

2012 Stock Screens Review: Investors Caught in Political Cliffhanger

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Article Highlights

- Most of the stock screens tracked on AAIL.com had positive returns despite the political uncertainty.
- The value-oriented Piotroski High F-Score screen rebounded to be the best-performing screen in 2012.
- The Estimate Revisions: Up 5% screen still has the best risk-adjusted, long-term performance, rising 26.1% last year.

Politics played a key role in the markets this year. First, there was the presidential campaign and election. Then, political gridlock reigned on Capitol Hill, as the country faced a possible year-end fiscal cliff of expiring tax cuts and automatic budget cuts.

By the time you read this article, we will know whether Congress and the president were able to come to an agreement regarding taxes and spending cuts or if the Budget Control Act of 2011 will go into full effect. If the latter happens, taxes will go up for many Americans, while massive spending cuts in the federal budget will be automatically triggered by Congress' sequestration rules. Serving as a backdrop to the political drama at home is a global economy that is still in the fragile stages of a recovery.

If you didn't know any better, you may think that this gloom and doom would have wreaked havoc on the markets and portfolios alike. However, the markets roared out of the gates to start the year, as the S&P 500 index gained almost 13% through April 2, 2012. The index subsequently gave up nearly 10% before finding a bottom on June 1, 2012, and rebounded 14.7% by September 14, 2012. The end of summer and the final stretch of the presidential campaign saw the S&P 500 lose nearly 8%. But once the dust settled and the market digested the election results, the index gained a modest 4.8% between November 15 and December 7, 2012. Year-to-date, through December 7, 2012, the S&P 500 is up 12.8% on a simple price-change basis, excluding dividends. For an election year, investors should be more than pleased



with these results. According to Ned David Research Inc., the S&P 500 has averaged a 7.5% gain during an election year since 1900.

Overall, the AAIL stock screens have fared reasonably well. Of the 64 we currently track at AAIL.com, only 11 are currently down for the year. Conversely, 26 have outperformed the S&P 500 year-to-date. The median, or midpoint, price increase for all the screens is 10.0%. None of the screens is having a 'best' or 'worst' year since we started testing these strategies in 1998.

The Rankings

Table 1 on pages 26 and 27 provides summary performance and volatility statistics for the stock screens we track on AAIL.com. All of these screens have been created using AAIL's fundamental stock screening and research database program, *Stock Investor Pro*, and most of them are pre-built into the software. (The exceptions are the Dogs of the Dow and Dogs of the Dow: Low-Priced 5 screens.)

Table 1 presents the price change performance (excluding dividends and transactions costs, time and price slippage, etc.) for the various stock selection strategies. The screens are grouped by style to identify their underlying premise. These style groups are: value, value with price momentum, growth, growth with price momentum, growth and value, growth and value with price momentum, earnings estimates and specialty.

The AAIL stock screens are ranked in Table 1 in descending order by their year-to-date price performance through December 7, 2012, within each of their style groups. At the bottom of the table, you will also find performance data for several market indexes and averages.

Impact of Dividends

The Price Gain and Average Annual Price Gain columns in Table 1 represent the annualized percentage gain or loss realized by a hypothetical portfolio invested in the stocks passing a given screen over varying time periods between January 1, 1998, through December 7, 2012.

However, these performance numbers do not include dividend payments or dividend reinvestment. Therefore, the results for large-cap strategies, such as the Dogs of the Dow (in the value category), do not benefit from dividend payments or reinvestment.

Currently, the 10 stocks that make up the Dogs of the Dow have an average dividend yield of 4.0%; investors holding shares in these stocks would, therefore, have a higher annual return by approximately this amount.

Top Performer of 2012

After a rare annual decline last year, the Piotroski: High F-Score screen rebounded strongly to be the top-performing screen for 2012. This low-price-to-book-value strategy developed by Joseph Piotroski, an accounting professor from the University of Chicago, saw its simple price gain return jump 93.9% this year through December 7.

The price-to-book-value ratio is calculated by dividing price per share by book value per share. Book value per share is determined by subtracting total liabilities from total assets and then dividing the result by the number of shares outstanding. It represents the value of owners' equity based upon historical accounting decisions. The price-to-book-value ratio essentially compares the market's assessment of company value to an accountant's assessment of a company's net worth.

The AII Piotroski screen starts with stocks that have price-to-book-value ratios ranking in the lowest 20% of the entire *Stock Investor Pro* database. There are many studies indicating that a portfolio of low price-to-book-value stocks generally outperforms portfolios

of stocks trading with high price-to-book-value ratios. Piotroski found that most of these stocks were neglected firms or financially troubled firms. He found that either situation can create buying opportunities—after checking on financial strength—especially when studying smaller-cap stocks.

Piotroski developed a nine-point scale that helps to identify stocks with solid and improving financials. Profitability, financial leverage, liquidity and operating efficiency are examined using popular ratios and basic financial elements that are easy to use and interpret. In order to pass the Piotroski: High F-Score screen, a stock must pass eight of these nine financial tests.

Number of Holdings and Turnover

Ideally, we would like to see an investment methodology provide an adequate number of investment choices and be fully invested over time, so stellar returns are not based on only a few periods of outperformance. Unlike the top-performing AII stock screens of the last few years, the Piotroski: High F-Score screen had passing companies each month. At the far right of Table 1, under Monthly Holdings, we report portfolio holdings over time—the average number of stocks passing a screen each month since we began testing in 1998. Historically, the Piotroski: High F-Score screen has generated, on average, 23 passing companies a month.

The Turnover % column under Monthly Holdings in Table 1 gives you an idea of how many stocks “fall out” of a given screening strategy month-to-month. Our backtesting methodology has each portfolio being rebalanced at the end of each month. Only those stocks passing a screen from one month to the next are kept in the portfolio. If a stock fails to pass the screen the following month, we assume it is sold from the portfolio. The lower the percentage turnover, the greater the likelihood that the same stock will pass a screen in subsequent months. The performance figures we quote for all the screens we

track on AII.com do not take into account, among other things, transaction costs such as commissions or bid-ask spreads. While commissions on stock transactions, especially when using an online discount broker, are small, higher turnover strategies will still incur higher overall transactions costs, which will have an adverse impact on your investment performance.

