AAII MODEL PORTFOLIOS

The Model Shadow Stock Portfolio's Drawdowns and Rewards

While the portfolio has had more frequent corrections and bear market cycles than the S&P 500, its down periods have generally been shorter in duration and its bull market reversals stronger.

BY JOHN BAJKOWSKI

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The Model Shadow Stock Portfolio was down 2.9% during November 2018, pushing its recent decline into bear market territory.

Over the last three months the Model Shadow Stock Portfolio has declined 20.5%, marking the fifth time it has been down 20% or more over its nearly 26-year existence. In contrast, the S&P 500 index as measured through the Vanguard 500 Index fund (VFINX) has had only two observed bear market periods over the same time frame, but they were much longer on average.

We examined the monthly total returns of the Model Shadow Stock Portfolio along with the VFINX to gain a sense of the frequency, duration and severity of corrections and bear markets. Figure 1 shows the cumulative growth coupled with the drawdowns, which are shaded. The chart provides visual illustration of the severity and duration of the drawdowns for the model portfolio and VFINX fund, while Table 1 on the next page summarizes the data. The drawdown is the decline from prior high portfolio or market value.

The Model Shadow Stock Portfolio has a cumulative total return of 3,304.7% (14.6% annualized) over its history, compared to the cumulative total return of 933.8% (9.4% annualized) for the VFINX (Figure 2). However, the greater long-term observed return has come with greater short-term volatility. On average, the Model Shadow Stock Portfolio has been up 62.7% of individual months during its existence. This means of course that it has had negative months 37.3% of the time. In contrast the VFINX has had positive monthly returns 66.2% of the time, or down months 33.8% of the time over the same time period.

Corrections are generally classified as declines of 10% or greater. The Model Shadow Stock Portfolio has had 10 observed corrections, and five of them have turned into bear markets of 20% or greater. The average correction has been 1.3 years in length, with an average drawdown of 21.5%. The drawdowns in Table 1 are the maximum losses sustained during a given downturn. The duration is the time it takes the portfolio to return to its level just before the downturn

FIGURE 1

Cumulative Growth and Drawdowns of Model Shadow Stock Portfolio Compared to the Market

