

# Test Market Timing Models

This tool allows you to test different market timing and tactical asset allocation models based on moving averages, momentum, market valuation and target volatility. The supported models include:

- Shiller PE Ratio Market Valuation
- Moving Averages - Single Asset
- Moving Averages - Portfolio Assets
- Momentum - Relative Strength
- Momentum - Dual Momentum
- Momentum - Adaptive Allocation
- Target Volatility

You can find a summary of the selected tactical asset allocation model below, and a more detailed description in the FAQ section.

## Momentum - Dual Momentum

The dual momentum model uses relative momentum to select the best performing model assets and incorporates absolute momentum as a filter to invest in cash if the excess return of the selected asset over cash is negative.

### Timing Model

Dual Momentum

### Start Year

1985

### End Year

2017

### Initial Amount

\$ 10000

.00

### Tickers

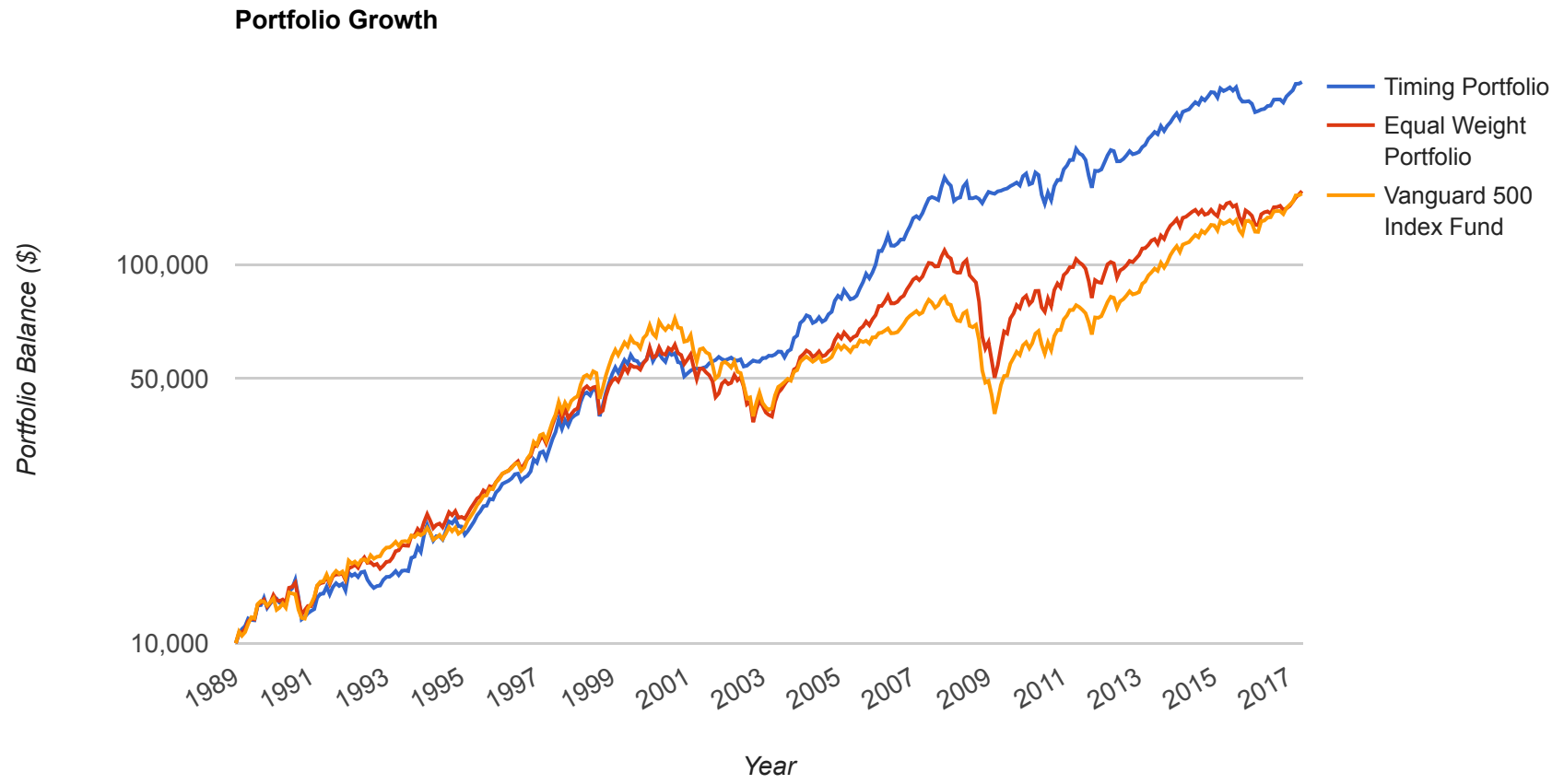
VFINX,HAINX

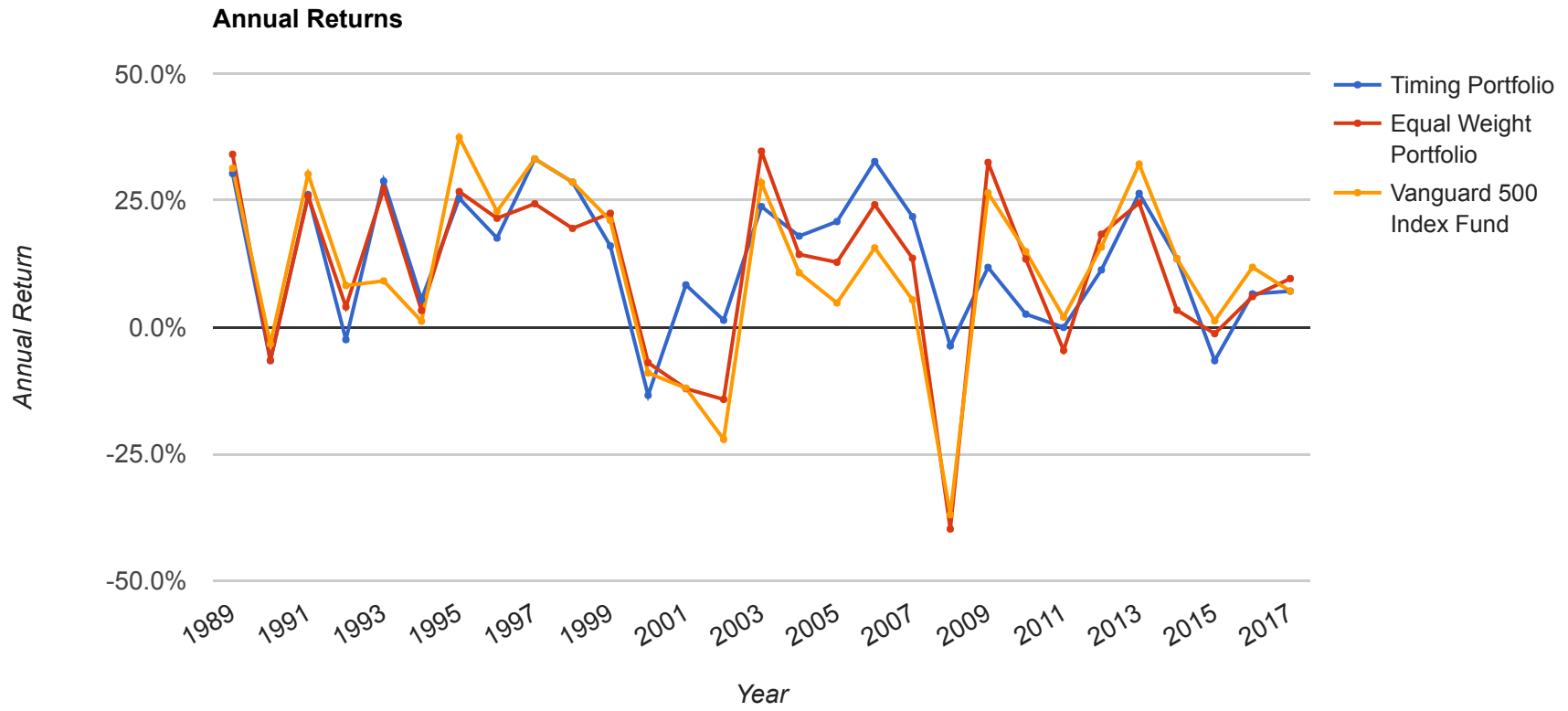


**Single absolute momentum****Out of Market Asset****Specify out of market asset****Performance Periods****Timing Period****Assets to hold****Trading Frequency****Trade Execution****Benchmark****Fee Structure****Market Timing Results (Jan 1989 - Apr 2017)**

Market timing results from 1989 to 2017 are based on dual momentum model holding the best performing asset. Absolute momentum based trend following filter is used to switch any selected assets that have a negative excess return over the risk free rate to Vanguard Total Bond Market Index Fd (VBMFX). The model uses a single performance window of 12 month(s). Timing model trades are executed using the end of month close price. The selected year range for the timing test was automatically adjusted based on the available data for Harbor International Fund Insti CI (HAINX) (Jan 1988-Apr 2017).