The Piotroski: High F-Score screen has averaged monthly turnover of 23.5% since the start of 1998, meaning that slightly less than one-quarter of the stocks in the hypothetical portfolio are new each month. For all screening methodologies tracked by AII, the median monthly turnover is 32.7% over the testing period.

Generally speaking, value-oriented strategies tend to have less portfolio turnover compared to those focusing on growth. Adding price momentum elements to a methodology also tends to increase the overall portfolio turnover. The nine financial tests of the Piotroski: High F-Score screen are strictly based on annual financial statement data, which only changes once a year. The price-to-book-value requirement is partly reliant on price, but does not lead to the same turnover as true price momentum elements such as price change and relative strength.

Measuring Volatility

While performance is an important consideration when selecting an investment approach (in this case, selecting a stock screening strategy), you need to also consider the risk of the stocks passing a given screen. By considering both the risk and return of an investment methodology, you ensure that you are properly compensated for the level of risk you are assuming.

The Monthly Variability columns in Table 1 report the greatest monthly percentage increase and loss since the beginning of 1998 as one indication of volatility.

The Piotroski: High F-Score screen's best single month over its history has been 43.1%, which came during April

Table 1. Performance of Stock Screens on AAll.com

Value Screens	Price Gain (%)				Avg Ann'l Price Gain (%)				Price Gain (%)		Historical Annual		Monthly		Monthly	
	YTD	2011	2010	2009	3 Yr	5 Yr	10 Yr	Since Incep	Bull Mkt*	Bear Mkt*	Risk Index (X)	Risk-Adj Return (%)	Risk-Adj Return (%)	Gain	Loss	Avg # Turnover %
Piotroski: High F-Score	93.9	(36.4)	138.8	34.6	15.9	17.0	27.1	26.5	314.0	(53.6)	2.02	15.1	43.1	(42.0)	23	23.5
O'Shaughnessy: Value	17.5	(11.2)	7.4	31.5	4.3	(6.6)	4.5	4.7	112.0	(69.1)	1.34	4.5	22.0	(23.8)	50	20.1
Graham—Defensive Investor (Non-Utility)	16.7	7.0	31.4	57.9	19.6	12.0	17.5	17.2	213.4	(52.1)	1.37	13.6	25.8	(17.3)	21	20.3
Weiss Blue Chip Div Yield	15.9	7.6	26.9	27.9	16.7	7.7	10.7	10.5	135.6	(43.1)	1.22	9.3	16.0	(16.8)	13	25.2
Dogs of the Dow: Low Priced 5	14.8	13.1	17.3	(7.7)	15.6	(11.8)	(2.6)	0.4	210.8	(82.9)	1.59	(1.7)	27.6	(34.8)	5	15.4
Schloss	13.8	(35.1)	12.5	57.5	(6.4)	(1.6)	9.2	11.4	46.2	(37.6)	1.85	8.0	27.1	(40.4)	13	54.5
Dogs of the Dow	10.0	10.7	19.4	8.1	13.3	(4.2)	0.7	1.4	162.3	(69.0)	1.23	0.8	17.1	(23.4)	10	7.3
Magic Formula	9.5	(30.6)	26.6	97.0	2.0	4.4	9.2	10.4	142.0	(51.6)	1.65	7.9	30.7	(22.4)	30	24.4
Cash Rich Firms	6.8	(32.8)	14.4	56.9	(5.0)	(4.2)	6.6	9.5	46.5	(45.6)	1.37	8.0	17.6	(20.7)	31	24.9
Graham—Defensive Investor (Utility)	1.4	8.6	4.6	7.9	6.7	0.4	8.2	7.7	50.1	(31.4)	0.89	8.1	12.0	(13.4)	19	13.5
Graham—Enterprising Investor	1.1	(1.1)	43.5	48.5	12.5	4.8	18.0	18.4	154.3	(50.3)	1.75	12.2	33.1	(23.4)	4	44.3
Price-to-Free-Cash-Flow	(1.5)	(7.0)	39.2	147.2	10.6	12.3	15.3	17.2	353.0	(62.8)	1.77	11.4	51.2	(31.7)	30	22.4
Fundamental Rule of Thumb	(4.5)	(35.2)	17.7	92.1	(7.5)	(3.9)	13.0	13.1	74.1	(57.0)	1.69	9.3	33.8	(19.2)	50	21.7
Graham—Enterprising Investor Revised	(9.7)	(4.1)	32.9	168.4	4.9	16.8	25.7	22.2	304.8	(49.9)	1.74	14.4	36.4	(22.4)	10	26.5
Value With Price Momentum Screens																
O'Shaughnessy: Growth	23.0	(7.5)	21.3	22.4	15.0	1.5	15.2	15.9	107.1	(57.2)	1.50	12.0	18.6	(17.9)	50	37.8
O'Shaughnessy: Small Cap Growth & Value	21.8	(0.3)	26.1	(3.3)	20.4	0.7	17.6	17.9	85.1	(50.6)	1.50	13.2	18.5	(18.2)	25	49.3