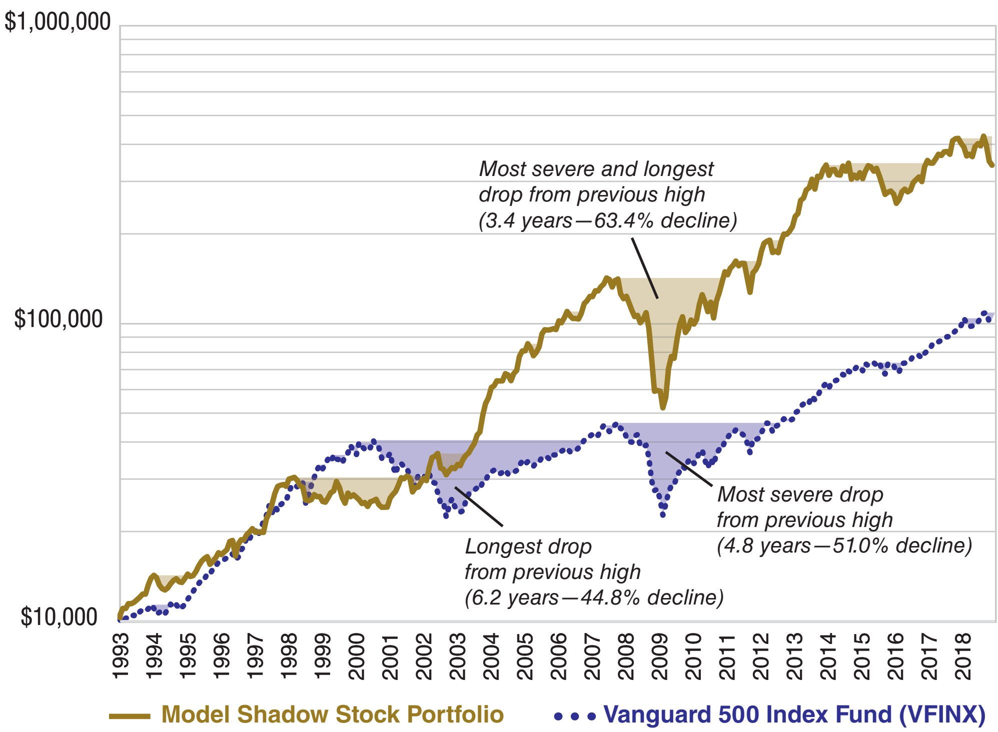


TABLE 1

Corrections Over Existence of Model Shadow Stock Portfolio

	Model Shadow Stock Portfolio	Vanguard 500 Index (VFINX)
Corrections (10% or greater decline)		
Number Observed	10	3
Average Duration	1.3 years	3.8 years
Longest Duration	3.4 years	6.2 years
Average Drawdown	(21.5%)	(37.1%)
Largest Drawdown	(63.4%)	(51.0%)
Bear Markets (20% or greater decline)		
Number Observed	5	2
Average Duration	1.9 years	5.5 years
Longest Duration	3.4 years	6.2 years
Average Drawdown	(30.4%)	(47.9%)
Largest Drawdown	(63.4%)	(51.0%)
Returns Since Inception		
Months With Positive Returns	62.7%	66.2%
Total Return (1/1993 to 11/2018)	3304.7%	933.8%
Annualized Return	14.6%	9.4%

Figures calculated from monthly total returns.
Data as of 11/30/2018.

began. The longest correction (July 2007 to November 2010) was 3.4 years and had a drawdown of 63.4%.

The Vanguard 500 Index fund has had three observed corrections and two of them have gone on to become bear markets of 20% or greater over the same time period. The average correction has been 3.8 years in length with an average drawdown of 37.1%. The longest correction (September 2000 to October 2006) was 6.2 years with a drawdown of 44.8%, but the greatest drawdown of 51.0% was with the 2007 bear market that lasted 4.8 years (November 2007 to July 2012.)

As shown in Table 1 and Figure 1, the Model Shadow Stock Portfolio has more frequent corrections and bear market cycles than the S&P 500, but the down periods have generally been shorter in duration and bull market reversals stronger.

If you are tempted to time the market, we suggest that you consider the issues raised in our May 2018 Model Portfolios article titled "Model Shadow Stock Portfolio: Staying Invested All 12 Months." The article examines the impact on your returns if you should miss one month during the year in the which the market has its best return. Market movements are often very sudden and strong both to the up side and down side.

Portfolio Changes

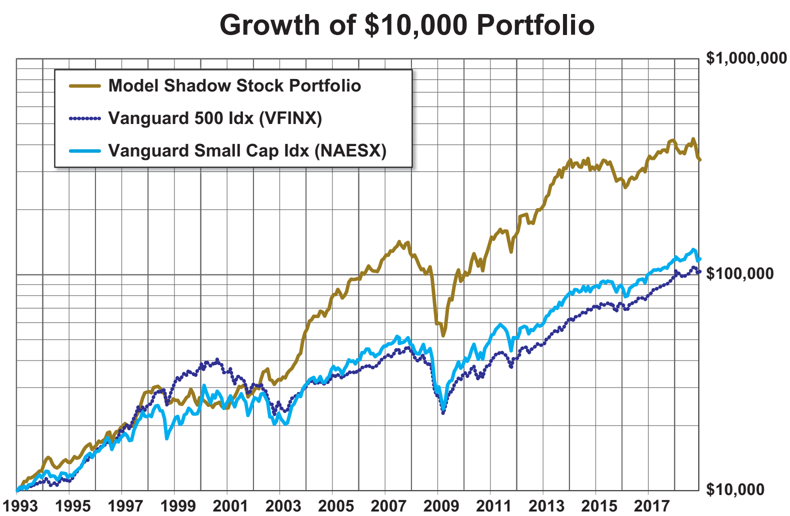
Table 2 shows the current holdings in the Model Shadow Stock Portfolio. After conducting the quarterly review of the Model Shadow Stock Portfolio in early December, two stocks were removed from the portfolio—AutoWeb Inc. (AUTO) and SigmaTron International (SGMA). With the cash on hand and the proceeds from the two sells, there was enough to purchase one new stock with a position size roughly equal to the average position size for the portfolio holdings: VSE Corp. (VSEC). Table 3 summarizes the changes. The detailed Model Shadow Stock Portfolio Rules that note the purchase and sell rules, stock order guidance rules and management rules can be viewed online in the Model Portfolios area (www.aaii.com/model-portfolios).

Sold: AutoWeb Inc. (AUTO)

AutoWeb Inc. was on earnings probation since it announced its second-quarter 2018 earnings on August 2, 2018. With the second-quarter results, the company's trailing 12-month adjusted earnings fell to a loss of $0.10 per share, placing it on earnings probation. The company announced a third-quarter loss of $0.19 per share on November 8. If a Shadow Stock that is on earnings probation reports a subsequent quarterly loss, it is removed from the portfolio.