<b>Portfolio</b>	<b>Initial Balance</b>	<b>Final Balance</b>	<b>CAGR</b>	<b>Stdev</b>	<b>Best Year</b>	<b>Worst Year</b>	<b>Max. Drawdown</b>	<b>Sharpe Ratio</b>	<b>Sortino Ratio</b>	<b>US Mkt Correlation</b>
Timing Portfolio	\$10,000	\$303,639	12.80%	13.07%	33.21%	-13.45%	-21.39%	0.77	1.19	0.71
Equal Weight Portfolio	\$10,000	\$156,435	10.19%	15.08%	34.73%	-39.84%	-53.93%	0.53	0.77	0.94
Vanguard 500 Index Fund	\$10,000	\$154,021	10.13%	14.41%	37.45%	-37.02%	-50.97%	0.54	0.80	0.99





## Notes on results:

- Past performance is not a guarantee of future returns and data and other errors may exist. See Disclaimer and Terms of Use
- The annual results for 2017 are based on full calendar months from January to April.
- An equal-weight allocation is used for the assets held by the momentum model
- The equal-weight buy-and-hold benchmark portfolio assumes annual rebalancing
- The results for the timing portfolio assume monthly rebalancing trades
- The relative strength signal is based on total return including dividends
- Additional trading costs and taxes for timing models are not reflected in the results
- CAGR = Compound Annual Growth Rate
- Stdev = Standard Deviation based on annualized standard deviation of monthly log returns
- Sharpe and Sortino ratios are calculated and annualized from monthly excess returns over risk free rate (1-month t-bills)
- Stock market correlation is based on the correlation of monthly returns
- Drawdowns are calculated based on monthly returns
- Refer to the FAQ regarding the list of data sources and methodology for additional details

Year	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Insti CI (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
1989	30.31%	34.11%	31.36%	31.36%	36.86%	13.64%	\$13,031	\$13,411	\$13,136
1990	-6.62%	-6.54%	-3.32%	-3.32%	-9.76%	8.64%	\$12,168	\$12,534	\$12,700
1991	26.15%	25.83%	30.19%	30.19%	21.46%	15.26%	\$15,350	\$15,771	\$16,534
1992	-2.47%	4.01%	8.21%	8.21%	-0.20%	7.21%	\$14,971	\$16,402	\$17,891
1993	28.82%	27.27%	9.12%	9.12%	45.42%	9.69%	\$19,285	\$20,875	\$19,523
1994	5.43%	3.30%	1.18%	1.18%	5.43%	-2.64%	\$20,332	\$21,564	\$19,752
1995	25.43%	26.75%	37.45%	37.45%	16.06%	18.19%	\$25,501	\$27,334	\$27,149
1996	17.59%	21.49%	22.86%	22.86%	20.12%	3.58%	\$29,987	\$33,208	\$33,355
1997	33.21%	24.35%	33.21%	33.21%	15.49%	9.43%	\$39,946	\$41,294	\$44,432
1998	28.62%	19.49%	28.62%	28.62%	10.36%	8.59%	\$51,377	\$49,342	\$57,147

<b>Year</b>	<b>Timing Return</b>	<b>Equal Weight Portfolio Return</b>	<b>Vanguard 500 Index Fund Return</b>	<b>Vanguard 500 Index Fund (VFINX)</b>	<b>Harbor International Fund Insti CI (HAINX)</b>	<b>Vanguard Total Bond Market Index Fd (VBMFX)</b>	<b>Timing Balance</b>	<b>Equal Weight Portfolio Balance</b>	<b>Vanguard 500 Index Fund Balance</b>
1999	16.03%	22.48%	21.07%	21.07%	23.89%	-0.75%	\$59,614	\$60,433	\$69,187
2000	-13.45%	-7.01%	-9.06%	-9.06%	-4.97%	11.39%	\$51,597	\$56,196	\$62,921
2001	8.34%	-12.14%	-12.02%	-12.02%	-12.25%	8.34%	\$55,900	\$49,375	\$55,356
2002	1.37%	-14.26%	-22.15%	-22.15%	-6.38%	8.40%	\$56,664	\$42,333	\$43,098
2003	23.80%	34.73%	28.50%	28.50%	40.95%	3.88%	\$70,148	\$57,035	\$55,381
2004	17.97%	14.35%	10.74%	10.74%	17.97%	4.25%	\$82,752	\$65,221	\$61,329
2005	20.84%	12.81%	4.77%	4.77%	20.84%	2.41%	\$99,997	\$73,574	\$64,257
2006	32.69%	24.16%	15.64%	15.64%	32.69%	4.28%	\$132,682	\$91,352	\$74,308
2007	21.82%	13.60%	5.39%	5.39%	21.82%	6.93%	\$161,627	\$103,777	\$78,311
2008	-3.69%	-39.84%	-37.02%	-37.02%	-42.66%	5.07%	\$155,667	\$62,433	\$49,320
2009	11.80%	32.51%	26.49%	26.49%	38.54%	5.93%	\$174,029	\$82,732	\$62,382
2010	2.57%	13.45%	14.91%	14.91%	11.98%	6.30%	\$178,498	\$93,856	\$71,686
2011	-0.05%	-4.58%	1.97%	1.97%	-11.13%	7.58%	\$178,407	\$89,557	\$73,095
2012	11.29%	18.35%	15.82%	15.82%	20.87%	4.06%	\$198,555	\$105,986	\$84,662
2013	26.40%	24.51%	32.18%	32.18%	16.84%	-2.25%	\$250,964	\$131,960	\$111,903
2014	13.51%	3.35%	13.51%	13.51%	-6.81%	5.76%	\$284,866	\$136,381	\$127,019
2015	-6.61%	-1.29%	1.25%	1.25%	-3.82%	0.29%	\$266,041	\$134,628	\$128,605
2016	6.56%	6.03%	11.82%	11.82%	0.25%	2.50%	\$283,494	\$142,749	\$143,802
2017	7.11%	9.59%	7.11%	7.11%	12.07%	1.64%	\$303,639	\$156,435	\$154,021

Annual returns for 2017 are based on partial year data

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Insti Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
1989	1	5.89%	6.61%	7.32%	7.32%	5.89%	0.87%	\$10,589	\$10,661	\$10,732
1989	2	2.86%	0.18%	-2.47%	-2.47%	2.86%	-0.62%	\$10,891	\$10,679	\$10,467
1989	3	1.92%	2.09%	2.26%	2.26%	1.92%	0.25%	\$11,101	\$10,902	\$10,704
1989	4	4.75%	4.96%	5.18%	5.18%	4.75%	1.97%	\$11,628	\$11,443	\$11,259
1989	5	-0.93%	1.51%	4.04%	4.04%	-0.93%	2.54%	\$11,519	\$11,616	\$11,713
1989	6	-0.20%	-0.40%	-0.59%	-0.59%	-0.20%	2.93%	\$11,496	\$11,570	\$11,644
1989	7	9.44%	9.22%	9.01%	9.01%	9.44%	2.19%	\$12,581	\$12,637	\$12,693
1989	8	0.25%	1.06%	1.86%	1.86%	0.25%	-1.61%	\$12,612	\$12,771	\$12,929
1989	9	4.49%	2.01%	-0.40%	-0.40%	4.49%	0.48%	\$13,178	\$13,028	\$12,877
1989	10	-5.94%	-4.16%	-2.34%	-2.34%	-5.94%	2.46%	\$12,395	\$12,485	\$12,576
1989	11	2.69%	2.36%	2.04%	2.04%	2.69%	0.75%	\$12,729	\$12,780	\$12,832
1989	12	2.38%	4.94%	2.38%	2.38%	7.52%	0.74%	\$13,031	\$13,411	\$13,136
1990	1	0.60%	-3.06%	-6.72%	-6.72%	0.60%	-1.89%	\$13,109	\$13,001	\$12,254
1990	2	-2.38%	-0.62%	1.27%	1.27%	-2.38%	0.75%	\$12,798	\$12,920	\$12,410
1990	3	-0.61%	0.97%	2.61%	2.61%	-0.61%	0.08%	\$12,720	\$13,045	\$12,734
1990	4	-0.92%	-1.71%	-2.50%	-2.50%	-0.92%	-0.91%	\$12,603	\$12,822	\$12,415
1990	5	8.83%	9.26%	9.69%	9.69%	8.83%	2.86%	\$13,716	\$14,010	\$13,619
1990	6	1.70%	0.53%	-0.66%	-0.66%	1.70%	1.60%	\$13,950	\$14,084	\$13,529
1990	7	5.41%	2.59%	-0.35%	-0.35%	5.41%	1.26%	\$14,705	\$14,448	\$13,481
1990	8	-10.22%	-9.65%	-9.03%	-9.03%	-10.22%	-1.21%	\$13,202	\$13,054	\$12,264



Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
1990	9	-12.44%	-8.82%	-4.89%	-4.89%	-12.44%	0.72%	\$11,560	\$11,902	\$11,664
1990	10	1.49%	2.79%	-0.41%	-0.41%	5.99%	1.49%	\$11,732	\$12,234	\$11,616
1990	11	2.23%	2.50%	6.44%	6.44%	-1.21%	2.23%	\$11,993	\$12,540	\$12,364
1990	12	1.46%	-0.05%	2.72%	2.72%	-2.85%	1.46%	\$12,168	\$12,534	\$12,700
1991	1	1.12%	4.64%	4.35%	4.35%	4.92%	1.12%	\$12,304	\$13,115	\$13,253
1991	2	7.12%	8.09%	7.12%	7.12%	9.05%	0.78%	\$13,179	\$14,176	\$14,196
1991	3	2.41%	1.62%	2.41%	2.41%	0.85%	0.69%	\$13,496	\$14,405	\$14,537
1991	4	0.20%	0.46%	0.20%	0.20%	0.72%	0.99%	\$13,523	\$14,471	\$14,566
1991	5	4.27%	3.77%	4.27%	4.27%	3.28%	0.67%	\$14,101	\$15,018	\$15,188
1991	6	-4.56%	-4.47%	-4.56%	-4.56%	-4.39%	-0.06%	\$13,458	\$14,346	\$14,496
1991	7	4.63%	4.88%	4.63%	4.63%	5.14%	1.32%	\$14,081	\$15,046	\$15,166
1991	8	2.33%	1.02%	2.33%	2.33%	-0.29%	2.05%	\$14,409	\$15,199	\$15,520
1991	9	-1.67%	-0.04%	-1.67%	-1.67%	1.61%	2.02%	\$14,169	\$15,193	\$15,261
1991	10	1.33%	0.63%	1.33%	1.33%	-0.06%	0.95%	\$14,357	\$15,288	\$15,464
1991	11	-4.01%	-3.88%	-4.01%	-4.01%	-3.75%	0.75%	\$13,781	\$14,695	\$14,844
1991	12	11.39%	7.32%	11.39%	11.39%	3.27%	3.05%	\$15,350	\$15,771	\$16,534
1992	1	-1.86%	0.86%	-1.86%	-1.86%	3.58%	-1.36%	\$15,065	\$15,907	\$16,227
1992	2	1.24%	1.46%	1.24%	1.24%	1.67%	0.63%	\$15,252	\$16,140	\$16,428
1992	3	-1.93%	-1.98%	-1.93%	-1.93%	-2.03%	-0.50%	\$14,959	\$15,820	\$16,112
1992	4	2.91%	3.84%	2.91%	2.91%	4.71%	0.71%	\$15,395	\$16,427	\$16,582
1992	5	0.48%	2.59%	0.48%	0.48%	4.55%	1.85%	\$15,469	\$16,853	\$16,662

