



Alternative Portfolio Applications of Value Momentum Model February 27, 2004

Background

In 1997 Ford developed its Value/Momentum model. The model identifies companies that have a combination of three characteristics that positively influence common stock performance: attractive relative valuation, positive earnings changes, and price momentum. While selecting stocks with these three factors individually results in above average returns, the effect of combining them produces a further improvement in performance and low volatility of returns.

In 1998 we began using the Value/Momentum model to choose the twenty stocks for our Selected Stock List which we publish monthly in the Ford Investment Review. Since that time, the Selected Stock List has outperformed the market in four of the six years. It did particularly well in the down market years of 2000, 2001, and 2002. Overall, the six year annualized total return for the list was 15.3% versus -6.3% for the Ford Universe and 3.8% for the S&P 500.

Companies eligible for inclusion in the Selected Stock List are limited to a group of about 400, which we call our "high quality universe". The high quality universe is made up of companies with a high Ford Quality Rating (a measure of company size, financial leverage, and earnings volatility) and a record of consistent earnings growth over the past ten years. About 70% of the companies in the high quality universe can be termed large capitalization stocks and 23% fall into the mid capitalization category. At inception, the top twenty stocks based on Value/Momentum score were chosen for the Selected Stock List. Companies remain on the list as long as their score remains in the top 30% of all companies in the Ford Universe. This results in an average holding period of 4 months. Both the high quality universe and the Value/Momentum model tend to favor companies in the financial group which, if left unchecked, could approach 70% of the portfolio. Because of this, the Selected Stock List limits the number of stocks in any one group to a maximum of five.

Purpose

While applying the Value/Momentum model to Ford's high quality universe has shown excellent results, the model can be applied to other discreet universes to generate excess returns and low volatility. This study examines the effect of capitalization and sector concentration on Value/Momentum model performance. In addition, it shows the effectiveness of the model as a tool to create an alternative high quality, low volatility stock universe on which to execute a defined strategy.

Capitalization/Industry Sector Modifications to Ford Quality Universe

The first modification limited the high quality universe to only the largest 1000 companies based on market capitalization. Two subgroups were created. The first placed no limits on the number of financial companies, while the second group eliminated financial stocks from the list completely. The Value/Momentum score was then used to select the top 20 stocks from each of these large cap subgroups. Stocks were held in these portfolios as long as they ranked among the top 50% based on Value/Momentum score. This resulted in an average holding period of 12 months for the subgroup containing unlimited financials and 9 months for the subgroup that excluded financials.

Large Cap High Quality

Annual Total Return (%)

	Top 20 VMO W/Financials	Annual Turnover (%)	Top 20 VMO No-Financials	Annual Turnover (%)	S&P 500 Index
12/75-12/76	70.3	135.0	70.2	140.0	24.0
12/76-12/77	11.1	85.0	12.5	100.0	-7.3
12/77-12/78	15.8	120.0	14.4	160.0	6.5
12/78-12/79	51.3	90.0	53.3	120.0	18.7
12/79-12/80	62.8	130.0	60.0	160.0	32.4
12/80-12/81	12.8	65.0	18.9	115.0	-5.1
12/81-12/82	14.5	80.0	21.8	80.0	21.7
12/82-12/83	39.0	70.4	37.4	125.7	22.4
12/83-12/84	15.5	65.0	16.9	85.0	6.7
12/84-12/85	48.3	75.0	42.3	125.0	31.8
12/85-12/86	22.3	90.0	34.6	145.0	18.3
12/86-12/87	3.0	130.5	5.8	125.0	5.2
12/87-12/88	32.2	85.3	26.2	125.0	16.8
12/88-12/89	23.5	95.4	44.6	170.0	31.2
12/89-12/90	-17.9	145.0	9.7	125.0	-3.1
12/90-12/91	45.7	65.0	52.3	125.0	30.3
12/91-12/92	30.0	80.0	13.3	125.0	7.7
12/92-12/93	12.0	35.0	18.9	125.0	10.2
12/93-12/94	4.4	75.3	5.6	90.0	1.4
12/94-12/95	51.6	95.9	33.2	162.1	37.6
12/95-12/96	39.6	105.4	24.6	176.1	23.3
12/96-12/97	57.5	65.0	43.2	150.0	33.4
12/97-12/98	23.6	105.0	49.0	100.0	28.8
12/98-12/99	11.7	150.9	26.2	155.8	20.7
12/99-12/00	17.0	100.4	12.9	125.3	-8.5
12/00-12/01	-0.2	100.0	-10.9	125.0	-12.0
12/01-12/02	-4.9	100.0	-5.3	125.0	-21.9
12/02-12/03	47.4	40.0	48.2	70.0	28.5
Annualized	24.6	91.9	26.3	126.6	13.1
Annual Std. Dev.	17.9		17.0		15.3

The large cap - unlimited financials Value/Momentum portfolio had excellent results, outperforming S&P 500 index in 22 of the 28 years studied. The results for the large cap – excluding financials portfolio were even better, with positive annual excess returns over the S&P 500 index in 27 of 28 years. The combination of large market capitalization, high quality, and Value/Momentum was also very resilient to market declines. It showed relatively strong performance in all down markets except 1990, which saw the unlimited financials Value/Momentum portfolio subgroup underperform.

The second modification limited the high quality universe to mid cap companies defined as the second 1000 largest companies based on market capitalization. Again, the mid cap high quality universe was divided into subgroups. The first had no limit on financial stock concentration and the second excluded financials altogether. The time frame studied in this case is only 10 years, which matches the availability of S&P Midcap 400 returns. As in the prior example stocks were held in these portfolios as long as they ranked among the top 50% based on Value/Momentum score. This resulted in an average holding period of 9 months for the subgroup containing unlimited financials and 7 months for the subgroup that excluded financials.