FIGURE 2

Model Shadow Stock Portfolio vs. Benchmarks (Through 11/30/2018)



Portfolio	Year-to-Date Return (%)	Annual Return (%) 1-Year	3-Year	10-Year	Since Inception	Ann'l Std Dev (%)
Model Shadow Stock Portfolio	(15.5)	(18.7)	6.9	19.1	14.6	17.3
Vanguard 500 Index (VFINX)	5.0	6.1	12.0	14.2	9.4	9.3
Vanguard Small Cap Index (NAESX)	0.7	1.1	9.8	15.3	10.0	12.5

Data as of 11/30/2018.

TABLE 2

Model Shadow Stock Portfolio

Company (Ticker)	Current Price ($)	52-Week High ($)	52-Week Low ($)	Market Cap ($ Mil)	P/E Ratio (X)	P/B Ratio (X)	Div Yield (%)	Notes
Aceto Corp. (ACET)	1.62	11.98	1.53	53.8	nmf	0.78	2.50	
Amira Nature Foods (ANFI)	0.56	4.77	0.50	25.5	nmf**	0.24	0.00	earnings probation (Q4 2018)
Beazer Homes USA (BZH)	11.26	21.20	8.16	374.4	5.4	0.56	0.00	qualifies as of 11/30/2018
Big 5 Sporting Goods (BGFV)	3.69	9.75	3.21	77.1	nmf	0.43	5.40	
Container Store Group (TCS)	5.43	12.42	3.57	278.3	32.1	1.08	0.00	
CPI Aerostructures (CVU)	6.99	11.75	6.38	80.9	11.0	0.79	0.00	qualifies as of 11/30/2018
CSS Industries Inc. (CSS)	10.84	29.34	10.76	96.3	nmf**	0.44	7.40	earnings probation (Q2 2018)
Delta Apparel, Inc. (DLA)	19.00	22.10	16.30	131.0	12.0	0.89	0.00	qualifies as of 11/30/2018
Ducommun Incorporated (DCO)	39.23	45.62	25.52	447.4	94.8	1.75	0.00	
Ennis, Inc. (EBF)	19.53	22.98	17.65	511.9	12.8	1.75	4.60	
Flexsteel Industries (FLXS)	24.82	52.70	22.64	198.0	18.2	0.81	3.50	qualifies as of 11/30/2018
Hallador Energy Co. (HNRG)	5.76	7.98	5.45	174.7	18.6	0.69	2.80	qualifies as of 11/30/2018
Hooker Furniture Corp. (HOFT)	30.13	52.75	28.52	351.2	10.6	1.46	1.90	
Kimball Electronics Inc. (KE)	17.64	21.15	15.75	469.7	10.8	1.30	0.00	
New Home Company (NWHM)	7.31	13.55	6.67	152.3	9.9	0.59	0.00	qualifies as of 11/30/2018
Olympic Steel, Inc. (ZEUS)	18.36	25.84	16.31	200.2	4.6	0.68	0.40	qualifies as of 11/30/2018
PC Connection, Inc. (CNXN)	31.34	43.05	22.66	839.6	15.0	1.60	0.00	
PCM Inc. (PCMI)	18.95	25.23	6.90	221.5	18.1	1.55	0.00	
RCM Technologies (RCMT)	3.93	6.55	3.41	51.4	13.4	1.96	0.00	
RCI Hospitality Holdings (RICK)	25.02	34.84	24.51	241.8	19.5	1.56	0.50	
Renewable Energy Group (REGI)	26.95	32.52	9.50	1,026.1	3.1	1.28	0.00	approaching size limit
REX American Resources (REX)	69.59	92.09	63.18	423.5	12.8	1.17	0.00	
Rocky Brands Inc. (RCKY)	25.89	33.45	15.00	193.7	16.7	1.28	1.90	
Seneca Foods Corp. (SENEA)	33.47	35.90	25.45	324.8	nmf	0.80	0.00	
Strattec Security Corp. (STRT)	30.54	46.40	29.68	119.6	11.4	0.67	1.80	qualifies as of 11/30/2018
Townsquare Media Inc. (TSQ)	6.20	9.79	6.00	125.2	nmf	0.33	4.80	
Universal Stainless & Alloy (USAP)	19.57	31.20	18.01	172.1	16.8	0.72	0.00	qualifies as of 11/30/2018
Vishay Precision Group (VPG)	33.93	45.00	23.65	452.5	20.2	2.13	0.00	
VSE Corporation (VSEC)*	29.13	56.03	26.96	314.9	9.8	0.99	1.10	qualifies as of 11/30/2018

nmf = no meaningful figure
**new addition as of 12/4/2018.*
***Trailing four-quarter GAAP earnings negative, but adjusted earnings positive.*
Source: AAII's Stock Investor Pro*/Thomson Reuters. Data as of 11/30/2018.*

Approaching Size Limit: Stocks are sold if their market capitalization goes above three times the initial maximum criterion and there is a stock to replace it. The current market capitalization maximum for initial screening is $400 million. Stocks are marked "approaching size limit" if their current market cap exceeds 2½ times the initial criterion, or $1 billion.

