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Background

Can a low-turnover portfolio strategy provide exposure to equity market gains while dampening downside risk during market declines? That was our objective as we sought to employ our systematic method of combining stock selection factors to produce a fully invested equity portfolio as an alternative to a tactical asset allocation model approach that uses a combination of equities and risk-free assets. The result of this effort was the development of the Quality Value Momentum Strategy. Based on the successful backtesting of this investment methodology, it was constructed into the AI Quality Value Momentum Index by Arrow Insights. This index went live with the July 31, 2014 rebalance.

As its name implies, the Quality Value Momentum Strategy balances stock selection based upon measures of quality, value, and momentum. The use of quality metrics provides a defensive characteristic to the portfolio by reducing overall volatility of returns and mitigating losses during market declines. By including a mix of stocks that are relatively undervalued and stocks whose prices are exhibiting long term momentum, the strategy increases the potential for equity gains during market advances.

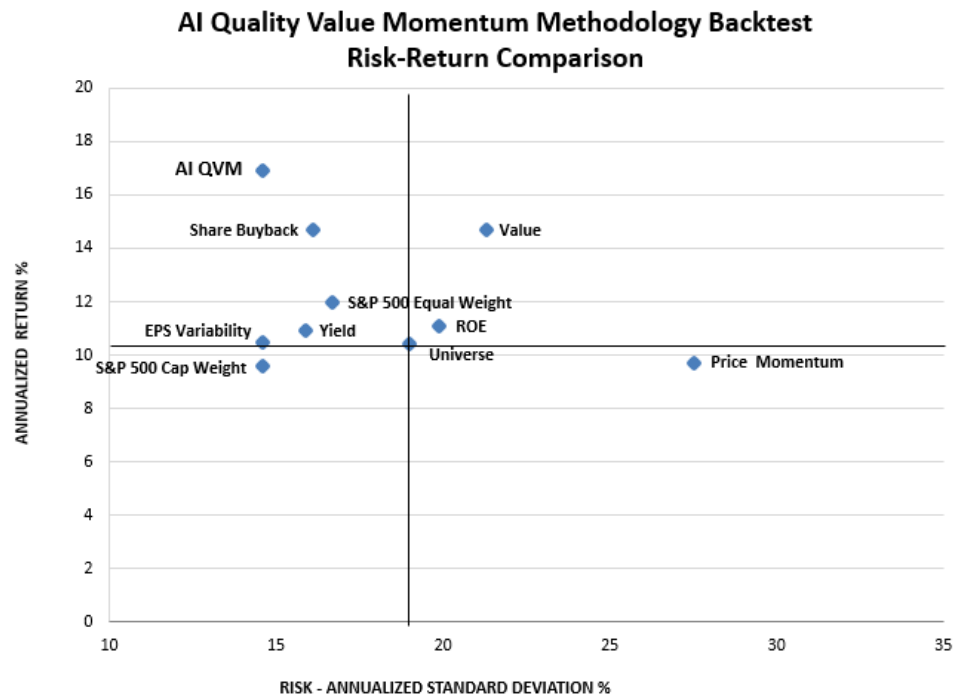


Table represents the 1993 to 2014 annualized return and standard deviation of the AIQVM methodology backtest compared to stocks in the test universe, S&P 500 index (both equal and cap-weighted), and the top 10% of companies in the test universe as ranked by each selection factor included in the AIQVM methodology. All portfolios were rebalanced semiannually. The top 10% portfolios consisted of 103, 206, and 280 companies in 1993, 2002, and 2014, respectively. Annualized returns shown do not include any expenses. Past performance is no guarantee of future results.

Model Inputs

Inputs to the Quality Value Momentum strategy are based on their observed performance characteristics. In determining which factors to include we considered overall performance, performance in down markets, standard deviation of returns, effect on portfolio turnover, and proportion of return from yield.

Quality

Quality factors are key components of the model. Among these are eps variability, return on equity, and return of earnings to shareholders in the form of dividends or share buybacks.

