The Case for the Valuentum Style of Investing

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Abstract

The benefits of value and momentum strategies on an individual basis have been well-documented in financial literature. Academic research has also concluded that a simply-constructed portfolio consisting 50% of a long-short value-oriented portfolio and 50% of a long-short momentum-oriented portfolio produces a higher Sharpe ratio and lower volatility than either value or momentum alone. We study the reasons behind this phenomenon and strive to answer the question: what are the types of stocks that drive such outperformance? Though the benefits of using a combined value and momentum approach in a portfolio management setting have been widely-accepted, we believe we are the first to identify the abnormal-return benefits of investing in a cohort of individual stocks that have both good value and good momentum qualities while shorting a cohort of individual stocks that have both poor value and poor momentum qualities. We also reveal the inherent link between the diverse backing of combined value and momentum strategies in financial literature and our stock-selection methodology, the Valuentum Buying Index, which identifies undervalued firms with strong momentum qualities.

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I. Introduction

The work of Asness, et al (2009) offers the following context with respect to value versus growth and high positive momentum versus low positive momentum as it relates to individual equities.

> A long literature finds that, on average, value stocks (with high book or accounting values relative to market values) outperform growth stocks (with low book-to-market ratios) and stocks with high positive momentum (high 12-month past returns) outperform stocks with low positive momentum (Stattman (1980), Fama-French (1992), Jegadeesh and Titman (1993), Asness (1994), Grinblatt and Moskowitz (2004)). This evidence has been extended to stocks in other countries (Fama and French (1998), Rouwenhorst (1998), Liew and Vassalou (2000), Griffin, Ji, and Martin (2003), Chui, Wei, and Titman (2000)), and to country equity indices (Asness, Liew, and Stevens (1997), Bhojraj and Swaminathan (2006)).

Please note the breadth of academic research supporting the risk-adjusted return superiority of value versus growth investing and high positive momentum stocks versus low positive momentum stocks. Throughout this paper, we show that a combined value and momentum portfolio – a 'Valuentum' portfolio – outperforms the individual strategies of value, growth, momentum, and a combined portfolio of growth-momentum, on average.

Asness, et al (2009) concluded that "the negative correlation between value and momentum strategies and their high expected returns makes a simple equal-weighted combination of the two a powerful strategy that produces a significantly higher Sharpe ratio than either stand alone and makes the combination portfolio far more stable across markets and time periods than either value or momentum alone." Academic work that combines the framework of two or more methodologies is embraced within the Valuentum community of investors, and in our view, provides a unique perspective on the potential abnormal return benefits of cross-methodological approaches.

We also posit that, within a combined value-momentum portfolio, the embedded subset of firms that have both good value characteristics and good momentum characteristics is the key driver behind outperformance on the long side. And similarly, the embedded subset of firms that have poor value characteristics and poor momentum characteristics is the key driver behind outperformance on the short side. These two subsets represent the major driver of outperformance behind the combined value and momentum approach, in our view. We reveal such a phenomenon within this paper.

Plotted on the next page are the cumulative returns to value, momentum, and a 50/50 combination of value and momentum strategies among a global basket of individual stocks. According to Asness, et al (2009), the 'Value' (blue) line represents the returns of a long-short portfolio that has long positions in stocks with good value characteristics (a high ratio of the book value of equity to the market value of equity) and short positions in those with poor value

characteristics (a low ratio of the book value of equity to the market value of equity). The 'Momentum' (green) line represents the returns of a long-short portfolio that goes long stocks that recently performed well and short those that recently performed poorly. The 'Combo' portfolio represents a 50/50 combination of the above value and momentum portfolios.

The following results regarding the Asness, et al (2009) study are quite intriguing (see below), and we suspect these findings have yet to reach the mainstream financial community (outside of academia). The work largely provides the broad framework to justify the benefits of the combination of value and momentum strategies in a portfolio setting. However, we seek to dig deeper to uncover the qualities of individual equities that generate the value-momentum portfolio's significant outperformance versus other strategies via our own statistical work.

We think individual investors, financial advisors, and institutional money-managers are increasingly interested in the characteristics of underlying equities that drive outsize returns in broad-based investment strategies to further augment the performance of individual portfolios.

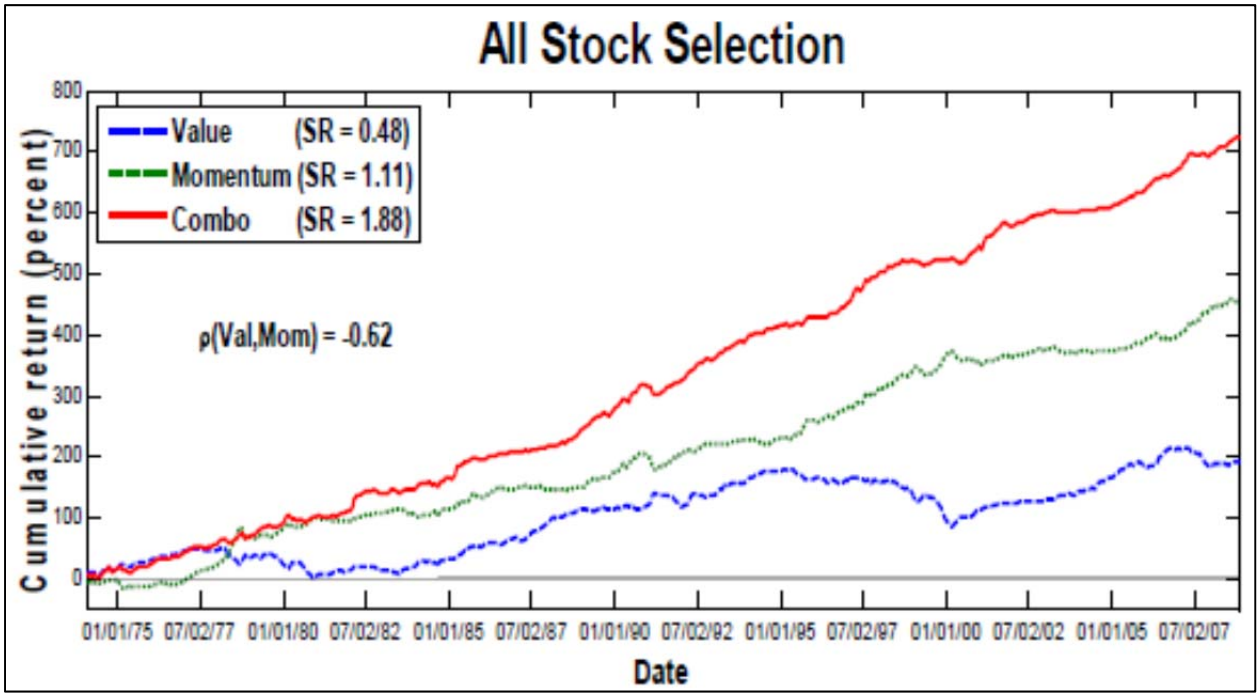


Image Source: Asness, et al (2009)

