and Titman (1993) found that stocks exhibit momentum of 3 to 12 month duration, with good or bad pricing performance continuing in the short-term. This finding might actually be supportive of behavioral studies suggesting initial overreactions to news. Several studies have investigated the Value Line Investment Survey Ranking

System, with evidence that it does provide useful information, but that the markets adjust quickly to the rankings (Jones, 2004, at 334).

It is doubtful whether short-term trading patterns can outperform a long-term buy and hold strategy on a post-tax, post-cost, post risk-adjustment basis (author's comments). For example, Ready (1997) has shown that a moving average rule would not produce profits in practice due to trading expenses and movement in pricing by the time the trader could respond to a technical signal. Jones (2004) felt the evidence against technical analysis was so overwhelming that the burden must be on the proponents of technical rules to prove outperformance in properly designed testing procedures.

As to event studies, numerous types of events have been analyzed. Studies on stock splits, IPO's, world events, economic news, accounting changes, and a variety of corporate financial events have shown that the market reacts quickly to such events (Reilly & Brown, 2000; Jones, 2004). Exchange listing studies are mixed in their conclusion, however, while a "January Effect" does seem to exist but could be related to either a small size effect or to tax related matters. There is also a "weekend effect" in which returns on Mondays are significantly negative. This anomaly has been noticed for many decades. The literature suggests that the markets do not adjust to quarterly earnings surprises as quickly as anticipated by the EMH, and that market pricing begins adjusting even before the announcement, implying insider activity (Jones, 2004, citing to other studies). To profit from such surprises however, one must do a superior job at predicting the earnings surprises, which is very difficult to do on a consistent basis.

As to inside information, insiders can definitely enjoy abnormal returns from their knowledge of corporate activities, so much so that the SEC long ago banned insider-trading activities. Insiders are still allowed to trade when their activities are not related to the possession of certain information, but must report the activity in monthly reports to the SEC. The evidence is mixed on whether outside investors can profit by reviewing these SEC mandated disclosure forms. Studies on investment managers and other professionals potentially possessing some information show that most managers do not consistently outperform a buy and hold philosophy on a risk adjusted basis.

Ball (2003) indicates that several trading styles may benefit from evidence regarding anomalies and outsized returns. DeBondt and Thaler (1985) found that prices overreact to information and then undergo corrections. Shiller (1981) argued that the market overreacts because of herd-like behavior and the existence of fads. This favors a contrarian style. Momentum styles have support from V.L. Bernard and J. Thomas (1990), who discovered that prices underreact to quarterly earnings reports. Findings of the French and Fama 1992 studies supports the value style in several respects (i.e. size; country status; price to value indicators). Several different seasonal patterns exist, as well. This may support some technical strategies.

Summation of the Initial Question. Perhaps Reilly and Brown (2000, at 233) summed up the issue in the clearest terms when they wrote: "the tests of publicly available ratios that

can be used to predict the cross section of expected returns for stocks have provided substantial evidence in conflict with the semi-strong form EMH.”

The Value Investing Style – Why Does it Work? Empirical studies on cross-sectional returns of value indicators have been criticized for not having theoretical support to explain their findings. “Results, in search of a theory”, is an oft-cited comment. The following reasons have been cited for the usefulness of value indicators.

Data Mining. Almost all of the theoretical analysis has been done on historical data using regression and backtesting analysis. But, data selection biases may creep into the statistical process, invalidating the results (Kothari, Shanken, and Sloan, 1995). Chan, Jegadeesh, and Lakonishok (1995) suggested however that data selection biases cannot explain differential performance between value and growth. Davis (1994) studied the question, and concluded that the book to market effect was less susceptible to biases affecting early observations of the Compustat files. Additionally, similar value results have been found internationally as has been the case with domestic Compustat data. Given the fact that similar results have been ascertained in very different markets, and under different economic conditions, data mining may not be “driving” the results (Chan and Lakonishok, 2004).

Higher Risk. Ball (1978) argued that low PE’s estimate risk that cannot be explicitly found. French and Fama (1989) showed that the yield spread on high to low grade actually had greater predictive power for stock returns than bond returns, suggesting that predictors of future market activity were risk premiums rather than proof of market inefficiency. French and Fama (1996) believed that value outperformed because of higher business risk factors (such as financial distress) inherent in companies exhibiting price to value indicators. As recently as 2004, Bodie, Kane, and Marcus (at 272, 273) argued that reversion to the mean tendencies in asset classes and price to value factors might only be evidence of risk premiums changing over time, citing to Fama.