Ford's earnings variability factor (EDV) measures the standard error of earnings about an exponential growth curve over the past eight years. Companies with relatively low variability in earnings per share tend to have predictable growth rates, dividend payments and price performance. In measuring the historical returns of the top 10% of companies based on EDV, the standard deviation of returns is substantially lower than other factors tested. Low earnings variability tends to positively correlate with company size so including this factor will have a tendency to tilt a portfolio to larger capitalization companies.

The ability to generate high return on equity (ROE) corresponds with a company's ability to reinvest in the company for growth, make acquisitions or return earnings to shareholders as dividends or share buybacks. The top 10% of companies based on ROE had both above average returns and lower than average risk.

Companies that return their earnings to shareholders in the forms of dividends or share buybacks tend to have above average risk adjusted returns. In the case of the top dividend payers measured by dividend yield, the performance boost is slightly above average while the average standard deviation of returns is much lower. Share repurchases positively impact a company's earnings per share and also can undergird its stock price. Ford's share buyback factor (SHB) measures the change in shares outstanding for a company over the past 12 months. The top 10% of companies based on SHB generated among the best returns of the factors tested while also showing below average return volatility.

Value

Including a value factor into the model provides the ability to capture the price appreciation potential of stocks that are priced relatively lower than average based on financial metrics. In this case, we use our operating earnings yield (OEY) to measure relative value. Ford's OEY is an earnings to price ratio in which the earnings value is based on operating earnings per share that we have adjusted for unusual and non-recurring items. The risk return characteristic of the top stocks based on this factor show the highest average returns of the factors in this study. However the annualized standard deviation of returns is a bit higher than average.

Momentum

The inclusion of a price momentum factor provides a selection timing element to the model. We have found that this is an important part of a model that also uses a value component. Stocks with attractive valuations may underperform for long periods of time. By selecting stocks that are also exhibiting price momentum, one can limit the selection of value stocks to those that have already had some market confirmation based on price performance. In this model we use a longer term price momentum factor which corresponds to longer term expected future performance. While they produce above average returns, stocks with high price momentum also have the highest risk among the factors we measured on a stand alone basis.

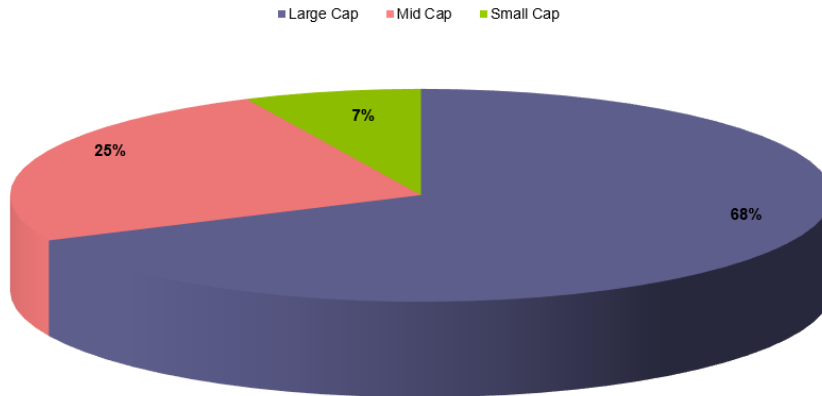
Portfolio Construction

The AI Quality Value Momentum Index constituents are selected from about 3,500 companies within the Ford universe of stocks that meet minimum liquidity and price standards. These include average daily dollar volume above \$1 million over the past three months and a minimum price of \$5 per share. Model inputs are combined to create a ranking score for the stocks that meet the liquidity and price standard. The top 50 stocks based on this ranking are selected as portfolio constituents. The list is reconstituted in January and July and rebalanced quarterly to maintain equal weighting among the constituents. The resulting portfolio has an average holding period of about one year.

