

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

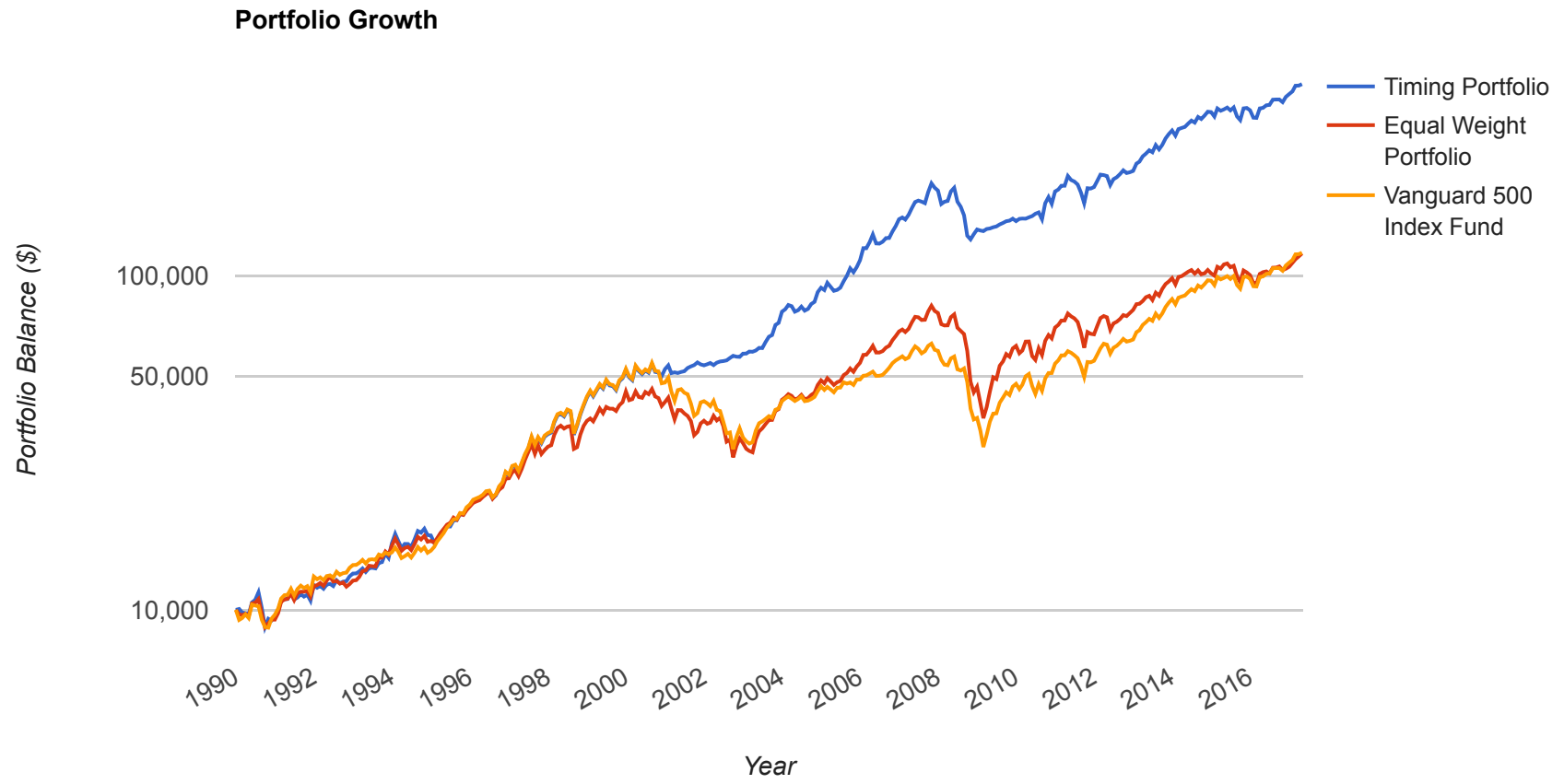
VFINX,HAINX

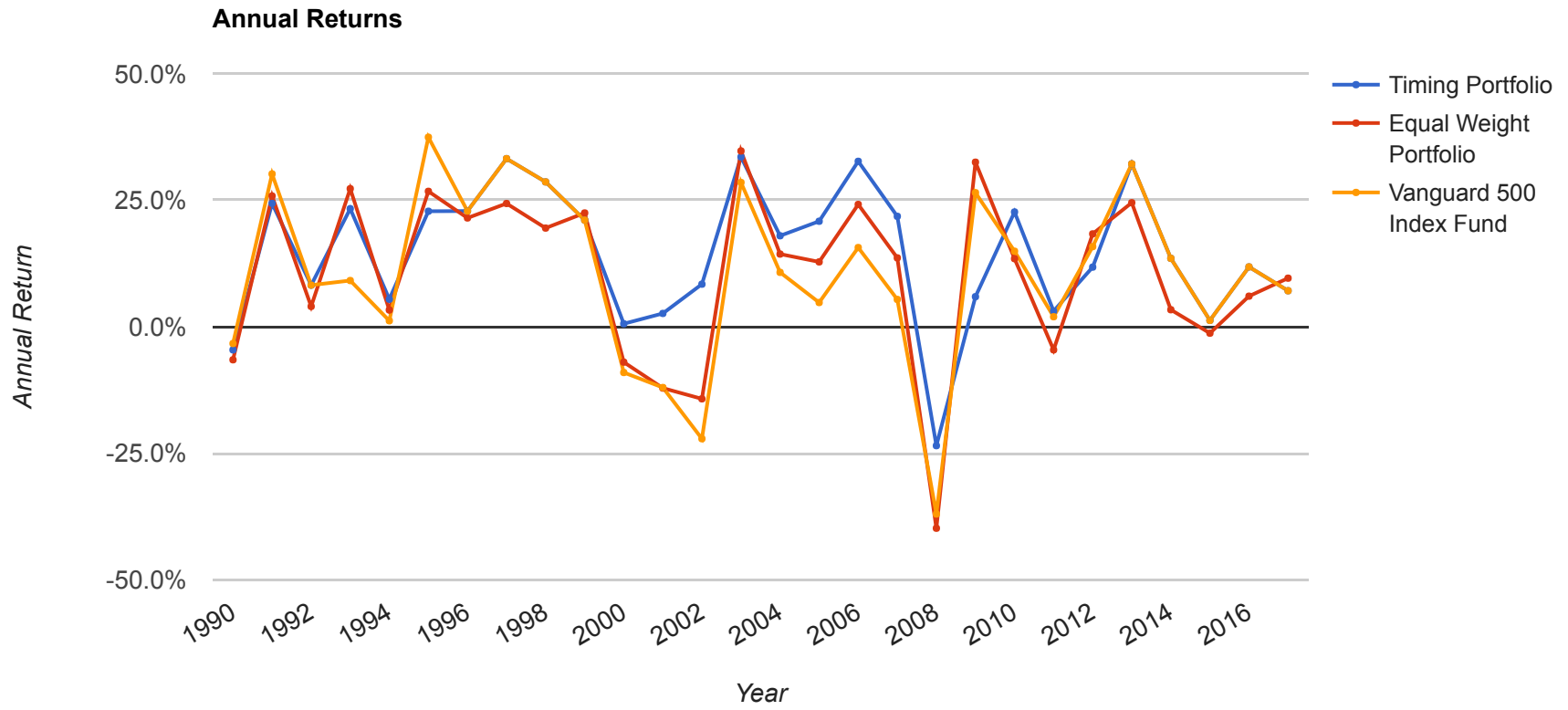


Single absolute momentum**Out of Market Asset****Specify out of market asset****Performance Periods****Timing Period****Assets to hold****Trading Frequency****Trade Execution****Benchmark****Fee Structure****Market Timing Results (Jan 1990 - Apr 2017)**

Market timing results from 1990 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 21 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).

Portfolio	Initial Balance	Final Balance	CAGR	Stdev	Best Year	Worst Year	Max. Drawdown	Sharpe Ratio	Sortino Ratio	US Mkt Correlation
Timing Portfolio	\$10,000	\$374,764	14.18%	13.14%	33.55%	-23.52%	-32.07%	0.87	1.40	0.70
Equal Weight Portfolio	\$10,000	\$116,647	9.40%	15.16%	34.73%	-39.84%	-53.93%	0.49	0.70	0.94