The assertion of higher risk in value-oriented assets has been criticized in the literature. Chan & Lakonishok (2004) felt that the higher risk argument simply “stretches credulity”, with a “metaphysical” type of risk being unsustainable. If the value strategy was fundamentally riskier with pricing volatility and beta not capturing all of the risk factors in a stock, then the equity should underperform during undesirable periods when marginal utility is high. Data collected in both Chan and Lakonishok (2004) and in Lakonishok, Vishny & Shleifer (1994) indicated otherwise, however. Low price to book stocks outperformed even in down markets, as well as the best markets. Quoting from the 2004 article: “If anything, the superior performance of the value strategy is skewed towards the negative return months rather than the positive return months. The evidence ... shows that the value strategy does not expose investors to greater downside risk.”

Dual Effects / Problems with the CAPM. Reilly and Brown (2000, at 227) noted that cross-sectional studies are actually joint tests on two separate propositions: The EMH and the CAPM. Positive findings of valuation studies are indicative of *either* market

inefficiency *or* the market model not correctly estimating expected risks and returns. Ball (2003) also believes that joint effects may be at play.

Haugen and Hein (1975) looked into the question of risk and concluded that empirical efforts do not support the proposition that risk generated a special reward. After a review of several theoretical articles, Murphy (1977) felt that no stable long-term relationship necessarily existed between risk and return. Roll and Ross (1980) proposed an Arbitrage Pricing Model, after finding that three to five factors influenced security returns, including inflation, industrial production, interest rates, and default risk premiums. Banz (1981) felt that the size effect was the result of misspecification of the CAPM rather than evidence of market inefficiency. Reinganum (1981) believed that most cross-section studies only involved single-period CAPM models, which were unrealistic depictions of actual capital markets. Roll (1981) stated that the riskiness of small firms was being improperly measured in many of the studies, while Chan, Chen, and Hsich (1985) used a multifactor pricing model with several risk factors to conclude that the differences in size-related returns can be explained by more complete measures of risk. Kothari, Shanken, and Sloan (1995) used annual betas instead of monthly beta data, and found no relationship between returns and the BV / MV ratio, in contradiction to French and Fama's 1992 findings. Pettengill, et al (1996) noted that most price to value studies used realized returns while the CAPM contemplated expected returns. When adjustments were made for expected returns, a consistent relationship between beta and returns resulted. Benchmark error may also exist, with the proxy for the market portfolio not being consistent with the true market portfolio (Roll, 1977).

Ball (2003) believes that that information costs and the complexity of processing the information may be causing some of the anomalies. Information costs are frequently ignored or assumed away in academic research, but the direction of the bias from ignoring such information processing is consistent with evidence on anomalies. Also, prices can only be expected to adjust within limits defined by the cost of trading (Jensen, 1978). The price quote spread may be causing some of the seasonal abnormalities, such as the January effect (Keim, 1989). Ball (2003) also believes that the events of 1987 created conditions of extreme uncertainty, whereby the assumptions of zero information costs and the homogeneity of investors broke down. The uncertainty was resolved over time, in part, through information provided by analysts. Ball feels that analysts generally have the effect of reducing information costs and investor uncertainty of public company valuation. Further, changes in riskless rates of return and risk premiums over time may be biasing the results of various studies, since most tests assume a constant RFR and risk premium. There may also be patterns of positive and negative serial correlation in real risk free rates and market premiums, reflective of demographic considerations as well as political and economic changes. Thus, efficient markets may be expected to exhibit such serial correlation in security pricing. Mean reversion therefore does not necessarily point to market irrationality. Additionally, there may also be systematic changes in beta after pricing drops, thereby explaining value effects noted by F&F. Endogenous risk variation explains much of the serial correlation examined by F&F, in fact (Ball and Kothari, 1989).

These above studies generally support the belief that it is not market inefficiency or even a basic increase in the riskiness of value stocks that can explain price to value studies. Instead, the current methodology used to measure beta and risk may be in need of further development and refinement. The basic risk / return trade-off may still be intact after a more sophisticated risk methodology is conducted.

A Different Definition of Risk. For the most part, the above possible explanations are consistent with analysis under the EMH and the CAPM. Not surprisingly, the explanations have been put forward by researchers generally favoring market efficiency. Many long-term and value oriented investors, however, believe that the concept of market efficiency itself encompasses flawed notions of risk. At common law, the preservation of capital was the critical determinant in developing the prudent man standard in 1830. To both Benjamin Graham and Warren Buffett, risk was simply the probability of a business loss. In today's parlance, such risk of a downside loss is known as "semivariance". As noted above, value studies that have looked into the issue of downside risk have found that price to value factors typically outperform the markets during downturns as well in more positive market conditions.

