

VALUE SERIES IV:

USING P/B RATIO CREATES A SOLID INVESTMENT FOUNDATION



THE RETIREMENT GROUP^{LLC}
PARTNERS IN RETIREMENT

TABLE OF CONTENTS

- 1 The Value Series
- 2 What is Book Value?
- 3 Testing
- 6 Weighting
- 9 The Brandes Research Institute
- 12 Conclusion
- 13 Sources



THE VALUE SERIES

Given current elevated market volatility, we think now is a good time to revisit important value metrics in our four part series. The valuation process does not have to be complex to be successful. Simple valuation techniques such as the price-to-book ratio are generally easy to use and have been proven to be effective if utilized correctly.

Investors are often looking for ways for their clients to beat the market. If you're one of those investors, you may want to consider the following strategy that has been implemented by the investment greats. Some value investors have historically beat the average annualized returns of the S&P 500, and many have successful track records spanning several decades to prove it. The most famous value investor, of course, is Warren Buffett, but there are many others, including Benjamin Graham, David Dodd, Charlie Munger, Christopher Browne and Seth Klarman.

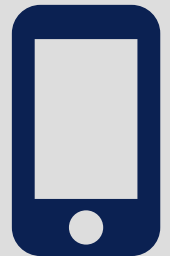
This investment style focuses on four metrics that characterize a value investment. These four metrics include the Price to Earnings Ratio, the Price to Cash Flow Ratio, High Dividend Yield and the Price to Book Ratio. These metrics, as you will see, are strong indicators of an undervalued security. If an undervalued security is brought back to fair value then we would see positive returns on that security. We will examine the effect of investing based off of certain characteristics and how their investment returns are correlated. Today, I want to end the four part TRG Value Series with the granddaddy of metrics, Price-to-Book value ratio (P/B).



WHAT IS BOOK VALUE?

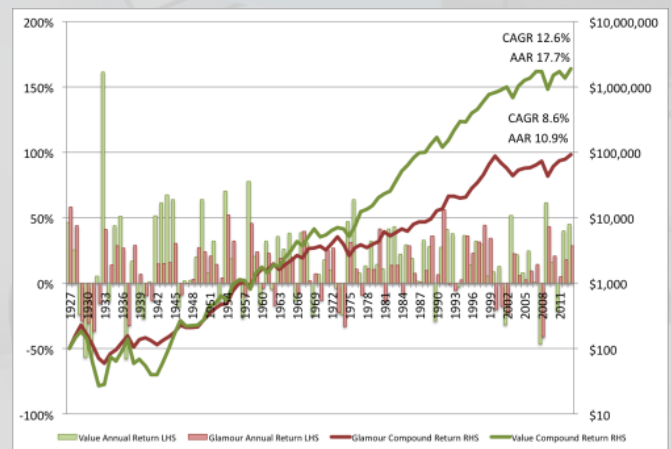
Book value is preferred by many value investors to cash flow and earnings metrics because it is more stable year-to-year whereas cash flow and earnings can vary greatly. This is an important property for the following reason: When a business at a cyclical trough with diminished cash flow and earnings might look expensive on the basis of price-to-cash flow or price-to-earnings, that same business may appear cheap on the basis of price-to-book value. This is because book value won't fall much or at all in a downturn, and vice versa. Thus, the argument goes, price-to-book value gives a more reliable picture of a company's usual business performance, which in turn may lead to better investment decisions and investment performance. Benjamin Graham popularized the indicator in his books "Security Analysis" and "The Intelligent Investor". Nobel Prize winner Eugene Fama and his research partner Kenneth French used the ratio in their three- and five-factor models to describe stock returns. Professor Joseph Piotroski uses the ratio as the only valuation measure in his F-Score methodology.