Vanguard 500 Index Fund	\$10,000	\$117,247	9.42%	14.47%	37.45%	-37.02%	-50.97%	0.51	0.74	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
1990	-4.59%	-6.54%	-3.32%	-3.32%	-9.76%	8.64%	\$9,541	\$9,346	\$9,668
1991	24.37%	25.83%	30.19%	30.19%	21.46%	15.26%	\$11,867	\$11,759	\$12,586
1992	8.21%	4.01%	8.21%	8.21%	-0.20%	7.21%	\$12,841	\$12,230	\$13,619
1993	23.32%	27.27%	9.12%	9.12%	45.42%	9.69%	\$15,835	\$15,566	\$14,862
1994	5.43%	3.30%	1.18%	1.18%	5.43%	-2.64%	\$16,695	\$16,080	\$15,036
1995	22.82%	26.75%	37.45%	37.45%	16.06%	18.19%	\$20,505	\$20,382	\$20,667
1996	22.86%	21.49%	22.86%	22.86%	20.12%	3.58%	\$25,192	\$24,762	\$25,391
1997	33.21%	24.35%	33.21%	33.21%	15.49%	9.43%	\$33,558	\$30,791	\$33,823
1998	28.62%	19.49%	28.62%	28.62%	10.36%	8.59%	\$43,161	\$36,792	\$43,503
1999	21.07%	22.48%	21.07%	21.07%	23.89%	-0.75%	\$52,255	\$45,062	\$52,668