By the long-term, standard deviation stops being a useful measure of risk, since reversion to the mean virtually eliminates pricing volatility (Siegel, 1998). Many long-term investors and institutional pension funds and trusts measure risk in terms of asset / liability modeling: For each relevant holding period, risk is the probability that future liabilities will exceed capital assets. As far back as Roy (1952), safety-first concepts focused on having sufficient capital assets to cover liabilities. More recently, the concept has referred to as "shortfall risk", where long-term investment goals are not fully funded on an actuarial basis. When seen in this manner, standard deviation as a definition of risk is meaningless. The probable shortfall in capital assets to fund investment goals becomes the critical and pressing concern. See, Kaufhold, 2006:4, for an extensive survey of shortfall risk.

The risks of fundamental types of business losses and short-falls are consistent with more sophisticated utility theories attempting to maximize investor marginal utility. Markowitz (1952, 1959) extensively relied upon utility curves in his early thoughts on portfolio analysis. In such a context, standard deviation can even be seen as a shortcut or proxy for marginal utility forms of risk occurring in short and near-term time frames, due to pricing volatility then being so significant (Kaufhold, 2005:4). But, as pricing volatility in the short run gives way to the ever-increasing range of net worth by the long run, risk across all time frames should be viewed as the probability that marginal utility at the individual investor level will be reduced. Price to value factors fit comfortably within the theoretical constructs of utility analysis, becoming additional factors of an opportunity set expressed at the individual investor level. However, Bodie, Kane, and Marcus (2004, at 659) are of the opinion that standard utility analysis does not yet successfully approximate individual behavior.

Investor Psychology. Numerous articles have been written on the impact from investor psychology, which treads away from the normal EMH / CAPM path and moves towards

the subject of Behavioral Finance. As far back as 1852, Charles Mackay noted emotional behavior in the financial arena in *Extraordinary Popular Delusions and the Madness of Crowds*. This may have been the first writing to detail a mass psychological force at work. More recently, studies have discussed psychological and emotional behavior. Ignoring prior probabilities in decisions interfere with intuitive predictions in a wide variety of fields, including financial analysis (Slovic, et al, 1977). Sherif and Sherif (1969) demonstrated that group opinion can be shaped and manipulated quite easily, and the judgment of test subjects can be shifted by as much as 80%.

Then, Kahneman and Tversky moved the discussion into high gear when they penned an article in 1979. Through testing procedures normally associated with psychological and behavioral disciplines, these two researchers discovered that individuals did not always make rational decisions under conditions of uncertainty. A wide array of thoughts quickly developed from there.

DeBondt and Thaler (1985) observed an overreaction bias that occurred in response to unexpected and dramatic news events. Chopra, Lakonishok, and Ritter (1992) found that this bias exists even after adjustments were made for beta and size effects. Investors tend to be overconfident in their own abilities to make wise investment choices, exhibit overreaction bias, have undue amounts of aversion, and engage in mental accounting (Hagstrom, 1999, at 148-151, citing to Kahneman and Thaler). A study of investment analysts by Tversky (1995) showed that investment analysts were markedly overconfident in their own projections, even though forecasting was known to be error-prone. Another study by Fischhoff (1982) showed that cognitive illusions exist among professionals, as well: even when experts were warned of an overconfidence bias in forecasts, they still were unable to adjust for it. Not only does overconfidence occur on a regular basis, business people are also greatly overoptimistic (Taylor and Brown, 1988). Dreman (1999, at 76-77, 107) believed that most investment professionals process information in linear ways, even though the analysis of assets requires high-level configural processing abilities. Informational processing short-cuts, such as anchoring, hindsight biases, the tendency to draw analogies when none exist, and not following probabilities in conditions of uncertainty, are additional examples of cognitive biases that can interfere with decision making in a financial setting. Regret avoidance issues (DeBondt and Thaler, 1987) and mental accounting (Statman, 1997) may also be involved.