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
1992	6	-4.86%	-3.27%	-1.49%	-1.49%	-4.86%	1.32%	\$14,717	\$16,301	\$16,413
1992	7	-2.90%	0.43%	4.04%	4.04%	-2.90%	1.91%	\$14,290	\$16,372	\$17,077
1992	8	-2.07%	-1.86%	-2.07%	-2.07%	-1.66%	0.98%	\$13,994	\$16,066	\$16,724
1992	9	1.17%	0.78%	1.17%	1.17%	0.39%	1.26%	\$14,158	\$16,192	\$16,920
1992	10	0.33%	-2.82%	0.33%	0.33%	-5.95%	-1.22%	\$14,204	\$15,735	\$16,975
1992	11	3.40%	1.78%	3.40%	3.40%	0.06%	-0.02%	\$14,688	\$16,015	\$17,553
1992	12	1.93%	2.42%	1.93%	1.93%	2.95%	1.48%	\$14,971	\$16,402	\$17,891
1993	1	0.10%	0.32%	0.10%	0.10%	0.53%	1.78%	\$14,985	\$16,454	\$17,909
1993	2	1.36%	2.24%	1.36%	1.36%	3.12%	1.98%	\$15,188	\$16,823	\$18,151
1993	3	2.11%	4.05%	2.11%	2.11%	5.95%	0.37%	\$15,509	\$17,504	\$18,534
1993	4	-2.42%	0.57%	-2.42%	-2.42%	3.40%	0.74%	\$15,133	\$17,604	\$18,085
1993	5	2.65%	3.24%	2.65%	2.65%	3.76%	0.14%	\$15,534	\$18,174	\$18,564
1993	6	0.27%	-0.33%	0.27%	0.27%	-0.86%	1.80%	\$15,576	\$18,114	\$18,614
1993	7	-0.42%	-0.15%	-0.42%	-0.42%	0.10%	0.61%	\$15,510	\$18,088	\$18,535
1993	8	8.41%	6.24%	3.79%	3.79%	8.41%	1.69%	\$16,814	\$19,216	\$19,237
1993	9	0.65%	-0.01%	-0.79%	-0.79%	0.65%	0.40%	\$16,925	\$19,214	\$19,084
1993	10	6.18%	4.31%	2.08%	2.08%	6.18%	0.31%	\$17,970	\$20,043	\$19,481
1993	11	-3.02%	-2.12%	-1.00%	-1.00%	-3.02%	-0.97%	\$17,428	\$19,618	\$19,287
1993	12	10.66%	6.41%	1.22%	1.22%	10.66%	0.48%	\$19,285	\$20,875	\$19,523
1994	1	6.62%	5.00%	3.38%	3.38%	6.62%	1.39%	\$20,561	\$21,918	\$20,182
1994	2	-4.63%	-3.69%	-2.71%	-2.71%	-4.63%	-1.88%	\$19,610	\$21,111	\$19,634

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
1994	3	-4.81%	-4.60%	-4.39%	-4.39%	-4.81%	-2.20%	\$18,666	\$20,139	\$18,773
1994	4	2.76%	2.03%	1.29%	1.29%	2.76%	-0.83%	\$19,182	\$20,548	\$19,015
1994	5	-0.04%	0.77%	1.60%	1.60%	-0.04%	0.01%	\$19,174	\$20,706	\$19,320
1994	6	-2.03%	-2.24%	-2.45%	-2.45%	-2.03%	-0.18%	\$18,785	\$20,243	\$18,847
1994	7	5.28%	4.28%	3.28%	3.28%	5.28%	1.84%	\$19,776	\$21,110	\$19,465
1994	8	6.05%	5.08%	4.08%	4.08%	6.05%	0.15%	\$20,974	\$22,182	\$20,258
1994	9	-1.17%	-1.79%	-2.45%	-2.45%	-1.17%	-1.45%	\$20,728	\$21,784	\$19,762
1994	10	2.79%	2.53%	2.25%	2.25%	2.79%	-0.06%	\$21,307	\$22,335	\$20,206
1994	11	-4.32%	-4.00%	-3.65%	-3.65%	-4.32%	-0.18%	\$20,387	\$21,442	\$19,468
1994	12	-0.27%	0.57%	1.46%	1.46%	-0.27%	0.81%	\$20,332	\$21,564	\$19,752
1995	1	-4.83%	-1.12%	2.58%	2.58%	-4.83%	1.90%	\$19,350	\$21,323	\$20,263
1995	2	2.17%	3.07%	3.88%	3.88%	2.19%	2.17%	\$19,771	\$21,977	\$21,049
1995	3	2.95%	3.57%	2.95%	2.95%	4.25%	0.68%	\$20,355	\$22,761	\$21,670
1995	4	2.94%	2.87%	2.94%	2.94%	2.78%	1.31%	\$20,954	\$23,414	\$22,308
1995	5	3.95%	3.04%	3.95%	3.95%	2.04%	3.95%	\$21,782	\$24,124	\$23,190
1995	6	2.31%	1.23%	2.31%	2.31%	0.04%	0.66%	\$22,286	\$24,421	\$23,726
1995	7	3.30%	3.74%	3.30%	3.30%	4.23%	-0.25%	\$23,022	\$25,334	\$24,510
1995	8	0.26%	-1.43%	0.26%	0.26%	-3.32%	1.18%	\$23,083	\$24,973	\$24,575
1995	9	4.21%	4.03%	4.21%	4.21%	3.82%	0.95%	\$24,055	\$25,979	\$25,610
1995	10	-0.36%	-0.69%	-0.36%	-0.36%	-1.07%	1.47%	\$23,968	\$25,800	\$25,517
1995	11	4.38%	3.27%	4.38%	4.38%	1.97%	1.44%	\$25,018	\$26,644	\$26,634

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
1995	12	1.93%	2.59%	1.93%	1.93%	3.38%	1.44%	\$25,501	\$27,334	\$27,149
1996	1	3.39%	2.54%	3.39%	3.39%	1.69%	0.63%	\$26,364	\$28,027	\$28,068
1996	2	0.92%	0.99%	0.92%	0.92%	1.06%	-1.76%	\$26,608	\$28,305	\$28,327
1996	3	0.98%	0.91%	0.98%	0.98%	0.84%	-0.77%	\$26,868	\$28,562	\$28,604
1996	4	1.46%	2.21%	1.46%	1.46%	2.98%	-0.49%	\$27,259	\$29,194	\$29,020
1996	5	2.54%	1.88%	2.54%	2.54%	1.21%	-0.18%	\$27,953	\$29,742	\$29,759
1996	6	0.38%	1.68%	0.38%	0.38%	2.99%	1.28%	\$28,060	\$30,242	\$29,873
1996	7	-4.42%	-4.55%	-4.42%	-4.42%	-4.68%	0.25%	\$26,819	\$28,865	\$28,552
1996	8	2.10%	2.88%	2.10%	2.10%	3.66%	-0.17%	\$27,382	\$29,697	\$29,151
1996	9	1.08%	3.32%	5.61%	5.61%	1.08%	1.70%	\$27,677	\$30,681	\$30,785
1996	10	2.76%	1.84%	2.76%	2.76%	0.91%	2.21%	\$28,440	\$31,246	\$31,633
1996	11	7.56%	6.05%	7.56%	7.56%	4.49%	1.75%	\$30,591	\$33,138	\$34,026
1996	12	-1.97%	0.21%	-1.97%	-1.97%	2.55%	-0.85%	\$29,987	\$33,208	\$33,355
1997	1	6.23%	4.25%	6.23%	6.23%	2.27%	0.24%	\$31,856	\$34,619	\$35,434
1997	2	0.79%	1.52%	0.79%	0.79%	2.28%	0.11%	\$32,107	\$35,145	\$35,713
1997	3	-4.14%	-4.12%	-4.14%	-4.14%	-4.10%	-0.97%	\$30,780	\$33,698	\$34,236
1997	4	5.96%	5.14%	5.96%	5.96%	4.30%	1.49%	\$32,613	\$35,430	\$36,275
1997	5	6.09%	6.64%	6.09%	6.09%	7.21%	0.88%	\$34,598	\$37,782	\$38,484
1997	6	4.45%	5.30%	4.45%	4.45%	6.17%	1.16%	\$36,139	\$39,785	\$40,198
1997	7	7.97%	5.63%	7.97%	7.97%	3.26%	2.81%	\$39,018	\$42,024	\$43,400
1997	8	-5.61%	-6.47%	-5.61%	-5.61%	-7.37%	-0.86%	\$36,829	\$39,306	\$40,965