Mid Cap High Quality

Annual Total Return (%)

	Top 20 VMO With Financials	Portfolio % Turnover	Top 20 VMO No Financials	Portfolio % Turnover	S&P Midcap 400
12/93-12/94	-2.1	137.6	2.1	207.8	-3.4
12/94-12/95	50.1	105.4	40.1	161.3	30.4
12/95-12/96	31.6	100.0	16.9	160.0	19.1
12/96-12/97	38.5	115.4	24.3	125.4	32.6
12/97-12/98	3.5	135.0	6.8	160.0	19.0
12/98-12/99	-16.1	203.5	-13.2	225.4	15.5
12/99-12/00	35.8	217.0	38.4	221.0	18.8
12/00-12/01	31.8	121.4	27.4	147.1	0.0
12/01-12/02	-1.2	145.0	5.3	130.6	-14.5
12/02-12/03	63.9	80.0	63.7	75.0	35.6
Annualized	21.0	135.9	19.3	161.0	14.2
Annual Std. Dev.	15.9		16.2		17.4

The top 20 stocks ranked by Value/Momentum for each of the subgroups, while good, fell short of those seen for the large caps. The mid cap – unlimited financials portfolio performed better than the S&P Midcap index in 8 of the 10 years. However, when financials were excluded performance beat the index in only 6 of the 10 years.

Creating and Executing a Strategy on an Alternative Universe

As shown by Ford's Selected Stock list and the previous examples, Value/Momentum model can effectively be used to select stocks to include in a portfolio. An alternative use for the model is as a screening tool to create a universe of attractive selection candidates on which an alternate strategy is used to choose the final portfolio constituents. The following examples show how this is done using share buyback and dividend yield as the stock selection parameters.

Our research has shown that companies that repurchase their shares frequently post above average performance. Further, there is a direct relationship in the magnitude of share buyback percentage over the prior year and future outperformance. In this example, we show how using the Value/Momentum model as an initial screen can be combined with the effectiveness of share buyback. Six capitalization universes were created. The largest 1000 companies (large cap), the second 1000 companies (mid cap), and the third 1000 (small cap) were created both with no limits on financial company concentration and eliminating financials completely. This was done to examine the effect of a large concentration of financials on the model results. Each of these cap groups were screened to include only companies that had a decline in shares outstanding over the past 12 months of at least 1%. The resulting universes yielded 201 large cap companies, 151 mid caps and 141 small cap companies at the end of 2003. These reduced lists were then screened to choose only those that were among the top 20% based on the Value/Momentum model. The final selection of 20 companies was determined by choosing those with the highest share buyback over the past year. Companies were held in the portfolio as long as they remained among the top 50% of stocks ranked by Value/Momentum.

Large Cap Share Buyback Annual Total Return (%)

	Top 20 SHB With Financials	Portfolio % Turnover	Top 20 SHB No Financials	Portfolio % Turnover	S&P 500
12/75-12/76	66.9	105.5	62.5	125.7	24.0
12/76-12/77	27.5	95.0	29.1	95.0	-7.3
12/77-12/78	30.0	75.0	26.3	80.0	6.5
12/78-12/79	48.8	110.0	46.1	120.0	18.7
12/79-12/80	32.9	140.0	43.5	162.0	32.4
12/80-12/81	16.7	115.0	17.3	125.0	-5.1
12/81-12/82	14.7	130.5	15.5	140.5	21.7
12/82-12/83	43.0	130.0	36.0	155.0	22.4
12/83-12/84	29.2	133.8	26.7	148.8	6.7
12/84-12/85	54.9	97.9	55.6	92.8	31.8
12/85-12/86	39.4	153.8	40.9	153.8	18.3
12/86-12/87	14.5	113.2	17.6	77.9	5.2
12/87-12/88	38.3	135.0	37.6	130.0	16.8
12/88-12/89	36.4	136.1	33.9	130.5	31.2
12/89-12/90	-8.9	140.8	-11.2	150.9	-3.1
12/90-12/91	65.0	105.0	51.8	145.7	30.3
12/91-12/92	22.5	95.0	12.8	140.0	7.7
12/92-12/93	23.6	70.0	30.9	130.0	10.2
12/93-12/94	12.0	130.6	14.1	135.3	1.4
12/94-12/95	47.8	129.1	51.2	148.7	37.6
12/95-12/96	44.1	87.6	36.7	117.6	23.3
12/96-12/97	46.1	85.0	25.8	120.0	33.4
12/97-12/98	12.6	81.3	17.3	100.7	28.8
12/98-12/99	2.6	95.0	13.6	75.0	20.7
12/99-12/00	25.9	140.9	26.1	160.9	-8.5
12/00-12/01	5.6	120.0	6.3	125.0	-12.0
12/01-12/02	7.2	120.5	2.1	126.7	-21.9
12/02-12/03	40.7	100.3	35.5	115.0	28.5
Annualized	28.7	112.9	27.5	125.6	13.1
Annual Std. Dev.	18.3		18.3		15.3

The large cap – share buyback portfolios (both with and without financials) executed on a high Value/Momentum universe performed well over the study period. Returns exceeded those of the S&P 500 in 24 of the 28 years for both portfolios. With the exception of 1990, down market performance was excellent.