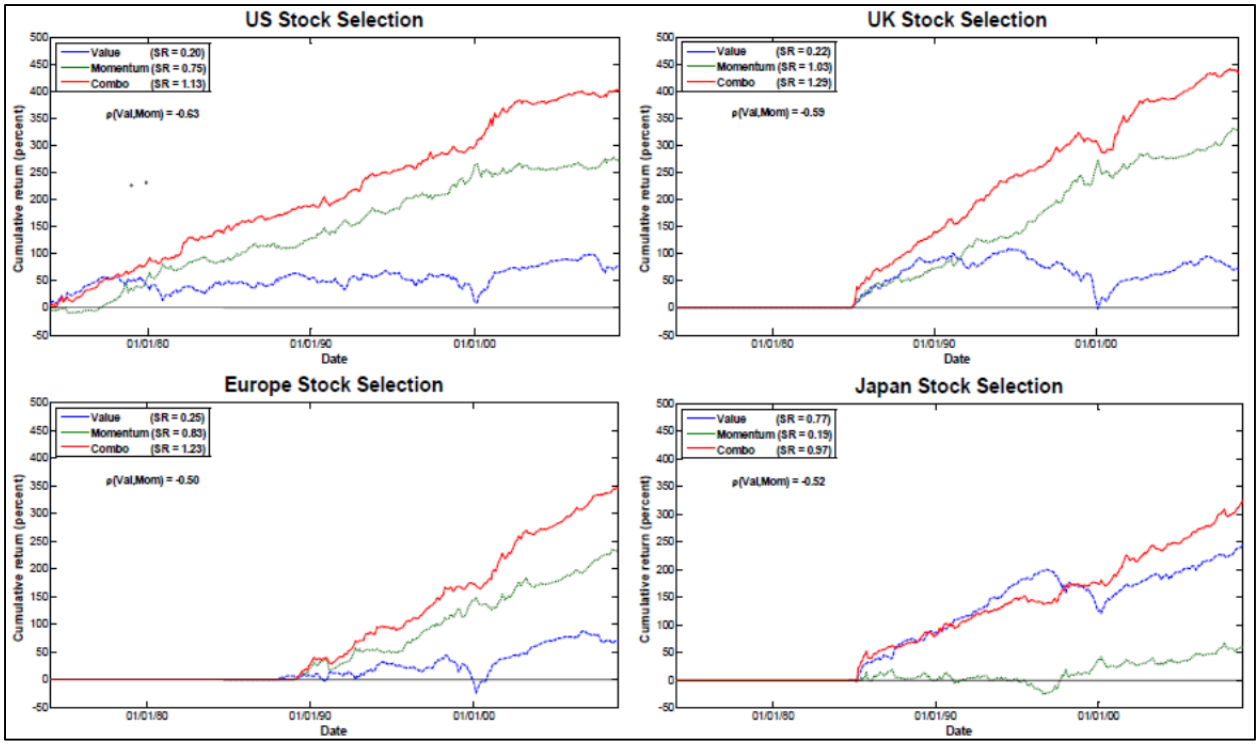


Image Source: Asness, et al (2009)

By extending the conclusions of previous academic works (Stattman (1980), Fama-French (1992), Jegadeesh and Titman (1993), Asness (1994, 2009), Grinblatt and Moskowitz (2004)), we hypothesize that the subset of stocks that have overlapping qualities of good value characteristics and good momentum characteristics not only outperform traditional value, growth, and momentum methodologies, alone, but also are the key driver behind the positive abnormal returns of the value-momentum combination portfolio. We also hypothesize that the subset of stocks that have overlapping qualities of poor value characteristics and poor momentum characteristics will underperform not only the combined value-momentum portfolio but also value, growth, and momentum on an individual basis.

We have substantiated our hypotheses by identifying and highlighting outperformers in a combination portfolio – a 'Valuentum' portfolio – using historical fundamental and pricing data of non-financial firms in the current Dow Jones Industrial Average (DJIA). As Asness, et al (2009) presents, the 'Combo' portfolio of value and momentum outperforms everywhere (US, UK, Europe, Japan), and we use the DJIA as a way to identify the qualities of those stocks that are key performance drivers behind such a value-momentum combination portfolio's abnormal returns. We chose the DJIA because firms in it are both liquid and well known.

We define firms that generate such significant outperformance as 'Valuentum' stocks – stocks on the long side that are both undervalued and exhibit bullish momentum characteristics and stocks on the short side that are both overvalued and exhibit bearish momentum characteristics – and we define the combined approach the Valuentum Style of Investing.

Though previous works have examined the efficacy of value and momentum separately and within one asset class at a single point in time and have analyzed value and momentum together from a long-short portfolio perspective across asset classes, we believe we are the first to identify the benefits of investing in (shorting) a cohort of stocks with both good (poor) value and momentum qualities and identifying such stocks through a systematic methodology, the Valuentum Buying Index.

Subsequent research may show that a combined value-momentum portfolio's outperformance may be further augmented by lagging certain variables, as there is a defined positive correlation between value and momentum (value in one year may lead to momentum in the next for the exact same stock), or by implementing the oversight of a portfolio manager. Our research concludes that due to data interpretation, the benefits of applying a portfolio manager to this process cannot be underestimated. The performance of the portfolio of our Best Ideas Newsletter showcases this benefit.

II. The 50/50 Value-Momentum Long-Short Portfolio Construction

In order to establish the case for Valuentum investing, the reader must first become familiar with the structure of the 50/50 value-momentum long-short portfolio as widely disseminated in financial literature.

Value Portfolio: *We generate portfolios sorted on value and examine zero-cost portfolios that go long stocks with "good" value characteristics, that is, high BM, and short those with low BM* (Asness et al, 2009).

Momentum Portfolio: *We construct portfolios sorted on momentum and examine zero-cost portfolios that are long the assets that recently performed relatively well and short those that performed relatively poorly* (Asness et al, 2009).

The combination portfolio represents a 50% weighting of the value portfolio and a 50% weighting of the momentum portfolio:

$$r_t^{COMBO} = s_t \; (0.5 \, r_t^{VALUE} + 0.5 \, r_t^{MOM2\text{-}12})$$

Image Source: Asness, et al (2009)

III. Results of the Combination Portfolio

Asness, et al (2009) indicates the following conclusions with respect to the combination portfolio:

> The results highlight the power and robustness of combining value and momentum everywhere and, in particular, the power of combining value/momentum combo portfolios everywhere…Because of their positive average returns and negative correlation between them, the combination of value and momentum in every asset class

> produces powerful performance results, generating information ratios consistently greater than either of the stand alone strategies in all markets and asset classes…Combining value and momentum results in about 60 percent of all stock selection profits coming from the short side and about an even split between long and short contributions for all non-stock selection. For the all combination strategy, the contribution from longs and shorts is also about equal.

As it relates to portfolio return attribution in previous academic literature, Asness, et al (2009) concludes that roughly 60% of stock-selection profits from the combined value and momentum strategy come from the short side. This suggests that stocks with poor value characteristics and poor momentum characteristics offer a stronger signal for a downward move in price than stocks with good value and good momentum characteristics do for an upward move in price. However, our research indicates more upside potential from the long side in a combination portfolio (long return versus average return), though we admit there are substantial and material differences between the data set and time period applied.

In either case, since shorting stocks may not be a viable strategy for every type of investor, we seek to capture such a phenomenon via put options (synthetic short exposure) in the portfolio of our Best Ideas Newsletter.

IV. Outperforming Equities in the Value-Momentum Combined Portfolio

Though the tremendous benefits of using a combined value and momentum approach in a portfolio setting have been well-documented in financial literature, we seek to identify the common qualities of the particular equities that drive the significant abnormal returns in a value-momentum combination portfolio relative to the value and momentum (and by extension growth) portfolios, individually.

At any particular point in time, the 'Value' portfolio will consist of long positions of stocks that represent good value and short positions of stocks that have poor value characteristics. Further, at the same point in time, the 'Momentum' portfolio will consist of long positions of stocks that have good recent performance and short positions of stocks that have poor recent performance.

And at the same time, the 'Combo' portfolio, by extension, will have a 50% long position in stocks that have good value characteristics and in stocks that have good momentum characteristics. A combination portfolio will also have a 50% short position in stocks that have poor value characteristics and in stocks that have poor momentum characteristics.

Historical back-testing lends itself to a few defendable assumptions on which we build our hypotheses:

1) Unlike forward projections of equity prices, the returns on individual stocks in the past are fixed. Across the universe of stocks used in the results presented by Asness, et al

(2009), we can conclude that the same basket is applied to the 'Value', 'Momentum', and 'Combo' portfolios.