**Call The Retirement Group to
speak with a financial adviser!**



TESTING

Set out below are the results of two Fama and French backtests of the book value-to-market equity (the inverse of the PB ratio) data from 1926 to 2013. As of December 2013, there were 3,175 firms in the sample (Carlisle-PB, P2). The value decile contained the 459 stocks with the highest earnings yield, and the glamour decile contained the 404 stocks with the lowest earnings yield. The average size of the glamour stocks is \$7.48 billion and the value stocks \$2.54 billion. (Note that the average is heavily skewed up by the biggest companies. For context, the 3,175th company has a market capitalization today of \$404 million, which is smaller than the average, but still investable for most investors). Portfolios are formed on June 30 and rebalanced annually.



In this backtest, the two portfolios are weighted by market capitalization, which means that bigger firms contribute more to the performance of the portfolio, and smaller firms contribute less. Here, we can see that the value decile has comprehensively outperformed the glamour decile, returning 12.6 percent compounded (17.7 percent in the average year) over the full period versus 8.6 percent for the glamour decile (10.9 percent in the average year) (Carlisle-PB, P3).



TESTING

These returns are considerably lower than the returns found for the price-to-earnings and cash flow ratios discussed earlier. This is because the earnings and cash flow backtests ran back to only 1951, and the book value return data begins in 1926. The difference is due to the 1929 crash, which had an oversized impact on returns. The impact of the crash is visible on the chart; it took twenty years for the value decile to fully recover. Something similar has happened to the glamour decile since 2000; it hasn't grown in 13 years.

To make a comparison possible of book value's performance to the performance of earnings and cash flow over the same period, I also measured the returns beginning in 1951. Since 1951, the low P/B value decile has generated a compound annual growth rate (CAGR) of 15.0 percent and an average annual return (AAR) of 17.9 percent. Over the same period the glamour decile returned a CAGR of 9.6 percent and an AAR of 12.6 percent (Carlisle-PB, P5). These returns are approximately the same as the returns generated by the low P/CF and P/E studies over the same period.

In their study, they found that the quintile of lowest P/E stocks significantly outperformed the high P/E quintile. The portfolio containing the lowest P/E stock returned 11.61% annualized compared to 4.83% for the highest P/E portfolio and 7.55% for the used universe of stocks. The graph below shows how the cumulative returns compare (it's not even close).

	Value	Glamour	Value-Glamour
1999	5.5%	34.2%	-28.7%
2000	8.6%	-20.1%	28.7%
2001	12.8%	-17.9%	30.7%
2002	-31.7%	-23.9%	-7.8%
2003	52.0%	22.6%	29.3%
2004	21.9%	5.9%	16.0%
2005	8.1%	2.7%	5.4%
2006	24.9%	9.3%	15.6%
2007	0.6%	14.2%	-13.6%
2008	-46.2%	-41.1%	-5.1%
2009	61.6%	43.2%	18.3%
2010	15.7%	20.9%	-5.2%
2011	-21.6%	5.1%	-26.6%
2012	40.1%	17.9%	22.2%
2013	45.0%	28.6%	16.4%
AAR	13.2%	6.8%	6.4%
CAGR	9.5%	4.3%	5.2%

WEIGHTING

As I noted, market capitalization-weighted returns are useful for demonstrating that the outperformance of value over glamour is not due to the value portfolios containing smaller stocks. Unless you're running an index (or hugging an index), they're not really meaningful. The easiest portfolio weighting scheme is to simply equally weight each position. (If we're prepared to put up with a little extra volatility for a little extra return, we can also Kelly weight our best ideas). Kelly Weighting is determined by the Kelly Criterion which is a formula used to determine what percentage of their capital should be used in each trade to maximize long-term growth. There are two key components to the formula ($\text{Kelly \%} = W - [(1 - W) / R]$): the winning probability factor (W) and the win/loss ratio (R). The winning probability is the probability a trade will have a positive return. The win/loss ratio is equal to the total positive trade amounts divided by the total negative trading amounts. The result of the formula will tell investors what percentage of their total capital that they should apply to each investment.



