Small Caps, Big Wins: AAII Model Shadow Stock Portfolio Annual Review

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Learning Objectives

- Background on research and theory behind the Shadow Stock strategy
- Present model portfolio construction and management rules
- Review Model Shadow Stock and market performance
- Highlight AAII resources to follow the approach including the current portfolio holdings and ideas list

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Shadow Stock Origin Story

- January 1993 AAII Journal: Thinly Traded Stocks: Putting a Practical Approach to the Test by James Cloonan
- The Model Shadow Stock Portfolio developed from an attempt to codify the lessons of academic studies into a set of practical portfolio selection and trading rules that an individual investor could follow with minimal effort
- The portfolio has allowed us to share the problems and procedures of managing a portfolio of small stocks using a quantitative approach

	All	High 1	2	3	4	5	6	7	8	9	Low 10
	Average Monthly Returns (July 1963 to December 1990) (%)										
					Price-to-Book-Value Ratio						
All Stocks	**1.23**	**0.64**	**0.98**	**1.06**	**1.17**	**1.24**	**1.26**	**1.39**	**1.40**	**1.50**	**1.63**
Size Deciles											
1-Largest	**0.89**	0.93	0.88	0.84	0.71	0.79	0.83	0.81	0.96	0.97	**1.18**
2	**0.95**	0.44	0.89	0.92	1.00	1.05	0.93	0.82	1.11	1.04	**1.22**
3	**1.08**	0.66	1.13	0.91	0.95	0.99	1.01	1.15	1.05	1.29	**1.55**
4	**1.07**	0.95	1.00	0.99	0.83	0.99	1.13	0.99	1.16	1.10	**1.47**
5	**1.15**	0.70	0.98	1.14	1.23	0.94	1.27	1.19	1.19	1.24	**1.50**
6	**1.24**	0.88	0.65	1.08	1.47	1.13	1.43	1.44	1.26	1.52	**1.49**
7	**1.19**	0.39	0.72	1.06	1.36	1.13	1.21	1.34	1.59	1.51	**1.47**
8	**1.22**	0.56	0.88	1.23	0.95	1.36	1.30	1.30	1.40	1.54	**1.60**
9	**1.22**	0.43	1.05	0.96	1.19	1.33	1.19	1.58	1.28	1.43	**1.79**
10-Smallest	**1.47**	**0.70**	**1.14**	**1.20**	**1.43**	**1.56**	**1.51**	**1.70**	**1.71**	**1.82**	**1.92**

Source: The Cross-Section of Expected Stock Returns, Eugene Fama & Kenneth French, The Journal of Finance, June 1992

Performance by Market Cap

Decile	1926 to 2022 Annual Return (%)	Standard Deviation (%)	# of Firms	Largest Stock	% of Total Market Cap	% of Total Cos
1-Largest	9.5	18.9	213	$2,203.4 bil	73.1	6.2
2	10.5	21.2	236	$31.32 bil	12.5	6.9
3	10.9	23.1	221	$12.32 bil	5.2	6.4
4	10.6	25.1	238	$5.92 bil	3.1	6.9
5	11.1	25.7	269	$3.77 bil	2.2	7.8
6	11.1	26.7	333	$2.37 bil	1.7	9.7
7	11.5	28.6	341	$1.39 bil	1.0	9.9
8	10.9	32.3	437	$782.4 mil	0.7	12.7
9	11.3	36.3	354	$373.9 mil	0.3	10.3
10-Smallest	**12.9**	**41.5**	**786**	**$218.2 mil**	**0.2**	22.9
Large Cap, S&P 500	10.1	19.8	503	$2,203.4 bil	85.6	14.7
Mid Cap, Deciles 3-5	10.9	24.0	728	$12.32 bil	10.5	21.2
Small Cap, Deciles 6-8	11.2	28.2	1,111	$2.37 bil	3.3	32.4
Micro Cap, Deciles 9-10	11.8	37.9	1,140	$373.9 mil	0.5	33.3
Treasury Bills	3.2	3.1				
Inflation	2.9	4.0				

Past performance is no guarantee of future results.

Source: Kroll, Morningstar, CRSP.

Time Frame and Performance

Holding Period	(1926 to 2019) Small Cap Outperform	(1926 to 2019) Large Cap Outperform	(2000 to 2019) Small Cap Outperform	(2000 to 2019) Large Cap Outperform
	Percentage of Holding Periods That Resulted in Better Performance			
1 Month	50% (563)	50% (565)	52% (125)	48% (115)
5 Year	56% (598)	44% (471)	59% (106)	41% (75)
10 Year	68% (686)	32% (323)	74% (89)	26% (32)
20 Year	88% (779)	12% (110)	100% (1)	0% (0)
30 Year	96% (740)	4% (29)		

Source: Morningstar, "Stocks, Bonds, Bills and Inflation," Chicago.

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Shadow Stock Primary Size Consideration: Market Capitalization

- Investable universe: Domestic stocks in the lowest 10% of market cap as defined by NYSE-listed companies
  - NYSE-listed stocks used to establish market cap levels
- Currently buy NYSE, Nasdaq and Amex-listed stocks with market cap below $300 million
  - Original cutoff: $55 million in 1993
  - Highest cutoff: $500 million (June 2021-Feb 2022)
  - Current cuttoff: $300 million since December 2022

Levels of Key Factors Over Time

Size and Value Maximums Used for the Model Shadow Stock Portfolio

	Maximum Value of Lowest (10th) NYSE Decile		Maximum Values for Shadow Stock Candidates		
Period Ending	Market Cap ($ Mil)	Price-to-Book-Value (X)	Market Cap ($ Mil)	Price-to-Book-Value (X)	Price-to-Sales (X)
Jun 1993	60	0.85	55	0.61	--
Dec 1993	66	0.99	55	0.61	--
Dec 1994	60	0.87	60	0.65	--
Dec 1995	81	0.95	60	0.65	--
Dec 1996	93	1.01	100	0.70	0.54
Dec 1997	123	1.13	125	0.85	0.54
Dec 1998	100	0.82	125	0.85	1.00
Dec 1999	95	0.65	125	0.85	1.00
Dec 2000	90	0.50	125	0.85	1.00
Dec 2001	115	0.73	125	0.60	1.00
Dec 2002	130	0.68	125	0.60	1.00
Dec 2003	243	1.02	125	0.70	1.20
Dec 2004	300	1.20	200	0.80	1.20
Dec 2005	310	1.09	200	0.80	1.20
Dec 2006	380	1.19	200	0.80	1.20
Dec 2007	303	0.84	200	0.85	1.20
Dec 2008	127	0.52	200	0.80	1.20
Dec 2009	230	0.79	200	0.80	1.20
Dec 2010	287	0.93	200	0.80	1.20
Dec 2011	238	0.76	200	0.80	1.20
Dec 2012	266	0.85	240	0.80	1.20
Dec 2013	385	1.06	300	0.80	1.20
Dec 2014	326	0.94	300	0.80	1.20
Dec 2015	249	0.77	300	1.00	1.20
Dec 2016	370	1.04	400	1.00	1.20
Dec 2017	387	1.00	400	1.00	1.20
Dec 2018	276	0.72	400	1.00	1.20
Dec 2019	280	0.82	300	0.90	1.20
Dec 2020	300	0.97	300	1.00	1.20
Dec 2021	479	1.04	500	1.10	1.20
Dec 2022	300	0.84	300	0.90	
Dec 2023	267	0.81	300	0.90	

Source: Kenneth R. French, AAII's Stock Investor Pro. Data as of 12/11/2023.

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Shadow Stock Primary Value Consideration: Price-to-Book-Value Ratio

- Buy stocks with price-to-book-value ratio in the bottom 10%
  - Currently, maximum P/B is 0.90
    - Original cutoff of 0.61 in 1993
    - Lowest cutoff of 0.60 from August 2000 to October 2003
    - Highest cutoff of 1.10 from June 2021 to February 2022
  - Median P/B of S&P 500:
    - Currently (12/2023): 3.47; Year Ago (12/2022): 3.25

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Minimum Liquidity

- Only interested in stocks that have an adequate market for us to take a position
  - Avoid stocks in danger of being delisted
- Currently buy stocks with a minimum market cap of $30 million
  - Original minimum of $10 million in 1993
  - Current minimum of $30 since December 2012
- No OTC stocks (bulletin board or pink sheets)
- The share price must be greater than $4

Minimum Financial Considerations

- Positive earnings from continuing operations over the last quarter and trailing 12 months (last 4 quarters)
  - When available, consensus estimates must also be positive for current quarter and year
- Avoid any stock that was sold from the portfolio in the last two years
  - Avoid marginal stocks that are forever marginal, creating high transaction costs
  - Avoid cyclical stocks going from profits, to losses, to profits, etc.

Minimum Financial Considerations

- Avoid stocks not listed on U.S. exchanges and Chinese firms
  - Potential for different accounting procedures
  - Withholding taxes on dividends
- Avoid financial stocks, leasing & rental companies, REITs & limited partnerships, etc.
  - High levels of acceptable liabilities make it difficult to make meaningful comparisons of popular ratios
- Avoid companies that have not filed a quarterly SEC report (10-Q) in last six months

Portfolio Construction

- 10-stock portfolio: minimum number of holdings
- 15 to 20 stocks: $100,0000 to $1 million
- 25+ stocks: Over $1 million
- Try to invest equal dollar amounts in each security
- If building a portfolio slowly by adding stocks over time, try to establish positions that will represent desired portfolio percentage

Current AAII Model Portfolio

Company	Ticker	Price	52-Week High	52-Week Low	Market Cap (Mil)	P/E Ratio (X)	P/Book Ratio (X)	26-Wk Rel Price Rank (%)	Notes
SigmaTron International Inc	SGMA	$3.17	$7.89	$2.07	$19.4	1.6	0.28	59	
Lazydays Holdings Inc	LAZY	$5.96	$13.92	$5.11	$82.3	nmf	0.32	15	Earnings probation 2023Q3
Key Tronic Corporation	KTCC	$4.20	$7.53	$3.72	$47.2	10.6	0.34	27	Currently qualifies
Ampco-Pittsburgh Corp	AP	$2.66	$4.00	$2.15	$53.2	21.0	0.49	32	
Big 5 Sporting Goods Corp	BGFV	$5.88	$10.83	$5.00	$129.1	36.3	0.49	19	
StealthGas Inc	GASS	$7.19	$7.54	$2.51	$252.5	5.6	0.51	96	Currently qualifies
Global Ship Lease Inc	GSL	$20.49	$21.83	$16.08	$732.0	2.5	0.65	62	
NACCO Industries, Inc.	NC	$37.05	$40.28	$29.37	$273.8	15.3	0.65	62	
Hurco Companies, Inc.	HURC	$23.00	$30.41	$19.29	$139.1	44.8	0.65	67	Currently qualifies
L S Starrett Co	SCX	$12.36	$13.10	$7.52	$88.1	4.0	0.70	82	Currently qualifies
Bassett Furniture Industries Inc	BSET	$15.11	$19.99	$13.30	$135.8	19.5	0.71	47	
Saga Communications Inc	SGA	$23.68	$27.27	$18.89	$142.2	12.7	0.78	72	
Fonar Corp	FONR	$19.18	$20.64	$12.13	$130.8	12.4	0.80	71	Currently qualifies
Clarus Corp	CLAR	$6.26	$10.72	$4.77	$240.3	nmf	0.80	25	TTM adjusted earnings positive
Natural Gas Services Group, Inc.	NGS	$15.47	$16.44	$9.41	$191.8	86.8	0.84	95	Currently qualifies
Friedman Industries Inc	FRD	$15.67	$18.31	$9.50	$114.5	6.1	0.89	83	Currently qualifies
Rocky Brands Inc	RCKY	$26.63	$33.09	$11.78	$199.8	19.2	0.91	84	
Titan Machinery Inc	TITN	$27.47	$47.87	$21.44	$631.3	6.0	1.00	44	
Lakeland Industries, Inc.	LAKE	$17.28	$19.66	$10.60	$127.4	19.9	1.04	78	
Core Molding Technologies, Inc.	CMT	$17.17	$30.09	$12.66	$148.2	6.5	1.10	25	
Pangaea Logistics Solutions Ltd	PANL	$7.82	$8.37	$5.06	$381.0	9.1	1.12	76	
Hooker Furnishings Corp	HOFT	$24.02	$27.15	$14.73	$260.7	nmf	1.12	85	Earnings probation 2023Q1
Park Ohio Holdings Corp	PKOH	$25.51	$28.79	$10.90	$333.4	13.2	1.16	91	
Kimball Electronics Inc	KE	$25.55	$31.43	$19.52	$628.3	11.1	1.19	38	
Ducommun Inc	DCO	$49.52	$58.28	$40.24	$754.0	35.4	1.19	75	Approaching size limit
Mistras Group Inc	MG	$7.96	$8.31	$4.93	$228.6	nmf	1.28	53	TTM adjusted earnings positive
Vishay Precision Group Inc	VPG	$31.44	$45.69	$27.94	$430.1	14.2	1.32	37	
Covenant Logistics Group Inc	CVLG	$44.10	$57.57	$29.34	$558.9	11.4	1.44	48	
Ennis Inc	EBF	$21.23	$23.17	$18.94	$556.0	12.4	1.60	64	
Escalade Inc	ESCA	$19.17	$22.01	$10.83	$259.2	27.5	1.63	94	