O'Shaughnessy: Tiny Titans	18.5	(22.9)	21.1	71.1	7.3	(3.5)	17.0	24.2	116.6	(67.3)	1.91	14.5	37.4	(21.0)	25	42.3
O'Shaughnessy: Growth Market Leaders	13.7	(1.2)	15.7	12.6	11.0	(3.9)	4.5	5.7	59.8	(50.5)	1.19	5.4	13.6	(18.6)	10	42.5
O'Shaughnessy: All Cap	9.0	(5.0)	29.4	23.3	11.9	0.3	12.7	11.2	101.6	(52.1)	1.36	9.3	18.4	(21.5)	22	34.7
Lakonishok	4.7	(0.6)	32.7	53.5	14.2	11.2	15.9	13.8	135.1	(32.5)	1.19	12.2	16.6	(17.9)	30	89.8
Growth																
IBD Stable 70	21.6	3.7	21.2	56.0	17.6	7.4	10.2	10.2	157.9	(50.6)	1.18	9.2	18.4	(21.9)	42	11.6
InvestWare Quality Growth	17.1	(9.4)	17.3	39.6	9.6	4.2	7.5	5.7	111.9	(44.7)	1.26	5.4	18.2	(22.0)	21	11.4
Return on Equity	10.0	(5.7)	32.0	40.0	13.1	5.0	11.5	12.3	132.8	(47.2)	1.28	10.5	14.6	(22.2)	33	20.8
Dual Cash Flow	3.0	(21.6)	31.0	76.0	4.4	(0.4)	9.2	13.1	130.8	(61.0)	1.54	9.9	34.7	(23.6)	68	30.9
Growth With Price Momentum Screens																
O'Neil's CAN SLIM	17.5	(10.2)	(9.6)	97.3	(2.0)	12.1	19.3	24.8	42.2	(10.1)	1.89	15.0	69.6	(23.1)	7	57.8
Foolish Small Cap 8	10.7	(14.9)	25.2	48.1	12.0	(3.0)	10.1	11.0	129.3	(67.7)	2.21	7.1	38.8	(22.5)	18	37.6
O'Neil's CAN SLIM Revised 3rd Edition	8.3	(30.1)	42.7	16.8	2.4	(1.0)	5.5	14.8	33.2	(27.8)	1.85	9.8	52.7	(26.7)	8	65.4
Driehaus	6.8	(14.1)	65.7	106.0	17.4	11.6	16.6	11.5	284.1	(53.4)	2.26	7.3	51.3	(25.7)	15	63.5
Kirkpatrick Growth	(12.1)	(11.6)	15.3	80.2	(1.5)	2.4	18.4	16.4	82.0	(38.7)	2.17	9.7	64.1	(23.1)	12	61.7
Growth & Value Screens																
Foolish Small Cap 8 Revised	34.7	(49.2)	15.4	161.0	(1.2)	(1.5)	9.6	16.0	126.0	(64.0)	2.18	9.5	28.1	(31.1)	6	31.9
Murphy Technology	33.6	(29.8)	40.0	28.8	11.1	(1.5)	4.1	(4.6)	92.1	(58.3)	2.79	(19.9)	58.5	(44.9)	11	21.3
Templeton	28.8	3.2	22.4	54.7	19.2	8.6	12.3	9.9	133.8	(40.0)	1.24	8.8	14.5	(23.1)	23	27.5
Wanger (Revised)	19.4	(5.2)	12.5	24.7	11.1	0.4	10.5	7.7	91.9	(51.3)	1.44	6.6	22.8	(19.8)	31	27.0
Dreman	17.3	(11.7)	22.7	37.2	10.5	0.7	9.1	9.9	105.4	(55.0)	1.25	8.7	23.9	(22.2)	21	32.1
Kirkpatrick Value	17.2	(15.1)	(25.5)	(8.9)	(9.5)	(9.1)	15.4	11.2	(22.9)	(23.3)	2.22	7.2	49.0	(25.3)	2	74.6
Dividend Screen: Non-DRPs	16.3	4.3	25.3	25.4	15.3	5.0	9.9	12.6	123.6	(48.1)	0.91	13.4	17.6	(15.3)	30	28.5
Neff	14.4	(4.2)	35.0	52.5	17.0	9.9	15.3	18.6	221.6	(52.8)	1.63	12.9	32.6	(21.7)	23	33.2
Buffettology: EPS Growth	14.2	3.8	20.5	57.5	15.3	7.2	10.1	9.7	156.2	(48.4)	1.22	8.7	15.1	(20.8)	46	11.6
Buffett: Hagstrom	13.0	8.2	27.7	30.0	18.5	9.1	13.2	14.1	151.9	(39.8)	1.11	13.1	13.2	(19.0)	30	20.1
Kirkpatrick Bargain	12.0	3.6	9.4	22.2	10.3	3.6	14.0	8.3	91.9	(43.2)	1.37	7.2	21.1	(21.7)	14	64.3
Dividend Screen: DRPs	8.9	1.9	19.8	29.4	11.3	4.1	6.1	7.8	138.5	(50.4)	1.10	7.4	20.5	(18.2)	30	26.0
Price-to-Sales	8.9	(2.6)	29.6	47.1	14.9	4.3	12.6	15.0	163.8	(55.1)	1.32	12.3	18.3	(20.6)	56	39.1
Rule #1 Investing	7.4	(1.0)	40.0	99.8	14.7	11.6	8.1	9.9	256.9	(54.0)	1.77	7.3	27.0	(26.8)	15	25.5
Dividend (High Relative Yield)	7.4	3.0	19.4	16.4	10.6	2.8	6.0	7.7	89.6	(40.4)	0.95	7.9	12.5	(14.2)	42	19.9
Buffettology: Sustainable Growth	5.2	0.7	18.4	68.0	11.0	8.1	11.0	10.4	139.7	(41.9)	1.29	8.9	16.5	(20.4)	33	13.0
Zweig	3.3	(18.3)	12.8	(13.3)	2.7	(10.8)	10.8	19.2	15.8	(54.4)	1.79	12.5	32.7	(24.2)	12	41.9
Fisher (Philip)	(1.9)	(50.9)	9.2	107.9	(15.4)	(8.3)	0.3	2.2	40.9	(58.2)	2.16	0.1	32.8	(27.9)	21	31.8
Lynch	(3.9)	(27.9)	24.9	82.8	0.0	(0.2)	13.6	11.6	86.4	(47.5)	1.21	10.3	18.9	(21.3)	26	21.6
T. Rowe Price	(15.0)	117.4	11.9	40.1	29.5	9.1	11.9	9.3	286.2	(62.5)	1.67	7.1	33.5	(20.0)	9	38.5

(Continued on next page)

Table 1. Performance of Stock Screens on AII.com (Cont.)