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Insti Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
1997	9	5.47%	6.06%	5.47%	5.47%	6.71%	1.45%	\$38,843	\$41,690	\$43,206
1997	10	-3.35%	-5.81%	-3.35%	-3.35%	-8.43%	1.44%	\$37,542	\$39,268	\$41,758
1997	11	4.60%	2.74%	4.60%	4.60%	0.64%	0.33%	\$39,268	\$40,342	\$43,678
1997	12	1.72%	2.36%	1.72%	1.72%	3.10%	1.04%	\$39,946	\$41,294	\$44,432
1998	1	1.11%	1.02%	1.11%	1.11%	0.92%	1.32%	\$40,389	\$41,713	\$44,925
1998	2	7.19%	7.38%	7.19%	7.19%	7.57%	-0.10%	\$43,294	\$44,792	\$48,156
1998	3	5.10%	4.90%	5.10%	5.10%	4.70%	0.33%	\$45,504	\$46,988	\$50,614
1998	4	1.01%	1.58%	1.01%	1.01%	2.16%	0.52%	\$45,962	\$47,731	\$51,124
1998	5	-1.74%	-1.98%	-1.74%	-1.74%	-2.21%	1.02%	\$45,161	\$46,787	\$50,233
1998	6	4.07%	1.32%	4.07%	4.07%	-1.42%	0.81%	\$47,000	\$47,404	\$52,278
1998	7	-1.05%	0.50%	-1.05%	-1.05%	2.14%	0.23%	\$46,504	\$47,643	\$51,727
1998	8	-14.47%	-14.66%	-14.47%	-14.47%	-14.85%	1.90%	\$39,773	\$40,658	\$44,240
1998	9	6.41%	1.19%	6.41%	6.41%	-4.15%	1.96%	\$42,323	\$41,141	\$47,077
1998	10	8.16%	9.25%	8.16%	8.16%	10.49%	-0.56%	\$45,779	\$44,948	\$50,920
1998	11	6.07%	5.98%	6.07%	6.07%	5.87%	0.48%	\$48,558	\$47,634	\$54,012
1998	12	5.81%	3.59%	5.81%	5.81%	1.11%	0.39%	\$51,377	\$49,342	\$57,147
1999	1	4.20%	1.65%	4.20%	4.20%	-0.90%	0.79%	\$53,537	\$50,157	\$59,549
1999	2	-3.12%	-1.98%	-3.12%	-3.12%	-0.77%	-1.77%	\$51,864	\$49,166	\$57,689
1999	3	4.00%	4.36%	4.00%	4.00%	4.74%	0.57%	\$53,937	\$51,310	\$59,994
1999	4	3.85%	4.71%	3.85%	3.85%	5.58%	0.40%	\$56,014	\$53,725	\$62,305
1999	5	-2.39%	-3.22%	-2.39%	-2.39%	-4.06%	-0.88%	\$54,676	\$51,994	\$60,817

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
1999	6	5.56%	4.43%	5.56%	5.56%	3.29%	-0.49%	\$57,714	\$54,300	\$64,196
1999	7	-3.13%	-1.20%	-3.13%	-3.13%	0.81%	-0.39%	\$55,907	\$53,647	\$62,186
1999	8	-0.50%	0.01%	-0.50%	-0.50%	0.53%	-0.08%	\$55,630	\$53,655	\$61,877
1999	9	-2.74%	-1.56%	-2.74%	-2.74%	-0.40%	1.26%	\$54,106	\$52,816	\$60,183
1999	10	1.90%	4.08%	6.33%	6.33%	1.90%	0.33%	\$55,136	\$54,970	\$63,990
1999	11	2.02%	2.08%	2.02%	2.02%	2.14%	0.02%	\$56,251	\$56,114	\$65,285
1999	12	5.98%	7.70%	5.98%	5.98%	9.43%	-0.48%	\$59,614	\$60,433	\$69,187
2000	1	-6.71%	-5.87%	-5.03%	-5.03%	-6.71%	-0.18%	\$55,612	\$56,884	\$65,705
2000	2	3.38%	0.71%	-1.91%	-1.91%	3.38%	1.18%	\$57,492	\$57,290	\$64,453
2000	3	1.39%	5.50%	9.76%	9.76%	1.39%	1.40%	\$58,289	\$60,441	\$70,743
2000	4	-3.01%	-3.79%	-3.01%	-3.01%	-4.62%	-0.49%	\$56,537	\$58,149	\$68,617
2000	5	-2.04%	-0.57%	-2.04%	-2.04%	1.00%	-0.17%	\$55,385	\$57,819	\$67,219
2000	6	5.81%	4.12%	2.49%	2.49%	5.81%	2.15%	\$58,602	\$60,202	\$68,890
2000	7	-1.46%	-1.48%	-1.49%	-1.49%	-1.46%	0.88%	\$57,745	\$59,313	\$67,863
2000	8	1.05%	3.62%	6.19%	6.19%	1.05%	1.40%	\$58,349	\$61,458	\$72,064
2000	9	-5.29%	-5.01%	-5.29%	-5.29%	-4.72%	0.76%	\$55,262	\$58,379	\$68,252
2000	10	-0.43%	-1.12%	-0.43%	-0.43%	-1.84%	0.56%	\$55,025	\$57,724	\$67,959
2000	11	-7.88%	-5.26%	-7.88%	-7.88%	-2.50%	1.58%	\$50,690	\$54,686	\$62,605
2000	12	1.79%	2.76%	0.50%	0.50%	5.02%	1.79%	\$51,597	\$56,196	\$62,921
2001	1	1.76%	3.08%	3.55%	3.55%	2.62%	1.76%	\$52,503	\$57,929	\$65,152
2001	2	0.91%	-7.19%	-9.14%	-9.14%	-5.22%	0.91%	\$52,983	\$53,765	\$59,199

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2001	3	0.54%	-7.31%	-6.36%	-6.36%	-8.23%	0.54%	\$53,271	\$49,834	\$55,436
2001	4	-0.46%	6.64%	7.77%	7.77%	5.52%	-0.46%	\$53,023	\$53,143	\$59,743
2001	5	0.74%	-0.07%	0.65%	0.65%	-0.79%	0.74%	\$53,415	\$53,109	\$60,132
2001	6	0.53%	-2.23%	-2.45%	-2.45%	-2.01%	0.53%	\$53,697	\$51,923	\$58,661
2001	7	2.23%	-1.72%	-1.00%	-1.00%	-2.46%	2.23%	\$54,895	\$51,029	\$58,075
2001	8	1.11%	-3.52%	-6.27%	-6.27%	-0.67%	1.11%	\$55,502	\$49,234	\$54,431
2001	9	0.90%	-9.25%	-8.09%	-8.09%	-10.38%	0.90%	\$55,999	\$44,681	\$50,027
2001	10	1.86%	2.29%	1.90%	1.90%	2.69%	1.86%	\$57,042	\$45,705	\$50,975
2001	11	-1.34%	6.05%	7.65%	7.65%	4.47%	-1.34%	\$56,278	\$48,472	\$54,877
2001	12	-0.67%	1.86%	0.87%	0.87%	2.88%	-0.67%	\$55,900	\$49,375	\$55,356
2002	1	0.79%	-2.07%	-1.47%	-1.47%	-2.67%	0.79%	\$56,341	\$48,353	\$54,541
2002	2	0.86%	0.78%	-1.94%	-1.94%	3.54%	0.86%	\$56,823	\$48,732	\$53,485
2002	3	-1.46%	4.84%	3.74%	3.74%	5.89%	-1.46%	\$55,993	\$51,091	\$55,487
2002	4	-0.41%	-3.15%	-6.07%	-6.07%	-0.41%	1.70%	\$55,763	\$49,480	\$52,116
2002	5	0.81%	1.89%	-0.75%	-0.75%	4.22%	0.81%	\$56,215	\$50,413	\$51,723
2002	6	-4.24%	-5.56%	-7.13%	-7.13%	-4.24%	0.29%	\$53,834	\$47,609	\$48,033
2002	7	0.48%	-10.19%	-7.72%	-7.72%	-12.22%	0.48%	\$54,095	\$42,756	\$44,325
2002	8	1.66%	1.51%	0.65%	0.65%	2.25%	1.66%	\$54,992	\$43,401	\$44,614
2002	9	1.53%	-11.63%	-10.87%	-10.87%	-12.27%	1.53%	\$55,834	\$38,355	\$39,763
2002	10	-0.61%	8.28%	8.78%	8.78%	7.84%	-0.61%	\$55,494	\$41,528	\$43,255
2002	11	-0.16%	5.25%	6.16%	6.16%	4.46%	-0.16%	\$55,408	\$43,708	\$45,918