Shadow Stock Portfolio Management Rules

- Decisions are made at the end of the quarter once the earnings results have been announced
  - Typically, in early March, June, September & December
- Use best judgment for mergers/tenders, but still follow rules

Shadow Stock Portfolio Sell Rules

- **Price-to-book-value ratio > 3x** current buy factor
  - 3 × 0.9 = 2.7
  - Sell if there are suitable replacements
- **Market cap > 3x** current buy factor
  - 3 × $300 mil = $900 million
  - Sell if there are suitable replacements
- **Adjusted EPS 12m Negative**
  - Not GAAP earnings
  - Stock placed on probation when quarterly results push trailing 12-month EPS negative
  - If subsequent quarter company has negative EPS while trailing 12-month EPS still negative, stock is sold
    - If subsequent quarterly EPS is positive but trailing 12-month EPS is negative, stock remains on probation
  - Sell even if no suitable replacements
- **Sell holdings older than four years**, unless up more than 40% since purchase (~10% annual gain) and not currently passing
  - Sell if there are suitable replacements

Knowing When to Sell

- Rules help to overcome emotions
  - Sell when stock is no longer attractive and better opportunities are available
  - Consider rebalancing when positions put portfolio way out of balance
  - Shadow Stock Portfolio sell rules (value & size) normally keep positions from getting too large for very long

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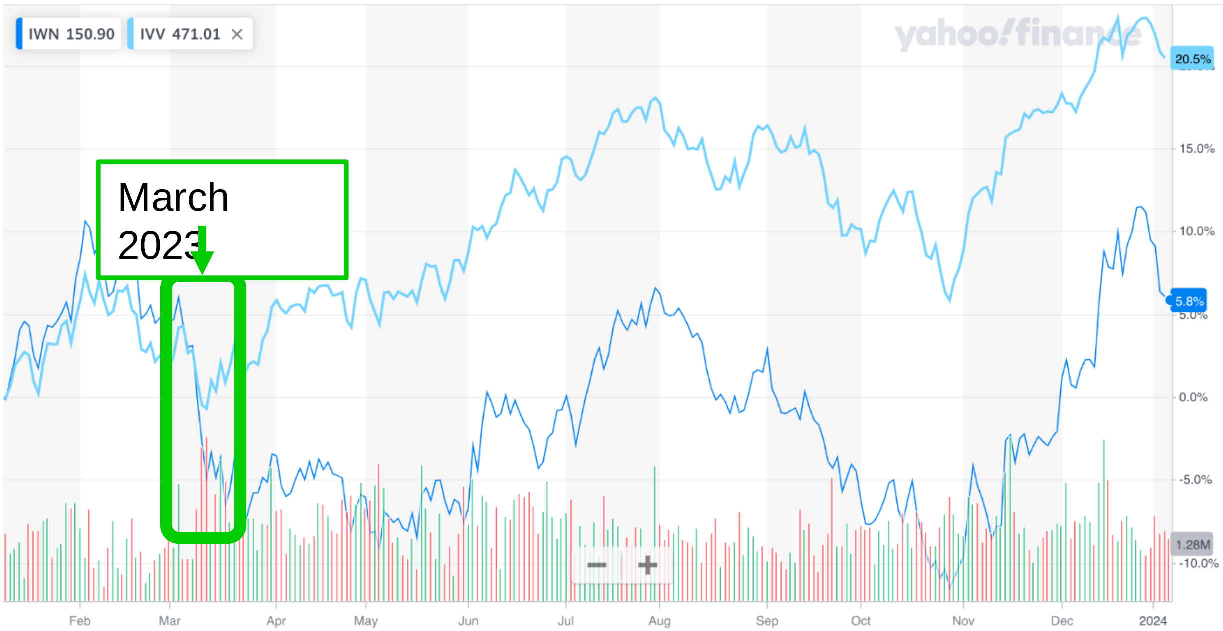
S&P Indexes	Total Returns 2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
S&P 500	26.3%	(18.1%)	28.7%	18.4%	31.5%	(4.4%)	21.8%	12.0%	1.4%	13.7%	32.4%
S&P 500 Growth	30.0%	(29.4%)	32.0%	33.5%	31.1%	(0.0%)	27.4%	6.9%	5.5%	14.9%	32.8%
S&P 500 Value	22.2%	(5.2%)	24.9%	1.4%	31.9%	(9.0%)	15.4%	17.4%	(3.1%)	12.4%	32.0%
S&P MidCap 400	16.4%	(13.1%)	24.8%	13.7%	26.2%	(11.1%)	16.2%	20.7%	(2.2%)	9.8%	33.5%
S&P MidCap 400 Growth	17.5%	(19.0%)	18.9%	22.8%	26.3%	(10.3%)	19.9%	14.8%	2.0%	7.6%	32.8%
S&P MidCap 400 Value	15.4%	(6.9%)	30.7%	3.7%	26.1%	(11.9%)	12.3%	26.5%	(6.7%)	12.1%	34.3%
S&P SmallCap 600	16.1%	(16.1%)	26.8%	11.3%	22.8%	(8.5%)	13.2%	26.6%	(2.0%)	5.8%	41.3%
S&P SmallCap 600 Growth	17.1%	(21.1%)	22.6%	19.6%	21.1%	(4.1%)	14.8%	22.2%	2.8%	3.9%	42.7%
S&P SmallCap 600 Value	14.9%	(11.0%)	31.0%	2.5%	24.5%	(12.6%)	11.5%	31.3%	(6.7%)	7.5%	40.0%

Source: S&P Dow Jones Indices LLC. Data as of 12/31/2023.

S&P Indexes	Total Returns 3 Yr	5 Yr	10 Yr
S&P 500	10.0%	15.7%	12.0%
S&P 500 Growth	6.6%	13.2%	13.4%
S&P 500 Value	13.1%	14.1%	10.0%
S&P MidCap 400	8.1%	12.6%	9.3%
S&P MidCap 400 Growth	4.2%	11.9%	9.0%
S&P MidCap 400 Value	12.0%	12.9%	9.2%
S&P SmallCap 600	7.3%	11.0%	8.7%
S&P SmallCap 600 Growth	4.3%	10.4%	9.0%
S&P SmallCap 600 Value	10.2%	11.3%	8.2%

Source: S&P Dow Jones Indices LLC. Data as of 12/31/2023.

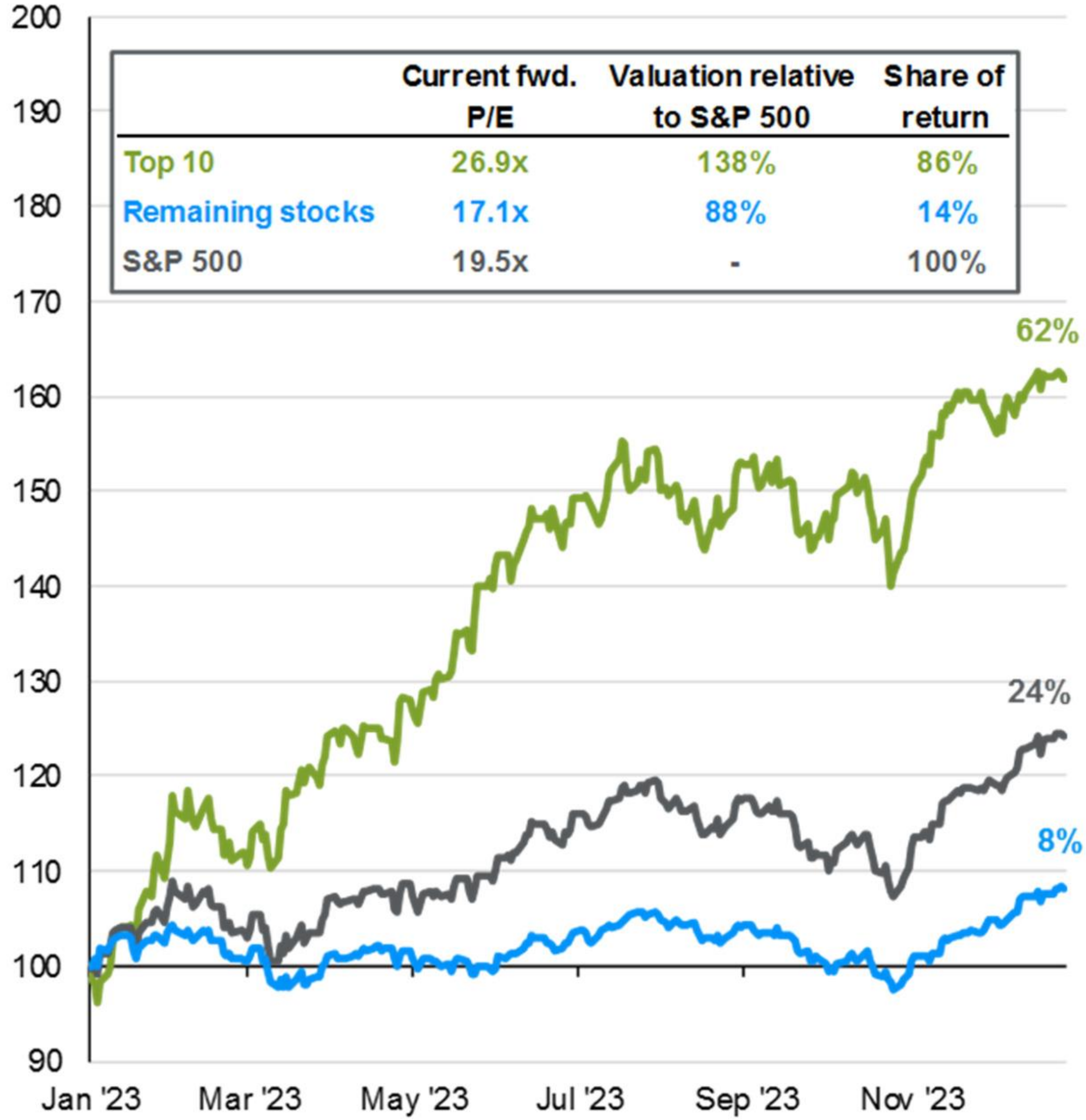
Small-Cap Value Led Early in 2023



Source: Yahoo Finance. Data for iShares Russell 2000 Value ETF (IWN) and iShares Core S&P 500 ETF (IVV) as of 1/5/24.

Performance of the top 10 stocks in the S&P 500

Indexed to 100 on 1/1/2023, price return, top 10 held constant

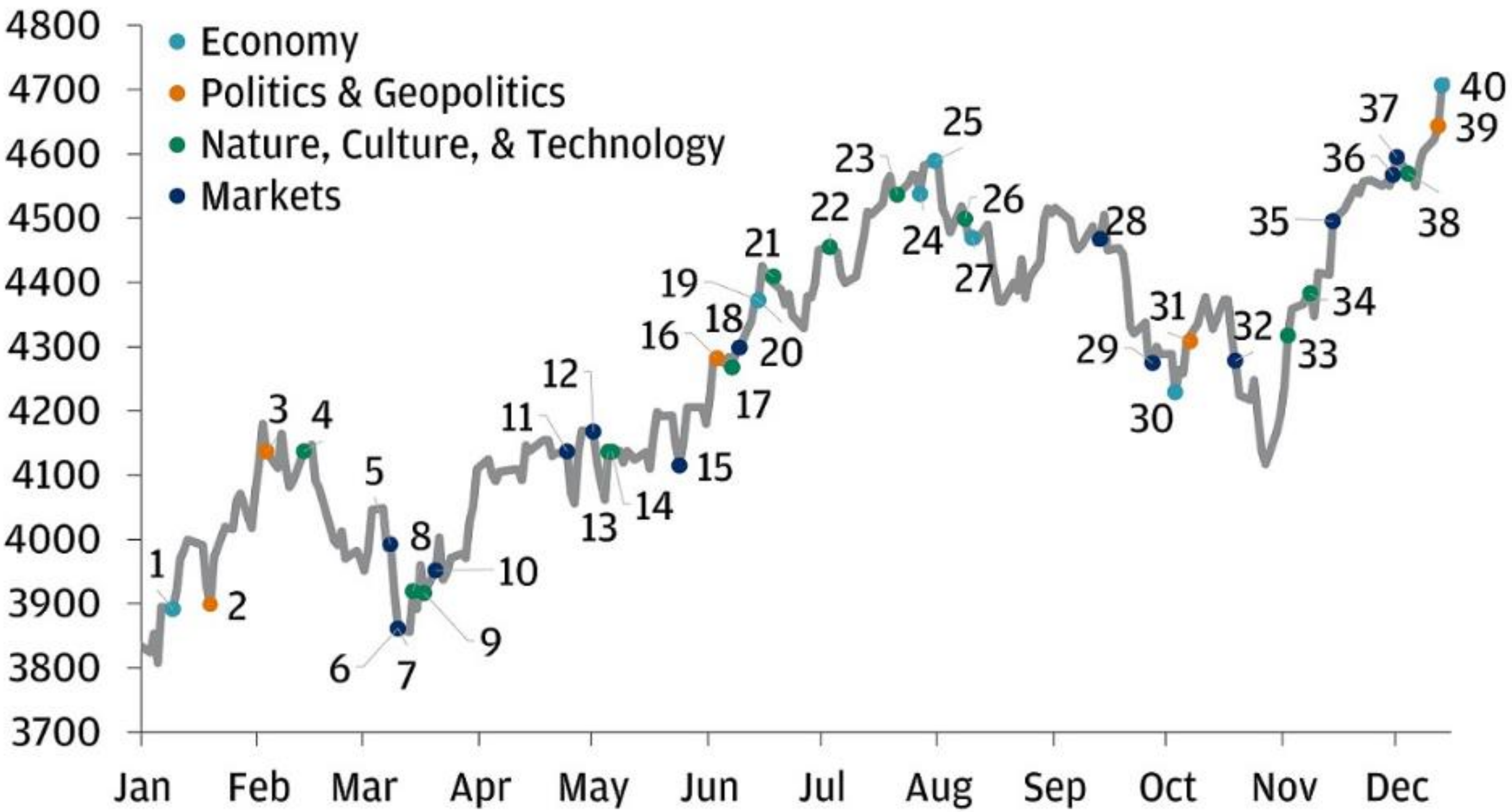


	Current fwd. P/E	Valuation relative to S&P 500	Share of return
Top 10	26.9x	138%	86%
Remaining stocks	17.1x	88%	14%
S&P 500	19.5x	-	100%

Source: J.P. Morgan Asset Management Guide to the Markets. Data as of 12/31/2023.