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
2000	0.58%	-7.01%	-9.06%	-9.06%	-4.97%	11.39%	\$52,557	\$41,903	\$47,898
2001	2.62%	-12.14%	-12.02%	-12.02%	-12.25%	8.34%	\$53,934	\$36,817	\$42,139
2002	8.40%	-14.26%	-22.15%	-22.15%	-6.38%	8.40%	\$58,466	\$31,566	\$32,808
2003	33.55%	34.73%	28.50%	28.50%	40.95%	3.88%	\$78,079	\$42,528	\$42,158
2004	17.97%	14.35%	10.74%	10.74%	17.97%	4.25%	\$92,109	\$48,633	\$46,686
2005	20.84%	12.81%	4.77%	4.77%	20.84%	2.41%	\$111,304	\$54,861	\$48,915
2006	32.69%	24.16%	15.64%	15.64%	32.69%	4.28%	\$147,683	\$68,118	\$56,566
2007	21.82%	13.60%	5.39%	5.39%	21.82%	6.93%	\$179,901	\$77,382	\$59,613
2008	-23.52%	-39.84%	-37.02%	-37.02%	-42.66%	5.07%	\$137,596	\$46,553	\$37,544
2009	5.93%	32.51%	26.49%	26.49%	38.54%	5.93%	\$145,756	\$61,690	\$47,488
2010	22.67%	13.45%	14.91%	14.91%	11.98%	6.30%	\$178,796	\$69,984	\$54,570
2011	3.08%	-4.58%	1.97%	1.97%	-11.13%	7.58%	\$184,304	\$66,778	\$55,643
2012	11.77%	18.35%	15.82%	15.82%	20.87%	4.06%	\$206,001	\$79,029	\$64,448
2013	32.18%	24.51%	32.18%	32.18%	16.84%	-2.25%	\$272,283	\$98,397	\$85,185
2014	13.51%	3.35%	13.51%	13.51%	-6.81%	5.76%	\$309,064	\$101,694	\$96,692
2015	1.25%	-1.29%	1.25%	1.25%	-3.82%	0.29%	\$312,922	\$100,386	\$97,899
2016	11.82%	6.03%	11.82%	11.82%	0.25%	2.50%	\$349,900	\$106,442	\$109,468
2017	7.11%	9.59%	7.11%	7.11%	12.07%	1.64%	\$374,764	\$116,647	\$117,247