Expectational errors may be part of the reason for superior returns in value stocks. Mispricing patterns can persist over long periods of time, due to the limits of arbitrage. (Shleifer and Vishny, 1997). Dreman (1999, at 250-251) felt that pricing changes overreact to changes in fundamentals. Fuller, Huberts, and Levinson (1993) demonstrated that investors continually overprice favorites while discounting unpopular firms. Shiller (1981) found that stock price volatility was too high to be attributed to just new information hitting the market. Rich pricing of stocks may not be reflective of their fundamental value, but is indicative instead of investor's overly optimistic sentiment towards future growth and a firm's ability to sustain growth (Chan, Karceski, Lakonishok, 2000). Investors may extrapolate past performance into the future, without

realizing that growth rates may not be persistent (Chan, Karceski, Lakonishok, 2003). Chan and Lakonishok (2004) believed that investors have exaggerated hopes about growth stocks, but then end up being disappointed when future expectations fall short. They are also unduly pessimistic about value stocks and wind up being pleasantly surprised. Chan & Lakonishok (2004) have postulated that low price to value indicators may be due to investors consistently overestimating growth, thereby paying too much for high-growth firms and too little for stable firms.

Another area of discussion swirls around the massive market pricing drop in October, 1987 as well as the more recent 2000 stock bubble. Dreman (1999) believed that the 1987 market fiasco was proof of market inefficiency, while Shiller (2000) was of the opinion that excessive pricing of equities leading up to the market peak in early 2000 was evidence of overreaction and undue euphoria exhibited on a mass scale. Many observers have even accepted the belief that a bubble did occur in 2000 that was not based on rational behavior (Jones, 2004).

Summation on the Explanatory Reasons for Value Performance. Many of the studies on the theoretical aspects of the CAPM suggest that risk / reward factors may still be consistent with the CAPM once a more sophisticated understanding of risk is entertained. This does not negate however, the power of value indicators to identify promising situations. The basic question still remains as to why investors persistently overestimate return prospects to growth stocks and underestimate the long-term returns of value-oriented stocks. The answer to this basic question may very well lay in further research on fundamental notions of risk and utility as well as in the continued exploration of the psychological and behavioral aspects of investing.

The Value Investing Style – Can It Outperform in the Real World? While value oriented indicators have been shown to outperform on a back-tested basis using the power of statistics and computers, in practice, any actively managed style has difficulty in keeping up with passively managed indexes. This is largely due to the expenses of active management. Bogle (1999) estimates that a 2% expense ratio of a fund will reduce accumulated capital by as much as 24% over 10 years, and 39% over 25 years. This results in underperformance across all mutual funds. In any one year, up to 70 % of all actively managed funds under-perform the Wilshire 5000 index. (Malkiel). In fact, only a meager 1.20% of all actively managed funds have outperformed the S&P Index *in each of the five years* between 1994 to 1999 (Sandy Lincoln, 2000). There is also little or no long-term relationship between performance in a past period and investment returns in a future period. Even the *Forbes* Honor Roll of Mutual Funds has under-performed the Wilshire 5000 over a 16 year test period (Malkiel, at 443-444). The probability of future out-performance by an active mutual may be close to that of random chance (Tanous, at 171, citing to Fama; Bogle, at 214). Actively managed funds may not be able to outperform indexes even in a downturn. In one study done by Charles Schwab (2001), index funds outperformed active funds in 11 out of 20 market declines since 1986. Additionally, once the tax impact of active management is factored into the process, index funds may outpace between 86% to 97% of all actively managed mutual funds, In

fact, the original Vanguard Index Fund outpaced 94% of all active funds pre-tax, and 97% of all funds post-tax for 15 years ending 1998. (Bogle, 1999; at 286-287; 129).

Professional reviews of active management performance have been conducted for many years. As far back as 1966, Sharpe found that only 32% of all active funds outperformed the DJIA. Good performance of a fund was usually associated with low expense ratios. Sharpe ascertained that while 56% of the funds outperformed before administrative costs were added in, after deducting for operating expenses of the mutual funds themselves, most funds under-performed the DJIA. In one of the earliest studies on the topic, Jensen (1968) found that actively managed funds, on the average, underperformed by 1.1% annually, after risk adjustment. No evidence of continuity of performance was found, either. Friend, Blume, and Crockett (1970) conducted an extensive study of mutual funds and found that the funds trailed the NYSE by 1.7% annually between 1960 and 1968. More recently, Lehman and Modest (1987) showed that average fund performance was consistently below that of the overall market. Ippolito (1993) reviewed numerous studies on mutual fund performance, and found a consistent indication of fund underperformance. Malkiel (1995) surveyed mutual funds and determined that the alpha return was roughly bell shaped, with a mean that was slightly negative. Carhart (1997) looked into persistence of certain managers to consistently produce superior results. The persistence appeared to be related to fund expenses rather than greatly superior fund performance. Carhart also found that persistence was concentrated at the two extremes of best and worst performers, suggesting that there are a few managers who can consistently outperform, while some others who consistently underperform. Bogle (1998) demonstrated that passively managed funds generally produced the highest risk-adjusted returns in each of the nine categories of the Morningstar equity style box.