Index Constituent Characteristics

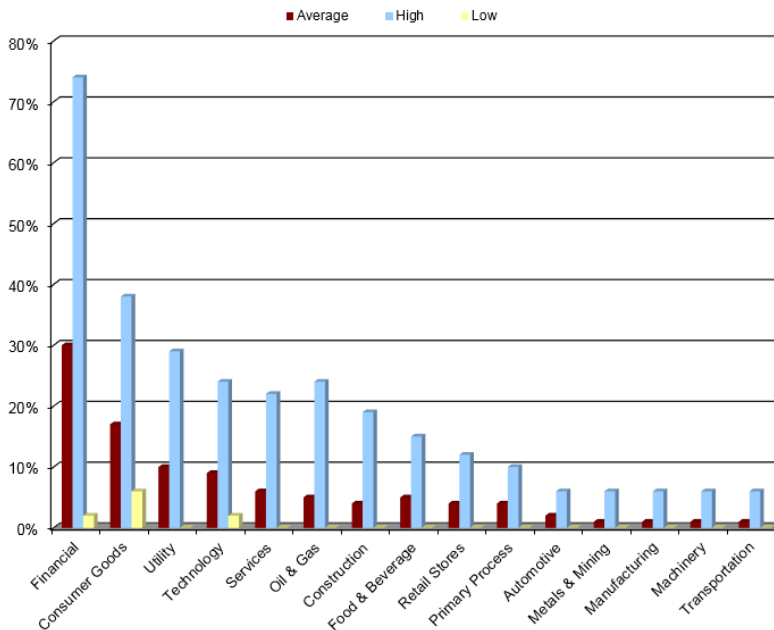
The following graphs show the average characteristics of the AI Quality Value Momentum Index constituents at year-end dates from 1992 to 2014.

AI Quality Value Momentum Methodology Backtest - Capitalization Distribution



Capitalization distributions are based dividing the liquidity-screened universe of stocks into equal-sized groups based on market capitalization. More than two thirds of the index constituents fall into the large cap category. This is largely a result of the strategy's exposure to quality factors such as lower earnings variability and yield, which tend to positively correlate to market capitalization. (see appendix table 1 for annual detail)

AI Quality Value Momentum Methodology Backtest: Industry Distribution



Financials tended to dominate the industry sector distribution, while consumer goods, utilities, and tech stocks also have high average representation. It is interesting to note that the value component of the strategy helped to reduce exposure to technology during the internet bubble and substantially overweighted financials at the 2003 market bottom and reduced exposure at the financial crisis top of 2008. (see appendix table 2 for annual detail)

Index Performance

AI Quality Value Momentum Methodology Backtest vs. S&P 500 Index



Source: Intrinsic Research Systems

This price graph highlights the steadiness of returns of the AI Quality Value Momentum compared to the S&P 500 Index since 1993.

AIQVM vs. S&P 500: Annual Total Return and Dividend Yield

	AIQVM (%)	S&P500 (%)	AIQVM Yield (%)	S&P500 Yield (%)
12/31/1993	8.1	10.1	3.4	2.7
12/31/1994	3.2	1.3	3.6	2.9
12/31/1995	45.9	37.6	3.1	2.2
12/31/1996	29.6	23.0	3.0	2.0
12/31/1997	50.1	33.4	2.6	1.6
12/31/1998	17.3	28.6	2.5	1.4
12/31/1999	-0.6	20.7	2.9	1.2
12/31/2000	28.9	-8.8	3.6	1.2
12/31/2001	17.7	-11.9	3.1	1.4
12/31/2002	0.5	-22.1	3.0	1.8
12/31/2003	32.0	28.7	2.6	1.6
12/31/2004	25.4	10.9	2.5	1.6
12/31/2005	12.2	4.9	3.2	1.8
12/31/2006	14.8	15.8	2.8	1.8
12/31/2007	17.5	5.5	3.0	1.9
12/31/2008	-28.1	-37.0	3.7	3.2
12/31/2009	31.5	26.5	3.8	2.0
12/31/2010	15.8	15.1	3.1	1.8
12/31/2011	14.1	2.1	3.2	2.1
12/31/2012	13.0	16.0	3.7	2.2
12/31/2013	47.4	32.4	2.9	1.9
12/31/2014	5.6	13.7	2.4	2.1

In this comparison of annual total returns, the AI Quality Value Momentum Index outperformed the S&P 500 Index in 16 of 22 years with notable relative outperformance during down markets. On average, the yield differential for the AIQVM portfolio versus the S&P 500 Index was 1.1% annually.