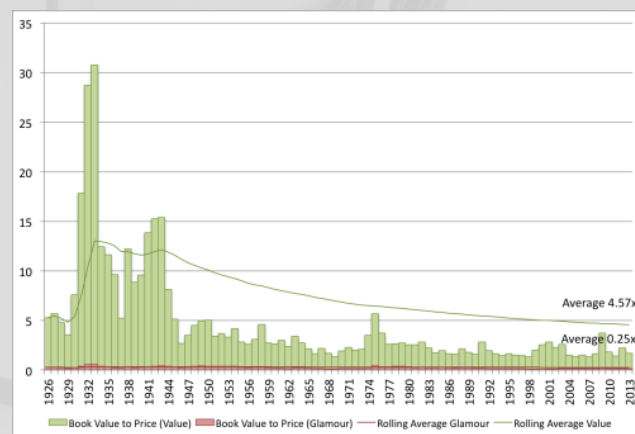
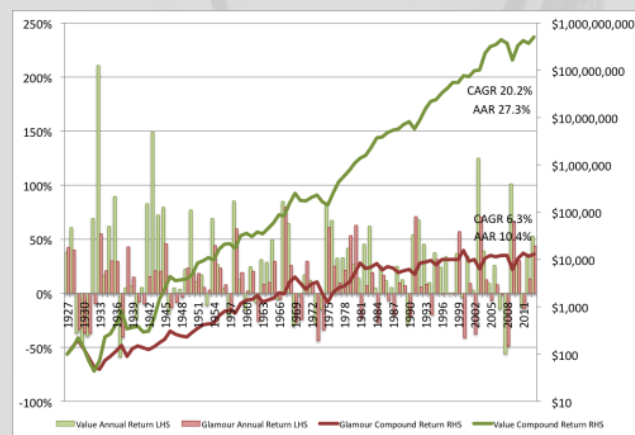
WEIGHTING

Here are the equal weight return statistics for book value. In the equal weight backtest, value generated 20.2 percent compounded return (27.3 percent on average), beating out glamour's 6.3 percent compounded return (10.4 percent on average) (Carlisle-PB, P10).

Since 1951 the equally weighted P/B value decile has generated a compound annual growth rate (CAGR) of 20.0 percent and an average annual return (AAR) of 25.4 percent (Carlisle-PB, P11). Over the same period the glamour decile returned a CAGR of 6.4 percent and an AAR of 10.8 percent. These returns are close to the same as the returns generated by the low P/CF and P/E studies over the same period.

Again, the value portfolios outperformed because they bought more book value per dollar invested than the glamour portfolios: 4.57x on average versus 0.25x in the glamour portfolios (Carlisle-PB, P12).

In the equal weight portfolios, value has significantly outperformed glamour since 1999, beating it by an extraordinary 15.9 percent compounded, and 16.1 percent in the average year (Carlisle-PB, P13).



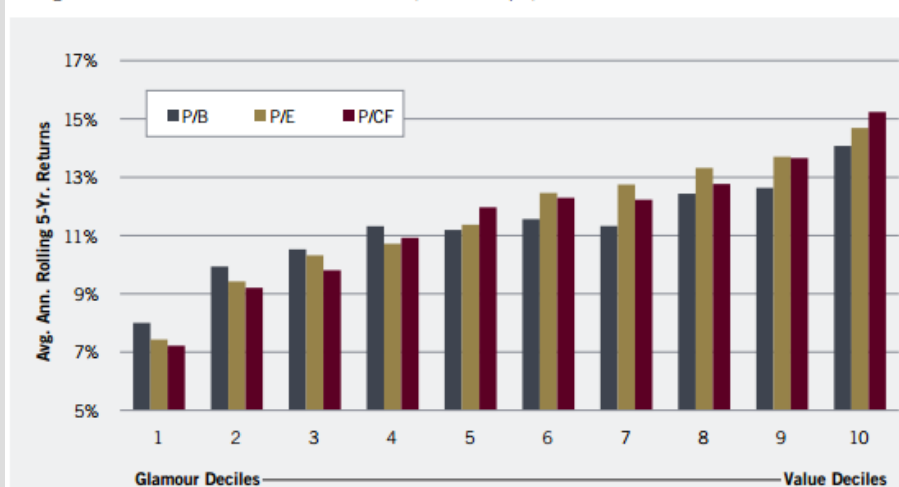
	Value	Glamour	Value-Glamour
1999	37.0%	57.4%	-20.4%
2000	-3.7%	-40.8%	37.1%
2001	34.7%	9.2%	25.6%
2002	3.0%	-37.5%	40.5%
2003	125.1%	70.7%	54.4%
2004	39.2%	12.5%	26.7%
2005	9.5%	-6.7%	16.1%
2006	25.8%	8.0%	17.8%
2007	-14.4%	-1.1%	-13.3%
2008	-55.7%	-48.5%	-7.2%
2009	101.5%	66.9%	34.6%
2010	26.9%	30.4%	-3.5%
2011	-13.3%	-14.2%	0.9%
2012	36.3%	13.3%	23.0%
2013	52.8%	43.8%	9.1%
AAR	27.0%	10.9%	16.1%
CAGR	20.6%	4.7%	15.9%