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2002	12	2.27%	-3.14%	-6.14%	-6.14%	-0.50%	2.27%	\$56,664	\$42,333	\$43,098
2003	1	0.06%	-3.88%	-2.62%	-2.62%	-5.14%	0.06%	\$56,697	\$40,690	\$41,966
2003	2	1.38%	-1.43%	-1.52%	-1.52%	-1.33%	1.38%	\$57,481	\$40,109	\$41,329
2003	3	-0.12%	-0.97%	0.96%	0.96%	-2.94%	-0.12%	\$57,409	\$39,720	\$41,724
2003	4	0.87%	9.40%	8.25%	8.25%	10.61%	0.87%	\$57,907	\$43,453	\$45,168
2003	5	1.82%	5.61%	5.26%	5.26%	5.97%	1.82%	\$58,962	\$45,889	\$47,546
2003	6	-0.13%	2.12%	1.26%	1.26%	3.01%	-0.13%	\$58,884	\$46,861	\$48,145
2003	7	-3.34%	3.00%	1.74%	1.74%	4.28%	-3.34%	\$56,919	\$48,267	\$48,984
2003	8	3.71%	2.82%	1.93%	1.93%	3.71%	0.61%	\$59,031	\$49,630	\$49,931
2003	9	1.13%	0.04%	-1.07%	-1.07%	1.13%	2.70%	\$59,698	\$49,651	\$49,396
2003	10	7.23%	6.45%	5.64%	5.64%	7.23%	-0.96%	\$64,016	\$52,855	\$52,183
2003	11	1.45%	1.16%	0.86%	0.86%	1.45%	0.17%	\$64,942	\$53,471	\$52,634
2003	12	8.02%	6.66%	5.22%	5.22%	8.02%	0.89%	\$70,148	\$57,035	\$55,381
2004	1	1.69%	1.75%	1.82%	1.82%	1.69%	0.86%	\$71,330	\$58,035	\$56,390
2004	2	2.99%	2.19%	1.38%	1.38%	2.99%	1.03%	\$73,466	\$59,303	\$57,167
2004	3	-0.83%	-1.17%	-1.51%	-1.51%	-0.83%	0.80%	\$72,856	\$58,609	\$56,301
2004	4	-3.72%	-2.66%	-1.58%	-1.58%	-3.72%	-2.61%	\$70,148	\$57,051	\$55,414
2004	5	1.03%	1.20%	1.36%	1.36%	1.03%	-0.42%	\$70,873	\$57,733	\$56,166
2004	6	2.48%	2.20%	1.93%	1.93%	2.48%	0.56%	\$72,627	\$59,005	\$57,250
2004	7	-2.73%	-3.02%	-3.31%	-3.31%	-2.73%	0.96%	\$70,644	\$57,222	\$55,354
2004	8	1.19%	0.79%	0.38%	0.38%	1.19%	1.94%	\$71,483	\$57,672	\$55,566



Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2004	9	3.44%	2.26%	1.07%	1.07%	3.44%	0.16%	\$73,943	\$58,978	\$56,159
2004	10	1.52%	1.52%	1.51%	1.51%	1.52%	0.85%	\$75,068	\$59,873	\$57,010
2004	11	6.93%	5.52%	4.05%	4.05%	6.93%	-0.80%	\$80,273	\$63,177	\$59,316
2004	12	3.09%	3.24%	3.39%	3.39%	3.09%	0.92%	\$82,752	\$65,221	\$61,329
2005	1	-1.59%	-2.02%	-2.45%	-2.45%	-1.59%	0.65%	\$81,435	\$63,902	\$59,824
2005	2	5.12%	3.61%	2.09%	2.09%	5.12%	-0.62%	\$85,601	\$66,210	\$61,077
2005	3	-2.74%	-2.26%	-1.76%	-1.76%	-2.74%	-0.49%	\$83,256	\$64,714	\$60,002
2005	4	-2.72%	-2.32%	-1.91%	-1.91%	-2.72%	1.36%	\$80,989	\$63,210	\$58,854
2005	5	0.65%	1.89%	3.17%	3.17%	0.65%	1.06%	\$81,512	\$64,408	\$60,719
2005	6	1.55%	0.83%	0.13%	0.13%	1.55%	0.55%	\$82,772	\$64,945	\$60,796
2005	7	4.54%	4.13%	3.71%	3.71%	4.54%	-0.99%	\$86,531	\$67,625	\$63,049
2005	8	3.94%	1.53%	-0.91%	-0.91%	3.94%	1.36%	\$89,942	\$68,663	\$62,473
2005	9	5.17%	3.05%	0.79%	0.79%	5.17%	-1.10%	\$94,594	\$70,760	\$62,969
2005	10	-2.68%	-2.21%	-1.68%	-1.68%	-2.68%	-0.81%	\$92,055	\$69,197	\$61,912
2005	11	3.58%	3.67%	3.76%	3.76%	3.58%	0.48%	\$95,349	\$71,735	\$64,243
2005	12	4.87%	2.56%	0.02%	0.02%	4.87%	0.99%	\$99,997	\$73,574	\$64,257
2006	1	8.68%	5.66%	2.65%	2.65%	8.68%	-0.11%	\$108,675	\$77,740	\$65,957
2006	2	-0.04%	0.10%	0.25%	0.25%	-0.04%	0.38%	\$108,635	\$77,821	\$66,125
2006	3	4.26%	2.79%	1.24%	1.24%	4.26%	-1.00%	\$113,257	\$79,991	\$66,944
2006	4	5.48%	3.49%	1.33%	1.33%	5.48%	-0.20%	\$119,462	\$82,784	\$67,837
2006	5	-6.01%	-4.55%	-2.90%	-2.90%	-6.01%	-0.09%	\$112,284	\$79,019	\$65,872

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2006	6	-0.13%	-0.01%	0.13%	0.13%	-0.13%	0.10%	\$112,142	\$79,015	\$65,956
2006	7	1.32%	0.98%	0.61%	0.61%	1.32%	1.35%	\$113,622	\$79,788	\$66,356
2006	8	2.53%	2.45%	2.36%	2.36%	2.53%	1.64%	\$116,501	\$81,745	\$67,924
2006	9	0.05%	1.25%	2.56%	2.56%	0.05%	0.81%	\$116,562	\$82,764	\$69,665
2006	10	4.63%	3.96%	3.25%	3.25%	4.63%	0.72%	\$121,955	\$86,045	\$71,930
2006	11	3.72%	2.84%	1.88%	1.88%	3.72%	1.11%	\$126,497	\$88,490	\$73,283
2006	12	4.89%	3.23%	1.40%	1.40%	4.89%	-0.48%	\$132,682	\$91,352	\$74,308
2007	1	1.23%	1.36%	1.49%	1.49%	1.23%	-0.08%	\$134,307	\$92,594	\$75,418
2007	2	-1.43%	-1.70%	-1.97%	-1.97%	-1.43%	1.51%	\$132,383	\$91,018	\$73,933
2007	3	3.33%	2.22%	1.11%	1.11%	3.33%	0.02%	\$136,788	\$93,040	\$74,755
2007	4	4.66%	4.54%	4.42%	4.42%	4.66%	0.51%	\$143,161	\$97,264	\$78,057
2007	5	4.35%	3.92%	3.48%	3.48%	4.35%	-0.78%	\$149,385	\$101,075	\$80,771
2007	6	0.99%	-0.32%	-1.67%	-1.67%	0.99%	-0.38%	\$150,860	\$100,754	\$79,423
2007	7	-0.74%	-1.88%	-3.09%	-3.09%	-0.74%	0.84%	\$149,748	\$98,862	\$76,967
2007	8	-1.04%	0.17%	1.50%	1.50%	-1.04%	1.34%	\$148,187	\$99,033	\$78,121
2007	9	7.87%	5.86%	3.72%	3.72%	7.87%	0.72%	\$159,843	\$104,834	\$81,030
2007	10	6.32%	4.06%	1.58%	1.58%	6.32%	0.93%	\$169,937	\$109,096	\$82,309
2007	11	-2.97%	-3.53%	-4.19%	-4.19%	-2.97%	1.81%	\$164,890	\$105,240	\$78,863
2007	12	-1.98%	-1.39%	-0.70%	-0.70%	-1.98%	0.31%	\$161,627	\$103,777	\$78,311
2008	1	-8.84%	-7.43%	-6.02%	-6.02%	-8.84%	1.79%	\$147,335	\$96,067	\$73,600
2008	2	1.55%	-0.89%	-3.25%	-3.25%	1.55%	0.10%	\$149,622	\$95,216	\$71,207

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2008	3	0.58%	0.07%	-0.44%	-0.44%	0.58%	0.30%	\$150,483	\$95,285	\$70,893
2008	4	6.79%	5.84%	4.86%	4.86%	6.79%	-0.40%	\$160,698	\$100,848	\$74,341
2008	5	2.55%	1.93%	1.28%	1.28%	2.55%	-0.69%	\$164,798	\$102,797	\$75,296
2008	6	-9.13%	-8.79%	-8.44%	-8.44%	-9.13%	-0.01%	\$149,758	\$93,759	\$68,942
2008	7	0.00%	-2.17%	-0.83%	-0.83%	-3.45%	0.00%	\$149,758	\$91,721	\$68,369
2008	8	0.70%	-2.19%	1.45%	1.45%	-5.73%	0.70%	\$150,808	\$89,715	\$69,357
2008	9	-1.11%	-10.96%	-8.91%	-8.91%	-13.11%	-1.11%	\$149,137	\$79,885	\$63,180
2008	10	-2.53%	-19.13%	-16.79%	-16.79%	-21.71%	-2.53%	\$145,360	\$64,602	\$52,571
2008	11	3.64%	-7.05%	-7.17%	-7.17%	-6.91%	3.64%	\$150,655	\$60,045	\$48,799
2008	12	3.33%	3.98%	1.07%	1.07%	7.37%	3.33%	\$155,667	\$62,433	\$49,320
2009	1	-0.70%	-10.65%	-8.41%	-8.41%	-12.89%	-0.70%	\$154,581	\$55,784	\$45,171
2009	2	-0.43%	-9.90%	-10.66%	-10.66%	-9.10%	-0.43%	\$153,921	\$50,263	\$40,357
2009	3	1.48%	8.03%	8.76%	8.76%	7.27%	1.48%	\$156,201	\$54,298	\$43,892
2009	4	0.36%	11.20%	9.56%	9.56%	12.91%	0.36%	\$156,758	\$60,377	\$48,088
2009	5	0.85%	10.32%	5.62%	5.62%	15.10%	0.85%	\$158,093	\$66,607	\$50,789
2009	6	0.54%	-1.20%	0.22%	0.22%	-2.53%	0.54%	\$158,949	\$65,806	\$50,901
2009	7	1.43%	9.61%	7.58%	7.58%	11.56%	1.43%	\$161,216	\$72,130	\$54,758
2009	8	1.01%	3.08%	3.60%	3.60%	2.60%	1.01%	\$162,847	\$74,350	\$56,729
2009	9	1.19%	5.16%	3.72%	3.72%	6.52%	1.19%	\$164,782	\$78,190	\$58,837
2009	10	-1.73%	-1.80%	-1.87%	-1.87%	-1.73%	0.41%	\$161,933	\$76,787	\$57,738
2009	11	5.76%	5.87%	5.98%	5.98%	5.76%	1.36%	\$171,263	\$81,291	\$61,192