2023: The year in review

S&P 500 index



Legend

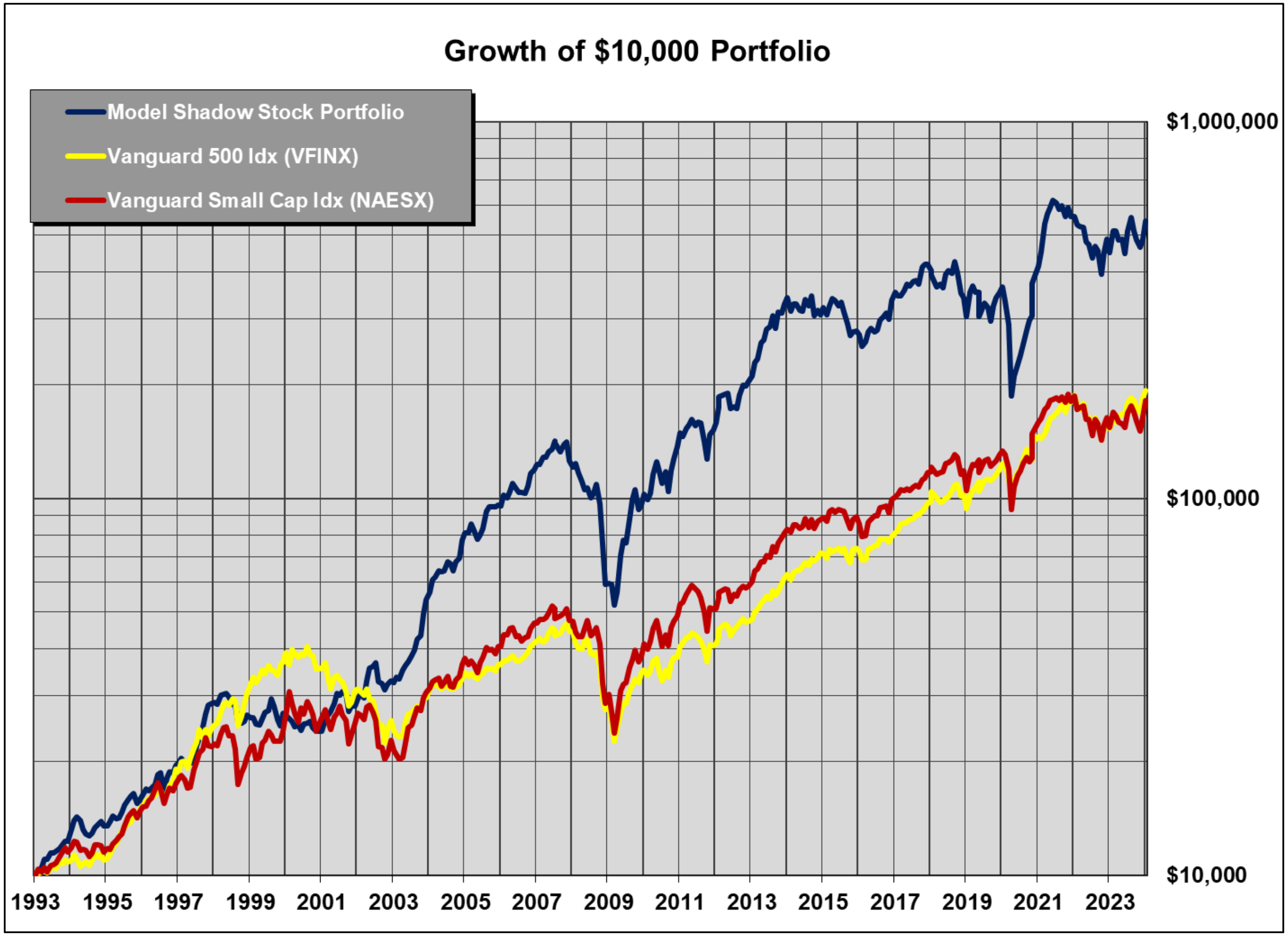
1 China ends its Zero-COVID policy
2 The U.S. government hits its legal $31.4 trillion debt limit
3 “Balloon-gate”
4 Kansas City Chiefs win the Superbowl
5 Silvergate Bank voluntarily liquidates
6 Silicon Valley Bank fails and U.S. banks post their worst daily performance since 2020
7 Xi Jinping re-elected as President of China for an unprecedented third term
8 OpenAI launches GPT-4
9 Taylor Swift kicks off her record-breaking Eras Tour
10 UBS buys Credit Suisse in a government-backed deal
11 LVMH becomes first European company to reach $500 billion market value
12 JPMorgan Chase takes over First Republic
13 WHO ends COVID-19 declaration of a global health emergency
14 Coronation of Charles III and his wife, Camilla, as King and Queen of the United Kingdom
15 Nvidia blockbuster earnings report kicks off AI hype in earnest
16 U.S. government suspends the debt ceiling
17 New York City covered in orange smoke from Canada wildfires
18 S&P 500 marks 20% rally from its October 2022 lows
19 The U.S. May CPI report officially marks a halving in inflation
20 The Federal Reserve “pauses” its most aggressive rate hikes in decades
21 Titan submersible implosion
22 Hottest global temperature ever recorded
23 The widely anticipated "Barbenheimer" weekend kicks off
24 The Federal Reserve hikes interest rates for the final time in 2023
25 Fitch downgrades credit rating for the U.S. government from AAA to AA+
26 Wildfires ignite on the Hawaiian island of Maui
27 U.S. CPI inflation reaccelerates for the first time in over a year
28 Chip designer Arm's IPO soared nearly 25% in market debut - marking the largest IPO of the year
29 Brent crude oil prices rally almost 20% in a month to peak at $97/bbl
30 McCarthy ousted as House Speaker amid government budget and shutdown debate
31 Start of Israel-Hamas conflict
32 10-year U.S. Treasury yield hits 5% in intraday trading for the first time since 2007
33 FTX founder Sam Bankman-Fried convicted of one of largest financial frauds on record
34 Eli Lilly weight loss drug obtains approval in the U.S. and UK
35 The Magnificent Seven stocks add more than $200bn of market value in a single day
36 U.S. aggregate bonds post their best monthly return since 1985
37 Gold closes at an all-time high
38 JPMorgan Private Bank releases its Outlook titled "After the Rate Reset: Investing Reconfigured"
39 COP28 climate talks end with a call to transition away from fossil fuels
40 The Federal Reserve signals rate hikes are over and cuts are on the cards

Sources: Bloomberg Finance L.P., J.P. Morgan Wealth Management. Data as of December 14, 2023.

S&P 500 Sectors	Total Return 2023	2022	2021	2020	2019
Information Technology	57.8%	(27.6%)	34.7%	43.9%	50.3%
Communication Services	55.8%	(37.7%)	16.0%	23.6%	32.7%
Consumer Discretionary	42.4%	(36.2%)	28.0%	33.3%	27.9%
Industrials	18.1%	(5.5%)	21.1%	11.1%	29.3%
Materials	12.6%	(12.3%)	27.3%	20.7%	24.6%
Financials	12.2%	(10.5%)	35.0%	(1.8%)	32.1%
Real Estate	12.4%	(26.1%)	46.2%	(2.2%)	29.0%
Health Care	2.1%	(2.0%)	26.1%	13.5%	20.9%
Consumer Staples	0.5%	(0.7%)	17.3%	10.8%	27.6%
Energy	(1.3%)	64.6%	53.4%	(33.7%)	11.8%
Utilities	(7.1%)	1.6%	17.7%	0.5%	26.4%
S&P 500	**26.3%**	**(18.1%)**	**28.7%**	**18.4%**	**31.5%**

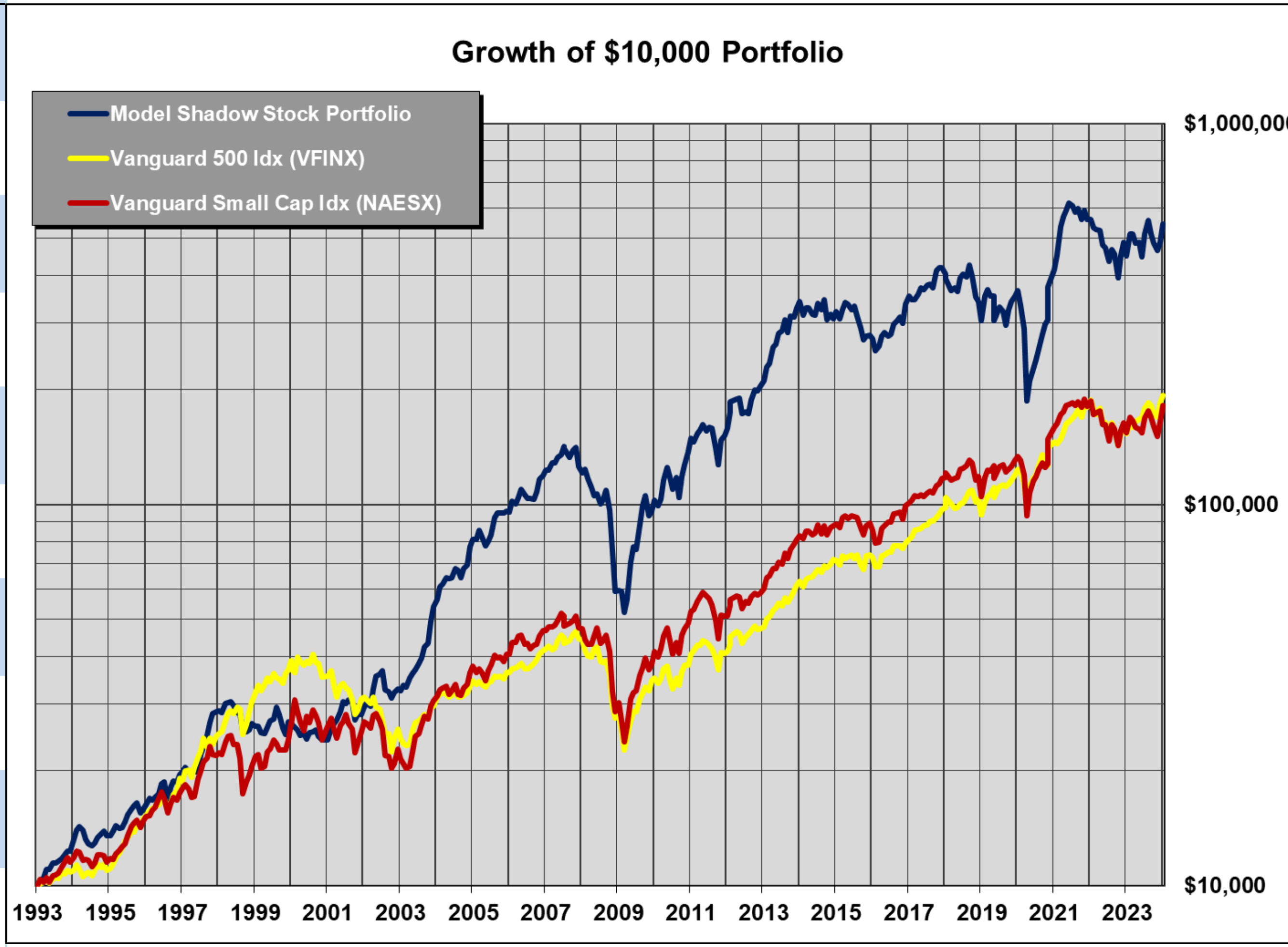
Portfolio	Monthly Return (%)	YTD Return (%)	Annual Return (%) 1-Year	3-Year	5-Year	10-Year	20-Year	Since Inception	Last 3 Years Ann'l Ret (%)	Risk-Adj	Ann'l Std Dev (%)	Since Inception Ann'l Ret (%)	Risk-Adj Ret (%)	Ann'l Std Dev (%)
Model Shadow Stock Portfolio	**17.4**	**20.8**	**20.8**	**9.5**	**12.3**	**4.8**	**12.0**	**13.8**	**9.5**	**8.7**	**26.8**	**13.8**	**11.7**	**22.1**
Vanguard 500 Index (VFINX)	14.1	26.1	26.1	9.9	15.5	11.9	9.6	10.0	9.9	9.9	17.3	10.0	10.0	15.0
Vanguard Small Cap Index (NAESX)	20.4	18.0	18.0	4.5	11.6	8.2	9.2	9.8	4.5	4.1	20.0	9.8	9.3	19.1
Dimensional U.S. Micro Cap (DFSCX	20.9	17.9	17.9	11.3	12.1	8.0	8.7	11.0	11.3	10.7	20.3	11.0	10.0	20.5

Data as of 12/31/223.