Growth & Value With Price Momentum Screens	Price Gain (%)				Avg Ann'l Price Gain (%)				Price Gain (%)		Historical Annual Risk & Return		Monthly Variability (%)		Monthly Holdings	
	YTD	2011	2010	2009	3 Yr	5 Yr	10 Yr	Since Incep	Bull Mkt*	Bear Mkt*	Risk Index (X)	Risk-Adj Return (%)	Gain	Loss	Avg #	Turnover %
Oberweis Octagon	29.0	(14.7)	78.4	2.1	25.7	(4.0)	13.2	13.1	155.9	(70.6)	1.91	8.7	24.6	(23.2)	17	42.1
Stock Market Winners	14.7	21.2	124.6	(9.0)	46.0	13.2	20.6	20.5	319.7	(51.3)	1.47	15.2	22.0	(23.4)	12	59.7
Value on the Move—PEG With Est Growth	8.6	(0.3)	29.7	24.2	14.1	1.9	19.4	18.2	117.9	(50.2)	1.31	14.9	15.7	(23.1)	42	44.3
Value on the Move—PEG With Hist Growth	2.5	1.0	31.7	23.9	13.6	1.0	12.3	13.1	104.8	(50.1)	1.03	12.8	12.7	(19.1)	84	36.1
ADR Screen	(2.0)	(25.9)	18.8	53.2	(4.1)	(11.6)	7.8	6.3	72.0	(68.7)	1.46	5.5	31.1	(29.7)	25	44.2
Muhlenkamp	(5.4)	(45.9)	2.7	45.2	(15.8)	(9.8)	0.9	5.0	4.0	(49.0)	1.34	4.8	21.0	(17.6)	19	23.8
MAGNET Simple	(17.1)	19.5	56.1	339.5	15.7	16.5	25.6	21.5	651.2	(75.9)	2.92	10.0	52.1	(30.0)	3	67.1
MAGNET Complex	(19.6)	6.9	(20.4)	(31.1)	(11.9)	(21.9)	(6.5)	12.0	(41.1)	(55.9)	2.74	6.9	63.0	(28.2)	2	72.7
Earnings Estimates Screens																
Est Rev: Up 5%	26.1	6.1	35.9	86.3	25.9	24.7	29.2	28.6	232.0	(23.4)	1.76	18.0	30.8	(21.7)	44	92.3
P/E Relative	12.6	(1.9)	29.6	51.8	15.2	12.6	17.6	16.2	136.8	(27.6)	1.13	14.8	18.4	(18.3)	33	77.1
Est Rev: Up	12.0	2.1	28.8	53.9	16.5	9.7	17.0	15.8	156.0	(40.1)	1.26	13.3	14.4	(18.6)	179	80.7
Est Rev: Down	10.5	(15.2)	26.8	57.6	8.6	0.8	4.5	0.9	136.7	(59.9)	1.60	(1.0)	25.0	(25.3)	217	79.2
Dreman With Est Revisions	9.4	21.6	26.5	62.9	21.8	11.5	20.6	15.3	173.1	(39.9)	1.36	12.3	21.4	(26.2)	13	82.6
Est Rev: Down 5%	6.4	(31.1)	30.3	76.0	1.4	(2.6)	3.6	(0.6)	123.5	(63.8)	1.97	(5.0)	33.5	(30.5)	77	88.8
Specialty Screens																
Insider Net Purchases	5.8	(31.4)	7.4	59.0	(6.5)	(8.9)	1.1	(2.0)	66.2	(65.5)	1.81	(6.8)	27.8	(27.2)	28	29.5
Indexes																
Indexes	Price Gain (%)				Avg Ann'l Price Gain (%)				Price Gain (%)		Historical Annual Risk & Return		Monthly Variability (%)			
	YTD	2011	2010	2009	3 Yr	5 Yr	10 Yr	Since Incep	Bull Mkt*	Bear Mkt*	Risk Index (X)	Risk-Adj Return (%)	Gain	Loss		
S&P 500	12.8	(0.0)	12.8	23.5	8.9	(0.9)	4.2	2.6	96.0	(52.6)	1.00	2.6	10.8	(16.8)		
S&P 500 Growth (w/divs)	14.7	4.7	15.0	31.6	12.2	3.8	6.4	4.2	113.0	(44.4)	1.10	4.2	10.8	(16.5)		
S&P 500 Value (w/divs)	16.6	(0.5)	15.1	21.2	10.3	(0.7)	6.5	4.1	110.5	(56.0)	1.00	4.1	11.3	(17.1)		
S&P MidCap 400	14.1	(3.1)	24.9	35.0	13.4	3.0	8.3	7.7	120.1	(50.5)	1.21	7.0	14.8	(21.8)		
S&P MidCap 400 Growth (w/divs)	14.4	(0.9)	30.6	38.1	16.0	5.0	10.2	11.1	136.2	(47.7)	1.31	9.4	19.0	(22.2)		
S&P MidCap 400 Value (w/divs)	17.0	(2.4)	22.8	33.7	14.3	4.3	9.5	7.1	126.9	(49.4)	1.11	6.8	15.7	(21.8)		
S&P SmallCap 600	11.3	(0.2)	25.0	23.8	14.6	3.0	8.5	6.5	126.5	(52.2)	1.27	6.0	17.3	(20.2)		
S&P SmallCap 600 Growth (w/divs)	11.2	4.1	28.0	30.7	17.5	5.5	10.5	8.0	151.0	(51.1)	1.31	7.0	17.0	(21.7)		
S&P SmallCap 600 Value (w/divs)	13.8	(1.2)	24.7	20.6	14.9	3.6	9.3	7.2	126.4	(51.0)	1.22	6.6	18.4	(19.6)		
Dow Jones 30	7.7	5.5	11.0	18.8	8.0	(0.5)	3.9	3.5	90.2	(49.3)	0.97	3.5	11.8	(15.1)		
NASDAQ 100	14.3	2.7	19.2	53.5	14.8	5.1	9.1	6.7	150.6	(50.1)	1.83	5.5	25.0	(27.5)		
All Exchange-Listed Stocks	12.9	(12.3)	26.2	65.8	9.8	1.9	10.7	9.2	147.6	(58.6)	1.39	7.8	23.9	(22.1)		

*Bull market period is March 1, 2009, through September 30, 2012. Bear market period is November 1, 2007, through February 28, 2009.