2) The selection of stocks in the 'Value' portfolio will be identical to those representing the value component in the 'Combo' portfolio. The selection of stocks in the 'Momentum' portfolio will be identical to those representing the momentum component of the 'Combo' portfolio. As such, stock selection can assumed to be static across the components of the 'Combo' portfolio and the 'Value' and 'Momentum' portfolios with respect to each return data point in the analysis presented by Asness, et al (2009).
3) The outperformance of a combination portfolio relative to the value and momentum portfolios, individually, is the result of not just the weightings of the value and momentum portfolios within the combination portfolio but, more importantly, the particular stocks within the combination portfolio that may be "over-weighted."

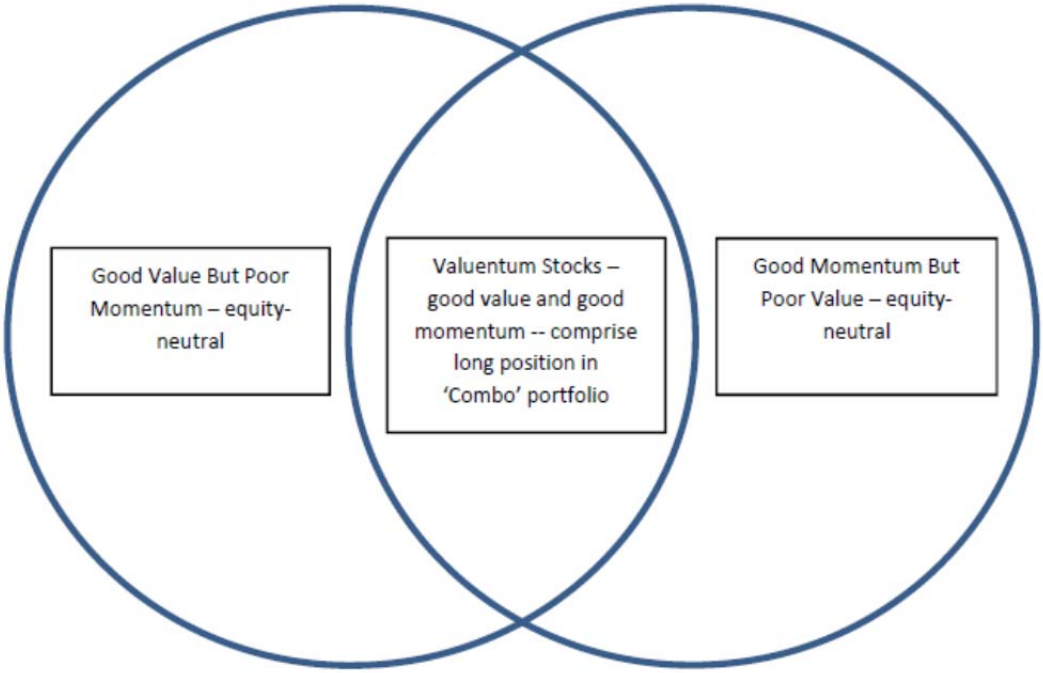
We posit that the abnormal returns of any combination portfolio are driven by the "over-weightings" of particular equities when compared to their relative weightings in the individual portfolios, respectively. Said differently, in a combination portfolio, firms that have both good value characteristics and good momentum characteristics are "over-weighted" (when compared to other holdings in a combination portfolio) on the long side (given the overlap), while firms that have poor value characteristics and poor momentum characteristics are "over-weighted" (when compared to other holdings in a combination portfolio) on the short side (given the overlap).

The Venn diagram on the next page displays this particular phenomenon. For a single stock that is both good value and good momentum, it will have an outsize weighting in a combination portfolio on the long side, while for a single stock that is both poor value and poor momentum, it will have an outsize weighting in a combination portfolio on the short side.

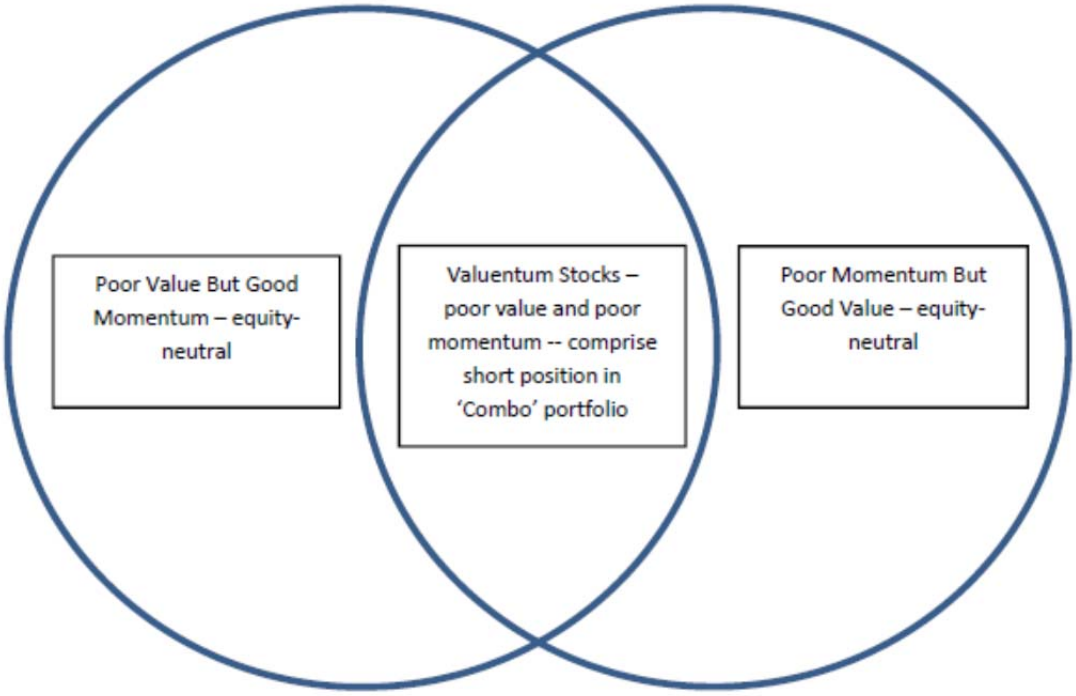
For stocks that have good value but poor momentum or for stocks that have poor value but good momentum, the portfolio will be equity-neutral, as long and short exposure will negate the position. Based on our interpretation, the work of Asness, et al (2009) notes this particular occurrence: "some of the securities (appear) on the long (short) side of value and short (long) side of momentum (page 11)." We take this to mean an equity-neutral strategy on certain positions, but confirmation of such is not material to our conclusions.

By extension and for the sake of simplification, the long side of a combination portfolio can be viewed as a collection of equities with good value and good momentum characteristics and the short side of a combination portfolio can be viewed as a collection of equities with poor value and poor momentum characteristics.

Long Side of 'Combo' Portfolio



Short Side of 'Combo' Portfolio



We seek to further analyze our combined portfolio – a 'Valuentum' portfolio – to identify the qualities of portfolio constituents that generate the majority of abnormal returns relative to the value and momentum portfolios, individually and respectively. We posit the "over-weighting" of stocks with both good value characteristics and good momentum characteristics on the long side and the "over-weighting" of stocks with both poor value characteristics and poor momentum characteristics on the short side are responsible for the abnormal returns of a combination portfolio. We detail such a phenomenon in our work below.

V. Data and Portfolio Construction

We use non-financial constituents in the current Dow Jones Industrial Average (DJIA) as our basic data set to illustrate this occurrence. Specifically, we omit BAC, JPM, TRV, and KFT, the latter lacking sufficient data history. We select the DJIA as it represents a liquid subset of well-known firms in the global financial system. We first select the period January 2002 through May 2012, as data for this period is readily available and can easily be confirmed. We further substantiate our research with data from the period January 1995 through May 2012. For the January 2002 through May 2012 period, we use data from CIS and Morningstar. For the January 1995 through May 2012 period, we use data from CIS and Factset.