Mid Cap Share Buyback
Annual Total Return (%)

	Top 20 SHB With Financials	Portfolio % Turnover		Top 20 SHB No Financials	Portfolio % Turnover	S&P Midcap
12/93-12/94	18.8	87.5		20.3	75.0	-3.4
12/94-12/95	36.1	115.1		36.4	125.0	30.4
12/95-12/96	27.1	90.0		25.2	105.0	19.1
12/96-12/97	58.9	72.9		44.1	102.8	32.6
12/97-12/98	-0.8	118.3		-6.5	142.9	19.0
12/98-12/99	-14.5	105.5		-17.4	100.0	15.5
12/99-12/00	29.5	115.0		39.8	125.0	18.8
12/00-12/01	29.6	93.3		35.2	87.8	0.0
12/01-12/02	15.9	72.5		11.0	63.0	-14.5
12/02-12/03	58.0	111.2		68.2	80.0	35.6
Annualized	23.9	97.3		23.2	100.3	14.2
Annual Std. Dev.	17.5			17.6		17.4

The mid cap – share buyback portfolios (both with and without financials) executed on a high Value/Momentum universe both outperformed the S&P Midcap index in 8 of the 10 years studied. The combination of selecting stocks based on share buyback and holding as long as they remain among the top 50% of Value/Momentum produced a longer holding period (12 months in this case) than would have been achieved using Value/Momentum as the final selection criterion.

Small Cap Share Buyback
Annual Total Return (%)

	Top 20 SHB With Financials	Portfolio % Turnover		Top 20 SHB No Financials	Portfolio % Turnover	S&P Small Cap
12/96-12/97	64.9	84.1		55.9	97.6	600
12/97-12/98	23.4	77.6		18.2	57.5	25.9
12/98-12/99	4.7	100.7		6.4	95.5	-1.2
12/99-12/00	17.3	75.0		6.4	80.0	14.0
12/00-12/01	38.2	75.3		56.6	85.7	13.7
12/01-12/02	33.0	65.3		20.2	75.7	6.9
12/02-12/03	45.0	60.3		56.9	100.0	-14.1
Annualized	31.1	77.4		29.7	85.0	39.4
Annual Std. Dev.	18.3			21.0		10.9
						20.9

The small cap – share buyback portfolio with unlimited financials performed better than the S&P Smallcap index in 6 of the 7 years presented. The portfolio that excluded financials also had strong overall performance and exceeded the S&P Smallcap index in 5 of the 7 years. Again, the selection method and hold criteria served to create portfolios with very low turnover.

A universe of high yield stocks, while not showing strong historical excess returns versus the overall market, does exhibit lower than average volatility. This is due to the cushion effect that dividend yields have on price declines. In this example we created capitalization universes of stocks as we did previously. However in this case we substituted a screen for companies paying a dividend and having adequate earnings coverage (operating EPS two times the dividend) for share buyback. We used the Value/Momentum model to reduce the list of candidates to those among the top 10%. The final 20 stock portfolio was made up of the companies with the highest dividend yield. Companies remained in the portfolio as long as they ranked among the top 50% based on the Value/Momentum model. Portfolio selection based on yield led to a 90% concentration in financials in the unlimited financial portfolio.

Large Cap Yield
Annual Total Return (%)

	Top 20 YLD With Financials	Portfolio % Turnover		Top 20 YLD No Financials	Portfolio % Turnover	S&P 500
12/75-12/76	66.1	45.0		67.4	55.0	24.0
12/76-12/77	14.7	95.0		20.8	115.0	-7.3
12/77-12/78	15.6	55.3		14.0	75.4	6.5
12/78-12/79	24.6	75.0		43.9	135.0	18.7
12/79-12/80	27.5	70.0		52.8	130.7	32.4
12/80-12/81	25.8	55.0		28.9	105.0	-5.1
12/81-12/82	28.2	75.0		26.5	180.0	21.7
12/82-12/83	42.8	75.4		41.3	125.4	22.4
12/83-12/84	20.3	20.0		18.8	95.0	6.7
12/84-12/85	48.8	80.0		53.2	150.0	31.8
12/85-12/86	19.0	40.0		53.7	151.7	18.3
12/86-12/87	5.3	142.6		18.4	85.0	5.2
12/87-12/88	32.7	139.3		41.2	95.0	16.8
12/88-12/89	33.3	100.0		26.2	135.0	31.2
12/89-12/90	-16.2	135.0		-1.0	150.0	-3.1
12/90-12/91	61.1	90.0		42.8	110.0	30.3
12/91-12/92	18.2	50.0		13.2	115.0	7.7
12/92-12/93	23.0	20.0		20.6	100.0	10.2
12/93-12/94	11.8	65.0		7.1	100.0	1.4
12/94-12/95	43.0	92.8		32.7	125.0	37.6
12/95-12/96	40.5	92.5		25.5	135.0	23.3
12/96-12/97	34.9	75.0		17.4	125.0	33.4
12/97-12/98	12.6	120.9		16.1	145.8	28.8
12/98-12/99	2.1	135.0		0.2	120.0	20.7
12/99-12/00	20.7	115.0		11.0	130.0	-8.5
12/00-12/01	12.0	100.5		8.8	110.7	-12.0
12/01-12/02	4.9	115.8		-5.8	151.4	-21.9
12/02-12/03	30.0	130.4		32.1	170.0	28.5
Annualized	23.9	85.8		24.7	121.8	13.1
Annual Std. Dev.	17.7			16.9		15.3

The large cap – high yield portfolios (both with and without financials) outperformed the S&P 500 index in 24 of the 28 years. The portfolio that excludes financials had slightly better overall performance and lower volatility. But this benefit is somewhat negated by the higher turnover versus the portfolio that includes financials.