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2009	12	1.62%	1.77%	1.95%	1.95%	1.62%	-1.68%	\$174,029	\$82,732	\$62,382
2010	1	-6.38%	-4.99%	-3.60%	-3.60%	-6.38%	1.57%	\$162,928	\$78,603	\$60,134
2010	2	0.72%	1.92%	3.09%	3.09%	0.72%	0.20%	\$164,102	\$80,114	\$61,993
2010	3	6.73%	6.36%	6.01%	6.01%	6.73%	-0.08%	\$175,139	\$85,210	\$65,721
2010	4	-1.48%	0.08%	1.58%	1.58%	-1.48%	0.93%	\$172,538	\$85,280	\$66,759
2010	5	-11.36%	-9.61%	-8.00%	-8.00%	-11.36%	0.88%	\$152,937	\$77,081	\$61,421
2010	6	-5.25%	-2.58%	-5.25%	-5.25%	0.41%	1.61%	\$144,910	\$75,094	\$58,197
2010	7	7.00%	8.38%	7.00%	7.00%	9.85%	0.93%	\$155,048	\$81,390	\$62,268
2010	8	-4.53%	-4.57%	-4.53%	-4.53%	-4.61%	1.48%	\$148,025	\$77,672	\$59,448
2010	9	8.92%	10.27%	8.92%	8.92%	11.67%	-0.01%	\$161,227	\$85,651	\$64,750
2010	10	3.79%	4.07%	3.79%	3.79%	4.36%	0.36%	\$167,335	\$89,140	\$67,203
2010	11	0.00%	-2.30%	0.00%	0.00%	-4.60%	-0.57%	\$167,335	\$87,089	\$67,203
2010	12	6.67%	7.77%	6.67%	6.67%	8.92%	-1.14%	\$178,498	\$93,856	\$71,686
2011	1	2.36%	1.87%	2.36%	2.36%	1.39%	0.08%	\$182,705	\$95,613	\$73,376
2011	2	3.42%	3.01%	3.42%	3.42%	2.59%	0.16%	\$188,947	\$98,486	\$75,882
2011	3	0.08%	0.05%	0.03%	0.03%	0.08%	-0.00%	\$189,097	\$98,538	\$75,902
2011	4	6.96%	4.94%	2.95%	2.95%	6.96%	1.32%	\$202,268	\$103,405	\$78,139
2011	5	-2.77%	-1.97%	-1.15%	-1.15%	-2.77%	1.31%	\$196,657	\$101,370	\$77,244
2011	6	-1.01%	-1.34%	-1.67%	-1.67%	-1.01%	-0.39%	\$194,677	\$100,013	\$75,952
2011	7	-2.93%	-2.49%	-2.05%	-2.05%	-2.93%	1.57%	\$188,977	\$97,522	\$74,398
2011	8	-9.14%	-7.30%	-5.45%	-5.45%	-9.14%	1.47%	\$171,696	\$90,406	\$70,346

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Instl Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2011	9	-7.04%	-9.67%	-7.04%	-7.04%	-12.41%	0.89%	\$159,605	\$81,660	\$65,392
2011	10	10.91%	11.47%	10.91%	10.91%	12.09%	0.16%	\$177,023	\$91,028	\$72,528
2011	11	-0.23%	-1.25%	-0.23%	-0.23%	-2.35%	-0.30%	\$176,610	\$89,894	\$72,359
2011	12	1.02%	-0.38%	1.02%	1.02%	-1.93%	1.08%	\$178,407	\$89,557	\$73,095
2012	1	4.46%	6.12%	4.46%	4.46%	7.78%	0.87%	\$186,372	\$95,039	\$76,359
2012	2	4.31%	5.43%	4.31%	4.31%	6.51%	-0.05%	\$194,399	\$100,195	\$79,647
2012	3	3.28%	1.43%	3.28%	3.28%	-0.33%	-0.58%	\$200,778	\$101,626	\$82,261
2012	4	-0.64%	-0.88%	-0.64%	-0.64%	-1.12%	1.14%	\$199,494	\$100,731	\$81,735
2012	5	-6.02%	-8.23%	-6.02%	-6.02%	-10.41%	0.95%	\$187,489	\$92,442	\$76,816
2012	6	0.04%	4.45%	4.11%	4.11%	4.80%	0.04%	\$187,556	\$96,553	\$79,972
2012	7	1.37%	1.20%	1.37%	1.37%	1.02%	1.39%	\$190,126	\$97,711	\$81,068
2012	8	2.24%	1.92%	2.24%	2.24%	1.60%	0.03%	\$194,383	\$99,591	\$82,883
2012	9	2.58%	2.71%	2.58%	2.58%	2.85%	0.11%	\$199,392	\$102,291	\$85,019
2012	10	-1.86%	-0.70%	-1.86%	-1.86%	0.51%	0.12%	\$195,684	\$101,578	\$83,438
2012	11	0.56%	2.11%	0.56%	0.56%	3.69%	0.20%	\$196,780	\$103,726	\$83,905
2012	12	0.90%	2.18%	0.90%	0.90%	3.43%	-0.20%	\$198,555	\$105,986	\$84,662
2013	1	2.95%	4.06%	5.18%	5.18%	2.95%	-0.71%	\$204,404	\$110,290	\$89,045
2013	2	1.34%	0.24%	1.34%	1.34%	-0.88%	0.55%	\$207,141	\$110,558	\$90,237
2013	3	3.74%	1.93%	3.74%	3.74%	0.05%	0.08%	\$214,886	\$112,696	\$93,610
2013	4	1.91%	2.67%	1.91%	1.91%	3.48%	0.91%	\$218,987	\$115,699	\$95,397
2013	5	2.33%	0.97%	2.33%	2.33%	-0.47%	-1.71%	\$224,084	\$116,825	\$97,617

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Insti Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2013	6	-1.35%	-2.88%	-1.35%	-1.35%	-4.55%	-1.66%	\$221,057	\$113,466	\$96,299
2013	7	5.07%	5.19%	5.07%	5.07%	5.32%	0.20%	\$232,270	\$119,355	\$101,184
2013	8	-2.91%	-2.03%	-2.91%	-2.91%	-1.04%	-0.64%	\$225,507	\$116,931	\$98,237
2013	9	3.12%	4.77%	3.12%	3.12%	6.60%	0.96%	\$232,546	\$122,510	\$101,304
2013	10	2.18%	3.43%	4.59%	4.59%	2.18%	0.78%	\$237,614	\$126,707	\$105,950
2013	11	3.03%	1.75%	3.03%	3.03%	0.35%	-0.35%	\$244,810	\$128,928	\$109,159
2013	12	2.51%	2.35%	2.51%	2.51%	2.17%	-0.65%	\$250,964	\$131,960	\$111,903
2014	1	-3.47%	-4.19%	-3.47%	-3.47%	-4.91%	1.54%	\$242,258	\$126,428	\$108,021
2014	2	4.56%	5.16%	4.56%	4.56%	5.76%	0.48%	\$253,307	\$132,947	\$112,947
2014	3	0.82%	0.64%	0.82%	0.82%	0.46%	-0.15%	\$255,394	\$133,802	\$113,878
2014	4	0.72%	1.52%	0.72%	0.72%	2.31%	0.78%	\$257,243	\$135,831	\$114,702
2014	5	2.33%	1.56%	2.33%	2.33%	0.79%	1.05%	\$263,249	\$137,949	\$117,381
2014	6	2.05%	1.15%	2.05%	2.05%	0.24%	0.11%	\$268,651	\$139,537	\$119,789
2014	7	-1.39%	-2.45%	-1.39%	-1.39%	-3.55%	-0.26%	\$264,922	\$136,112	\$118,126
2014	8	3.99%	2.29%	3.99%	3.99%	0.52%	1.13%	\$275,485	\$139,233	\$122,836
2014	9	-1.42%	-2.69%	-1.42%	-1.42%	-4.08%	-0.73%	\$271,579	\$135,484	\$121,095
2014	10	2.42%	0.67%	2.42%	2.42%	-1.28%	0.94%	\$278,160	\$136,396	\$124,029
2014	11	2.68%	2.33%	2.68%	2.68%	1.92%	0.65%	\$285,621	\$139,575	\$127,356
2014	12	-0.26%	-2.29%	-0.26%	-0.26%	-4.65%	0.09%	\$284,866	\$136,381	\$127,019
2015	1	-3.01%	-1.58%	-3.01%	-3.01%	-0.14%	2.31%	\$276,285	\$134,233	\$123,193
2015	2	5.73%	6.29%	5.73%	5.73%	6.83%	-1.08%	\$292,127	\$142,677	\$130,257

Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Insti Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2015	3	-1.59%	-1.22%	-1.59%	-1.59%	-0.85%	0.40%	\$287,471	\$140,942	\$128,181
2015	4	0.95%	2.90%	0.95%	0.95%	4.76%	-0.36%	\$290,200	\$145,027	\$129,397
2015	5	1.27%	0.68%	1.27%	1.27%	0.14%	-0.45%	\$293,893	\$146,016	\$131,044
2015	6	-1.93%	-2.57%	-1.93%	-1.93%	-3.17%	-1.00%	\$288,212	\$142,256	\$128,511
2015	7	2.08%	0.99%	2.08%	2.08%	-0.04%	0.76%	\$294,208	\$143,660	\$131,185
2015	8	-6.04%	-7.05%	-6.04%	-6.04%	-8.02%	-0.35%	\$276,433	\$133,531	\$123,259
2015	9	-2.49%	-3.93%	-2.49%	-2.49%	-5.34%	0.76%	\$269,550	\$128,283	\$120,190
2015	10	0.01%	8.42%	8.42%	8.42%	8.42%	0.01%	\$269,575	\$139,086	\$130,313
2015	11	0.29%	-1.31%	0.29%	0.29%	-2.92%	-0.27%	\$270,347	\$137,266	\$130,686
2015	12	-1.59%	-1.92%	-1.59%	-1.59%	-2.27%	-0.38%	\$266,041	\$134,628	\$128,605
2016	1	-4.98%	-5.25%	-4.98%	-4.98%	-5.52%	1.43%	\$252,801	\$127,563	\$122,205
2016	2	0.66%	-0.38%	-0.15%	-0.15%	-0.62%	0.66%	\$254,468	\$127,073	\$122,027
2016	3	0.94%	6.91%	6.78%	6.78%	7.04%	0.94%	\$256,866	\$135,852	\$130,295
2016	4	0.37%	1.21%	0.37%	0.37%	2.06%	0.38%	\$257,826	\$137,500	\$130,782
2016	5	1.78%	0.53%	1.78%	1.78%	-0.71%	0.02%	\$262,423	\$138,234	\$133,114
2016	6	0.25%	-1.33%	0.25%	0.25%	-2.94%	1.94%	\$263,079	\$136,392	\$133,447
2016	7	3.68%	3.96%	3.68%	3.68%	4.26%	0.64%	\$272,751	\$141,791	\$138,352
2016	8	0.13%	0.12%	0.13%	0.13%	0.11%	-0.17%	\$273,104	\$141,964	\$138,532
2016	9	0.01%	0.75%	0.01%	0.01%	1.52%	-0.08%	\$273,126	\$143,023	\$138,543
2016	10	-1.83%	-2.47%	-1.83%	-1.83%	-3.13%	-0.80%	\$268,120	\$139,486	\$136,003
2016	11	3.70%	0.92%	3.70%	3.70%	-1.97%	-2.65%	\$278,038	\$140,771	\$141,034

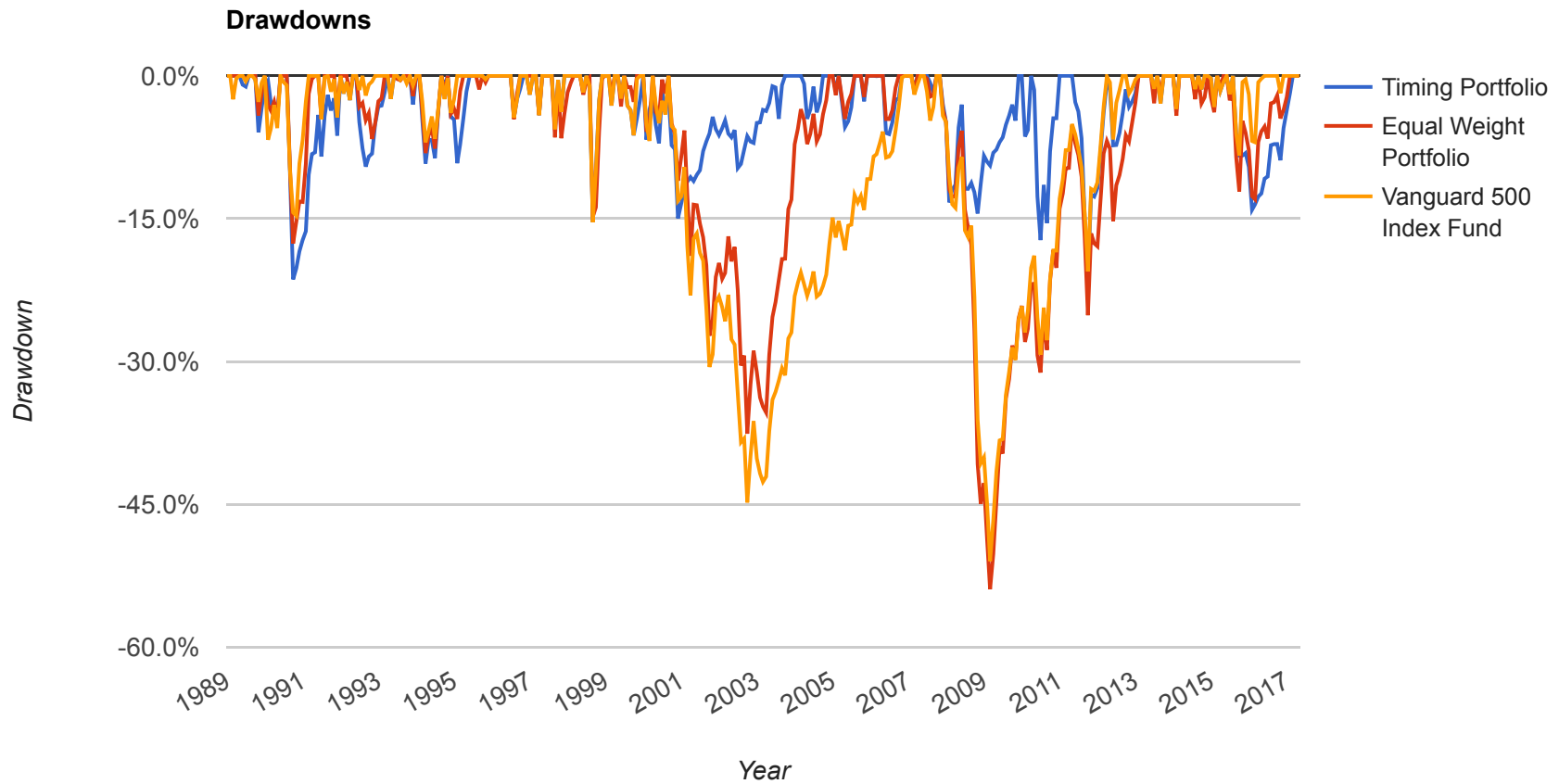
Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Insti Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2016	12	1.96%	1.41%	1.96%	1.96%	0.79%	0.24%	\$283,494	\$142,749	\$143,802
2017	1	1.88%	2.73%	1.88%	1.88%	3.58%	0.29%	\$288,833	\$146,647	\$146,510
2017	2	3.96%	2.49%	3.96%	3.96%	1.04%	0.66%	\$300,279	\$150,298	\$152,316
2017	3	0.10%	1.98%	0.10%	0.10%	3.88%	-0.07%	\$300,579	\$153,270	\$152,468
2017	4	1.02%	2.07%	1.02%	1.02%	3.09%	0.76%	\$303,639	\$156,435	\$154,021

Metric	Timing Model	Equal Weight Portfolio	Vanguard 500 Index Fund
Mean Return (monthly)	1.08%	0.91%	0.89%
Mean Return (annualized)	13.76%	11.43%	11.27%
Compound Return (monthly)	1.01%	0.81%	0.81%
Compound Return (annualized)	12.80%	10.19%	10.13%
Volatility (monthly)	3.76%	4.30%	4.13%
Volatility (annualized)	13.07%	15.08%	14.41%
Max. Drawdown	-21.39%	-53.93%	-50.97%
Market Correlation	0.71	0.94	0.99
Beta <sup>(*)</sup>	0.65	0.98	1.00
Alpha (annualized)	6.04%	0.41%	-0.00%
R <sup>2</sup>	50.17%	87.63%	100.00%
Sharpe Ratio	0.77	0.53	0.54
Sortino Ratio	1.19	0.77	0.80
Treynor Ratio (%)	15.48	8.11	7.76



<b>Metric</b>	<b>Timing Model</b>	<b>Equal Weight Portfolio</b>	<b>Vanguard 500 Index Fund</b>
<b>Skewness</b>	-0.49	-0.74	-0.58
<b>Excess Kurtosis</b>	1.47	1.79	1.27
<b>Historical Value-at-Risk (95%)</b>	-5.29%	-7.29%	-6.70%
<b>Delta Normal Value-at-Risk (95%)</b>	-6.19%	-7.07%	-6.79%
<b>Conditional Value-at-Risk (95%)</b>	-8.15%	-10.19%	-9.20%
<b>Positive Periods</b>	229 out of 340 (67.35%)	222 out of 340 (65.29%)	220 out of 340 (64.71%)
<b>Gain/Loss Ratio</b>	1.01	0.92	0.94

(\*) Beta is calculated against Vanguard 500 Index Fund (the selected benchmark). Market correlation is against the US stock market.