The benefits of a long-short combination portfolio of value and momentum have been well-documented, so the goal of this exercise is to reveal the kinds of stocks that fit the Valuentum Style of Investing and their subsequent returns in future periods versus other stocks included in the data set. Further, we believe a portfolio management overlay, as that pursued in the portfolio of our Best Ideas Newsletter, can bolster returns of a 'Valuentum' portfolio by mitigating entries caused by data anomalies and errors.

To measure value, we sort the data set by a firm's end of initial period price-to-earnings ratio (see Figure I & III). Firms that have low price-to-earnings ratios (the bottom half of the data set) have good value characteristics, while firms that have high price-to-earnings ratios (the top half of the data set) have poor value characteristics. To measure momentum, we sort the data set by a firm's trailing 2-year return through the beginning of the initial period (see Figure II & IV). Firms that have strong relative price performance (the top half of the data set) have good momentum characteristics, while firms that have poor relative price performance (the bottom half of the data set) have poor momentum characteristics. We are less concerned about identifying the precise value signal or momentum signal in this exercise than we are in revealing the substantial benefits of using value and momentum combined. We explain our value and momentum signals later in the paper.

The 'Value' portfolio is a 50/50 long-short portfolio that goes long stocks with good value characteristics and short stocks with poor value characteristics. The 'Momentum' portfolio is a 50/50 long-short portfolio that goes long stocks with good momentum characteristics and short stocks with poor momentum characteristics. The 'Valuentum' portfolio in this example is a

50/50 long-short portfolio that only goes long stocks with both good value and good momentum characteristics and only goes short stocks with both poor value and poor momentum characteristics. These are zero-cost, zero turnover portfolios.

To assess the performance of each portfolio, we take the average total return of each portfolio constituent beginning January 2002 through May 2012 (excluding dividends) and beginning January 1995 through May 2012. We then take the difference between the average long return and average short return of each portfolio to arrive at an average total return measure for each portfolio.

A. January 2002 – May 2012

We show the returns from January 2002 through May 2012 of each portfolio below:

Momentum (LR - SR)	Value (LR - SR)	Combined (LR - SR)
30.8%	62.4%	86.5%

* LR = Long Return; SR = Short Return

The 'Valuentum' portfolio generates a total return that was 24.1 percentage points better than the 'Value' portfolio alone and nearly three times that of the 'Momentum' portfolio alone during this time period.

Long Concentration

Short Concentration

Symbol	Return Jan 2002 - May 2012	Position
CAT	355.6%	Valuentum Long
MCD	330.1%	
CVX	235.5%	Valuentum Long
XOM	166.4%	Valuentum Long
UTX	160.5%	Valuentum Long
DIS	137.1%	Valuentum Short
KO	124.6%	Valuentum Short
BA	113.7%	
IBM	107.2%	
AXP	105.8%	
PG	97.3%	Valuentum Short
MMM	96.5%	
DD	61.0%	
VZ	53.3%	
T	52.9%	Valuentum Long
JNJ	42.3%	
WMT	29.0%	
HD	22.7%	Valuentum Long
MSFT	18.5%	Valuentum Short
HPQ	14.2%	Valuentum Short
MRK	1.0%	
INTC	-9.6%	Valuentum Short
CSCO	-16.0%	Valuentum Short
PFE	-21.9%	Valuentum Long*
GE	-27.7%	
AA	-70.2%	

* Entry offered less clear value signal and long position could be avoided with portfolio management overlay.

Out of the top five equity performers in the data set, the ‘Valuentum’ portfolio went long 4 of them in its portfolio (CAT, CVX, XOM, UTX), including the top performer (CAT). Out of the worst five equity performers during this time period, the ‘Valuentum’ portfolio went short 2 of them (INTC, CSCO). The worst performer (AA) would have flashed a short signal shortly after the snapshot date of January 2002.

Though the ‘Valuentum’ portfolio showed excellent stock-selection proficiency in identifying winners and losers (see long and short concentrations in previous image) during this time period, the ‘Valuentum’ portfolio faced a performance headwind by going short firms whose performance heading into the beginning of 2002 was considerably poor, namely with respect to DIS and KO. Another headwind was presented in the long selection of PFE, as price-to-earnings data was particularly volatile around the snapshot period for this company (20.8 in 2002 versus 161.3 in 2003).

We believe such performance headwinds can be mitigated through active management by limiting the portfolio’s aggregate short exposure at the bottom of the business cycle and by steering clear of firms where the value signal is less certain (PFE). Further research may show additional benefits of a combination portfolio by adding a short-term trading overlay (more frequent re-balancing) and factoring in other firm-specific or macroeconomic indicators to bolster returns.

Valuentum Portfolio	Return (Jan 2002 - May 2012)
Long	
CAT	355.6%
CVX	235.5%
XOM	166.4%
UTX	160.5%
T	52.9%
HD	22.7%
PFE	-21.9%
Average Long Return	138.8%
Short	
CSCO	-16.0%
INTC	-9.6%
HPQ	14.2%
MSFT	18.5%
PG	97.3%
KO	124.6%
DIS	137.1%
Average Short Return	52.3%
LR - SR	86.5%

The outperformance of the combined value and momentum strategy may have been expected thanks to previous academic work, but the sorting proficiency of the combined value and momentum approach is quite remarkable. Not only did stocks on the long side of the 'Valuentum' portfolio produce the best returns of any sub-portfolio, on average, but stocks on the short side of the 'Valuentum' portfolio produced the worst returns of any sub-portfolio, on average.

Portfolio	Return
Valuentum Long Average	138.8%
Value Long Average	115.0%
Momentum Long Average	99.2%
Data Universe Average	83.8%
Weak Momentum Long Average	68.4%
Data Universe Median	57.2%
Growth Long Average	52.7%
Valuentum Short Average	52.3%

We think this is partly due to proficient stock-selection and partly due to more concentrated positions in better performing stocks on the long side and poor performing stocks on the short side. The 'Valuentum' portfolio consisted of 14 positions during this time period, while the 'Value' and 'Momentum' portfolios consisted of 26 positions each. This speaks to the benefits of the "over-weighting" of outperforming stocks on the long side and the "over-weighting" of underperforming stocks on the short side, a phenomenon that we hypothesize is present in the Asness, et al (2009) work.

Though not displayed for brevity, during this time period the 'Valuentum' portfolio also outperformed a growth-momentum portfolio combination, which goes long only stocks with both good growth and good momentum characteristics and goes short only stocks with both good value (poor growth) and poor momentum characteristics. During this time period, a growth-momentum portfolio combination generated a negative 30.5% return (-30.5%), as losses on the short side of the portfolio (83.5%) overwhelmed gains from the long side (53.1%).

B. January 1995 – May 2012

We show the returns from January 1995 through May 2012 of each portfolio below:

Momentum (LR - SR)	Value (LR - SR)	Combined (LR - SR)
321.0%	72.9%	426.7%

* LR = Long Return; SR = Short Return

Over this time period, the 'Valuentum' portfolio outperformed the 'Momentum' portfolio by 105.7 percentage points, while it dwarfed the returns of the 'Value' portfolio. Out of the top five equity performers in the data set, the 'Valuentum' portfolio went long the top 3 (IBM, UTX, CAT). Out of the worst five equity performers during this time period, the 'Valuentum' portfolio went short just one of them (DIS). The worst performing equity within our data set over this time

period, VZ, offered a good value signal and a poor momentum signal. The firm was not captured on the short side of the 'Valuentum' portfolio. The 'Valuentum' portfolio, however, revealed even greater sorting qualities between winners and losers during this time period, in our view.