Unless otherwise stated with, figures do not include dividends or transaction costs.

Screen results are based on hypothetical portfolios and are not realistic as to what an investor could achieve in the real world.

Source: AII's Stock Investor Pro/Thomson Reuters. Data as of December 7, 2012.

See the AII Stock Screens area on AII.com for details on each approach.

of 2009, while its worst single-month loss has been -42.0%. By means of comparison, the most the S&P 500 has gained in a single month since the start of 1998 was 10.8%, which came during October of 2011; the index's largest single monthly loss was -16.8%.

The Historical Annual Risk & Return columns offer additional measures of portfolio volatility and risk/return profiles over the study period from the start of 1998 through December 7, 2012. The risk index compares the

variability of returns, as measured by the standard deviation of return, for a given stock screening strategy to that of the volatility of a benchmark, in this case the S&P 500. Standard deviation is a measure of return volatility computed using monthly returns since the beginning of 1998. The risk index divides the standard deviation of a strategy's return by the standard deviation of return for the benchmark. The risk index provides a relative measure of risk by comparing the variation in return for a screen since

the beginning of 1998 to the typical variation in return for the benchmark index. The risk index of the S&P 500, therefore, is 1.00; methodologies with a risk index below 1.00 are below average in risk. For example, the Graham—Defensive Investor (Utility) (in the value category) screen has a total risk index of 0.89, meaning the approach is only 89% as volatile as the S&P 500 historically.

The 2.02 risk index value for the Piotroski: High F-Score indicates that,

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What It Takes: The Investment Characteristics of the 2012 Winners

Table 2 presents the current characteristics of the top- and bottom-performing screening strategies for 2012, as well as the risk-adjusted winners and losers since the start of 1998.

Compared to last year, this was a relatively good year. Whereas in 2011 only 22 of the 63 screens we tracked ended the year with a gain, this year 53 out of a total of 64 screens are up year-to-date as of December 7, 2012. The average gain for the selection methodologies we track is 10.9% year-to-date, while the median is 10.0%. By comparison, the S&P 500 large-cap index is up 12.8% through December 7, 2012.

While none of the methodologies achieved an all-time high single-year gain, 25 did outperform their historical average annual returns.

Market Capitalization

The median market capitalization (share price times number of shares outstanding) of the stocks that make up the major S&P indexes are:

- S&P 500 index, \$12.4 billion;
- S&P MidCap 400 index, \$2.7 billion; and
- S&P SmallCap 600 index: \$750 million.

Among the top 2012 performers, two currently have passing companies with median market capitalizations that fall squarely into the small-cap, if not micro-cap, category: Piotroski: High F-Score (\$184.9 million) and Foolish Small Cap 8 Revised (\$195.5 million). Generally speaking, small-cap strategies fared better in 2012

Table 2. Characteristics of Winning and Losing Stock Screens

	Price Change (%)		Market Cap (\$ Mil)	P/E Ratio (X)	Price-to-Book Ratio (X)	Div Yield (%)	P/E to EPS Est Grth (PEG) (%)	5-Yr Hist EPS Grth (%)	Est Long-Term EPS Grth (%)	52-Wk Rel Str (%)
	YTD	Ann'l Risk-Adj								
Top Performers: 2012										
Piotroski: High F-Score (Value)	93.9	15.1	184.9	4.5	0.56	0.0	1.7	2.4	19.3	(13)
Foolish Small Cap 8 Revised (Growth & Value)	34.7	9.5	195.5	12.9	7.93	3.5	na	55.8	na	32
Murphy Technology (Growth & Value)	33.6	(19.9)	594.1	8.1	1.68	1.1	0.6	23.6	12.0	(13)
Oberweis Octagon (Gr & Val w/Price Mom)	29.0	8.7	1,078.9	14.1	1.82	0.5	0.8	7.9	18.2	37
Templeton (Growth & Value)	28.8	8.8	5,941.9	21.3	3.49	0.0	1.1	30.2	17.5	(9)
Bottom Performers: 2012										
MAGNET Complex (Gr & Val w/Price Mom)	(19.6)	6.9	No companies passed this screen as of 12/7/2012.							
MAGNET Simple (Gr & Val w/Price Mom)	(17.1)	10.0	2,452.9	34.5	4.01	0.8	0.6	(13.0)	37.5	93
T. Rowe Price (Growth & Value)	(15.0)	7.1	No companies passed this screen as of 12/7/2012.							
Kirkpatrick Growth (Gr w/Price Mom)	(12.1)	9.7	2,679.9	18.8	2.12	0.4	1.1	(7.9)	20.3	33
Graham—Enterprising Investor Revised (Value)	(9.7)	14.4	493.3	7.8	0.92	3.1	1.1	13.5	6.4	(15)
Top Performers: Total History, Risk-Adjusted										
Est Rev: Up 5% (Earnings Estimates)	26.1	18.0	698.5	32.5	1.90	0.0	1.8	(19.5)	13.3	8
Stock Market Winners (Gr & Val w/Price Mom)	14.7	15.2	57.1	8.4	0.88	1.6	7.9	12.1	5.0	30
Piotroski: High F-Score (Value)	93.9	15.1	184.9	4.5	0.56	0.0	1.7	2.4	19.3	(13)
O'Neil's CAN SLIM (Gr w/Price Mom)	17.5	15.0	263.4	41.9	1.16	0.0	7.9	46.0	5.0	35
Value on the Move—PEG w/Est Gr (Gr & Val w/Price Mom)	8.6	14.9	4,941.3	17.2	2.87	0.0	0.9	13.1	17.6	2
Bottom Performers: Total History, Risk-Adjusted										
Murphy Technology (Growth & Value)	33.6	(19.9)	594.1	8.1	1.68	1.1	0.6	23.6	12.0	(13)
Insider Net Purchases (Specialty)	5.8	(6.8)	331.7	44.7	2.57	0.0	1.5	(3.6)	25.0	(13)
Est Rev: Down 5% (Earnings Estimates)	6.4	(5.0)	427.9	15.8	1.36	0.0	1.2	1.7	13.8	(29)
Dogs of the Dow: Low Priced 5 (Value)	14.8	(1.7)	188,187.4	17.4	2.04	3.8	1.6	(6.1)	6.4	(9)
Est Rev: Down (Earnings Estimates)	10.5	(1.0)	1,371.6	15.6	1.70	0.6	1.3	3.0	11.4	(13)
All Exchange-Listed Stocks	12.9	7.8	487.2	16.4	1.46	0.4	1.4	0.0	12.0	(5)