Mid Cap Yield
Annual Total Return (%)

	Top 20 YLD With Financials	Portfolio % Turnover		Top 20 YLD No Financials	Portfolio % Turnover	S&P Midcap
12/93-12/94	19.1	110.0		15.9	110.0	400
12/94-12/95	38.3	120.1		36.4	135.8	-3.4
12/95-12/96	37.6	100.4		21.8	110.0	30.4
12/96-12/97	53.3	80.4		34.9	85.0	19.1
12/97-12/98	0.2	140.4		-6.7	140.0	32.6
12/98-12/99	-2.3	156.1		3.7	140.7	19.0
12/99-12/00	9.6	146.2		7.0	146.2	15.5
12/00-12/01	21.2	100.0		22.4	125.5	18.8
12/01-12/02	18.9	120.4		8.5	115.3	0.0
12/02-12/03	36.3	135.0		43.3	140.0	-14.5
Annualized	22.0	120.9		17.7	124.8	35.6
Annual Std. Dev.	15.1			16.1		14.2
						17.4

The mid cap – high yield portfolios (both with and without financials) outperformed the S&P Midcap index in 7 out of 10 years. The overall performance of the portfolio with financials was substantially better than the one that excluded financials.

Small Cap Yield
Annual Total Return (%)

	Top 20 YLD With Financials	Portfolio % Turnover		Top 20 YLD No Financials	Portfolio % Turnover	S&P Small Cap
12/96-12/97	59.4	113.6		53.1	105.9	600
12/97-12/98	13.3	97.8		9.2	85.0	25.9
12/98-12/99	18.6	120.5		17.7	130.0	-1.2
12/99-12/00	1.8	90.1		9.1	105.3	14.0
12/00-12/01	55.3	55.0		46.1	65.0	13.7
12/01-12/02	32.8	117.1		13.3	102.0	6.9
12/02-12/03	52.5	95.3		70.7	85.0	-14.1
Annualized	31.7	98.0		29.4	97.9	39.4
Annual Std. Dev.	17.3			18.8		10.9
						20.9

The small cap – high yield portfolios (both with and without financials) beat the S&P Smallcap index in 6 out of 7 years. The performance of both portfolios was remarkable in its high excess return over the entire period with lower volatility and low turnover.

Attributes

Although the alternative portfolios were created in fairly similar ways, with the Value/Momentum model as a core component of universe selection, there was very little overlap in the portfolios created. The table below shows some interesting attributes of the alternative portfolios that were created.

Large Cap 1000 Quality Portfolio/S&P 500

Date	Portfolio Market Cap.	S&P 500 Market Cap.	Portfolio Dividend Yield	S&P 500 Dividend Yield	Portfolio Beta Coeff.	S&P 500 Beta Coeff.	Portfolio P/E Ratio	S&P 500 P/E Ratio	Portfolio 1 year EPS Growth	S&P 500 1 year EPS Growth	Portfolio Return on Equity	S&P 500 Return on Equity	Portfolio Estimated L.T. Growth	S&P 500 Estimated L.T. Growth
Dec-94	6806	6726	2.7	2.7	1.10	1.06	11	22	22	16	17	17	12	12
Dec-95	15640	9201	2.6	2.2	1.08	1.03	16	26	16	20	18	18	12	12
Dec-96	6997	11307	2.5	2.0	1.01	1.00	20	32	17	7	17	17	13	12
Dec-97	14545	15116	1.7	1.7	1.13	0.94	20	40	21	9	23	18	17	13
Dec-98	47656	19914	2.1	1.7	0.96	0.98	43	51	17	0	20	19	17	13
Dec-99	35091	24593	1.7	1.8	1.16	0.97	29	51	23	11	17	18	15	14
Dec-00	55198	23367	1.4	1.5	1.03	0.96	28	52	32	35	21	18	17	16
Dec-01	19142	20830	2.5	1.4	0.72	0.95	19	40	16	-5	23	17	12	14
Dec-02	9503	16077	1.4	1.7	0.84	0.95	12	30	29	0	19	17	13	13
Dec-03	18454	20543	1.6	1.5	0.76	0.93	14	36	30	9	24	17	13	12

Large Cap 1000 Ex-Finl Quality Portfolio/S&P 500

Date	Portfolio Market Cap.	S&P 500 Market Cap.	Portfolio Dividend Yield	S&P 500 Dividend Yield	Portfolio Beta Coeff.	S&P 500 Beta Coeff.	Portfolio P/E Ratio	S&P 500 P/E Ratio	Portfolio 1 year EPS Growth	S&P 500 1 year EPS Growth	Portfolio Return on Equity	S&P 500 Return on Equity	Portfolio Estimated L.T. Growth	S&P 500 Estimated L.T. Growth
Dec-94	8301	6726	2.4	2.7	1.11	1.06	15	22	19	16	20	17	12	12
Dec-95	17781	9201	1.9	2.2	1.08	1.03	23	26	31	20	25	18	15	12
Dec-96	14890	11307	1.1	2.0	0.99	1.00	23	32	20	7	19	17	17	12
Dec-97	15442	15116	1.1	1.7	1.01	0.94	25	40	24	9	22	18	18	13
Dec-98	46758	19914	1.8	1.7	1.03	0.98	42	51	20	0	23	19	18	13
Dec-99	27106	24593	1.6	1.8	1.04	0.97	40	51	24	11	19	18	17	14
Dec-00	50190	23367	1.0	1.5	0.99	0.96	36	52	34	35	20	18	19	16
Dec-01	20310	20830	1.7	1.4	0.69	0.95	29	40	16	-5	24	17	13	14
Dec-02	12006	16077	0.7	1.7	0.84	0.95	17	30	30	0	23	17	15	13
Dec-03	11113	20543	0.7	1.5	0.83	0.93	18	36	23	9	25	17	13	12