Long Concentration

Short Concentration

Symbol	Return Jan 1995 - May 2012	Position
IBM	1203.2%	Valuentum Long
UTX	1150.3%	Valuentum Long
CAT	960.6%	Valuentum Long
MSFT	916.1%	
CSCO	797.3%	
XOM	711.1%	
CVX	687.7%	
AXP	665.6%	Valuentum Long
MCD	649.4%	
INTC	639.7%	
WMT	606.8%	
JNJ	522.0%	
HD	507.4%	Valuentum Short
PG	458.4%	Valuentum Long
PFE	420.7%	Valuentum Short
MMM	417.9%	Valuentum Short
BA	331.3%	
KO	304.2%	Valuentum Short
GE	252.3%	
MRK	239.2%	Valuentum Short
T	222.1%	Valuentum Long
DD	221.4%	
DIS	210.3%	Valuentum Short
HPQ	175.3%	
AA	20.7%	
VZ	14.7%	

Valuentum Portfolio	Return (Jan 1995 - May 2012)
Long	
IBM	1203.2%
UTX	1150.3%
CAT	960.6%
AXP	665.6%
PG	458.4%
T	222.1%
Average Long Return	776.7%
Short	
DIS	210.3%
MRK	239.2%
KO	304.2%
MMM	417.9%
PFE	420.7%
HD	507.4%
Average Short Return	350.0%
LR - SR	426.7%

Over this time period, the stocks on the long side of the 'Valuentum' portfolio produced the best returns of any sub-portfolio, on average, and stocks on the short side of the 'Valuentum' portfolio produced the worst returns of any sub-portfolio, on average. This is consistent with the results of time period January 2002 – May 2012.

Portfolio	Return
Valuentum Long Average	776.7%
Momentum Long Average	672.3%
Value Long Average	548.2%
Data Universe Average	511.8%
Data Universe Median	482.9%
Growth Long Average	475.3%
Weak Momentum Long Average	351.3%
Valuentum Short Average	350.0%

And again, we think this is partly due to proficient stock-selection and partly due to more concentrated positions in better performing stocks on the long side and poor performing stocks on the short side. The 'Valuentum' portfolio over this time period consisted of 12 positions, while the 'Value' and 'Momentum' portfolio consisted of 26 positions each. This again speaks to the benefits of the "over-weighting" of outperforming stocks on the long side and the "over-weighting" of underperforming stocks on the short side.

Though not displayed for brevity, during this time period the 'Valuentum' portfolio also outperformed a growth-momentum combination portfolio, which goes long only stocks with both good growth and good momentum characteristics and goes short only stocks with both good value (poor growth) and poor momentum characteristics. During this time period, a growth-momentum combination portfolio generated a 230.3% return (582.7% long less 352.4% short return), slightly worse than the 'Momentum' strategy alone but materially better than a 'Value' strategy.

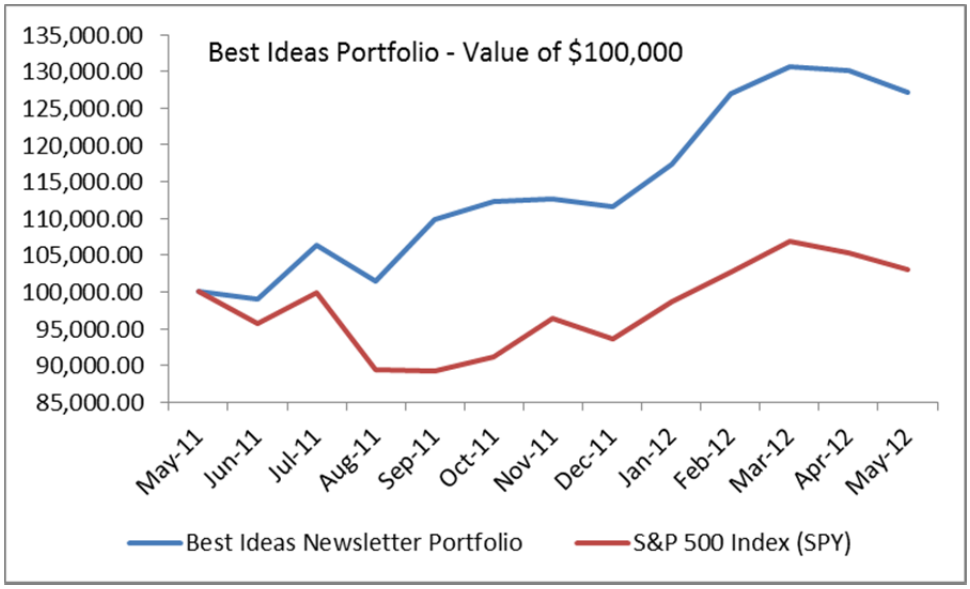
VI. Conclusions

Firms that have both good value and good momentum qualities generate abnormal returns relative to firms that have poor value and poor momentum qualities. A 'Valuentum' portfolio has been shown to consistently outperform value, growth, momentum and combined growth-momentum portfolios over various time periods. We also show that value may, depending on the data set and during certain time periods (January 2002 – May 2012), outperform momentum, a view that we believe is not necessarily inconsistent with the work of Asness, et al (2009). Still, over longer time horizons, momentum has outperformed value, further supporting previous academic literature. However, no other strategy (value, growth, momentum, or combined growth-momentum) stacks up to the power of the 'Valuentum' approach.

The Valuentum Style of Investing has been shown to sort winners from losers effectively and apply outsize weightings appropriately to maximize returns relative to value, growth, and momentum strategies, individually. The duration of the data used in our analysis also suggests that a 'Valuentum' portfolio can outperform over a longer-term horizon, even with limited or no re-balancing.

A. Simulated Evidence

We continue to test our conclusions via the performance of the actively-managed portfolio included in our Best Ideas Newsletter. We believe a portfolio management overlay in actively adjusting the weightings of long and short exposure of 'Valuentum' equities (beyond the 50/50 approach) can result in even greater portfolio outperformance than what would be originally expected through predictive models. The performance of the portfolio of our Best Ideas Newsletter is another data point supporting the use of the Valuentum Style of Investing.



Value of a $100,000 Investment (includes dividends)														
	5/17/2011	6/15/2011	7/13/2011	8/12/2011	9/13/2011	10/11/2011	11/11/2011	12/12/2011	1/13/2012	2/12/2012	3/14/2012	4/13/2012	5/14/2012	Avg
Best Ideas Newsletter Portfolio	100,000.00	99,013.62	106,457.85	101,415.15	109,865.95	112,285.02	112,646.21	111,608.10	117,311.19	126,944.51	130,603.74	130,093.74	127,128.46	
SPY	100,000.00	95,773.08	99,832.69	89,492.80	89,206.42	91,154.57	96,399.88	93,679.25	98,623.11	102,783.18	106,965.86	105,341.02	103,057.16	
Outperformance	0.00	3,240.54	6,625.16	11,922.35	20,659.53	21,130.45	16,246.33	17,928.85	18,688.08	24,161.33	23,637.88	24,752.72	24,071.30	
Long Percentage (%)	10.0	49.7	90.9	86.8	83.7	89.2	95.0	94.5	86.4	82.8	83.3	83.2	68.3	77.2
Cash & Short Percentage (%)	90.0	50.3	9.1	13.2	16.3	10.8	5.0	5.5	13.6	17.2	16.7	16.8	31.7	22.8