Many value fund managers also have difficulty in outperforming. Frank Russell Analytical Services (noted in Reilly and Brown, 2000, at 245) regularly engages in performance evaluations on professional managers. For 1 to 10 year periods ending in 1997, very few investing styles provided returns in excess of the S&P 500. Value styled equity accounts under-performed in short and near-term time frames, but did at least perform at or slightly above the S&P 500 in longer time frames of 6, 8, and 10 years. Many value funds follow a near-term philosophy, with a buy occurring for value, and a sale transpiring if and when full value is achieved. This generates higher turnover, tax impacts, and trading expenses than through an index fund. It becomes problematic whether any near-term style, be it value or otherwise, can outperform a long-term buy and hold strategy, once tax impacts and other expenses are factored in.

Some very noted value investors and managers have had excellent returns over long-time frames, however. Charlie Munger ran an investment partnership for 13 years in the 60's and 70's, and averaged a 24.3% return to the DJIA 6.4%. The Sequoia Fund, over a 26 year period of time from 1971 to 1997 had a 19.6% return rate versus the S&P 500 Index return of 14.5%. Geico's equity portfolio return rate between 1980 and 1996 was 24.7% versus 17.8% for the S&P 500 (Hagstrom, at 40-53). Dreman (1999, at 187-189) ran a Monte Carlo simulation on his own contrarian strategy. He felt that the odds of outperforming the markets with his strategy in any one quarter was 60% - 40%; and that

over 25 years, the odds of outperforming the markets was 9999 out of 10,000 tries. Peter Lynch's Magellan Fund outran benchmark indexes by an incredible 13% per year between 1977 through 1990 (Siegel, 1998, at 276). In addition to Lynch, Warren Buffett, John Templeton and George Soros have all had performance records that are difficult to reconcile with efficient markets (Bodie, Kane, and Marcus, 2004, at 285). Josef Lakonishok took his academic research on the value style and formed a management company. Between the five-year period of 2000 and 2005, his value-oriented mutual fund had returned a risk-adjusted alpha of 11.62, with a beta of .68, and R^2 of 60. This translates to a higher risk-adjusted return than the broader markets, and with little correlation of pricing returns. Since 2000, Lakonishok's fund had easily outdistanced not only the large value indexes, but the S&P 500 and the total stock market index, too. Additionally, many ordinary, individual investors have also consistently out-run the indexes by using simple, buy and hold value-oriented tactics (*Better Investing*, 2002).

In response to these examples, market theorists note that efficiency does not compel a conclusion that no one can ever beat the market averages. Indeed, the laws of probability and the central limit theorem suggest and even require several important items: that prices can and will deviate from true value from time to time, and by significant amounts; that actual returns may deviate from expected returns in the short-run; that roughly half of the investors will beat the market in any given time period; and that a fairly large size of people will consistently outperform over long periods (Damodaran, 1996, at 147). Efficiency only requires that: 1) deviations in stocks prices are random in nature; 2) that no one investment strategy can successfully be employed on a continuing basis by a disproportionate number of investors; and 3) and that the expected returns for any investment will be consistent with the risk of that investment over the long-term.

Inefficiencies in the capital markets can persist if the ease and / or liquidity of trading does not exist; if the information and transaction costs of exploiting that inefficiency are too high; or if the investing style used to exploit that inefficiency cannot be easily replicated. (Id.) In the modern capital markets, trading is normally easy to engage in; liquidity exists on most assets, with some notable exceptions that may serve to explain a persistent inefficiency (such as micro and small caps; real estate; private investments; etc); and most investing styles can be easily replicated. The large amounts of time, resources, information, and sheer patience required to successfully exploit value-oriented weaknesses in the marketplaces may explain why value indicators have continued to persist over the years. The style is not easily replicated in practice, since there is no simple formula or method to use. While the value style has certainly been known about since the time of Graham, only a relatively small group of people (possibly having unique personalities and thinking patterns) has been able to methodically and consistently take advantage of value investing tactics.