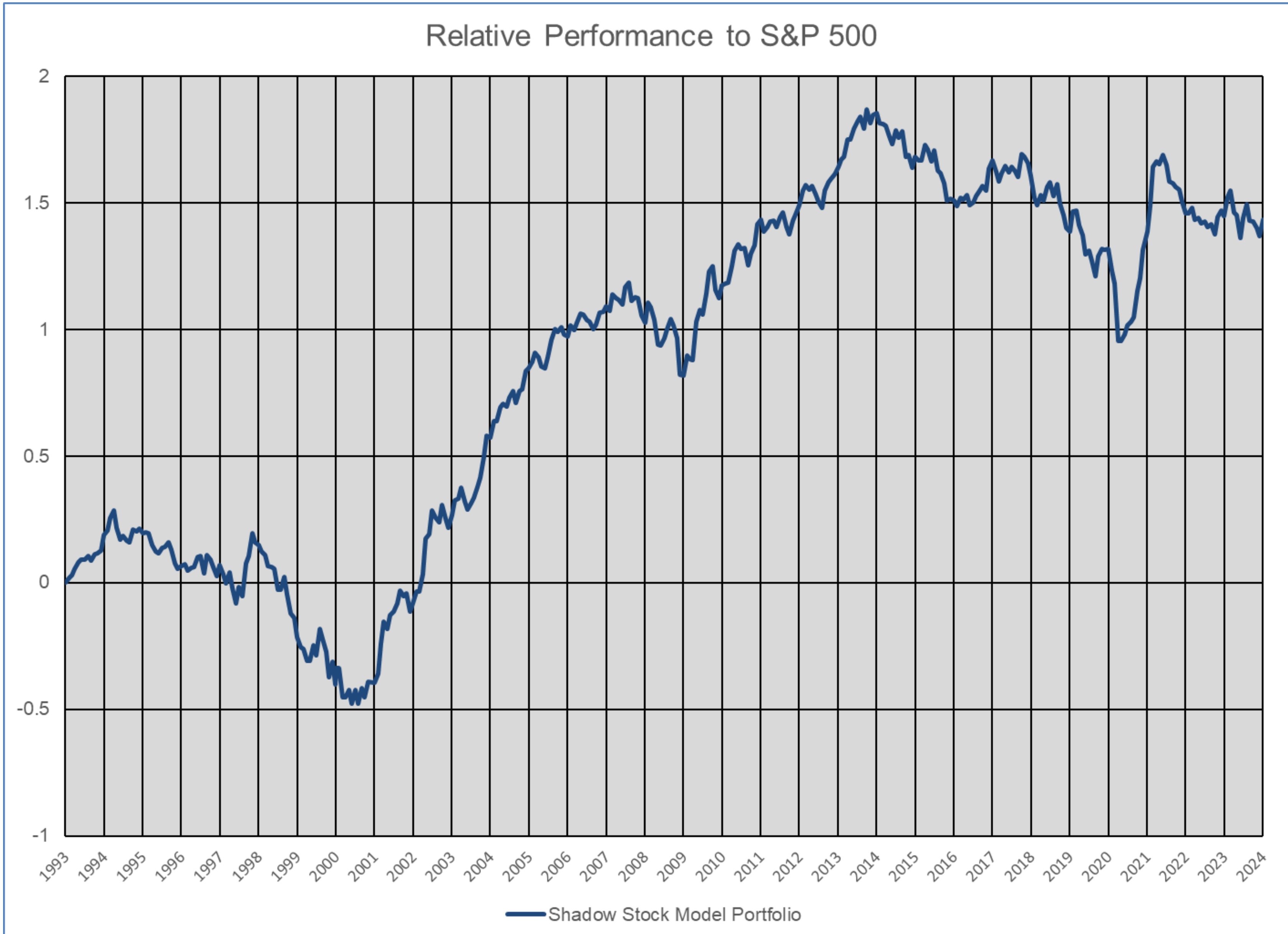
Year	Average Annual Return (%) Model Shadow Stock Portfolio	Vanguard 500 Index (VFINX)	Vanguard Small Cap Index (NAESX)
1993	32.3	9.9	18.7
1994	2.0	1.2	(0.5)
1995	20.7	37.4	28.7
1996	22.3	22.9	18.1
1997	44.3	33.2	24.6
1998	(8.9)	28.6	(2.6)
1999	(0.0)	21.1	23.1
2000	(7.7)	(9.1)	(2.7)
2001	21.4	(12.0)	3.1
2002	10.8	(22.1)	(20.0)
2003	73.1	28.5	45.6
2004	43.7	10.8	19.9
2005	17.9	4.8	7.4
2006	29.4	15.6	15.6
2007	(1.8)	5.4	1.2
2008	(50.8)	(37.0)	(36.0)
2009	72.3	26.5	36.1
2010	45.4	14.9	27.7
2011	6.3	2.0	(2.8)
2012	33.3	15.8	18.0
2013	61.0	32.2	37.6
2014	(5.8)	13.5	7.4
2015	(15.2)	1.3	(3.8)
2016	29.8	11.8	18.2
2017	14.0	21.7	16.1
2018	(24.4)	(4.5)	(10.5)
2019	19.6	31.3	27.2
2020	13.8	18.3	19.0
2021	35.3	28.6	17.6
2022	(19.7)	(18.2)	(17.7)
2023*	20.8	26.1	18.0
Inception	**13.8**	**10.0**	**9.8**

**Through 12/31/223.*



Model Portfolio Sector Holdings

	Model Portfolio Holdings	
Stock Investor/LSEG Sectors	#	% of Value
Academic & Educational Services	0	0.0%
Basic Materials	3	10.8%
Consumer Cyclicals	9	25.2%
Consumer Non-Cyclicals	0	0.0%
Energy	3	11.9%
Financials	0	0.0%
Healthcare	1	3.6%
Industrials	11	43.2%
Real Estate	0	0.0%
Technology	3	4.8%
Utilities	0	0.0%



Relative Performance to S&P 500
2
1.5
1
0.5
0
-0.5
-1
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Shadow Stock Model Portfolio

Time Frame and Performance

(Rolling Periods 1993 - 2023)

Holding Period	Percentage of Holding Periods That Resulted in Better Performance: Model Shadow Stock Outperformed	S&P 500 Outperformed
1 Month	52% (194 out of 372)	48% (178 out of 372)
1 Year	54% (196 out of 361)	46% (165 out of 361)
3 Year	52% (175 out of 337)	48% (162 out of 337)
5 Year	61% (192 out of 313)	39% (121 out of 313)
10 Year	81% (205 out of 253)	19% (48 out of 253)
15 Year	91% (175 out of 193)	9% (18 out of 193)
20 Year	100% (133 out of 133)	0% (0 out of 133)

Past performance is no guarantee of future results.

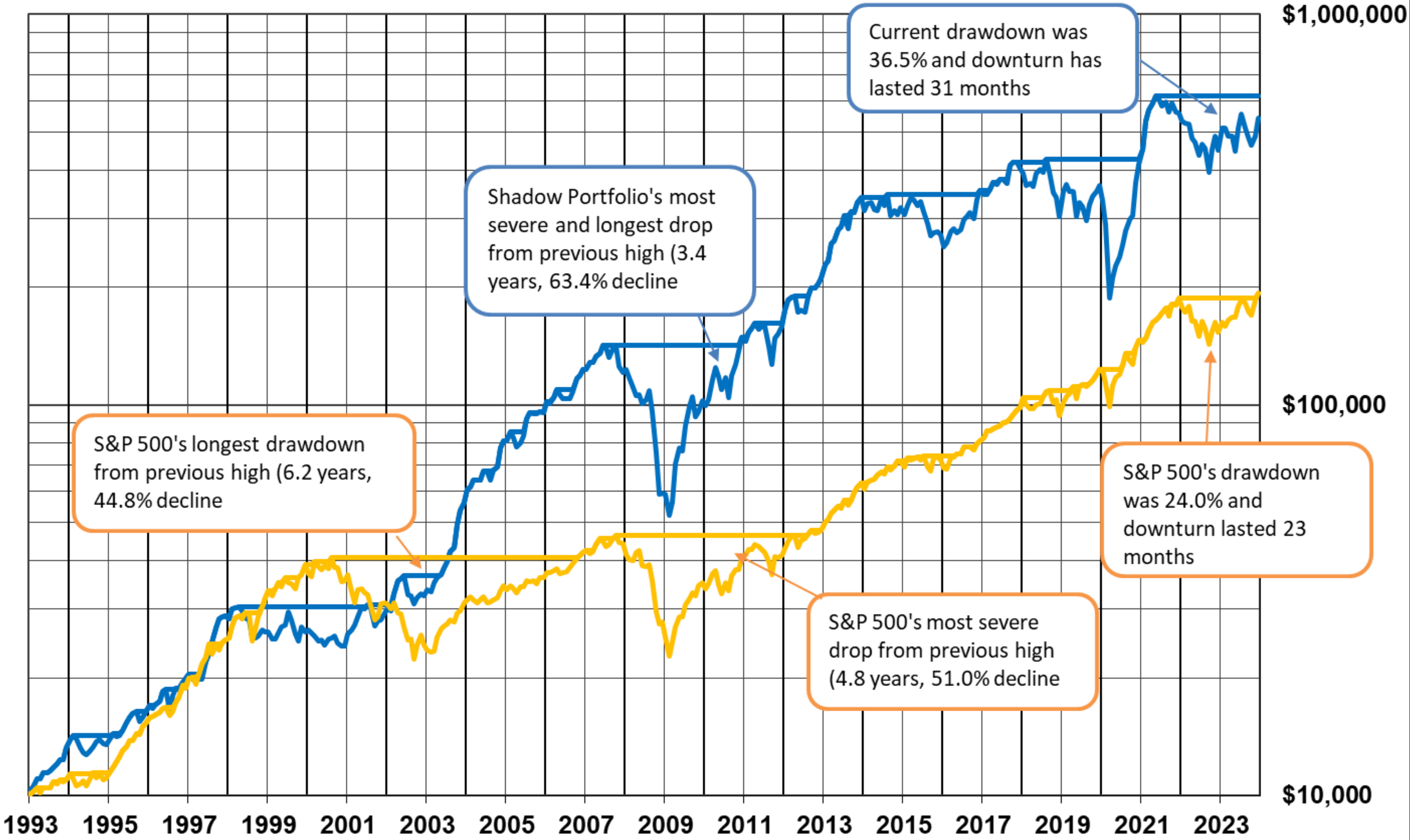
Security Performance 12/31/2022 - 12/31/2023