Performance figures do not include dividends or transaction costs.

Source: AAI's Stock Investor Pro/Thomson Reuters. Data as of December 7, 2012.

than large- and mid-cap strategies, as measured by the S&P market-cap indexes.

Multiples

Looking at the price-earnings ratios (price divided by trailing 12-month earnings per share) for the stocks currently passing the top-performing screens for 2012, the Piotroski: High F-Score stocks have a median price-earnings ratio of 4.5. This is roughly a quarter of that of the median value for all exchange-listed stocks currently in the *Stock Investor Pro* database (16.4). Another of this year's top performers, Murphy Technology, has a median price-earnings ratio (8.1) that is half that of the typical exchange-listed stock. Neither of these screens explicitly looks for stocks with low price-earnings ratios. The Foolish Small Cap 8 Revised screen looks for profitable and rapidly growing small companies with above-average price momentum yet that are reasonably priced and have effective management; the stocks in this screen have a median price-earnings ratio of 12.9. Although the Templeton screen has a price-earnings ratio that exceeds that of the typical exchange-listed stock (21.3 versus 16.4), it also has a value element. In order to pass the screen, a company must have a current price-earnings ratio that is less than the five-year average. The screen also eliminates stocks that have had "extreme" price-earnings ratios over the last five years.

Since the Piotroski: High F-Score screen looks for stocks that are in the bottom 20% of the entire universe in terms of price-to-book ratio, it is probably not surprising that it has the lowest median price-to-book ratio of 0.56. This is 60% lower than the median price-to-book-value ratio of 1.46 for the typical exchange-listed stock.

Looking at the valuations of 2012's worst-performing strategies, we find mixed results when it comes to price-earnings and price-to-book ratios. Two of the five screens—MAGNET Complex and T. Rowe Price—did not have any passing companies at the end of November. The MAGNET Simple screen, which ironically was one of 2011's best-performing screens, does have a value element to it even though its 34.5 median price-earnings ratio doesn't reflect it: The screen looks for stocks with a forward price-earnings ratio that is no more than half that of the forecasted earnings per share growth rate for the next three to five years. This screen also has the highest median price-to-book ratio among the worst performers at 4.01. In contrast, the Graham—Enterprising Investor Revised screen has a very reasonable median price-earnings ratio of 7.8. This screen looks for unpopular dividend-paying companies with low price-earnings and price-to-book ratios that are exhibiting positive earnings and have a reasonable amount of long-

term debt relative to net working capital (current assets less current liabilities). Earlier this year, we modified the original Graham—Enterprising Investor screen to make it a most investable approach by loosening its price-earnings ratio requirement to those stocks in the bottom 25% of the stock universe instead of the bottom 20%. The result was an increase in the average number of passing companies (10 versus four) with a better average annual risk-adjusted return since 1998 (14.4% versus 12.2%). For this article we present the results of both the original Graham—Enterprising Investor screen and the revised screen, but starting with the January update to the AAIL Stock Screens area, we will only be tracking the revised screen.

The ratio of price-earnings to earnings per share growth is called the PEG ratio and attempts to balance the trade-off between price-earnings ratios and earnings per share growth rates. Investors are willing to pay more for current earnings when there are reasonable expectations of growth and higher earnings in the future.

One way to compute the PEG ratio is to divide the normalized price-earnings ratio (price divided by the consensus earnings per share estimate for the current fiscal year) by the estimated earnings per share growth rate for the next three to five years. Normally, companies with PEG ratios near 1.0 are considered fairly valued. Ratios above 1.5 may indicate overvalued stocks, and ratios below 0.5 potentially indicate attractively priced (undervalued) stocks.

Looking at this year's top-performing methodologies, we find that the Piotroski: High F-Score has a PEG ratio that is above that of the typical exchange-listed stock, while three are below (the one company that passed the top-performing Foolish Small Cap 8 Revised screen at the end of November did not have an estimated PEG value). Interestingly enough, the three worst-performing screens that had passing companies at the end of November all have median estimated PEG ratios that are below that of the typical exchange-listed stock.

Relative Strength

The relative strength figure in Table 2 is calculated against the performance of the S&P 500 ETF (IVV), which is used as a proxy for the S&P 500 index. Stocks with performance equal to that of the S&P 500 over the last 52 weeks have a relative strength of 0%. A relative strength value of 13% indicates that the stock outperformed the S&P 500 by 13%. Negative numbers indicate underperformance relative to the index.

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Behind the Scenes of the Top 2012 Strategy

The Piotroski: High F-Score screen turned in a dominating performance in 2012 with a 93.9% price gain year-to-date through December 7, 2012. In a year where 53 out of the 64 AAI stock screens generated positive gains,

no other approach came close. However, when evaluating the performance of a given approach, it is useful to look beyond the simple gain/loss data and examine the individual stocks that contributed to the overall return.