So, still the question remains: can the value style outperform in the real world? Can any trading or investing style (be it value, or otherwise) consistently outrun its relevant benchmark? Richard Roll, an academic as well as an investment manager, in response to Robert Shiller (an Economist who brilliantly wrote on the 2000 stock bubble), stated: "I agree ...that investor psychology plays an important role. But I have to keep coming back

to my original point that a true market inefficiency ought to be an exploitable opportunity. If there's nothing that investors can exploit in a systematic way...then its very hard to say that information is not being properly incorporated into stock prices...real money investment strategies don't produce the results that that academic papers say they should" (quoted from Malkiel, at 223).

Summation on the Practicalities. Perhaps, the question should be reframed to a discussion of costs. The basic inquiry may lay in the ability to keep costs as low as possible. Since long-term buy and hold index funds carry no research costs, have almost no trading fees, and incur minimal tax impacts through turnover, the central question becomes: *On the average*, can any active style of investing (be it the value style, or otherwise) make up for and exceed its own costs of research, trading and turnover, and do so over long time frames? The theoretical research and empirical evidence suggests that it cannot. Certain value-oriented individuals with superior skills are obviously capable of outperformance over extended periods, *but on the average*, finance professionals seem to be incapable of capturing the benefits of any investment strategy, including the value style.

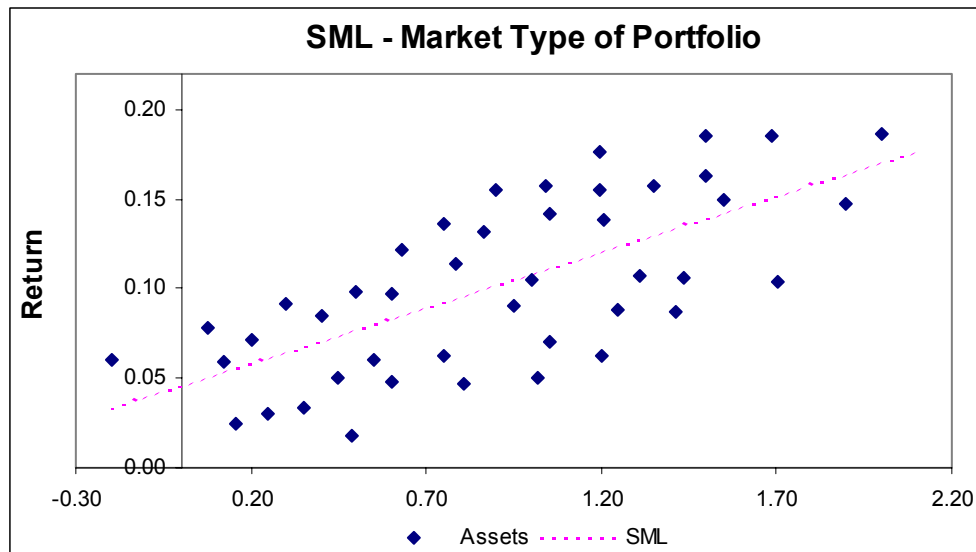
Conclusion. The weight of the evidence highly suggests that value-oriented factors do provide superior results as measured on a statistical, back-testing basis. The reasons for the outperformance are less clear, but revolve around two main and somewhat competing theories: first, the market model is in need of further refinements; and second, behavioral factors may be responsible for persisting valuation situations.

Whether value styled investors and managers can consistently capture and provide superior returns in a real world setting is very much an open question, however. If any investing strategy can outperform a relevant benchmark index on a risk-adjusted, post-tax, and post-expense basis, it may be the value style. Considering that value benchmark indexes have outperformed growth indexes over long time frames and that high expense ratios virtually guarantee underperformance, perhaps the most prudent and practical course of action to take would be to simply invest in a value-oriented index fund. Active management is always a possibility, but the success of such a strategy would largely depend upon keeping expense ratios very low while simultaneously providing superior investment management abilities and skills.