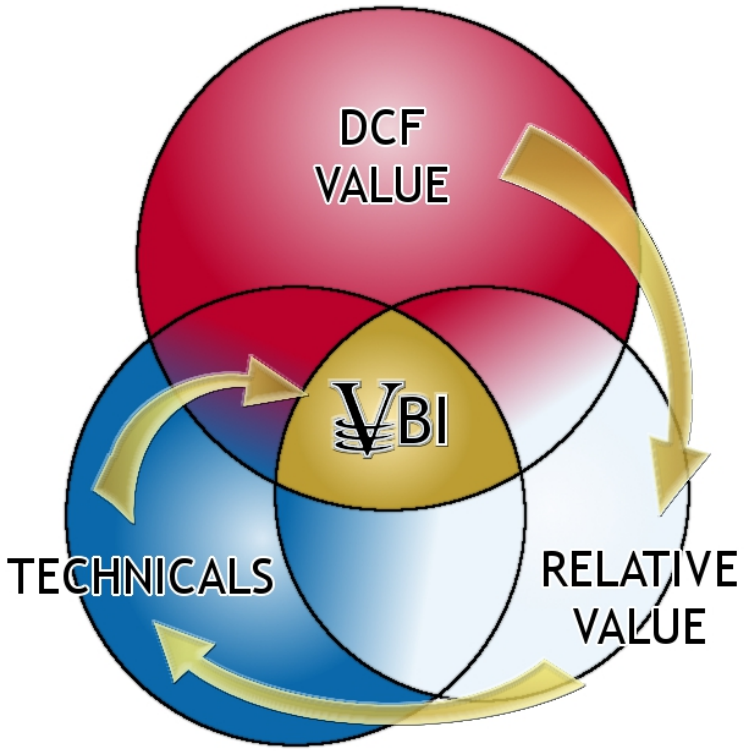
VII. Valuentum Investing – The Valuentum Buying Index

A. Introduction

The Valuentum Buying Index (VBI) is a contingent, adaptive stock-selection methodology that captures both the value and momentum qualities of individual equities at a particular point in time. We view the VBI as the most straightforward way to translate a rigorously back-tested process into a transparent and easy-to-follow investment methodology.

The Valuentum Buying Index (VBI), the center of the Venn diagram, combines rigorous financial and valuation analysis with an evaluation of a firm's technicals and momentum indicators to derive a score between 1 and 10 for each company (10=best). The size of the circles reveals the relative emphasis we place on each investment consideration, while the arrows display the order of our process -- value first then technicals and momentum last. A firm's Valuentum Buying Index score is contingent on its value and momentum variables.

Stocks that meet our demanding criteria fall in the center of the Venn diagram, displaying attractive characteristics from a DCF basis (our primary value signal), a relative value basis, and with respect to a technical and momentum assessment (our momentum signal). Our process is consistent with the framework outlined in this paper in that both value and momentum assessments are integral to our stock-selection process.



Academic literature suggests that analyzing a stock across a wide spectrum of philosophies (namely value and momentum) is the clearest route to significant risk-adjusted portfolio outperformance. We embrace the combination of value and momentum strategies (and all cross-

methodological work) and view a firm's valuation and its technical and momentum indicators as core to a superior stock-selection process.

At Valuentum, we think companies that are attractive across the investment methodology spectrum – including value and momentum – have the greatest probability of capital appreciation and relative outperformance. On the other hand, we think the worst stocks will be shunned by most investment disciplines and display expensive valuations, poor technicals and deteriorating momentum indicators. Said differently, we're bullish on firms that have good value characteristics and good momentum characteristics, while we're bearish on firms that have poor value characteristics and poor momentum characteristics.

Another benefit of a unified value and momentum process, in our view, is that anecdotally it allows for improved entry and exit points on the most undervalued stocks. Future research may confirm that the greatest outperformance of undervalued equities may occur in immediate subsequent periods following an improvement in their underlying technical and momentum indicators. The work of Jagadeesh, et al (1993), for example, documents that over a three-to-twelve month horizon, past winners on average continue to outperform past losers, so when a stock becomes cheap, patience may be in order as it can certainly become cheaper.

> The price continuations are particularly notable for stocks with the worst past earnings performance, whose results are below average for up to three years afterwards (Jagadeesh, et al, 1993).

Only when both sides of the investment spectrum are combined can investors get the best stocks on the market today at the best prices, in our view. We think focusing just on valuation may encourage the buying of a stock all the way down (see Jagadeesh, et al, 1993), while just using technical and momentum indicators may expose an unhedged portfolio to significantly overpriced stocks at their peaks. We point to the dot-com bubble as evidence of this dynamic.

B. We Use a Rigorous Discounted Cash Flow Valuation Process as our Primary Value Signal

Our methodology starts with in-depth financial statement analysis, where we derive our ValueCreation, ValueRisk, and ValueTrend ratings, which together provide a quantitative assessment of the strength of a firm's competitive advantages. Warren Buffett's track record of investing in "economic castles protected by unbreachable moats" is one that cannot be ignored in our cross-methodological process. However, this area remains of key interest for further research as it is unclear whether such returns are driven more by the "value" factor of Buffett's style than a documented "moat" factor.

Recent data by Morningstar, for example, shows a negligible difference between the returns of its moat universe (about 60% of its covered stocks) versus the performance of the S&P 500 over the most recent 10-year time period. The data also show negligible difference in performance

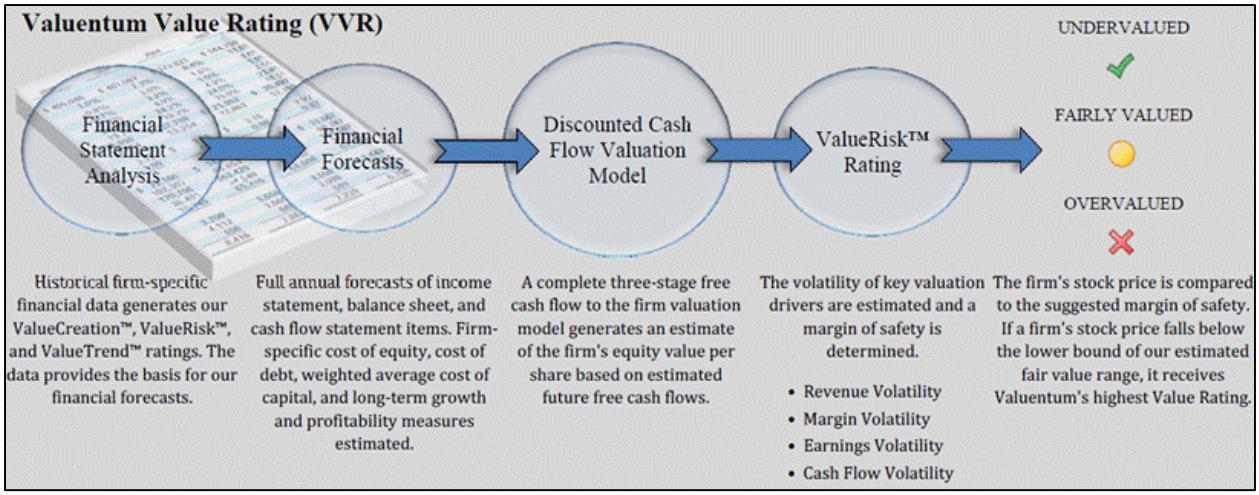
between wide and narrow moat stocks. However, when factoring in a valuation component to their process, as outlined in its Morningstar Wide Moat Focus Index Fund, the returns markedly improve relative to the S&P 500 Index. One can infer through this work that valuation may be more of an explanatory factor of returns than Buffett's "moat" factor, and if so, a combined value and momentum strategy may offer tangible portfolio benefits over such a value process alone (see Asness et al, 2009).

On the other hand, future research may instead conclude that Warren Buffett's style is consistent with the Valuentum Style of Investing as his focus on valuation coupled with the performance of the stocks in the Berkshire portfolio indicate most of his outsize returns come from undervalued firms that have generated significant relative price out-performance, and by extensive, positive momentum indicators over time. Undervalued firms with bullish technical and momentum indicators are 'Valuentum' stocks.