Table 3. Stocks Passing the Piotroski High F-Score Screen During 2012

Company (Ticker)	Price Gain While in Port (%)	Mos in Port During 2012	P/E Ratio (X)	Price-to-Book-Ratio (X)	Div Yield (%)	P/E to EPS Est Grth (%)	5-Yr Hist EPS Grth (%)	Est Long-Term EPS Grth (%)	Market Cap (\$ Mil)	52-Wk Rel Strgth (%)	Industry
P & F Industries (PFIN)	88.8	10	4.5	0.64	0.0	na	(12.9)	na	22.2	44	Appliances & Tools
Goldfield Corp. (GV)	84.0	2	5.0	2.04	0.0	na	(22.9)	na	46.7	510	Construction Services
Global-Tech Advanced Innov. (GAI)	66.0	5	24.6	0.25	0.0	na	15.2	na	21.4	73	Appliances & Tools
Versar Inc. (VSR)	32.9	1	8.3	0.99	0.0	na	(6.8)	na	36.5	15	Construction Services
MOD-PAC Corp. (MPAC)	25.0	5	21.3	0.84	0.0	na	20.8	na	19.7	(2)	Containers & Packaging
CRA International (CRAI)	24.4	6	39.7	0.70	0.0	1.7	(10.4)	12.0	184.9	(15)	Business Services
Escalade, Inc. (ESCA)	23.1	1	na	0.92	6.0	na	(11.6)	na	71.1	(6)	Recreational Products
NeoPhotonics Corp. (NPTN)	20.1	1	na	0.79	0.0	na	0.0	na	160.5	(4)	Semiconductors
Career Education Corp. (CECO)	18.6	2	na	0.29	0.0	na	(15.6)	(15.7)	198.3	(63)	Schools
Fuwei Films (Holdings) Co. (FFHL)	17.1	4	na	0.21	0.0	na	(51.7)	na	18.3	(3)	Fabricated Plastic & Rubber
Diana Containerships (DCIX)	15.0	2	19.6	0.68	21.2	2.8	na	7.5	182.5	4	Water Transportation
China Yuchai International (CYD)	13.1	1	5.4	0.66	3.2	na	49.0	na	588.7	(2)	Misc. Capital Goods
Natural Grocers by Vit Cot (NGVC)	9.3	1	2.0	0.18	0.0	1.7	na	26.5	468.9	(13)	Retail (Grocery)
Champion Industries (CHMP)	6.5	1	na	na	0.0	na	(21.8)	na	2.6	(74)	Broadcasting & Cable TV
Blonder Tongue Labs, Inc. (BDR)	(1.6)	4	na	0.35	0.0	na	(47.6)	na	6.8	(20)	Communications Equipment
Pro-Dex, Inc. (PDEX)	(16.8)	6	na	0.67	0.0	na	(30.7)	na	6.4	(26)	Medical Equip & Supplies
Renewable Energy Group (REGI)	(17.2)	6	2.3	0.56	0.0	na	71.6	na	187.7	(13)	Chemical Manufacturing
Exchange-Listed Stocks	—	—	16.4	1.46	0.4	1.4	0.0	12	487.2	(5)	

Source: AAI's Stock Investor Pro/Thomson Reuters. Data as of December 7, 2012.

(Continued from page 27)

since the beginning of 1998, the monthly variability of returns for the stocks held in this portfolio has been twice that of the S&P 500. This places the Piotroski: High F-Score screen as the 10th-riskiest screen among the 64 AAI tracks. It also has the highest risk index among all value strategies. Among all AAI stock screens, the median risk index value is 1.49. This means that the typical stock screen tracked by AAI has 49% more volatility than the S&P 500.

Overall, only three AAI stock screens have a risk index less than 1.00, meaning their risk or volatility is

lower than that of the S&P 500. These screens are:

- Graham—Defensive Investor (Utility) (in the value category), 0.89;
- Dividend Screen: Non-DRPs (in the growth & value category), 0.91; and
- Dividend (High Relative Yield) (in the growth & value category), 0.95.

Risk-Adjusted Returns

Another way of considering the risk of a strategy is by calculating a risk-adjusted return. When adjusting returns for risk, strategies with high returns that have above-benchmark standard

deviations will have their returns proportionally lowered, and strategies with below-benchmark standard deviations will have their returns adjusted upward proportionally.

Risk-Adjusted Winner

Ranking the 64 AAI stock screens by their risk-adjusted return over the period from January 1, 1998, through December 7, 2012, we see that the Estimate Revisions: Up 5% (in the earnings estimates category) remains the top-performing strategy since inception, with an average annual price gain of 18.0%.

Unlike some of the other top-performing AII stock screens in recent years, the Piotroski: High F-Score screen was fully invested throughout 2012, meaning that at least one stock passed the screen each month. In a year where value-oriented approaches fared better than growth approaches, the Piotroski: High F-Score screen benefited from finding undervalued or neglected firms (as indicated by their low price-to-book-value ratios) that also satisfied several measures of financial strength.

The Piotroski: High F-Score screen starts by isolating stocks with price-to-book value ratios that rank in the lowest 20% of the entire stock universe. Then, using a nine-point scale to identify stocks with solid and improving financials, passing companies must satisfy at least eight of the nine tests. Prior to 2011, we had required passing companies to satisfy all nine financial strength tests, but we found that this severely limited the number of passing companies. Relaxing the screening requirements led to more passing companies without hurting performance too severely.

As a result of the relaxed standards, the Piotroski: High F-Score screen held a total of 17 stocks throughout 2012, averaging nearly five holdings per month. Historically, the strategy has averaged 23 stocks per month—tying for 17th place among all AII screens in terms of the highest average number of passing companies. When following a given strategy, spreading your investment around more stocks will lower your volatility, as investing in a small number of companies makes a portfolio more susceptible to individual stock price movements. The 10 AII stock screens that average the lowest number of passing companies each month are at least 50% more volatile than the S&P 500 index. That is not to say that the Piotroski: High F-Score screen isn't volatile. With a risk index of 2.02, the

screen is 102% more volatile than the S&P 500, placing it in the top 10 of all AII screens in terms of volatility. But looking at its historical performance, much of that volatility has been to the upside.