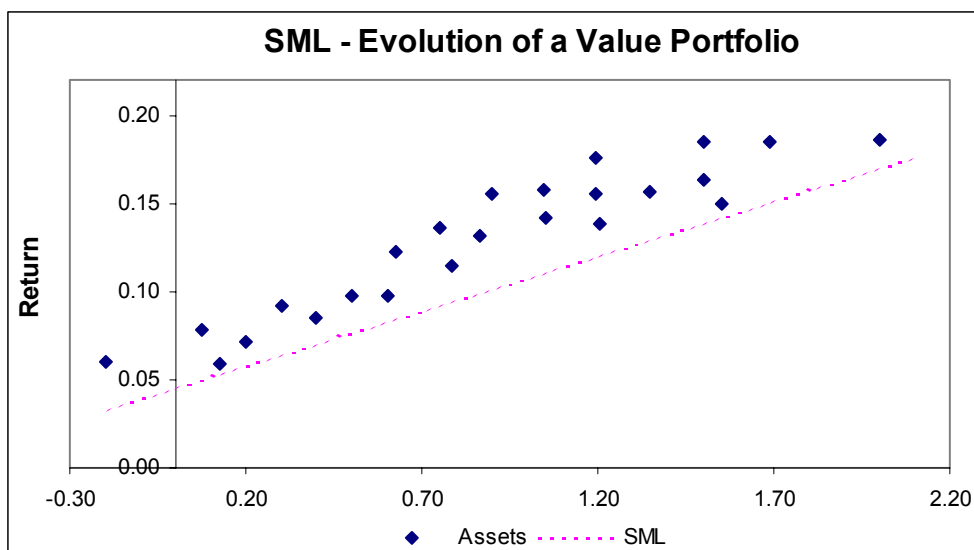
Indeed, the findings of this paper generally support the beliefs of John Bogle (1999), in that a fully diversified portfolio can be composed of only three index funds: a domestic equity fund, a domestic bond fund, and a fund tracking international indices. The Wilshire 5000, the Lehman Bond Aggregate, and an International fund of fund approach would fit Bogle's recommendation quite nicely. Investment in a series of index funds would provide even greater diversification benefits. Global, all-asset model portfolios containing both public and private asset indices were developed in Kaufhold (2006:1), and were found to have superior reward to risk ratios compared with all-public US and even public US + International portfolios. The model portfolios could be chosen by length of investing period, as well.

Once the core of a portfolio is established with various low cost index funds, then it might be appropriate to purchase individual securities through quality, value or contrarian styles. At all times however, the administrative costs of investment (i.e. research costs, trading expenses, tax impacts through turnover, etc) must be kept extremely low to have any chance of exceeding the relevant benchmark indices. Pricing variance must be also considered when picking individual securities, and the goal should be the generation of returns in excess of the indices on a post-tax, post cost, post risk-adjusted basis. This is a difficult endeavor to accomplish. Additionally, investors having mature portfolios and who are contemplating cash withdrawals should be more concerned with the likelihood of shortfall (Kaufhold, 2006:4). In the long-term, the question may not be whether there is “value to value”, but whether assets will be sufficient to cover anticipated liabilities.

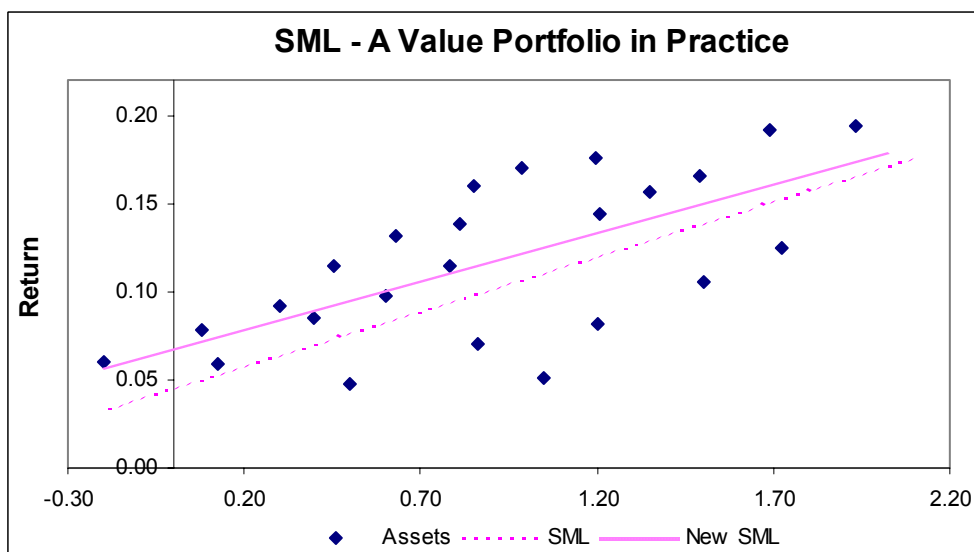
Update on Theoretical Reasons for Active Portfolio Management. The following graph depicts the risk-return combination of all assets within a market portfolio, with risk stated in term of beta while return is the expected rate of return of any single asset. The Security Market Line (SML) is generated from a linear regression equation that represents the “best fit” of all the risk-return combinations. The SML can therefore be viewed as the average trend-line of all assets.