THE BRANDES RESEARCH INSTITUTE

In a Brandes Research Institute study, Exhibit 6 below illustrates the global all-cap findings across three price metrics. The results confirmed a consistent value premium across all metrics. We will focus on the P/CF ratio and the outperformance in the decile 10 value stocks. The smallest outperformance between decile 1 glamour stocks and decile 10 value stocks can be observed with the P/B measurement, where the average outperformance was 7.1% (Brandes, p. 8).

Exhibit 6: Value Outperformed Glamour Regardless of Valuation Metrics

Rolling 5-Year Annualized Returns of Valuation Deciles, Global Sample, 1980–2014



Source: Worldscope via FactSet, The Brandes Institute, as of 6/30/2014. Past performance is not a guarantee of future results.



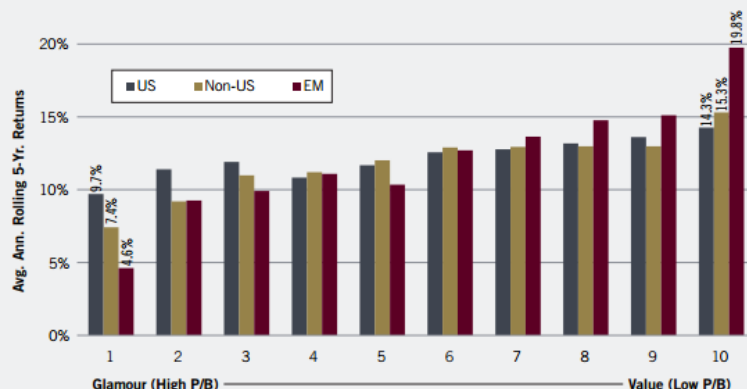
THE BRANDES RESEARCH INSTITUTE

In the same Brandes study, they looked at how the Price-to-Cash Flow held up in the U.S., Non-U.S., and Emerging Markets. Looking at rolling 5-year annualized returns of P/B deciles from 1980-2014, it can be seen that the lower price-to-cash flow deciles significantly out-perform those in the higher P/B deciles. While all of the lowest P/B deciles out-perform the high P/B deciles, the biggest premiums happen outside of the United States. In fact, the largest premium can be seen in emerging markets where companies with more assets are better suited to withstand market downturns.

In addition, there was a clear value premium when using the P/B deciles regardless of market cap size (Exhibit 8).