Company	Ticker	Starting Value	Ending Value	Profit (%)	Return On Investment (%)	Sector	Industry
Beazer Homes USA Inc	BZH	$4,224	$0	125.1%	125.1%	Consumer Cyclicals	Homebuilding
Escalade Inc	ESCA	$5,436	$10,728	101.8%	103.9%	Consumer Cyclicals	Recreational Products
Pangaea Logistics Solutions Lt	PANL	$6,232	$9,970	67.8%	69.8%	Industrials	Freight & Logistics - Marine
Friedman Industries Inc	FRD	$6,080	$9,601	58.7%	59.0%	Basic Materials	Metals & Mining - Iron & Steel
Park Ohio Holdings Corp	PKOH	$0	$8,573	49.0%	49.1%	Industrials	Industrial Machinery & Equipment
Mistras Group Inc	MG	$5,916	$8,784	48.5%	48.5%	Energy	Oil & Gas - Integrated
Lakeland Industries, Inc.	LAKE	$0	$7,416	44.4%	44.5%	Consumer Cyclicals	Apparel & Accessories
Hooker Furnishings Corp	HOFT	$2,712	$3,782	44.2%	45.0%	Consumer Cyclicals	Home Furnishings
Core Molding Technologies, Inc	CMT	$6,495	$9,265	42.7%	42.7%	Basic Materials	Non-Paper Containers & Packaging
Natural Gas Services Group, In	NGS	$0	$8,040	39.9%	39.9%	Energy	Oil & Gas - Related Services and Equipment
Covenant Logistics Group Inc	CVLG	$7,329	$9,760	34.5%	34.6%	Industrials	Freight & Logistics - Ground
VSE Corporation	VSEC	$6,469	$0	30.5%	30.6%	Industrials	Aerospace & Defense
Rocky Brands Inc	RCKY	$3,496	$4,467	30.4%	30.7%	Consumer Cyclicals	Footwear
Global Ship Lease Inc	GSL	$4,712	$5,609	28.1%	29.2%	Industrials	Freight & Logistics - Marine
L S Starrett Co	SCX	$0	$6,849	19.8%	<30 Days	Industrials	Industrial Machinery & Equipment
Kimball Electronics Inc	KE	$4,202	$5,013	19.3%	19.3%	Technology	Semiconductors
Strattec Security Corp	STRT	$3,391	$0	16.8%	16.8%	Consumer Cyclicals	Auto, Truck & Motorcycle Parts
Fonar Corp	FONR	$5,762	$6,729	16.8%	16.8%	Healthcare	Advanced Medical Equipment & Technology
Ampco-Pittsburgh Corp	AP	$1,340	$1,458	8.8%	8.8%	Basic Materials	Metals & Mining - Iron & Steel
StealthGas Inc	GASS	$0	$6,098	6.6%	<30 Days	Industrials	Freight & Logistics - Marine
Ducommun Inc	DCO	$7,444	$7,757	4.2%	4.2%	Industrials	Aerospace & Defense
Ennis Inc	EBF	$3,102	$3,067	3.4%	3.5%	Industrials	Commercial Printing Services
Key Tronic Corporation	KTCC	$1,936	$1,931	-0.2%	-0.2%	Technology	Computer Hardware
Bassett Furniture Industries I	BSET	$5,944	$5,677	-0.6%	-0.6%	Consumer Cyclicals	Home Furnishings
NACCO Industries, Inc.	NC	$4,370	$4,198	-1.7%	-1.7%	Energy	Coal
VOXX International Corp	VOXX	$5,447	$0	-3.3%	-3.3%	Technology	Household Electronics
Saga Communications Inc	SGA	$0	$5,320	-6.1%	<30 Days	Consumer Cyclicals	Broadcasting
Clarus Corp	CLAR	$5,096	$4,482	-10.8%	-10.8%	Consumer Cyclicals	Recreational Products
Vishay Precision Group Inc	VPG	$12,755	$11,243	-11.9%	-11.9%	Industrials	Industrial Machinery & Equipment
Hurco Companies, Inc.	HURC	$2,691	$2,218	-15.2%	-15.4%	Industrials	Industrial Machinery & Equipment
Big 5 Sporting Goods Corp	BGFV	$5,987	$4,299	-18.3%	-19.2%	Consumer Cyclicals	Retailers - Miscellaneous Specialty
SigmaTron International Inc	SGMA	$2,611	$2,040	-21.9%	-21.9%	Technology	Semiconductors
Titan Machinery Inc	TITN	$10,807	$7,855	-27.3%	-27.3%	Industrials	Heavy Machinery & Vehicles
Advanced Emissions Solutions I	ADES	$2,517	$0	-35.7%	-35.7%	Industrials	Environmental Services & Equipment
Lazydays Holdings Inc	LAZY	$4,525	$2,672	-41.0%	-41.0%	Consumer Cyclicals	Recreational Products
Container Store Group Inc	TCS	$3,189	$0	-47.1%	-47.1%	Consumer Cyclicals	Retailers - Miscellaneous Specialty

Current AAII Model Portfolio

Company	Ticker	Price	52-Week High	52-Week Low	Market Cap (Mil)	P/E Ratio (X)	P/Book Ratio (X)	26-Wk Rel Price Rank (%)	Notes
SigmaTron International Inc	SGMA	$3.17	$7.89	$2.07	$19.4	1.6	0.28	59	
Lazydays Holdings Inc	LAZY	$5.96	$13.92	$5.11	$82.3	nmf	0.32	15	Earnings probation 2023Q3
Key Tronic Corporation	KTCC	$4.20	$7.53	$3.72	$47.2	10.6	0.34	27	Currently qualifies
Ampco-Pittsburgh Corp	AP	$2.66	$4.00	$2.15	$53.2	21.0	0.49	32	
Big 5 Sporting Goods Corp	BGFV	$5.88	$10.83	$5.00	$129.1	36.3	0.49	19	
StealthGas Inc	GASS	$7.19	$7.54	$2.51	$252.5	5.6	0.51	96	Currently qualifies
Global Ship Lease Inc	GSL	$20.49	$21.83	$16.08	$732.0	2.5	0.65	62	
NACCO Industries, Inc.	NC	$37.05	$40.28	$29.37	$273.8	15.3	0.65	62	
Hurco Companies, Inc.	HURC	$23.00	$30.41	$19.29	$139.1	44.8	0.65	67	Currently qualifies
L S Starrett Co	SCX	$12.36	$13.10	$7.52	$88.1	4.0	0.70	82	Currently qualifies
Bassett Furniture Industries Inc	BSET	$15.11	$19.99	$13.30	$135.8	19.5	0.71	47	
Saga Communications Inc	SGA	$23.68	$27.27	$18.89	$142.2	12.7	0.78	72	
Fonar Corp	FONR	$19.18	$20.64	$12.13	$130.8	12.4	0.80	71	Currently qualifies
Clarus Corp	CLAR	$6.26	$10.72	$4.77	$240.3	nmf	0.80	25	TTM adjusted earnings positive
Natural Gas Services Group, Inc.	NGS	$15.47	$16.44	$9.41	$191.8	86.8	0.84	95	Currently qualifies
Friedman Industries Inc	FRD	$15.67	$18.31	$9.50	$114.5	6.1	0.89	83	Currently qualifies
Rocky Brands Inc	RCKY	$26.63	$33.09	$11.78	$199.8	19.2	0.91	84	
Titan Machinery Inc	TITN	$27.47	$47.87	$21.44	$631.3	6.0	1.00	44	
Lakeland Industries, Inc.	LAKE	$17.28	$19.66	$10.60	$127.4	19.9	1.04	78	
Core Molding Technologies, Inc.	CMT	$17.17	$30.09	$12.66	$148.2	6.5	1.10	25	
Pangaea Logistics Solutions Ltd	PANL	$7.82	$8.37	$5.06	$381.0	9.1	1.12	76	
Hooker Furnishings Corp	HOFT	$24.02	$27.15	$14.73	$260.7	nmf	1.12	85	Earnings probation 2023Q1
Park Ohio Holdings Corp	PKOH	$25.51	$28.79	$10.90	$333.4	13.2	1.16	91	
Kimball Electronics Inc	KE	$25.55	$31.43	$19.52	$628.3	11.1	1.19	38	
Ducommun Inc	DCO	$49.52	$58.28	$40.24	$754.0	35.4	1.19	75	Approaching size limit
Mistras Group Inc	MG	$7.96	$8.31	$4.93	$228.6	nmf	1.28	53	TTM adjusted earnings positive
Vishay Precision Group Inc	VPG	$31.44	$45.69	$27.94	$430.1	14.2	1.32	37	
Covenant Logistics Group Inc	CVLG	$44.10	$57.57	$29.34	$558.9	11.4	1.44	48	
Ennis Inc	EBF	$21.23	$23.17	$18.94	$556.0	12.4	1.60	64	
Escalade Inc	ESCA	$19.17	$22.01	$10.83	$259.2	27.5	1.63	94	

Cumulative Growth and Drawdowns of Model Shadow Stock Portfolio Compared to the S&P 500



Corrections Over Existence of Model Shadow Stock Portfolio
(computed with monthly total returns)

Corrections (10% or greater decline)	**Model Shadow Stock Portfolio**	**Vanguard 500 Index (VFINX)**
Number Observed	12	6
Average Length	1.4 years	2.3 years
Shortest Duration	2 months	4 months
Longest Duration	3.4 years	6.2 years
Average Drawdown	(26.1%)	(28.1%)
Largest Drawdown	(63.4%)	(51.0%)
Bear Markets (20% or greater decline)		
Number Observed	6	4
Average Length	2.3 years	3.2 years
Shortest Duration	8 months	6 months
Longest Duration	3.4 years	6.2 years
Average Drawdown	(37.4%)	(34.8%)
Largest Drawdown	(63.4%)	(51.0%)
Returns Since Inception		
Total Return	5,337.8%	1,791.1%
Annualized Return	13.8%	10.0%
Monthly Holding Periods with Losses	39% (145 out of 372)	34% (127 out of 372)
1-Year Holding Periods with Losses	28% (101 out of 361)	19% (69 out of 361)
5-Year Holding Periods with Losses	5% (16 out of 313)	16% (49 out of 313)
10-Year Holding Periods with Losses	0% (0 out of 253)	9% (24 out of 253)
15-Year Holding Periods with Losses	0% (0 out of 193)	0% (0 out of 193)

Figures calculated from monthly total returns. Data as of 12/31/2023.
Past performance is no guarantee of future results.

Time Frame, Losses & Return Extremes

(Rolling Periods 1993 - 2023)

	Model Shadow Stock Portfolio			Vanguard 500 Index (VFINX)		
Holding Period (Years)	% of Periods Resulting in Losses	Highest Annual Return	Lowest Annual Return	% of Periods Resulting in Losses	Highest Annual Return	Lowest Annual Return
1	28%	203.5%	(55.6%)	19%	56.2%	(43.3%)
3	15%	52.8%	(19.7%)	18%	32.7%	(16.1%)
5	5%	44.5%	(11.1%)	16%	28.5%	(6.7%)
10	0%	22.7%	4.0%	9%	16.5%	(3.5%)
15	0%	19.1%	5.6%	0%	13.8%	3.6%
20	0%	17.8%	10.5%	0%	10.2%	4.7%

Past performance is no guarantee of future results.

Model Shadow Stock Portfolio Turnover Statistics

	Avg Holding Period (Yrs)	Annual Portfolio Turnover	Average Buys/Sells per Year	Average No of Holdings	Ann'l Return
Inception	**4.0**	**25%**	**10**	**30**	**13.8%**
2023	5.7	18%	6	30	20.8%
2022	3.0	33%	10	30	(19.7%)
2021	8.0	13%	20	29	35.3%
2020	5.9	17%	6	29	13.8%
2019	4.2	24%	8	28	19.6%
2018	11.7	9%	4	29	(24.4%)
2017	3.4	30%	9	31	14.0%
2016	6.5	15%	5	31	29.8%
2015	5.1	19%	8	31	(15.2%)
2014	10.4	10%	4	31	(5.8%)
2013	4.3	23%	8	30	61.0%
2012	5.6	18%	7	29	33.3%
2011	5.3	19%	8	27	6.3%
2010	2.9	35%	12	28	45.4%
2009	3.6	27%	11	26	72.3%
2008	3.4	29%	10	29	(50.8%)
2007	1.8	57%	26	30	(1.8%)
2006	3.2	31%	13	33	29.4%
2005	2.9	34%	13	35	17.9%
2004	3.2	31%	13	36	43.7%

Data as of 12/31/2023

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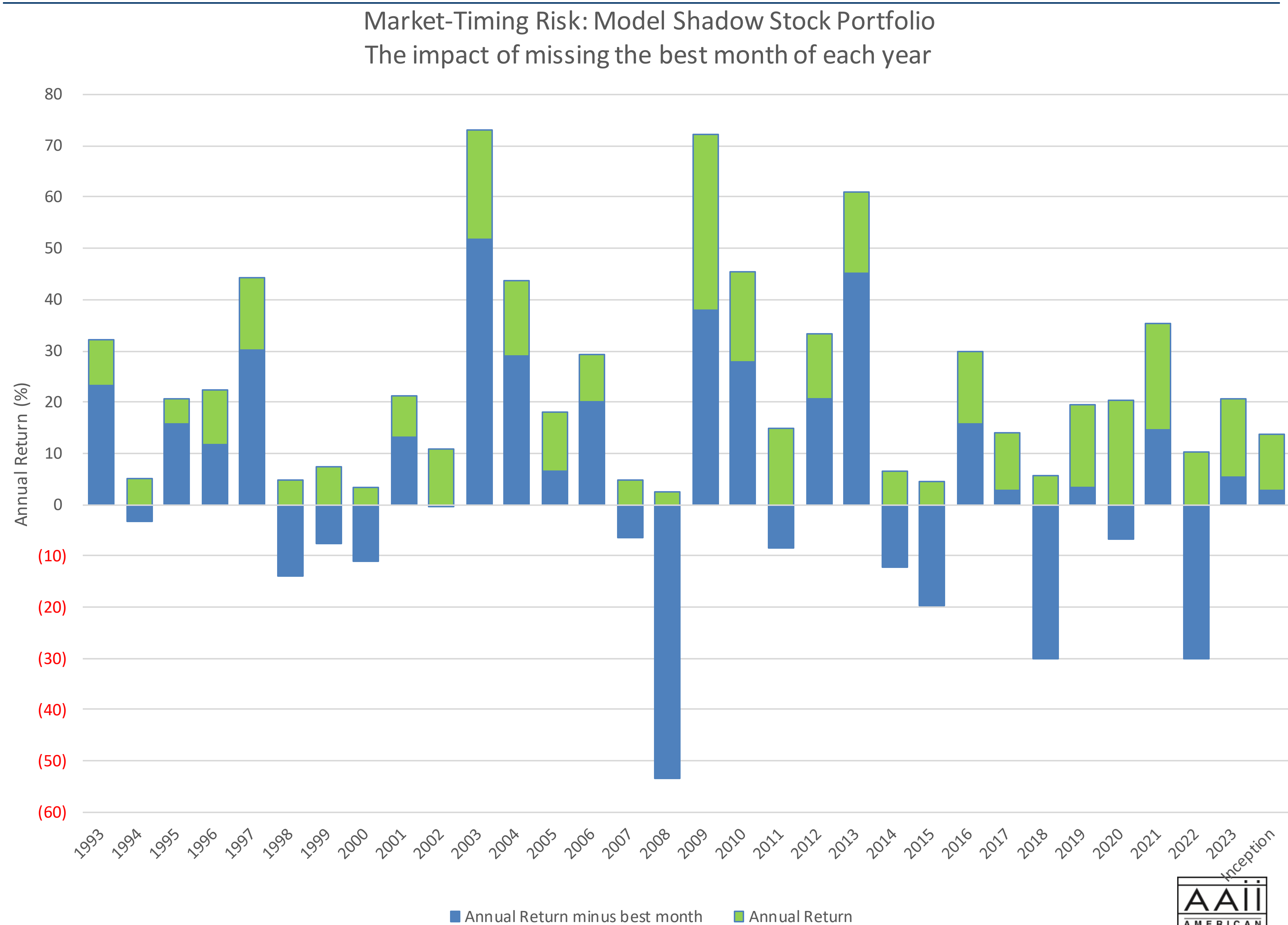
Market-Timing Risk: Model Shadow Stock Portfolio
The impact of missing the best month of each year
Annual Return (%)
80
70
60
50
40
30
20
10
0
(10)
(20)
(30)
(40)
(50)
(60)
1993
1994
1995
1996
1997
1998
1999
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2014
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2016
2017
2018
2019
2020
2021
2022
2023
Inception
Annual Return minus best month
Annual Return