Mid Cap 1000 Quality Portfolio/Mid Cap 400

Date	Portfolio Market Cap.	S&P Midcap Market Cap.	Portfolio Dividend Yield	S&P Midcap Dividend Yield	Portfolio Beta Coeff.	S&P Midcap Beta Coeff.	Portfolio P/E Ratio	S&P Midcap P/E Ratio	Portfolio 1 year EPS Growth	S&P Midcap 1 year EPS Growth	Portfolio Return on Equity	S&P Midcap Return on Equity	Portfolio Estimated L.T. Growth	S&P Midcap Estimated L.T. Growth
Dec-94	338	1174	3.4	2.1	0.95	1.05	12	26	8	16	17	16	11	14
Dec-95	577	1440	2.3	1.8	1.00	0.99	15	32	16	18	14	15	13	14
Dec-96	763	1696	2.6	1.7	0.84	0.93	18	26	14	11	17	15	11	14
Dec-97	1034	2256	1.2	1.4	0.86	0.85	19	36	17	17	16	15	14	15
Dec-98	925	2424	1.7	1.4	0.81	0.96	18	38	14	14	18	16	14	15
Dec-99	989	2287	1.9	1.6	0.85	0.95	15	39	11	1	17	15	13	16
Dec-00	944	2219	1.8	1.2	0.83	0.95	15	30	13	31	15	16	15	17
Dec-01	1208	2110	2.4	1.2	0.61	0.93	17	40	4	-2	16	14	11	17
Dec-02	948	1755	1.2	1.2	0.71	0.94	15	31	20	2	16	13	13	15
Dec-03	1521	2413	0.8	1.1	0.74	0.90	21	38	28	13	16	13	13	14

Mid Cap 1000 Ex-Finl Quality Portfolio / Mid Cap 400

Date	Portfolio Market Cap.	S&P Midcap Market Cap.	Portfolio Dividend Yield	S&P Midcap Dividend Yield	Portfolio Beta Coeff.	S&P Midcap Beta Coeff.	Portfolio P/E Ratio	S&P Midcap P/E Ratio	Portfolio 1 year EPS Growth	S&P Midcap 1 year EPS Growth	Portfolio Return on Equity	S&P Midcap Return on Equity	Portfolio Estimated L.T. Growth	S&P Midcap Estimated L.T. Growth
Dec-94	381	1174	3.0	2.1	0.99	1.05	15	26	2	16	20	15	13	14
Dec-95	634	1440	2.3	1.8	0.98	0.99	18	32	15	18	16	16	14	14
Dec-96	746	1696	2.2	1.7	0.81	0.93	17	26	18	11	18	15	13	14
Dec-97	793	2256	1.4	1.4	0.82	0.85	17	36	16	17	16	15	14	15
Dec-98	770	2424	1.6	1.4	0.85	0.96	17	38	46	14	16	16	14	15
Dec-99	888	2287	1.7	1.5	0.79	0.95	18	39	12	1	16	15	13	16
Dec-00	1089	2219	1.5	1.2	0.78	0.95	17	30	12	31	15	16	15	16
Dec-01	1236	2110	2.1	1.2	0.68	0.93	20	40	2	-2	16	14	12	17
Dec-02	1001	1755	0.9	1.2	0.76	0.94	14	31	24	2	17	13	13	15
Dec-03	1535	2413	0.9	1.1	0.77	0.90	20	38	23	13	16	13	12	14

Large Cap 1000 Share Buyback Portfolio/S&P500

Date	Portfolio Market Cap.	S&P 500 Market Cap.	Portfolio Dividend Yield	S&P 500 Dividend Yield	Portfolio Beta Coeff.	S&P 500 Beta Coeff.	Portfolio P/E Ratio	S&P 500 P/E Ratio	Portfolio 1 year EPS Growth	S&P 500 1 year EPS Growth	Portfolio Return on Equity	S&P 500 Return on Equity	Portfolio Estimated L.T. Growth	S&P 500 Estimated L.T. Growth
Dec-94	4583	6726	1.9	2.7	1.06	1.06	16	22	24	16	17	17	12	12
Dec-95	4643	9201	1.9	2.2	1.11	1.03	15	26	33	20	18	18	12	12
Dec-96	6524	11307	1.8	2.0	1.07	1.00	18	32	32	7	19	17	13	12
Dec-97	9988	15116	1.5	1.7	0.94	0.94	17	40	33	9	23	18	13	13
Dec-98	11661	19914	2.0	1.7	0.95	0.95	20	51	28	0	19	19	12	13
Dec-99	9231	24593	2.4	1.8	0.87	0.97	19	51	19	11	22	18	12	14
Dec-00	6948	23367	1.8	1.5	0.82	0.96	15	52	55	35	16	18	12	16
Dec-01	7850	20830	2.3	1.4	0.70	0.95	20	40	22	-5	22	17	12	14
Dec-02	10264	16077	1.1	1.7	0.85	0.95	16	30	35	0	22	17	13	13
Dec-03	10896	20543	1.2	1.5	0.81	0.93	18	36	18	9	25	17	13	12

Large Cap 1000 Ex-Finl Share Buyback Portfolio/S&P500

Date	Portfolio Market Cap.	S&P 500 Market Cap.	Portfolio Dividend Yield	S&P 500 Dividend Yield	Portfolio Beta Coeff.	S&P 500 Beta Coeff.	Portfolio P/E Ratio	S&P 500 P/E Ratio	Portfolio 1 year EPS Growth	S&P 500 1 year EPS Growth	Portfolio Return on Equity	S&P 500 Return on Equity	Portfolio Estimated L.T. Growth	S&P 500 Estimated L.T. Growth
Dec-94	4546	6726	1.6	2.7	1.03	1.06	17	22	27	16	19	17	13	12
Dec-95	5565	9201	1.4	2.2	1.01	1.03	19	26	41	20	22	18	12	12
Dec-96	6362	11307	1.7	2.0	1.00	1.00	19	32	27	7	20	17	13	12
Dec-97	11141	15116	1.6	1.7	0.92	0.94	17	40	28	9	22	18	13	13
Dec-98	12242	19914	1.9	1.7	0.95	0.98	22	51	35	0	21	19	13	13
Dec-99	8266	24593	2.3	1.8	0.88	0.97	21	51	21	11	24	18	12	14
Dec-00	5029	23367	1.7	1.5	0.80	0.96	15	52	59	35	17	18	12	16
Dec-01	8654	20830	2.3	1.4	0.67	0.95	20	40	21	-5	23	17	12	14
Dec-02	4526	16077	0.9	1.7	0.82	0.95	18	30	31	0	23	17	14	13
Dec-03	6603	20543	0.8	1.5	0.82	0.93	18	36	21	9	24	17	13	12