Appendix

Table 1

AI Quality Value Momentum Methodology Backtest

Year	Capitalization Distribution		
	Large Cap	Mid Cap	Small Cap
1992	53%	33%	14%
1993	66%	22%	12%
1994	83%	13%	4%
1995	79%	13%	8%
1996	82%	16%	2%
1997	87%	11%	2%
1998	60%	40%	0%
1999	51%	44%	4%
2000	44%	42%	13%
2001	55%	31%	14%
2002	48%	43%	9%
2003	47%	42%	12%
2004	64%	31%	4%
2005	67%	25%	8%
2006	85%	8%	6%
2007	79%	19%	2%
2008	71%	18%	10%
2009	76%	12%	12%
2010	65%	31%	4%
2011	81%	19%	0%
2012	72%	18%	10%
2013	76%	18%	6%
2014	78%	18%	4%
Average	68%	25%	7%

Capitalization distributions groups are constructed by dividing the universe of stocks that have been screened for liquidity into three equally-sized groups, i.e., large cap represents the top third of the universe ranked by market capitalization. Currently 914 companies in each third. In 1993, each third had 373 companies.

Table 2

AI Quality Value Momentum Methodology Backtest Ford Industry Group Distribution

Year	Automotive	Consumer Goods	Food & Beverage	Retail Stores	Metals & Mining	Manufacturing	Oil & Gas	Primary Process	Machinery	Technology	Construction	Financial	Services	Transportation	Utility
1992	0%	26%	2%	0%	0%	2%	0%	0%	2%	4%	0%	30%	2%	4%	28%
1993	0%	22%	10%	2%	0%	0%	2%	0%	0%	8%	0%	32%	10%	0%	14%
1994	0%	38%	15%	0%	0%	0%	0%	2%	0%	6%	0%	21%	11%	0%	6%
1995	0%	33%	13%	0%	0%	2%	0%	8%	0%	4%	2%	25%	4%	0%	8%
1996	0%	13%	4%	0%	0%	6%	0%	4%	2%	4%	2%	42%	6%	2%	15%
1997	0%	15%	2%	0%	0%	0%	2%	2%	6%	4%	0%	58%	2%	0%	8%
1998	2%	9%	4%	4%	0%	0%	0%	7%	2%	7%	2%	35%	2%	0%	26%
1999	2%	12%	2%	4%	0%	2%	0%	2%	4%	6%	8%	24%	2%	2%	29%
2000	4%	8%	2%	4%	0%	0%	0%	2%	2%	2%	19%	31%	6%	0%	19%
2001	2%	10%	2%	8%	2%	0%	8%	0%	0%	4%	18%	33%	0%	0%	12%
2002	0%	8%	2%	6%	0%	0%	0%	0%	0%	4%	8%	66%	0%	0%	6%
2003	0%	13%	0%	0%	0%	0%	0%	0%	2%	2%	6%	74%	0%	0%	2%
2004	2%	7%	7%	9%	0%	0%	4%	7%	0%	4%	9%	50%	2%	0%	0%
2005	2%	6%	2%	0%	2%	2%	16%	6%	0%	2%	16%	33%	0%	6%	6%
2006	6%	6%	0%	0%	4%	0%	24%	8%	2%	2%	2%	33%	2%	2%	8%
2007	4%	14%	2%	4%	2%	2%	18%	10%	0%	6%	0%	24%	4%	2%	6%
2008	2%	16%	6%	4%	2%	0%	14%	10%	6%	8%	0%	16%	4%	0%	10%
2009	2%	24%	4%	8%	0%	4%	4%	6%	0%	18%	2%	2%	18%	0%	6%
2010	0%	28%	6%	6%	2%	2%	4%	6%	0%	16%	2%	20%	6%	0%	2%
2011	0%	18%	0%	8%	6%	0%	4%	10%	0%	22%	2%	4%	22%	0%	2%
2012	0%	26%	4%	12%	2%	0%	4%	8%	0%	20%	0%	10%	12%	0%	2%
2013	4%	20%	4%	4%	2%	0%	10%	0%	0%	24%	0%	14%	12%	0%	4%
2014	2%	10%	12%	6%	2%	4%	2%	4%	2%	24%	0%	12%	12%	4%	4%
Average	2%	17%	5%	4%	1%	1%	5%	4%	1%	9%	4%	30%	6%	1%	10%

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