Annual Total Return Performance

Year	Model Shadow Stock Portfolio: Always Invested (%)	Model Shadow Stock Portfolio: Skip Best & Worst Month (%)	Model Shadow Stock Portfolio: Skip Best Month (%)	Model Shadow Stock Portfolio: Skip Worst Month (%)	Vanguard 500 Index (VFINX): Always Invested (%)	Vanguard 500 Index (VFINX): Skip Best & Worst Month (%)	Vanguard 500 Index (VFINX): Skip Best Month (%)	Vanguard 500 Index (VFINX): Skip Worst Month (%)
1993	32.3	23.3	23.3	32.4	9.9	8.5	5.9	12.6
1994	2.0	2.5	(3.2)	8.0	1.2	1.7	(2.8)	5.8
1995	20.7	22.7	15.6	28.1	37.4	32.2	31.7	37.9
1996	22.3	26.2	11.8	38.2	22.9	19.5	14.2	28.5
1997	44.3	33.6	30.1	48.2	33.2	30.7	23.4	41.1
1998	(8.9)	(4.7)	(13.8)	0.7	28.6	39.0	18.9	50.4
1999	(0.0)	0.3	(7.5)	8.4	21.1	17.5	13.9	25.0
2000	(7.7)	(7.2)	(11.0)	(3.8)	(9.1)	(10.1)	(17.1)	(1.3)
2001	21.4	26.3	13.2	35.4	(12.0)	(10.2)	(18.4)	(3.2)
2002	10.8	12.0	(0.0)	24.2	(22.1)	(19.7)	(28.4)	(12.6)
2003	73.1	53.3	51.7	75.0	28.5	21.9	18.7	32.0
2004	43.7	34.6	28.9	50.1	10.8	10.1	6.5	14.6
2005	17.9	12.6	6.5	24.7	4.8	3.5	1.0	7.4
2006	29.4	23.9	20.0	33.6	15.6	15.3	12.0	19.1
2007	(1.8)	4.8	(6.5)	10.1	5.4	5.3	0.9	10.0
2008	(50.8)	(40.4)	(53.3)	(37.2)	(37.0)	(27.8)	(39.9)	(24.3)
2009	72.3	56.8	37.9	95.9	26.5	29.2	15.5	41.6
2010	45.4	44.3	27.9	64.0	14.9	14.7	5.5	24.9
2011	6.3	2.7	(8.6)	19.4	2.0	(1.1)	(8.1)	9.7
2012	33.3	32.8	20.8	46.6	15.8	18.0	10.9	23.2
2013	61.0	45.3	45.3	61.0	32.2	29.4	25.7	36.2
2014	(5.8)	(0.8)	(12.2)	6.6	13.5	12.4	8.5	17.6
2015	(15.2)	(13.8)	(19.7)	(9.0)	1.3	(0.6)	(6.6)	7.8
2016	29.8	24.2	15.7	39.3	11.8	10.2	4.7	17.7
2017	14.0	6.8	2.7	18.6	21.7	16.9	17.0	21.5
2018	(24.4)	(20.7)	(30.0)	(14.3)	(4.5)	(0.7)	(9.7)	5.0
2019	19.6	19.6	3.2	38.5	31.3	29.9	21.6	40.3
2020	13.8	43.8	(6.7)	75.2	18.3	19.6	4.8	35.0
2021	35.3	22.0	14.5	44.1	28.6	26.0	20.2	34.9
2022	(19.7)	(19.3)	(30.0)	(7.4)	(18.2)	(17.5)	(25.1)	(9.9)
2023	20.8	15.3	5.4	32.1	26.1	21.4	15.6	32.4
CAGR**	**13.8**	**13.2**	**2.8**	**25.2**	**10.0**	**9.9**	**3.0**	**17.3**

**Through Dec 31, 2023.*

***CAGR: compound Annual Growth Rate*

AMERICAN ASSOCIATION OF INDIVIDUAL INVESTORS®

Valuation & Performance Snapshot of Market Segments and Sectors

Ranked by 52-Week Price Change

Median Values	52-Wk Price Change (%)	P/Book Ratio (X)	P/Sales Ratio (X)	P/E Ratio (X)	EPS Growth Rate 3 Yr (%)	EPS Growth Rate 12 m (%)	Profit Margin (%)	Avg Qrtrly Earnings Surprise (%)	Avg Current Year Est Revision (% 4 wk)	Market Cap ($ Mil)
Shadow Stock Portfolio	16.2	0.89	0.56	12.8	33.8	(0.2)	3.6	(1.2)	4.3	286
S&P MidCap 400	13.5	2.57	1.94	20.7	14.7	(1.0)	8.2	10.2	0.7	6,487
S&P 500	11.0	3.47	2.72	24.9	10.3	4.8	11.8	11.8	(0.0)	33,996
S&P SmallCap 600	9.2	1.81	1.47	18.8	12.4	(5.6)	6.1	1.4	0.0	1,795
Exchanged-Listed Stocks	3.3	1.76	1.79	19.3	7.8	3.9	3.5	2.1	(0.4)	616
SI Pro Sector Medians										
Industrials	9.8	2.31	1.35	23.4	12.2	8.9	4.1	1.1	(1.0)	703
Technology	5.8	2.33	1.97	24.6	2.6	9.8	(6.6)	12.9	(0.5)	436
Financials	4.7	1.27	2.04	11.9	8.9	(1.8)	18.5	4.3	(0.4)	242
Real Estate	0.5	1.21	3.24	28.2	(1.5)	(20.5)	4.2	(26.7)	2.1	1,163
Basic Materials	0.4	1.50	1.15	16.1	19.9	(7.2)	4.8	(21.8)	(2.0)	634
Consumer Cyclicals	0.3	1.79	0.83	18.3	12.3	(5.8)	2.1	(1.2)	(2.3)	556
Energy	(1.7)	1.40	1.27	9.0	32.2	(4.7)	13.3	(8.7)	0.2	813
Academic & Educational Servs	(7.1)	1.34	1.30	20.9	3.0	14.4	(4.9)	30.5	0.4	43
Consumer Non-Cyclicals	(7.5)	2.16	0.95	21.2	7.3	6.6	2.1	8.4	(5.0)	656
Utilities	(10.7)	1.60	1.90	18.5	4.7	6.7	10.1	21.4	1.1	3,571
Health Care	(18.9)	2.08	3.44	29.8	4.0	13.0	(34.1)	2.5	1.4	106

Median values of index and sector constituents for price changes, valuation, profitability and market cap. Averages for earnings surprise and estimate revisions.

Source: AAII Stock Investor Pro/Refinitiv. Data as of 12/29/2023.

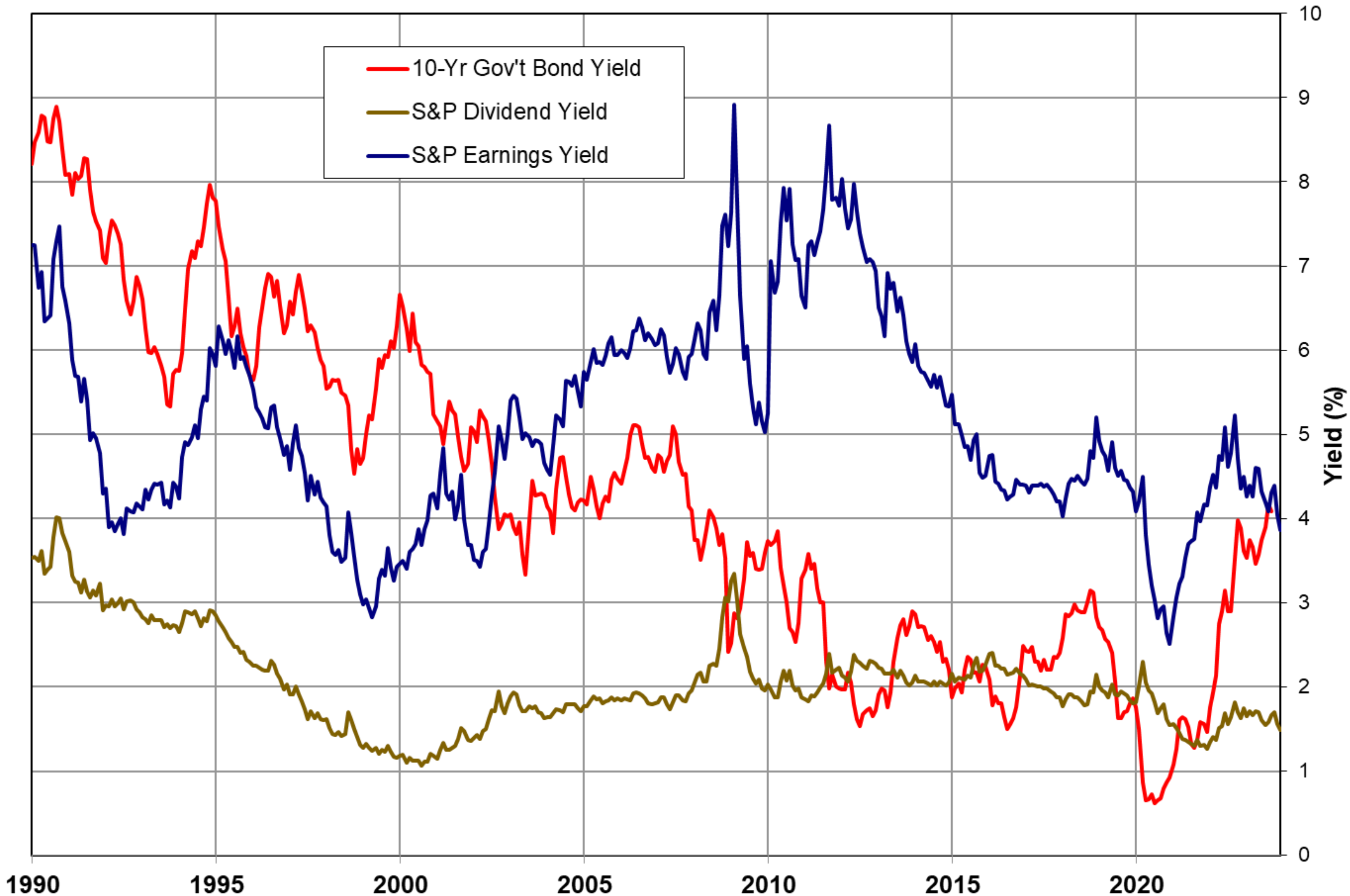
Long-Term Averages

	S&P 500 P/E Ratio	S&P 500 Dividend Yield	10-Yr T-Bond Yield	CPI 12 mo. % Change
1960+	**17.7**	**2.9%**	**5.8%**	**3.8%**
1960s	17.8	3.2%	4.7%	2.3%
1970s	12.7	4.1%	7.5%	7.1%
1980s	12.2	4.3%	10.6%	5.6%
1990s	21.9	2.5%	6.7%	3.0%
2000s	19.6	1.8%	4.5%	2.6%
2010s	18.5	2.1%	2.4%	1.8%
2020s	26.0	1.6%	2.2%	4.6%