Mid Cap 1000 Share Buyback Portfolio/Mid Cap 400

Date	Portfolio Market Cap.	S&P Midcap Market Cap.	Portfolio Dividend Yield	S&P Midcap Dividend Yield	Portfolio Beta Coeff.	S&P Midcap Beta Coeff.	Portfolio P/E Ratio	S&P Midcap P/E Ratio	Portfolio 1 year EPS Growth	S&P Midcap 1 year EPS Growth	Portfolio Return on Equity	S&P Midcap Return on Equity	Portfolio Estimated L.T. Growth	S&P Midcap Estimated L.T. Growth
Dec-94	261	1174	1.8	2.1	0.93	1.05	13	26	38	16	18	15	14	14
Dec-95	453	1440	1.6	1.8	1.02	0.99	16	32	32	18	15	16	14	14
Dec-96	596	1696	1.7	1.7	0.91	0.93	14	26	54	11	15	15	13	14
Dec-97	965	2256	1.4	1.4	0.85	0.85	15	36	19	17	16	15	13	15
Dec-98	808	2424	1.2	1.4	0.92	0.96	18	38	38	14	18	16	14	15
Dec-99	815	2287	1.3	1.6	0.85	0.95	18	39	25	1	17	15	13	16
Dec-00	1063	2219	1.1	1.2	0.87	0.95	17	30	25	31	19	16	15	17
Dec-01	1337	2110	1.4	1.2	0.75	0.93	17	40	24	-2	24	14	11	17
Dec-02	1244	1755	1.6	1.2	0.64	0.94	19	31	26	2	19	13	14	15
Dec-03	1769	2413	0.6	1.1	0.86	0.90	16	38	23	13	21	13	14	14

Mid Cap 1000 Ex-Finl. Share Buyback Portfolio/Mid Cap 400

Date	Portfolio Market Cap.	S&P Midcap Market Cap.	Portfolio Dividend Yield	S&P Midcap Dividend Yield	Portfolio Beta Coeff.	S&P Midcap Beta Coeff.	Portfolio P/E Ratio	S&P Midcap P/E Ratio	Portfolio 1 year EPS Growth	S&P Midcap 1 year EPS Growth	Portfolio Return on Equity	S&P Midcap Return on Equity	Portfolio Estimated L.T. Growth	S&P Midcap Estimated L.T. Growth
Dec-94	291	1174	1.6	2.1	0.96	1.05	14	26	48	16	14	15	14	14
Dec-95	432	1440	1.7	1.8	0.90	0.99	16	32	35	18	17	16	13	14
Dec-96	605	1696	1.5	1.7	0.82	0.93	16	26	29	11	17	15	13	14
Dec-97	858	2256	1.4	1.4	0.80	0.85	16	36	12	17	14	15	13	15
Dec-98	849	2424	1.4	1.4	0.91	0.96	18	38	39	14	21	16	14	15
Dec-99	846	2287	1.6	1.6	0.87	0.95	18	39	24	1	18	15	12	16
Dec-00	1154	2219	1.5	1.2	0.85	0.95	17	30	26	31	20	16	15	17
Dec-01	1269	2110	0.9	1.2	0.86	0.93	16	40	19	-2	26	14	13	17
Dec-02	1226	1755	1.2	1.2	0.74	0.94	17	31	27	2	20	13	14	15
Dec-03	1881	2413	0.6	1.1	0.87	0.90	17	38	26	13	17	13	15	14

Small Cap 1000 Share Buyback Portfolio/Small Cap 600

Date	Portfolio Market Cap.	S&P Smallcap Market Cap.	Portfolio Dividend Yield	S&P Smallcap Dividend Yield	Portfolio Beta Coeff.	S&P Smallcap Beta Coeff.	Portfolio P/E Ratio	S&P Smallcap P/E Ratio	Portfolio 1 year EPS Growth	S&P Smallcap 1 year EPS Growth	Portfolio Return on Equity	S&P Smallcap Return on Equity	Portfolio Estimated L.T. Growth	S&P Smallcap Estimated L.T. Growth
Dec-96	181	481	1.9	1.0	0.75	0.90	14	29	13	3	12	14	12	17
Dec-97	241	597	1.1	0.8	0.76	0.85	15	32	17	13	16	14	12	18
Dec-98	277	574	1.1	0.8	0.87	0.96	22	37	24	6	15	14	18	18
Dec-99	281	619	1.1	1.0	1.01	0.96	11	34	31	1	18	14	15	18
Dec-00	301	578	0.9	1.0	0.79	0.93	9	28	23	16	21	14	13	19
Dec-01	410	628	2.7	0.8	0.79	0.92	14	41	41	-5	17	13	14	18
Dec-02	472	541	2.3	0.9	0.70	0.90	13	36	39	-4	16	12	13	16
Dec-03	572	732	1.6	0.8	0.68	0.88	17	42	7	6	22	11	12	15