The following procedure is noted in Reilly and Brown (2000, at 298-301). A value-oriented portfolio seeks to identify and select only those assets that are undervalued. Thus, portfolio will only want to select those assets possessing above average return to possessing above average risk combinations. The overvalued assets that are below the SML are cut out of the portfolio, leaving only those assets that are expected to generate high returns compared to asset risk levels. This is shown in the next graph.



Once the portfolio is chosen on the basis of expected returns, the value investor then holds the assets until intrinsic valuation is realized. Of course, the actual rates of return will inevitably vary off of projected amounts. The following graph depicts actual returns from a hypothetical value portfolio. Many assets perform about the same as the projection, some perform somewhat better, while other perform worse. The hypothetical portfolio presented in the graph performs somewhat better than the market portfolio, with the value-oriented SML projecting out a higher return to risk regression line than the original market portfolio.

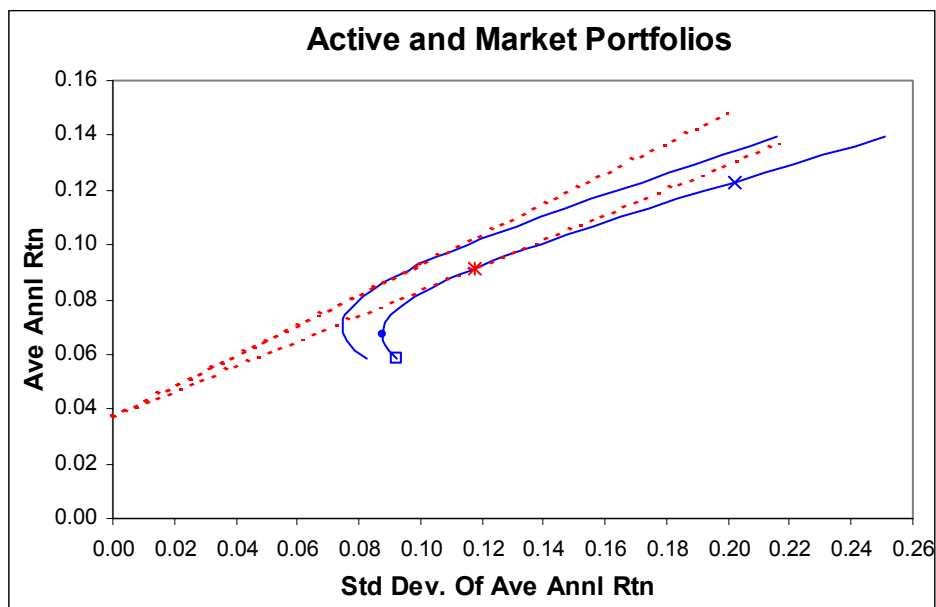


The initial valuation of assets can be accomplished via any of several relative value or intrinsic methods. A well-known procedure that references the CAPM is the Wells Fargo evaluation system (summarized in Elton, Gruber, at 461-464). The rate of return implicit

in the current price is initially evaluated. This is accomplished by finding the discount rate that equalizes the current price with the present value of the future dividend stream. A three period DDM is typically employed. An expected beta is also generated from both historical and forward estimates. The risk-return combination of the asset's current pricing is then plotted on an SML. An over or under valuation can then be easily determined as with the above graphs.

The initial valuation of assets can be accomplished via any of several relative value or intrinsic methods. A well-known procedure that references the CAPM is the Wells Fargo evaluation system (Elton, Gruber, et al, 2004). The rate of return implicit in the current price is initially evaluated. This is accomplished by finding the discount rate that equalizes the current price with the present value of the future dividend stream. A three period Dividend Discount Model is typically employed. An expected beta is also generated from historical and / or forward estimates. The risk-return combination of the asset's current pricing is then plotted on an SML. An over or under valuation situation can then be easily determined, using the same general process as with the above graphs.

Another model that analyzes active management issues comes from a paper authored by Treynor and Black (1973), and summarized in Bodie, Kane, and Marcus (2004, at 709-712). In nearly efficient markets, managers will initially estimate the characteristic line of the asset, and estimate the beta and variance. The required rate of return can then be generated. Determine the expected return, and then arrive at alpha. An optimal portfolio can then be developed. This is done by mixing a small composition of positive alpha assets with a market portfolio to increase diversification. This mixing of an active group of assets with a market portfolio will also increase the reward-risk ratio for the resultant combined portfolio, by shifting or rotating the frontier outward. Of interest to both the Treynor-Black model and the SML graphs reviewed above, any actively managed assets possessing superior return to risk ratios will push the frontier outward.



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