### Drawdowns for Timing Portfolio

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
1	Aug 1990	Sep 1990	2 months	Dec 1991	1 year 5 months	-21.39%
2	May 2011	Sep 2011	5 months	Jan 2013	1 year 9 months	-21.09%
3	Apr 2010	Jun 2010	3 months	Dec 2010	9 months	-17.26%
4	Jul 1998	Aug 1998	2 months	Nov 1998	5 months	-15.38%
5	Jan 2000	Nov 2000	11 months	Sep 2003	3 years 9 months	-14.97%

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
6	Nov 2007	Oct 2008	1 year	Nov 2009	2 years 1 month	-14.46%
7	Aug 2015	Jan 2016	6 months	Feb 2017	1 year 7 months	-14.07%
8	Jun 1992	Aug 1992	3 months	Mar 1993	10 months	-9.54%
9	Feb 1994	Mar 1994	2 months	Aug 1994	7 months	-9.22%
10	Nov 1994	Jan 1995	3 months	May 1995	7 months	-9.18%
11	Jan 2010	Jan 2010	1 month	Mar 2010	3 months	-6.38%
12	Jul 1999	Sep 1999	3 months	Dec 1999	6 months	-6.25%
13	May 2006	Jun 2006	2 months	Oct 2006	6 months	-6.13%
14	Oct 1989	Oct 1989	1 month	May 1990	8 months	-5.94%
15	Aug 1997	Aug 1997	1 month	Nov 1997	4 months	-5.61%
16	Mar 2005	Apr 2005	2 months	Jul 2005	5 months	-5.39%
17	Mar 2004	Apr 2004	2 months	Sep 2004	7 months	-4.52%
18	Jul 1996	Jul 1996	1 month	Oct 1996	4 months	-4.42%
19	Mar 1997	Mar 1997	1 month	Apr 1997	2 months	-4.14%
20	Jan 2014	Jan 2014	1 month	Feb 2014	2 months	-3.47%
21	Dec 2014	Jan 2015	2 months	Feb 2015	3 months	-3.27%
22	Feb 1999	Feb 1999	1 month	Mar 1999	2 months	-3.12%
23	Nov 1993	Nov 1993	1 month	Dec 1993	2 months	-3.02%
24	Aug 2013	Aug 2013	1 month	Sep 2013	2 months	-2.91%
25	Oct 2005	Oct 2005	1 month	Nov 2005	2 months	-2.68%
26	Jan 1992	Mar 1992	3 months	Apr 1992	4 months	-2.55%
27	Apr 1993	Apr 1993	1 month	May 1993	2 months	-2.42%

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
28	May 1999	May 1999	1 month	Jun 1999	2 months	-2.39%
29	Dec 1996	Dec 1996	1 month	Jan 1997	2 months	-1.97%
30	Jun 2015	Jun 2015	1 month	Jul 2015	2 months	-1.93%
31	Jul 2007	Aug 2007	2 months	Sep 2007	3 months	-1.77%
32	May 1998	May 1998	1 month	Jun 1998	2 months	-1.74%
33	Mar 2015	Mar 2015	1 month	May 2015	3 months	-1.59%
34	Jan 2005	Jan 2005	1 month	Feb 2005	2 months	-1.59%
35	Feb 2007	Feb 2007	1 month	Mar 2007	2 months	-1.43%
36	Sep 2014	Sep 2014	1 month	Oct 2014	2 months	-1.42%
37	Jul 2014	Jul 2014	1 month	Aug 2014	2 months	-1.39%
38	Jun 2013	Jun 2013	1 month	Jul 2013	2 months	-1.35%
39	Sep 1994	Sep 1994	1 month	Oct 1994	2 months	-1.17%
40	May 1989	Jun 1989	2 months	Jul 1989	3 months	-1.13%
41	Jul 1993	Jul 1993	1 month	Aug 1993	2 months	-0.42%
42	Oct 1995	Oct 1995	1 month	Nov 1995	2 months	-0.36%
43	Feb 2006	Feb 2006	1 month	Mar 2006	2 months	-0.04%

### Drawdowns for Equal Weight Portfolio

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
1	Nov 2007	Feb 2009	1 year 4 months	Jan 2013	5 years 3 months	-53.93%
2	Sep 2000	Sep 2002	2 years 1 month	Nov 2004	4 years 3 months	-37.59%
3	Aug 1990	Sep 1990	2 months	Apr 1991	9 months	-17.62%
4	May 1998	Aug 1998	4 months	Dec 1998	8 months	-14.82%

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
5	Jun 2015	Feb 2016	9 months	Jan 2017	1 year 8 months	-12.97%
6	Feb 1994	Mar 1994	2 months	Aug 1994	7 months	-8.12%
7	Jun 1992	Oct 1992	5 months	Mar 1993	10 months	-6.63%
8	Aug 1997	Oct 1997	3 months	Feb 1998	7 months	-6.56%
9	Jan 2000	Jan 2000	1 month	Mar 2000	3 months	-5.87%
10	May 2006	Jun 2006	2 months	Oct 2006	6 months	-4.55%
11	Jul 1996	Jul 1996	1 month	Sep 1996	3 months	-4.55%
12	Nov 1994	Jan 1995	3 months	Mar 1995	5 months	-4.53%
13	Mar 2005	Apr 2005	2 months	Jul 2005	5 months	-4.53%
14	Jun 1991	Jun 1991	1 month	Jul 1991	2 months	-4.47%
15	Jan 1990	Apr 1990	4 months	May 1990	5 months	-4.39%
16	Apr 2000	May 2000	2 months	Aug 2000	5 months	-4.34%
17	Jan 2014	Jan 2014	1 month	Feb 2014	2 months	-4.19%
18	Oct 1989	Oct 1989	1 month	Dec 1989	3 months	-4.16%
19	Mar 1997	Mar 1997	1 month	Apr 1997	2 months	-4.12%
20	Nov 1991	Nov 1991	1 month	Dec 1991	2 months	-3.88%
21	Dec 2014	Jan 2015	2 months	Feb 2015	3 months	-3.83%
22	May 1999	May 1999	1 month	Jun 1999	2 months	-3.22%
23	Jul 2014	Sep 2014	3 months	Nov 2014	5 months	-2.90%
24	Jun 2013	Jun 2013	1 month	Jul 2013	2 months	-2.88%
25	Jul 1999	Sep 1999	3 months	Oct 1999	4 months	-2.73%
26	Oct 2005	Oct 2005	1 month	Nov 2005	2 months	-2.21%

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
27	Jun 2007	Jul 2007	2 months	Sep 2007	4 months	-2.19%
28	Nov 1993	Nov 1993	1 month	Dec 1993	2 months	-2.12%
29	Aug 2013	Aug 2013	1 month	Sep 2013	2 months	-2.03%
30	Jan 2005	Jan 2005	1 month	Feb 2005	2 months	-2.02%
31	Mar 1992	Mar 1992	1 month	Apr 1992	2 months	-1.98%
32	Feb 1999	Feb 1999	1 month	Mar 1999	2 months	-1.98%
33	Sep 1994	Sep 1994	1 month	Oct 1994	2 months	-1.79%
34	Feb 2007	Feb 2007	1 month	Mar 2007	2 months	-1.70%
35	Aug 1995	Aug 1995	1 month	Sep 1995	2 months	-1.43%
36	Mar 2015	Mar 2015	1 month	Apr 2015	2 months	-1.22%
37	Oct 1995	Oct 1995	1 month	Nov 1995	2 months	-0.69%
38	Jun 1993	Jul 1993	2 months	Aug 1993	3 months	-0.48%
39	Jun 1989	Jun 1989	1 month	Jul 1989	2 months	-0.40%
40	Sep 1991	Sep 1991	1 month	Oct 1991	2 months	-0.04%
41	Sep 1993	Sep 1993	1 month	Oct 1993	2 months	-0.01%

### Drawdowns for Vanguard 500 Index Fund

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
1	Nov 2007	Feb 2009	1 year 4 months	Aug 2012	4 years 10 months	-50.97%
2	Sep 2000	Sep 2002	2 years 1 month	Nov 2006	6 years 3 months	-44.82%
3	Jul 1998	Aug 1998	2 months	Nov 1998	5 months	-15.38%
4	Jun 1990	Oct 1990	5 months	Feb 1991	9 months	-14.70%
5	Aug 2015	Sep 2015	2 months	May 2016	10 months	-8.38%

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
6	Feb 1994	Mar 1994	2 months	Aug 1994	7 months	-6.98%
7	Jan 2000	Feb 2000	2 months	Mar 2000	3 months	-6.84%
8	Jan 1990	Jan 1990	1 month	May 1990	5 months	-6.72%
9	Jul 1999	Sep 1999	3 months	Nov 1999	5 months	-6.25%
10	Aug 1997	Aug 1997	1 month	Nov 1997	4 months	-5.61%
11	Apr 2000	May 2000	2 months	Aug 2000	5 months	-4.98%
12	Jun 2007	Jul 2007	2 months	Sep 2007	4 months	-4.71%
13	Jun 1991	Jun 1991	1 month	Aug 1991	3 months	-4.56%
14	Jul 1996	Jul 1996	1 month	Sep 1996	3 months	-4.42%
15	Sep 1991	Nov 1991	3 months	Dec 1991	4 months	-4.36%
16	Mar 1997	Mar 1997	1 month	Apr 1997	2 months	-4.14%
17	Sep 1994	Nov 1994	3 months	Jan 1995	5 months	-3.90%
18	Jan 2014	Jan 2014	1 month	Feb 2014	2 months	-3.47%
19	Dec 2014	Jan 2015	2 months	Feb 2015	3 months	-3.27%
20	Feb 1999	Feb 1999	1 month	Mar 1999	2 months	-3.12%
21	Aug 2013	Aug 2013	1 month	Sep 2013	2 months	-2.91%
22	Sep 1989	Oct 1989	2 months	Dec 1989	4 months	-2.73%
23	Jan 1992	Mar 1992	3 months	Apr 1992	4 months	-2.55%
24	Feb 1989	Feb 1989	1 month	Apr 1989	3 months	-2.47%
25	Apr 1993	Apr 1993	1 month	May 1993	2 months	-2.42%
26	May 1999	May 1999	1 month	Jun 1999	2 months	-2.39%
27	Aug 1992	Aug 1992	1 month	Nov 1992	4 months	-2.07%