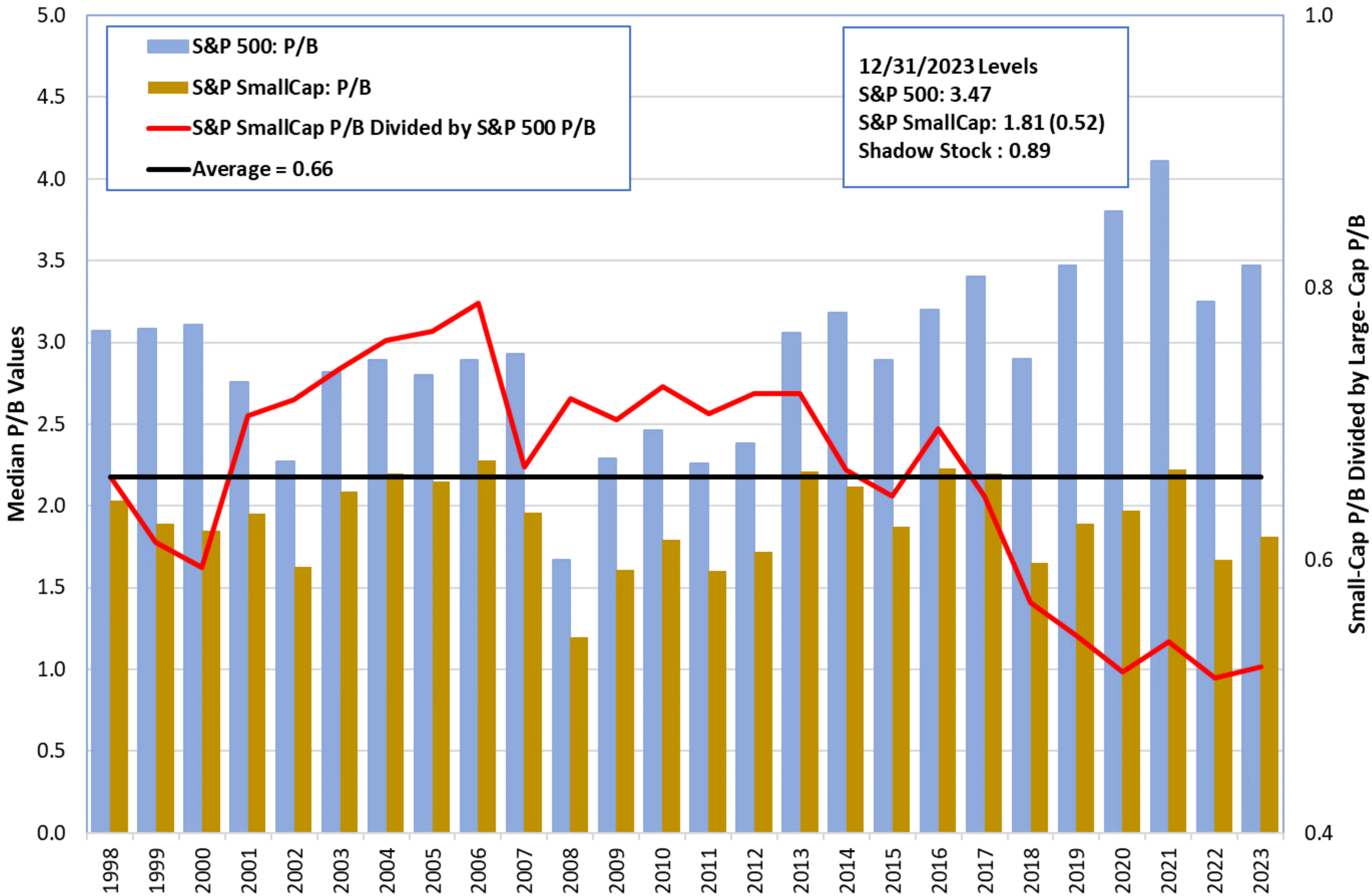
Source: IrrationalExuberance.com

S&P 500 Index and Price-Earnings Ratio

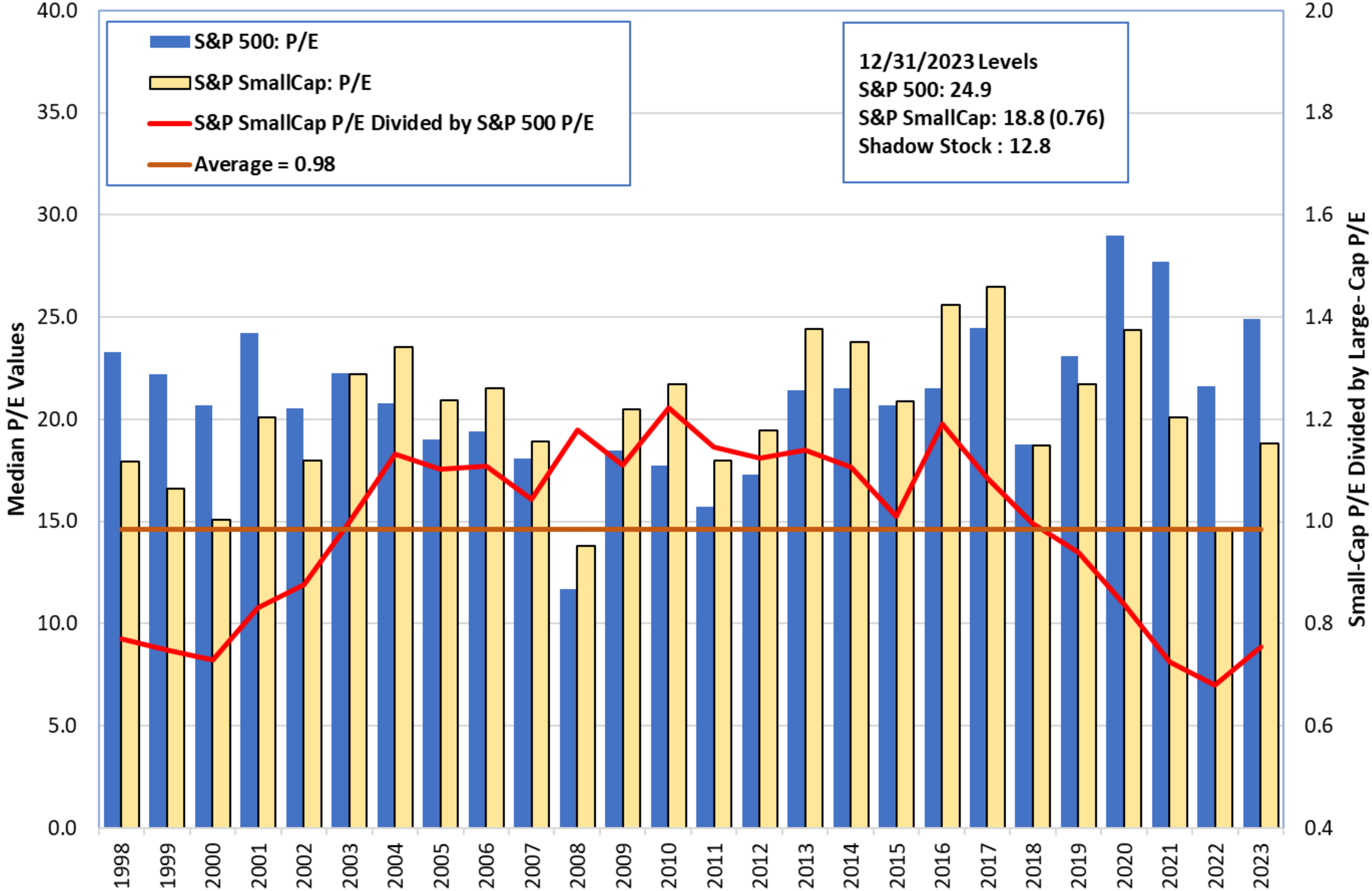
Yields on Long-Term Government Bonds, S&P Dividends, and S&P Earnings



Price-to-Book Ratios: Small-Cap Stocks Relative to Large-Cap Stocks



Price/Earnings Ratios: Small-Cap Stocks Relative to Large-Cap Stocks



Learning Objectives

- Background on research and theory behind the Shadow Stock strategy
- Present model portfolio construction and management rules
- Review Model Shadow Stock and market performance
- Highlight AAII resources to follow the approach including the current portfolio holdings and ideas list

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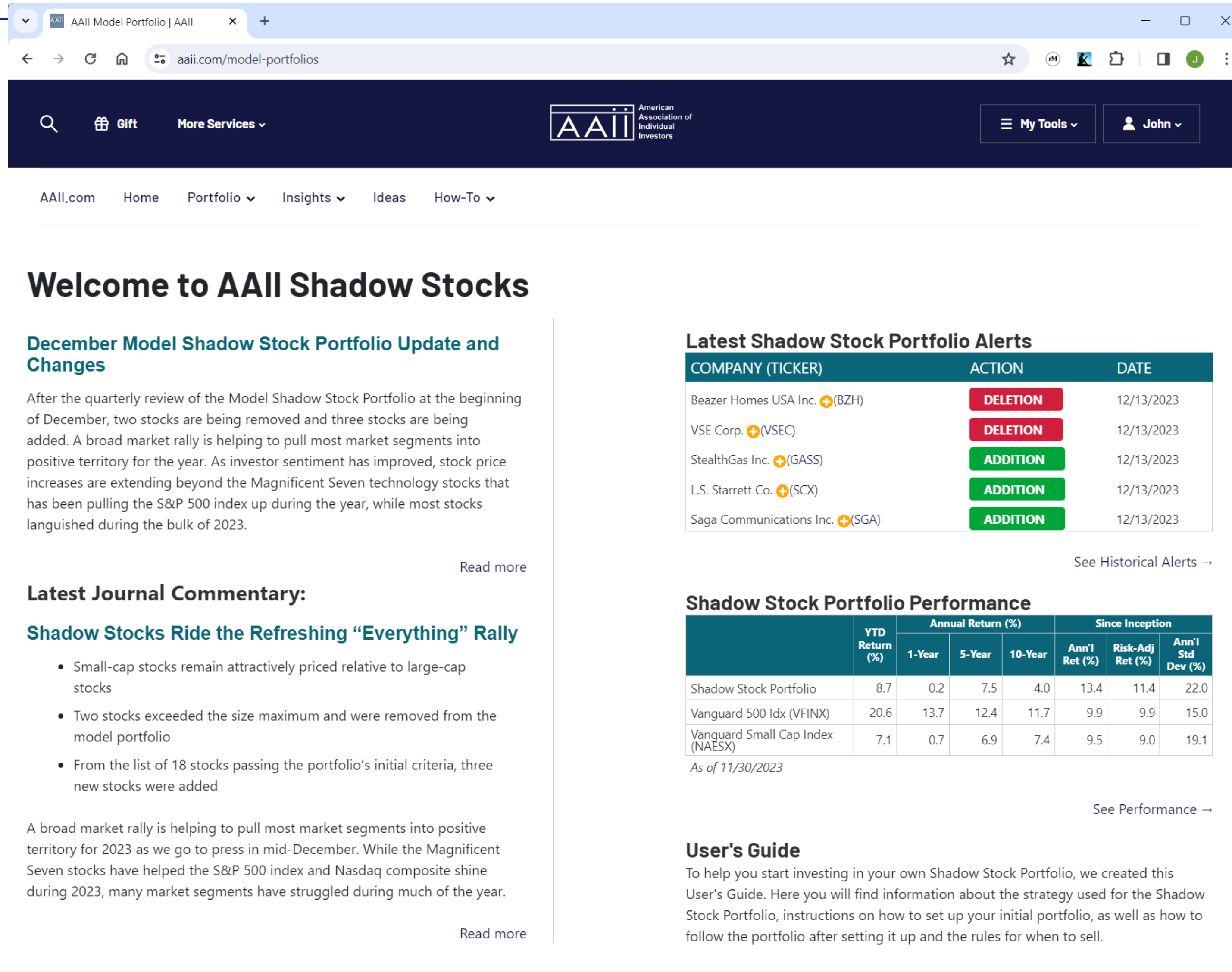
- Home page for AAII Model Shadow Stock Portfolio



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Welcome to AAII Shadow Stocks

December Model Shadow Stock Portfolio Update and Changes

After the quarterly review of the Model Shadow Stock Portfolio at the beginning of December, two stocks are being removed and three stocks are being added. A broad market rally is helping to pull most market segments into positive territory for the year. As investor sentiment has improved, stock price increases are extending beyond the Magnificent Seven technology stocks that has been pulling the S&P 500 index up during the year, while most stocks languished during the bulk of 2023.

Read more

Latest Journal Commentary:

Shadow Stocks Ride the Refreshing “Everything” Rally

- Small-cap stocks remain attractively priced relative to large-cap stocks
- Two stocks exceeded the size maximum and were removed from the model portfolio
- From the list of 18 stocks passing the portfolio’s initial criteria, three new stocks were added

A broad market rally is helping to pull most market segments into positive territory for 2023 as we go to press in mid-December. While the Magnificent Seven stocks have helped the S&P 500 index and Nasdaq composite shine during 2023, many market segments have struggled during much of the year.

Read more

Latest Shadow Stock Portfolio Alerts

COMPANY (TICKER)	ACTION	DATE
Beazer Homes USA Inc. (BZH)	DELETION	12/13/2023
VSE Corp. (VSEC)	DELETION	12/13/2023
StealthGas Inc. (GASS)	ADDITION	12/13/2023
L.S. Starrett Co. (SCX)	ADDITION	12/13/2023
Saga Communications Inc. (SGA)	ADDITION	12/13/2023

See Historical Alerts →

Shadow Stock Portfolio Performance

	YTD Return (%)	Annual Return (%)			Since Inception		
		1-Year	5-Year	10-Year	Ann'l Ret (%)	Risk-Adj Ret (%)	Ann'l Std Dev (%)
Shadow Stock Portfolio	8.7	0.2	7.5	4.0	13.4	11.4	22.0
Vanguard 500 Idx (VFINX)	20.6	13.7	12.4	11.7	9.9	9.9	15.0
Vanguard Small Cap Index (NAESX)	7.1	0.7	6.9	7.4	9.5	9.0	19.1

As of 11/30/2023

See Performance →

User's Guide

To help you start investing in your own Shadow Stock Portfolio, we created this User's Guide. Here you will find information about the strategy used for the Shadow Stock Portfolio, instructions on how to set up your initial portfolio, as well as how to follow the portfolio after setting it up and the rules for when to sell.