Exhibit 7: Value Outperformed Glamour in Each Region

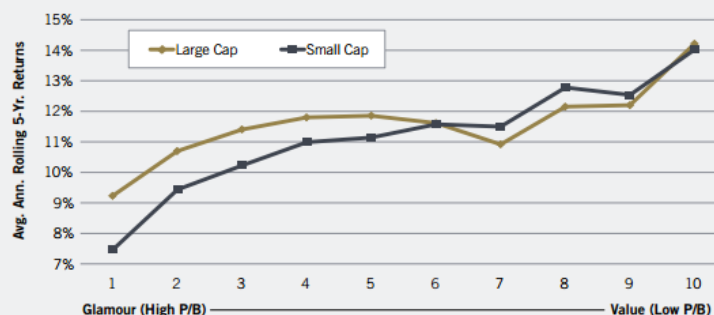
Rolling 5-Year Annualized Returns of P/B Deciles, 1980-2014



Source: The Brandes Institute; Worldscope via FactSet, as of 6/30/2014. Past performance is not a guarantee of future results.

Exhibit 8: Value Outperformed Glamour Regardless of Market Cap

Rolling 5-Year Annualized Returns of P/B Deciles, Global Sample, 1980-2014



Source: Worldscope via FactSet, The Brandes Institute, as of 6/30/2014. Past performance is not a guarantee of future results.



CONCLUSION

As can be seen in these studies, it is apparent that by simply screening for low P/B ratio stocks with no fundamental analysis, it is possible to outperform not only glamour stocks but the market as well. With current market volatility and uncertainty, looking at low P/B stocks might provide more stable returns than the broader market. Over the long run the low P/B ratio acts as a strong indicator of a value investment. Combining all four metrics we gain valuable insight into how to select undervalued stocks that ultimately outperform glamour stocks over the long term. Reinforcing all four of these metrics as indicators of an undervalued security are the value oriented track records of notable names such as Warren Buffet, Bruce Berkowitz and Seth Klarman who all use these ratios as key pillars for their investment universe.



SOURCES

[1] Brandes Institute, The. "Value vs. Glamour: A Long-Term Worldwide Perspective". 2014. < <https://www.brandes.com/docs/default-source/brandes-institute/value-vs-glamour-worldwide-perspective>>.

[2] Carlisle, Tobias. "Investing Using the Price-to-Earnings Ratio and Earnings Yield (Backtests 1951 to 2013)". May 26, 2014. <<http://greenbackd.com/2014/05/26/price-to-earnings-ratio-backtest-1951-to-2013/>>.

[3] Causeway Capital. "The Compelling Case for Value Stocks". 2018 <https://www.causewaycap.com/wp-content/uploads/2018/02/201802-TheCompellingCaseforValue-1.pdf>

[4] Research Affiliates. "To Win with 'Smart Beta', Ask if the Price is Right" September 7, 2016 < <https://seekingalpha.com/article/4004564-win-smart-beta-ask-price-right>>

[5] Tweedy Browne Company LLC. "What Has Worked in Investing: Studies of Investment Approaches and Characteristics Associated with Exceptional Returns." 1992. <http://www.tweedy.com/resources/library_docs/papers/WhatHasWorkedFundVersionWeb.pdf>.

[6] Yuan, Vera. Guru Focus. "Earnings, Free Cash Flow, Book Value? Which Parameters Are Stock Prices Most Correlated To?". August 2, 2013. < <http://www.gurufocus.com/news/225255/earnings-free-cash-flow-book-value-which-parameters-are-stock-prices-most-correlated-to->>>.

[7] Fama and French Backtesting http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

For more Financial Information check out these resources!



Advisory services offered through Wealth Enhancement Advisory Services, LLC, a registered investment advisor and affiliate of Wealth Enhancement Group®. Wealth Enhancement Group is a registered trademark of Wealth Enhancement Group, LLC. Trust services offered through Wealth Enhancement Trust Services, LLC, a trust company chartered under South Dakota law.

Check the background of investment professionals associated with this site on the [Investment Advisor Public Disclosure website](#).

[WEAS ADV Part 2A with Form CRS](#) [Form CRS](#) [WEAS ADV PART 2A Appendix 1](#)

This site is published for residents of the United States only. Investment Advisor Representatives of Wealth Enhancement Advisory Services may only conduct business with residents of the states and jurisdictions in which they are properly registered. All information herein has been prepared solely for information purposes, and it is not an offer to buy or sell, or a solicitation of an offer to buy or sell any security.