Table 3 presents the 17 stocks that passed the Piotroski: High F-Score screen in 2012, as well as their performance while they were held in the hypothetical portfolio, the number of months the stock was held this year and select current financial data.

P&F Industries Inc. (PFIN) was the best-performing stock that passed the screen in 2012. It was held in the portfolio for 10 of the 12 months of the year and gained 88.8% in that time. The company manufactures or imports air-powered tools for the industrial, retail and automotive markets and various residential hardware such as kitchen and bath hardware, fencing hardware and door and window hardware.

Three of the 17 stocks held in the Piotroski: High F-Score portfolio during 2012 suffered losses, with ProDex Inc. (PDEX) losing 16.8% and Renewable Energy Group (REGI) falling 17.2%. Both stocks were held for six months, but Renewable Energy exhibited wild price fluctuations. After passing the screen for the first time at the end of June, the producer of biodiesel saw its stock fall 33.4% in July, only to rebound by gaining 7.5% in August and another 25.6% in September. This was followed by a 26.2% loss in October and a 20.1% gain in November.

The 2012 results for the Piotroski: High F-Score screen build on its historical record of strong performance. Its annual average price gain since the beginning of 1998—26.5%—places it second among all 64 AII stock screens. On a risk-adjusted basis, it slips one spot to third overall with an average annual return of 15.1%.

The screen looks for companies tracked by at least four analysts that have not had any downward revisions over the last month in their earnings estimates for the current and next fiscal year and have had at least one upward revision. Furthermore, the revisions to the average estimate must be significant enough to increase the consensus estimates for both the current and next fiscal years by at least 5% over the last month.

The strategy's non-risk-adjusted gain of 28.6% per year on average since the beginning of 1998 is also the highest among all the screening strategies we follow. The Estimate Revisions: Up 5%

screen has an annual standard deviation of 28.6%, versus 16.2% for the S&P 500, giving the screen a risk index of 1.76. This means it is 76% more volatile than the large-cap index.

One approach whose risk-adjusted return benefits greatly from its low risk relative to the other AII stock screens is the P/E Relative screen (in the earnings estimates category). This screen ranks 16th in annualized return since the beginning of 1998. However, with a risk index of 1.13—meaning it is only 13% more volatile than the S&P 500—its risk-adjusted return does not suffer as much as the typical AII stock screen,

which has a risk index of 1.49. In fact, 11 of the 15 screens that ranked higher than the P/E Relative screen based on annualized gain since inception had a risk index greater than 1.5. As a result, many of these screens saw their risk-adjusted returns drop significantly.

Risk-Adjusted Loser

An extreme example of where a high risk index adversely impacted a screen's risk-adjusted performance is the MAGNET Simple methodology.

The screen begins by looking for stocks with forward price-earnings ratios that are no more than half of

the projected earnings growth rate for the next three to five years (a forward PEG ratio of no more than 0.5). From there it requires sales growth over the trailing 12 months to be at least 15% and, finally, relative price strength over the last 13 and 26 weeks to rank in the top 10% of the overall stock universe.

This screen's average annual price gain since the beginning of 1998 is 21.5%, placing it sixth among all AAIL stock screens. However, its risk index is the highest for all AAIL screens: At 2.92, it is 192% more volatile than the S&P 500. As a result, the annual risk-adjusted return for the MAGNET Simple screen is only 10.0%, dropping it to 25th place among the 64 screens we track. This means the strategy's price performance has not been high enough to adequately compensate for the level of risk relative to other AAIL screens.

Conclusion

The AAIL stock screens are not intended to be buy or recommended lists. Instead, they allow investors to see how different investment strategies perform over varying market conditions. Since market conditions change, it is important to be adequately diversified to weather the ups and downs of the market.

One way to achieve sufficient diversification is by using multiple stock screening methodologies to help you select stocks. However, it is not enough to simply choose those strategies that have the best long-term performance. Instead, it is useful to understand the forces influencing both the overall market and a strategy's performance, and how changing economic conditions can impact both the market and individual stocks. Examining the characteristics of

an investment methodology may reveal some practical problems you can face when trying to translate quantitative stock screening in real-world portfolio building.

Something else to keep in mind is that once you decide on which methodologies to follow, you cannot just let the quantitative screens choose your stocks.

Screening is a multi-step process. The first step is to apply the quantitative filters to the stock universe to help you arrive at a set of candidates that all share the same base set of characteristics. This doesn't necessarily mean they are all good investments. It is important to take your list of passing companies and, at a minimum, perform some cursory qualitative analysis to decide whether or not they are right for your stock portfolio. ▲

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The Oberweis Octagon screen, with 14 passing companies at the end of November, has a relative strength of 37% over the 52 weeks ending December 7, 2012. This means the typical stock held in this portfolio has outperformed the S&P 500 by 37% over this period. Only one of the stocks currently in the portfolio—Focus Media Holding Limited (FMCN)—has underperformed the S&P 500 over the last 52 weeks, and only by 1.9%. Consumer Portfolio Services Inc. (CPSS), a subprime auto loan provider, has outperformed the S&P 500 by nearly 360%, thanks to its 427.6% price jump over the last year. Both the Piotroski: High F-Score and Murphy Technology screens have stocks currently satisfying their criteria that have underperformed the S&P 500 by 13% over the last year. Ironically, the second-worst-performing AAIL stock screen for this year—MAGNET Simple—has a relative strength of 93%, meaning that its two passing companies have outperformed the S&P 500 by an average of 93% over the last year.

Winning Characteristics

When looking at those strategies that have achieved long-term success, several common factors are apparent:

- Low multiples (price-earnings, price-to-book value, etc.), on a relative rather than an absolute basis;
- An emphasis on consistency of growth in earnings, sales or dividends;
- Strong financials;
- Price momentum; and
- Upward earnings revisions.

For a more in-depth discussion of the characteristics of successful investment strategies, see John Bajkowski's article, "Constructing Winning Stock Screens," in the December 2012 *AAIL Journal*; it is also available in the Stock Screens area of AAIL.com.

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