Though academic literature remains inconclusive to our knowledge on the major drivers behind Buffett's outperformance, economic-profit and competitive-advantage analysis remain key components of our process. We compare a company's return on invested capital (ROIC) to our estimate of its weighted average cost of capital (WACC) to assess whether it is creating economic profit for shareholders (ROIC less WACC equals economic profit). Firms that have improving economic profit spreads over their respective cost of capital score high on our ValueCreation and ValueTrend measures, while firms that have relatively stable returns score well with respect to our ValueRisk evaluation, which impacts our margin-of-safety assessment.

After evaluating historical trends, we then make full annual forecasts for each item on a company's income statement and balance sheet to arrive at a firm's future free cash flows. We derive a company-specific cost of equity (using a fundamental beta based on the expected uncertainty of key valuation drivers) and a cost of debt (considering the firm's capital structure and synthetic credit spread over the risk-free rate), culminating in our estimate of a company's weighted average cost of capital (WACC). We don't use a market price-derived beta, as we embrace market volatility, which provides investors with opportunities to buy stocks with both good value and good momentum characteristics at bargain-basement levels. On the other hand, market volatility provides investors with opportunities to sell stocks with poor value and poor momentum characteristics at overpriced levels.

We then assess each company within our complete three-stage free cash flow to the firm (enterprise cash flow) valuation model, which generates an estimate of a company's equity value per share based on its discounted future free cash flows and the company's net balance sheet impact, including other adjustments to equity value (namely pension and OPEB adjustments). Our ValueRisk rating, which considers the underlying uncertainty of the capacity of the firm to continue to generate value for shareholders, sets the margin of safety bands around this fair value estimate.



For firms that are trading below the lower bound of our margin of safety band, we consider these companies undervalued based on our DCF process. For firms that are trading above the higher bound of our margin of safety band, we consider these companies overvalued based on our DCF process. The concept of momentum reinforces the idea of applying a fair value range in situations where the momentum "effect" may be present.

C. We Perform a Forward-Looking Relative Value Assessment to Bolster our Value Signal

Our discounted cash-flow process allows us to arrive at an absolute view of the firm's intrinsic value. However, we also include a forward-looking relative value assessment in our process to further bolster our rigorous discounted cash-flow process and improve our value signal. If a company is undervalued on both a price-to-earnings ratio and a price-earnings-to-growth (PEG) ratio versus industry peers, we would consider the firm to be attractive from a relative value standpoint.

The inclusion of a relative value assessment using common valuation parameters further ties our real-world application to the standard valuation measures used in academic literature. A common value signal is the ratio of the book value of equity to the market value of equity, or book to market (*BM*). By employing the price-to-earnings ratio in our analysis, we are taking the inverse of this ratio and assessing the forward contributions to book value as opposed to book value itself. We view such an approach as a practical application of the value signal, particularly when combined with our rigorous discounted cash-flow process.

D. We Use Technical Analysis to Bolster our Momentum Signal

> Underlying the efficient market hypothesis is the notion that if any predictable patterns exist in returns, investors will quickly act to exploit them, until the source of predictability is eliminated. However, this does not seem to be the case for either stock return or earnings based momentum strategies. Both strategies have been well-known and were well-publicized by at least the early 1990s, but both continue to generate excess

> profits. We would argue that the momentum effect represents perhaps the strongest evidence against the efficient markets hypothesis (Jagadeesh 2001).

Once we have estimated a firm's intrinsic value on the basis of our discounted cash-flow process, determined if it is undervalued according to its firm-specific margin of safety bands, and assessed whether it has relative value versus industry peers, we then evaluate the company's technical and momentum indicators to pin-point the best entry and exit points on the stock.

Rigorous valuation analysis and technical/momentum analysis are not mutually exclusive, and we believe both can be used together to bolster returns. Our firm-wide view is that technical analysis is in part a self-reinforcing prophecy, but we are not against capitalizing on the understanding of such a discipline. Chan, et al (1996) theorizes on the possibility of why momentum strategies may be effective:

> Another possibility is that the profitability of momentum strategies stems from overreaction induced by positive feedback trading strategies of the sort discussed by DeLong, Shleifer, Summers, and Waldmann (1990). This explanation implies that "trend-chasers" reinforce movements in stock prices even in the absence of fundamental information, so that the returns for past winners and losers are (at least partly) temporary in nature…(but)…The bulk of the evidence suggests that the drifts in future returns are not subsequently reversed, so momentum does not appear to be entirely driven by positive feedback trading.

An evaluation of a stock's moving averages, relative strength, upside-downside volume, and money flow index are but a few considerations we look at with respect to our technical and momentum assessment of a company's stock. The application of simple moving averages to our process allows us to identify stocks whose near-term performance is stronger than their intermediate-term performance, thus revealing the momentum signal.

We embrace the idea that the future is inherently unpredictable and that not all fundamental factors can be included in a valuation model. By extension, we also use technical and momentum analysis to help safeguard us against value traps, negative momentum trends, analyst error, and the opportunity cost of holding an undervalued equity for years before it converges to fair value. As the work of Chan, et al (1996) suggests, even an undervalued equity can underperform for up to three years after a poor earnings report.

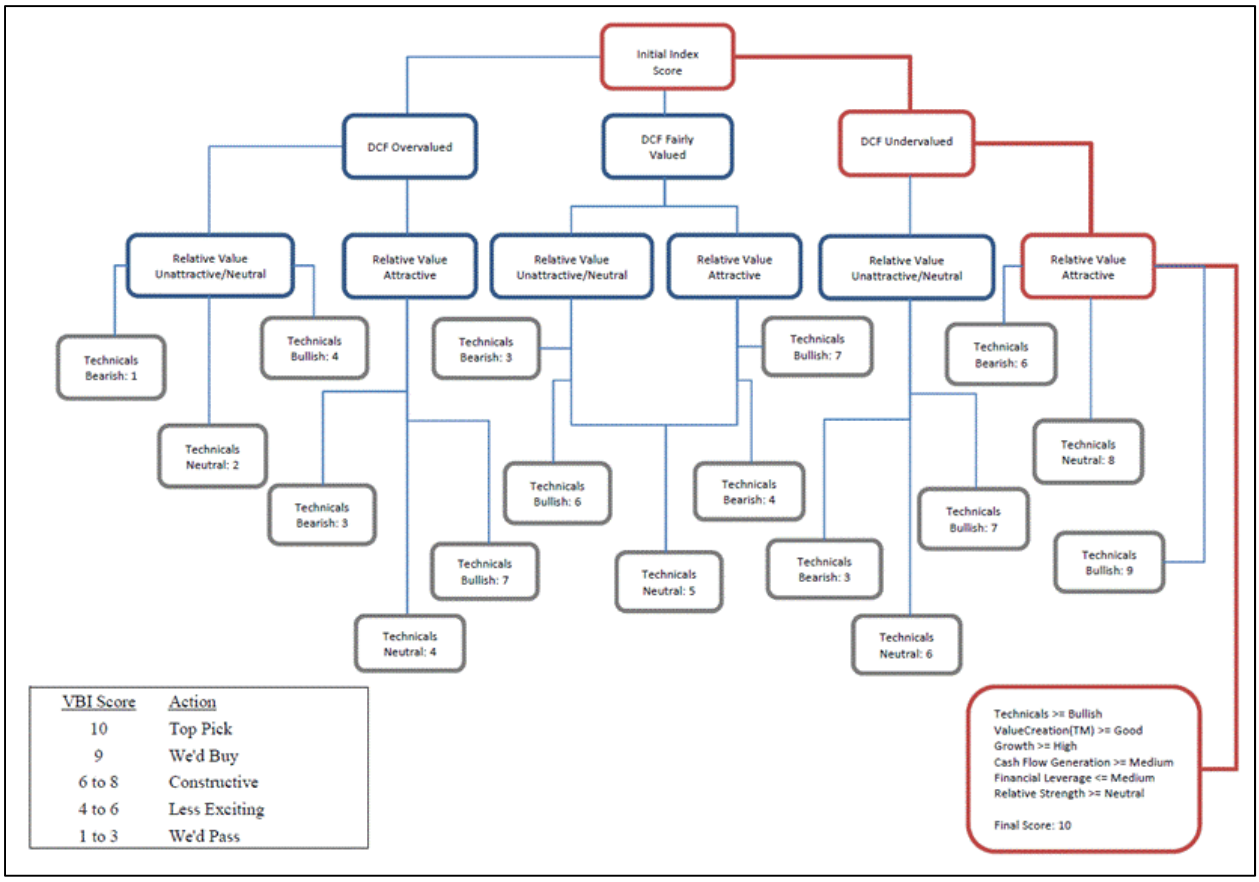
E. Combining Value and Momentum - the Valuentum Buying Index

The red line on the flow chart below reveals our contingent, adaptive stock-selection methodology. We strive to identify stocks where both the value and momentum signals are clearly good or clearly poor.