See User's Guide →

www.aaii.com/model-portfolios

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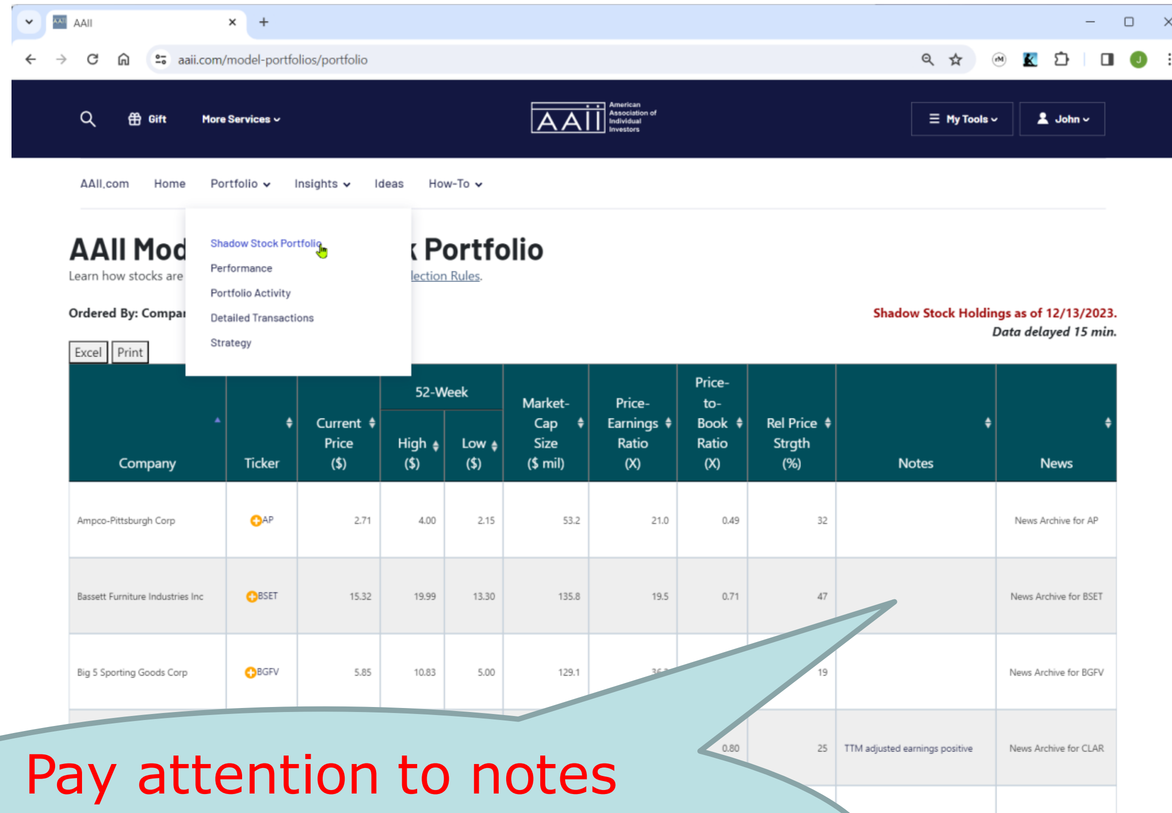
Actual AAII Model Shadow Stock Portfolio

- "Actual Portfolio" section updated monthly & lists current portfolio holdings
- Current price to book & market cap
- Special notes (e.g., currently qualifies, earnings probation)



Pay attention to notes about current qualifiers, earnings probation, valuation & market cap aaii.com/model-portfolios/ideas

AAII.com | Home | Portfolio | Insights | Ideas | How-To

Shadow Stock Ideas

We run AAII's Shadow Stock selection methodology daily against a universe of over 6,000 stocks to uncover specific companies that meet our selection criteria.

Ordered By: Company

Passing Companies as of 1/5/2024.
Data delayed 15 min.

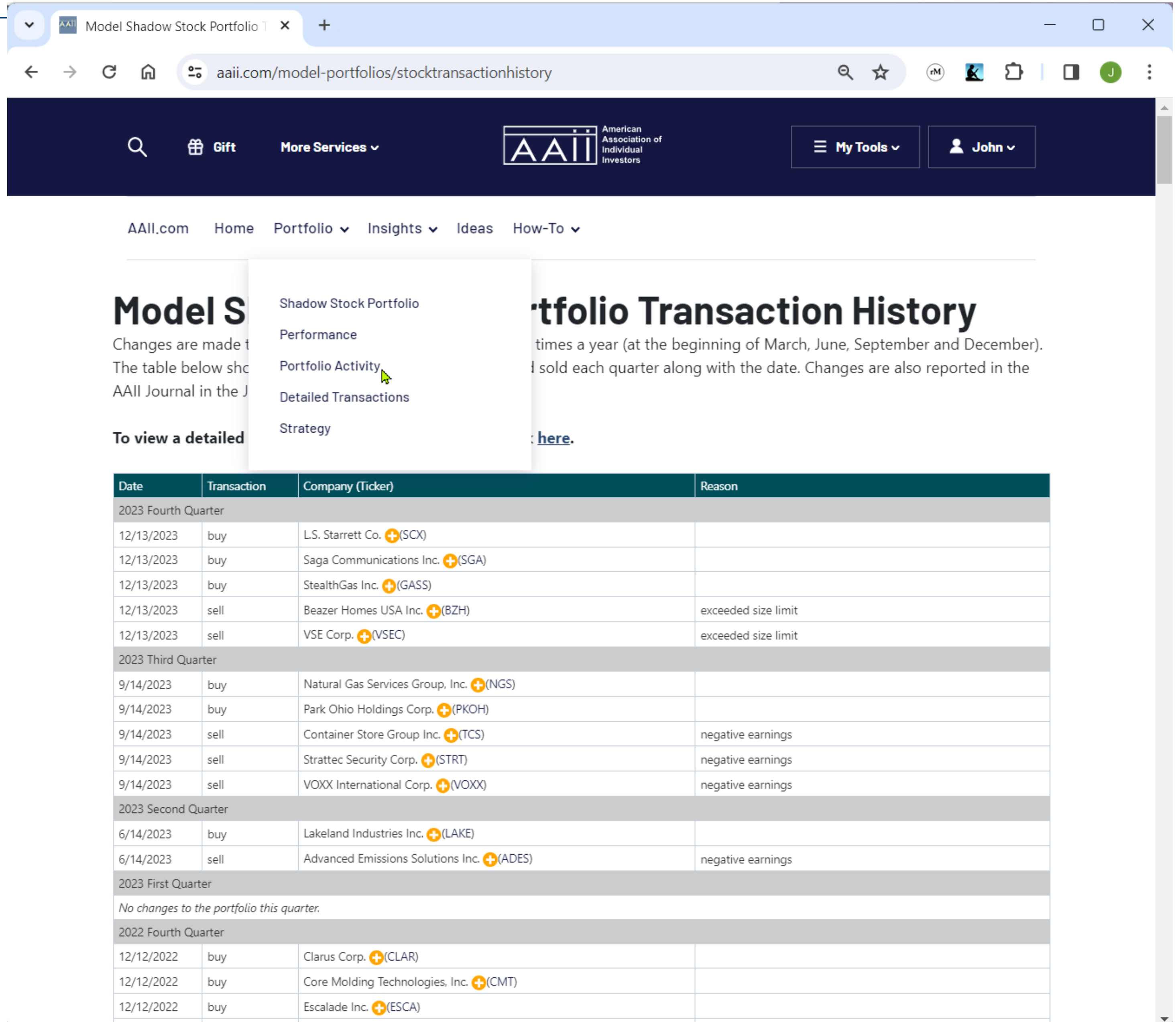
Excel | Print

Company	Ticker	Current Price ($)	52-Week High ($)	52-Week Low ($)	Market-Cap Size ($ mil)	Price-Earnings Ratio (X)	Price-to-Book Ratio (X)	Rel Price Strgth (%)	Industry	Held in Tracking Portfolio
Bridgford Foods Corporation	BRID	11.55	14.51	10.03	106.3	24.00	0.83	61	Food Processing	
Eagle Pharmaceuticals Inc	EGRX	4.94	34.56	4.62	67.9	5.60	0.27	6	Pharmaceuticals	
Flexsteel Industries Inc	FLXS	18.24	24.96	15.45	97.8	6.40	0.67	44	Home Furnishings	
Fonar Corp	FONR	19.14	20.64	12.13	130.8	12.40	0.80	71	Advanced Medical Equipment & Technology	✓
Friedman Industries Inc	FRD	15.80	18.31	9.50	114.5	6.10	0.89	83	Metals & Mining - Iron & Steel	✓
FutureFuel Corp	FF	5.93	10.31	5.27	262.1	9.10	0.88	22	Renewable Fuels	
Hurco Companies, Inc.	HURC	23.73	30.41	19.29	139.1	44.80	0.65	67	Industrial Machinery & Equipment	✓
Key Tronic Corporation	KTCC	4.20	7.53	3.72	47.2	10.60	0.34	27	Computer Hardware	✓
L S Starrett Co	SCX	12.40	13.10	7.52	88.1	4.00	0.70	82	Industrial Machinery & Equipment	✓
LGL Group Inc	LGL	6.07	6.25	4.05	32.1	341.00	0.84	87	Electrical Components & Equipment	
Natural Gas Services Group,	NGS	15.59	16.44	9.41	191.8	86.80	0.84	95	Oil & Gas - Related Services and Equipment	✓

https://www.aaii.com/model-portfolios/ideas

- "Shadow Stock Ideas" list is updated **daily** a lists all stocks currently passin initial buy rules
- You will need to monitor any stocks purchased from this list since they may not be part of our model portfolio

- Transaction History page lists the Model Shadow Stock Portfolio transactions dating back to 2003


Model Shadow Stock Portfolio T

aaii.com/model-portfolios/stocktransactionhistory

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Shadow Stock Portfolio
Performance
Portfolio Activity
Detailed Transactions
Strategy

Model S rtfolio Transaction History

Changes are made t times a year (at the beginning of March, June, September and December). The table below sho sold each quarter along with the date. Changes are also reported in the AAII Journal in the J

To view a detailed here.

Date	Transaction	Company (Ticker)	Reason
2023 Fourth Quarter			
12/13/2023	buy	L.S. Starrett Co. (SCX)	
12/13/2023	buy	Saga Communications Inc. (SGA)	
12/13/2023	buy	StealthGas Inc. (GASS)	
12/13/2023	sell	Beazer Homes USA Inc. (BZH)	exceeded size limit
12/13/2023	sell	VSE Corp. (VSEC)	exceeded size limit
2023 Third Quarter			
9/14/2023	buy	Natural Gas Services Group, Inc. (NGS)	
9/14/2023	buy	Park Ohio Holdings Corp. (PKOH)	
9/14/2023	sell	Container Store Group Inc. (TCS)	negative earnings
9/14/2023	sell	Strattec Security Corp. (STRT)	negative earnings
9/14/2023	sell	VOXX International Corp. (VOXX)	negative earnings
2023 Second Quarter			
6/14/2023	buy	Lakeland Industries Inc. (LAKE)	
6/14/2023	sell	Advanced Emissions Solutions Inc. (ADES)	negative earnings
2023 First Quarter			
No changes to the portfolio this quarter.			
2022 Fourth Quarter			
12/12/2022	buy	Clarus Corp. (CLAR)	
12/12/2022	buy	Core Molding Technologies, Inc. (CMT)	
12/12/2022	buy	Escalade Inc. (ESCA)	

Keep a Long-Term Perspective

- Micro-cap stocks tend to have consecutive periods of overperformance and then underperformance
- Micro-cap stocks have more volatility than large-cap stocks; important to maintain diversified portfolio and consider all asset classes and foreign markets as well as domestic markets

Keep a Long-Term Perspective

- Maintain reasonable expectations
- Market is reasonably efficient, but not in the academic sense that all information is instantaneously reflected in prices of all stocks. Nevertheless, information will eventually lead to stock price adjustments
  - Adjustments quicker for large caps than micro caps

Keys to Long-Term Success

- To succeed with the Shadow Stock approach:
  - Need enough time to manage a stock portfolio
    - Approach designed so that it only needs a careful examination quarterly, perhaps an 8-hour commitment
    - If one has time, the portfolio can be reviewed monthly to keep up to date on earnings and company news
  - Need an interest in managing a portfolio—in good times and bad
  - Need discipline to follow the program once you have committed to it
  - Important to control turnover with micro-cap stocks

AAII's Model Portfolio Review Week

- **Daily Live Events (Subscribers can view on-demand)**

Schedule:

- 1/8 AAII Shadow Stocks Model Portfolio (open to all AAII Members)
- 1/9 AAII Growth Investing
- 1/10 Dividend Investing
- 1/11 VMQ Stocks
- 1/12 Stock Superstars Report

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