Small Cap 1000 Ex-Fin Share Buyback Portfolio/Small Cap 600

Date	Portfolio Market Cap.	S&P Smallcap Market Cap.	Portfolio Dividend Yield	S&P Smallcap Dividend Yield	Portfolio Beta Coeff.	S&P Smallcap Beta Coeff.	Portfolio P/E Ratio	S&P Smallcap P/E Ratio	Portfolio 1 year EPS Growth	S&P Smallcap 1 year EPS Growth	Portfolio Return on Equity	S&P Smallcap Return on Equity	Portfolio Estimated L.T. Growth	S&P Smallcap Estimated L.T. Growth
Dec-96	159	481	1.5	1.0	0.72	0.90	16	29	15	3	13	14	13	17
Dec-97	247	597	1.0	0.8	0.76	0.85	16	32	39	13	20	14	13	18
Dec-98	273	574	0.9	0.9	0.86	0.96	21	37	23	6	15	14	17	18
Dec-99	254	619	0.7	1.0	0.98	0.96	10	34	25	1	21	14	18	18
Dec-00	313	578	0.8	1.0	0.79	0.93	8	28	21	16	22	14	13	19
Dec-01	463	628	2.4	0.8	0.83	0.92	15	41	22	-5	17	13	13	18
Dec-02	487	541	2.0	0.9	0.85	0.90	11	36	16	-4	18	12	13	16
Dec-03	677	732	1.1	0.8	0.84	0.88	12	42	20	6	20	11	13	15

Large Cap 1000 Yield Portfolio/ S&P500

Date	Portfolio Market Cap.	S&P 500 Market Cap.	Portfolio Dividend Yield	S&P 500 Dividend Yield	Portfolio Beta Coeff.	S&P 500 Beta Coeff.	Portfolio P/E Ratio	S&P 500 P/E Ratio	Portfolio 1 year EPS Growth	S&P 500 1 year EPS Growth	Portfolio Return on Equity	S&P 500 Return on Equity	Portfolio Estimated L.T. Growth	S&P 500 Estimated L.T. Growth
Dec-94	4916	6726	4.3	2.7	1.09	1.06	9	22	15	16	14	17	10	12
Dec-95	5585	9201	3.9	2.2	0.92	1.03	10	26	21	20	14	18	10	12
Dec-96	9896	11307	3.4	2.0	0.85	1.00	13	32	15	7	15	17	9	12
Dec-97	15861	15116	3.0	1.7	0.89	0.94	13	40	27	9	17	18	9	13
Dec-98	12608	19914	3.2	1.7	0.99	0.98	17	51	-1	0	16	19	10	13
Dec-99	9713	24593	3.4	1.8	0.99	0.97	15	51	13	11	16	18	10	14
Dec-00	9115	23367	3.8	1.5	0.76	0.96	9	52	118	35	14	19	10	16
Dec-01	7305	20830	3.3	1.4	0.66	0.95	10	40	27	-5	15	17	9	14
Dec-02	10454	16077	3.8	1.7	0.77	0.95	10	30	13	0	14	17	9	13
Dec-03	24501	20543	3.3	1.5	0.76	0.93	13	36	12	9	16	17	7	12

Large Cap 1000 Ex-Fin. Yield Portfolio/ S&P500

Date	Portfolio Market Cap.	S&P 500 Market Cap.	Portfolio Dividend Yield	S&P 500 Dividend Yield	Portfolio Beta Coeff.	S&P 500 Beta Coeff.	Portfolio P/E Ratio	S&P 500 P/E Ratio	Portfolio 1 year EPS Growth	S&P 500 1 year EPS Growth	Portfolio Return on Equity	S&P 500 Return on Equity	Portfolio Estimated L.T. Growth	S&P 500 Estimated L.T. Growth
Dec-94	6453	6726	3.5	2.7	1.00	1.06	11	22	41	16	18	17	10	12
Dec-95	4082	9201	3.3	2.2	0.91	1.03	14	26	83	20	16	18	10	12
Dec-96	7233	11307	3.2	2.0	0.83	1.00	13	32	18	7	16	17	10	12
Dec-97	10731	15116	3.0	1.7	0.79	0.94	12	40	27	9	17	18	9	13
Dec-98	19609	19914	2.9	1.7	0.99	0.98	15	51	3	0	18	19	11	13
Dec-99	11007	24593	3.0	1.8	0.99	0.97	16	51	16	11	19	18	11	14
Dec-00	8229	23367	3.9	1.5	0.70	0.96	9	52	138	35	16	18	9	16
Dec-01	9860	20830	3.3	1.4	0.61	0.95	10	40	26	-5	15	17	9	14
Dec-02	7348	16077	3.7	1.7	0.79	0.95	13	30	14	0	19	17	8	13
Dec-03	20094	20543	3.1	1.5	0.76	0.93	17	36	12	9	20	17	6	12

Mid Cap 1000 Yield Portfolio/ Mid Cap 400

Date	Portfolio Market Cap.	S&P Midcap Market Cap.	Portfolio Dividend Yield	S&P Midcap Dividend Yield	Portfolio Beta Coeff.	S&P Midcap Beta Coeff.	Portfolio P/E Ratio	S&P Midcap P/E Ratio	Portfolio 1 year EPS Growth	S&P Midcap 1 year EPS Growth	Portfolio Return on Equity	S&P Midcap Return on Equity	Portfolio Estimated L.T. Growth	S&P Midcap Estimated L.T. Growth
Dec-94	332	1174	3.6	2.1	0.82	1.05	9	26	39	16	15	15	10	14
Dec-95	453	1440	3.1	1.8	0.79	0.99	11	32	20	18	14	16	10	14
Dec-96	676	1696	2.9	1.7	0.81	0.93	13	26	15	11	14	15	10	14
Dec-97	876	2256	2.8	1.4	0.79	0.85	13	36	16	17	17	15	11	15
Dec-98	657	2424	3.0	1.4	0.84	0.96	12	38	7	14	17	16	10	15
Dec-99	760	2287	3.0	1.6	0.77	0.95	11	39	15	1	18	15	10	16
Dec-00	922	2219	4.0	1.2	0.75	0.95	16	30	13	31	16	16	10	17
Dec-01	902	2110	2.9	1.2	0.73	0.93	14	40	17	-2	16	17	10	17
Dec-02	774	1755	2.7	1.2	0.64	0.94	14	31	70	2	15	13	11	15
Dec-03	1284	2413	2.4	1.1	0.66	0.90	14	38	39	13	17	13	11	14