To earn the highest score on our scale, the company would need to be undervalued on a DCF basis and attractive on a relative value basis. We view this assessment as key in determining whether the firm meets the criteria of having good value characteristics. The stock would also have to be exhibiting bullish technical and momentum indicators, the latter used in assessing whether the company meets the criteria of having good momentum characteristics.

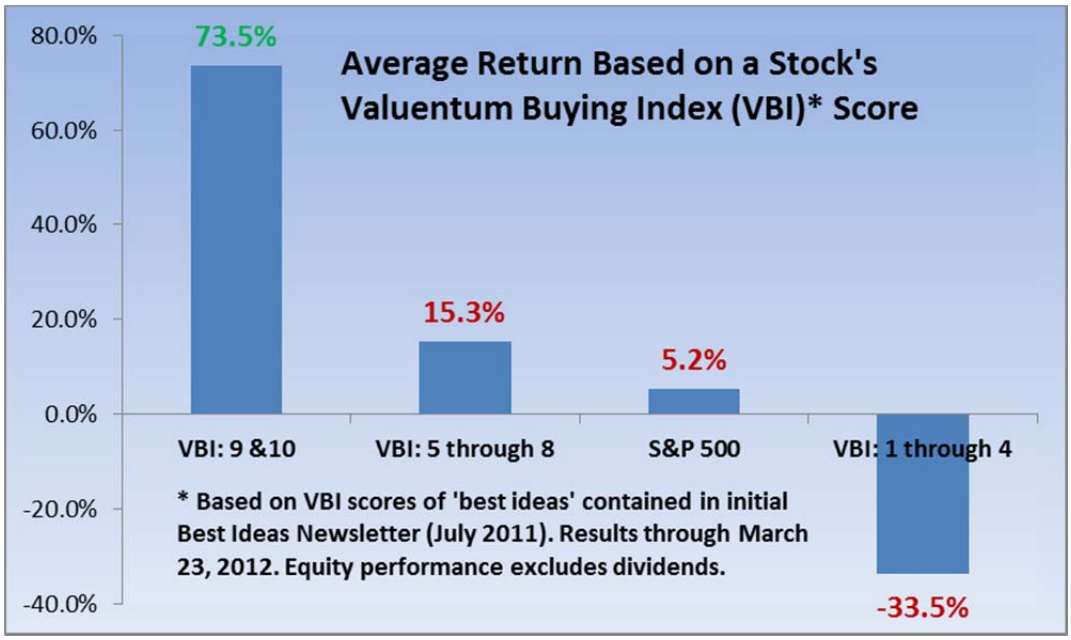
The firm would need a ValueCreation rating of good or excellent, exhibit high or aggressive growth prospects, and generate at least a medium or neutral assessment for cash flow generation, financial leverage, and relative price strength. We use these fundamental factors as a way to capture relatively high quality firms within our portfolio and to safeguard against a variety of risks (deteriorating product demand, liquidity issues, etc.) while also capturing any perceived phenomenon related to a “moat” factor.

This is a tall order for any company, but we're looking to deliver the very best of ideas to our clients and subscribers. Firms that don't make the cut for a 10 are ranked accordingly, with the least attractive stocks garnering a score of 1 ("We'd sell"). Most of our coverage universe falls between 3 and 7, but at any given time there could be large number of companies garnering either high or low scores, especially at market lows or tops, respectively.



F. Performance of the Valuentum Buying Index

Initial testing results of the Valuentum Buying Index have been very encouraging. The performance reflects the subset of firms deemed to fit the 'Valuentum' style at the time of the writing of our inaugural Best Ideas Newsletter in July 2011. Firms that generate a 9 or 10 on our Valuentum Buying Index have good value characteristics and good momentum characteristics, while firms that generate a 1 through 4 typically have poor value characteristics and neutral or poor momentum characteristics. The results are consistent with previous academic literature, and we expect to expand our sample set over time.



Additionally, the performance remains consistent with a combined value and momentum approach, while the smaller, more selective data set (embedded in the above performance) indicates that a portfolio management overlay may be able to extract even more outperformance than traditional predictive models by mitigating positions with less clear value and momentum indicators or avoiding them altogether.

January 2002 – May 2012

Figure I

Symbol	Price / Earnings
BA	54.1
AA	39.2
CSCO	35.3
INTC	33.9
DIS	31.6
MSFT	29.8
WMT	29.3
HPQ	27.7*
KO	27.5
IBM	25.3
JNJ	24.9
MMM	24.7
PG	24.6
VZ	23.2
DD	23.0
XOM	21.7
MCD	20.9
PFE	20.8
CAT	19.9
MRK	18.1
AXP	17.7
GE	16.1
HD	15.3
UTX	14.0
T	12.2
CVX	12.2*

* 2003 PE; 2002 PE NMF.

Figure II

Symbol	2yr Trail Perf - 2002
JNJ	37.3%
UTX	33.3%
CAT	26.4%
MMM	24.2%
PFE	17.3%
WMT	10.7%
CVX	6.5%
AA	6.2%
XOM	-1.6%
IBM	-3.0%
BA	-5.6%
T	-8.6%
HD	-10.9%
GE	-14.5%
PG	-15.7%
DD	-20.4%
VZ	-20.6%
MRK	-21.9%
KO	-22.0%
MCD	-26.2%
INTC	-28.9%
AXP	-33.7%
MSFT	-34.9%
DIS	-41.0%
HPQ	-46.6%
CSCO	-63.8%

January 1995 – May 2012

Figure III

Symbol	Price / Earnings
BA	68.2
MSFT	39.0
CSCO	36.7
CVX	36.6
HD	35.4
KO	31.3
MMM	28.6
PFE	25.2
MRK	24.3
JNJ	23.0
MCD	22.9
DIS	22.1
HPQ	20.0
WMT	19.6
PG	19.4
GE	18.5
T	18.5
UTX	16.6
VZ	16.4
XOM	15.5
INTC	14.1
AXP	13.3
IBM	12.6
DD	12.5
AA	11.9
CAT	10.3

Figure IV

Symbol	2yr Trail Perf - 1995
CAT	86.8%
AXP	64.6%
CSCO	50.4%
IBM	47.0%
UTX	46.0%
HPQ	43.3%
JNJ	38.6%
MSFT	37.5%
PG	37.1%
MCD	36.4%
T	33.6%
CVX	33.2%
BA	32.7%
INTC	30.8%
PFE	30.8%
KO	28.1%
GE	26.7%
DD	24.6%
VZ	14.7%
MMM	14.0%
DIS	13.0%
XOM	12.1%
AA	11.0%
MRK	6.3%
HD	-3.8%
WMT	-29.0%

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This study discusses backtested information. The Best Ideas Newsletter portfolio and Dividend Growth Newsletter portfolio are not real money portfolios. Actual results may differ from simulated information, results, or performance presented in this paper. All results are hypothetical and do not represent actual trading.