Approaching Value Limit: Stocks are sold once their price-to-book-value ratio goes above three times the initial criterion and there is a stock to replace it. The current initial price-to-book ceiling is 1.00. Stocks are marked "approaching value limit" if their current price-to-book-value ratio exceeds 2½ times the initial criterion, or 2.50.

Earnings Probation: If last 12 months' earnings are negative, the stock is put on probation; if a subsequent quarter has negative earnings prior to 12-month earnings becoming positive, the stock is sold. When available, adjusted (non-GAAP) earnings are used to put stocks on probation or sell them. Otherwise, earnings from continuing operations are used. The date is the fiscal quarter during which the company first reported negative trailing 12-month earnings.

Qualifies as of: Stock still qualified as a buy when the screen was run with current data. Stocks that don't currently qualify as a buy are held until they meet one of the sell rules.

See the Model Shadow Stock Portfolio area of AAII.com for more information.

TABLE 3

Fourth-Quarter 2018 Transactions

Sells

Company (Ticker)	Reason
AutoWeb Inc. (AUTO)	negative earnings
SigmaTron International (SGMA)	negative earnings

Buy

Company (Ticker)	Maximum Price to Pay
VSE Corp. (VSEC)	$32.37

Sold: SigmaTron International (SGMA)

SigmaTron International was on earnings probation since it announced its fourth-quarter 2018 earnings on July 20. With the fourth-quarter results, the company's trailing 12-month adjusted earnings fell to a loss of $0.64 per share, placing it on earnings probation. The company announced a first-quarter 2019 loss of $0.85 per share on September 12. If a Shadow Stock that is on earnings probation reports a subsequent quarterly loss, it is removed from the portfolio.

Purchased: VSE Corp. (VSEC)

With the market pullback, a greater number of stocks has been passing the value and size filters for the Model Shadow Stock Portfolio. As of the end of November, 25 stocks met the initial selection criteria, but the portfolio already held nine of them. Applying liquidity requirements to the remaining stocks reduced the number to four candidates. After ranking the four by their four-week relative strength, our additional analysis found that the top option had significant trust and partnership interests. Another potential selection had a significant joint-venture in China; companies whose primary business is in China are not purchased for the Model Shadow Stock Portfolio.

This led to VSE Corp. being purchased for the portfolio. VSE Corp. is a services and supply chain management company to the U.S. Department of Defense (DOD), the U.S. Postal Service (USPS), federal civilian agencies and commercial and other customers. The company's service offerings include supply chain and inventory management services; vehicle fleet sustainment programs; vehicle fleet parts supply and distribution; maintenance, repair and operations (MRO) of aircraft engines and engine components; aircraft engine parts supply and distribution; engineering support for military vehicles; military equipment refurbishment and modification and ship MRO and follow-on technical support.

Based on VSE Corp.'s closing price of $29.13 on November 30, we suggest paying no more than $32.37, which provides a 10% cushion given that its price-to-book-value ratio was very close to the 1.0 cutoff for the Model Shadow Stock Portfolio. To calculate the maximum buy price based on the price-to-book-value ratio, multiply the current share price by the ratio of the maximum price-to-book ratio to be considered for the Model Shadow Stock Portfolio (currently 1.0) to the current price-to-book ratio of the stock. The price-to-book ratio for VSE Corp. as of November 30 was 0.99, so the calculation, including the 10% cushion, is: [$29.13 × (1.0 ÷ 0.99)] × 1.1 = $32.37.

Follow the Portfolio Online

The next portfolio review will take place at the end of February, and any changes made then will be reported in the April 2019 *AAII Journal*. You can keep abreast of the Model Shadow Stock Portfolio on AAII.com in the Model Portfolios area. To receive monthly email updates along with alerts to any changes made to the portfolio, please sign in to AAII.com and go to www.aaii.com/email.

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How Much Small Cap Should Be in Your Portfolio?, by John McDermott, Ph.D. and Dana D'Auria, CFA, July 2014

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vestments. It is important then to perform at least cursory qualitative analysis to decide whether they are right for your stock portfolio.

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