Mid Cap 1000 Ex-Fin Yield Portfolio/ Mid Cap 400

Date	Portfolio Market Cap.	S&P Midcap Market Cap.	Portfolio Dividend Yield	S&P Midcap Dividend Yield	Portfolio Beta Coeff.	S&P Midcap Beta Coeff.	Portfolio P/E Ratio	S&P Midcap P/E Ratio	Portfolio 1 year EPS Growth	S&P Midcap 1 year EPS Growth	Portfolio Return on Equity	S&P Midcap Return on Equity	Portfolio Estimated L.T. Growth	S&P Midcap Estimated L.T. Growth
Dec-94	247	1174	3.0	2.1	0.80	1.05	11	26	35	16	13	15	10	14
Dec-95	282	1440	2.9	1.8	0.76	0.99	11	32	36	18	15	16	11	14
Dec-96	522	1696	2.5	1.7	0.83	0.93	13	26	25	11	13	15	11	14
Dec-97	846	2256	2.8	1.4	0.78	0.85	13	36	18	17	15	15	11	15
Dec-98	726	2424	3.1	1.4	0.90	0.96	12	38	5	14	19	16	13	15
Dec-99	746	2287	2.8	1.6	0.82	0.95	10	39	17	1	16	15	11	16
Dec-00	879	2219	3.8	1.2	0.78	0.95	13	30	5	31	16	16	10	17
Dec-01	903	2110	2.5	1.2	0.78	0.93	18	40	21	-2	15	14	10	17
Dec-02	1014	1755	2.1	1.2	0.78	0.94	13	31	29	2	15	13	12	15
Dec-03	1246	2413	1.7	1.1	0.80	0.90	21	38	8	13	16	13	12	14

Small Cap 1000 Yield Portfolio / Small Cap 600

Date	Portfolio Market Cap.	S&P Smallcap Market Cap.	Portfolio Dividend Yield	S&P Smallcap Dividend Yield	Portfolio Beta Coeff.	S&P Smallcap Beta Coeff.	Portfolio P/E Ratio	S&P Smallcap P/E Ratio	Portfolio 1 year EPS Growth	S&P Smallcap 1 year EPS Growth	Portfolio Return on Equity	S&P Smallcap Return on Equity	Portfolio Estimated L.T. Growth	S&P Smallcap Estimated L.T. Growth
Dec-96	181	481	3.3	1.0	0.76	0.90	13	29	10	3	12	14	10	17
Dec-97	230	597	2.8	0.8	0.70	0.85	15	32	9	13	13	14	10	18
Dec-98	271	574	3.0	0.9	0.80	0.96	11	37	15	6	12	14	15	18
Dec-99	257	619	3.5	1.0	0.71	0.96	10	34	11	1	14	14	13	18
Dec-00	239	578	4.5	1.0	0.78	0.93	10	28	6	16	14	14	12	19
Dec-01	305	628	3.4	0.8	0.61	0.92	18	41	10	-5	16	13	10	18
Dec-02	249	541	3.3	0.9	0.55	0.90	12	36	18	-4	14	12	9	16
Dec-03	357	732	2.9	0.8	0.57	0.88	14	42	15	6	14	11	9	15

Small Cap 1000 Ex-Fin Yield Portfolio / Small Cap 600

Date	Portfolio Market Cap.	S&P Smallcap Market Cap.	Portfolio Dividend Yield	S&P Smallcap Dividend Yield	Portfolio Beta Coeff.	S&P Smallcap Beta Coeff.	Portfolio P/E Ratio	S&P Smallcap P/E Ratio	Portfolio 1 year EPS Growth	S&P Smallcap 1 year EPS Growth	Portfolio Return on Equity	S&P Smallcap Return on Equity	Portfolio Estimated L.T. Growth	S&P Smallcap Estimated L.T. Growth
Dec-96	171	481	2.6	1.0	0.78	0.90	13	29	5	3	12	14	12	17
Dec-97	227	597	2.5	0.8	0.70	0.85	15	32	14	13	13	14	12	18
Dec-98	253	574	3.0	0.9	0.77	0.96	11	37	10	6	12	14	16	18
Dec-99	267	619	3.3	1.0	0.71	0.96	10	34	7	1	14	14	13	18
Dec-00	269	578	4.2	1.0	0.95	0.93	10	28	6	16	15	14	11	19
Dec-01	303	628	3.3	0.8	0.70	0.92	11	41	4	-5	17	13	10	18
Dec-02	295	541	2.6	0.9	0.68	0.90	13	36	21	-4	13	12	13	16
Dec-03	478	732	2.2	0.8	0.64	0.88	14	42	41	6	16	11	11	15

Conclusion

The Value/Momentum model is a flexible tool that can provide excellent results as a final stock selection method across market capitalization sectors or to create a universe of attractive candidates on which to run an alternate process. While containing a bias toward the selection of stocks in the financial industry, the Value/Momentum model works well independent of its propensity to select financials. This is true across all market capitalization sectors. Alternative selection methods, such as share buyback and high yield, combine well with a universe limited by Value/Momentum to provide excellent performance.