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
1990	1	0.60%	-3.06%	-6.72%	-6.72%	0.60%	-1.89%	\$10,060	\$9,694	\$9,328
1990	2	-2.38%	-0.62%	1.27%	1.27%	-2.38%	0.75%	\$9,821	\$9,634	\$9,447
1990	3	-0.61%	0.97%	2.61%	2.61%	-0.61%	0.08%	\$9,761	\$9,727	\$9,693
1990	4	-0.92%	-1.71%	-2.50%	-2.50%	-0.92%	-0.91%	\$9,671	\$9,561	\$9,451
1990	5	8.83%	9.26%	9.69%	9.69%	8.83%	2.86%	\$10,526	\$10,446	\$10,367
1990	6	1.70%	0.53%	-0.66%	-0.66%	1.70%	1.60%	\$10,705	\$10,502	\$10,299
1990	7	5.41%	2.59%	-0.35%	-0.35%	5.41%	1.26%	\$11,284	\$10,773	\$10,262
1990	8	-10.22%	-9.65%	-9.03%	-9.03%	-10.22%	-1.21%	\$10,131	\$9,733	\$9,336
1990	9	-12.44%	-8.82%	-4.89%	-4.89%	-12.44%	0.72%	\$8,871	\$8,875	\$8,879
1990	10	5.99%	2.79%	-0.41%	-0.41%	5.99%	1.49%	\$9,403	\$9,123	\$8,843
1990	11	-1.21%	2.50%	6.44%	6.44%	-1.21%	2.23%	\$9,289	\$9,351	\$9,412
1990	12	2.72%	-0.05%	2.72%	2.72%	-2.85%	1.46%	\$9,541	\$9,346	\$9,668
1991	1	4.35%	4.64%	4.35%	4.35%	4.92%	1.12%	\$9,957	\$9,779	\$10,088
1991	2	7.12%	8.09%	7.12%	7.12%	9.05%	0.78%	\$10,665	\$10,570	\$10,806
1991	3	0.85%	1.62%	2.41%	2.41%	0.85%	0.69%	\$10,756	\$10,741	\$11,066
1991	4	0.20%	0.46%	0.20%	0.20%	0.72%	0.99%	\$10,777	\$10,791	\$11,088
1991	5	4.27%	3.77%	4.27%	4.27%	3.28%	0.67%	\$11,237	\$11,198	\$11,562
1991	6	-4.39%	-4.47%	-4.56%	-4.56%	-4.39%	-0.06%	\$10,744	\$10,697	\$11,035
1991	7	1.32%	4.88%	4.63%	4.63%	5.14%	1.32%	\$10,885	\$11,219	\$11,545
1991	8	2.33%	1.02%	2.33%	2.33%	-0.29%	2.05%	\$11,139	\$11,333	\$11,815

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
1991	9	-1.67%	-0.04%	-1.67%	-1.67%	1.61%	2.02%	\$10,954	\$11,329	\$11,617
1991	10	1.33%	0.63%	1.33%	1.33%	-0.06%	0.95%	\$11,099	\$11,400	\$11,772
1991	11	-4.01%	-3.88%	-4.01%	-4.01%	-3.75%	0.75%	\$10,654	\$10,958	\$11,300
1991	12	11.39%	7.32%	11.39%	11.39%	3.27%	3.05%	\$11,867	\$11,759	\$12,586
1992	1	-1.86%	0.86%	-1.86%	-1.86%	3.58%	-1.36%	\$11,646	\$11,861	\$12,352
1992	2	1.24%	1.46%	1.24%	1.24%	1.67%	0.63%	\$11,791	\$12,035	\$12,506
1992	3	-1.93%	-1.98%	-1.93%	-1.93%	-2.03%	-0.50%	\$11,564	\$11,796	\$12,265
1992	4	2.91%	3.84%	2.91%	2.91%	4.71%	0.71%	\$11,901	\$12,249	\$12,623
1992	5	0.48%	2.59%	0.48%	0.48%	4.55%	1.85%	\$11,959	\$12,566	\$12,684
1992	6	-1.49%	-3.27%	-1.49%	-1.49%	-4.86%	1.32%	\$11,781	\$12,155	\$12,495
1992	7	4.04%	0.43%	4.04%	4.04%	-2.90%	1.91%	\$12,257	\$12,208	\$13,000
1992	8	-2.07%	-1.86%	-2.07%	-2.07%	-1.66%	0.98%	\$12,003	\$11,980	\$12,731
1992	9	1.17%	0.78%	1.17%	1.17%	0.39%	1.26%	\$12,144	\$12,073	\$12,880
1992	10	0.33%	-2.82%	0.33%	0.33%	-5.95%	-1.22%	\$12,184	\$11,733	\$12,922
1992	11	3.40%	1.78%	3.40%	3.40%	0.06%	-0.02%	\$12,598	\$11,942	\$13,362
1992	12	1.93%	2.42%	1.93%	1.93%	2.95%	1.48%	\$12,841	\$12,230	\$13,619
1993	1	0.10%	0.32%	0.10%	0.10%	0.53%	1.78%	\$12,854	\$12,269	\$13,633
1993	2	1.36%	2.24%	1.36%	1.36%	3.12%	1.98%	\$13,028	\$12,544	\$13,818
1993	3	2.11%	4.05%	2.11%	2.11%	5.95%	0.37%	\$13,302	\$13,052	\$14,109
1993	4	-2.42%	0.57%	-2.42%	-2.42%	3.40%	0.74%	\$12,980	\$13,127	\$13,767
1993	5	2.65%	3.24%	2.65%	2.65%	3.76%	0.14%	\$13,324	\$13,552	\$14,132

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
1993	6	0.27%	-0.33%	0.27%	0.27%	-0.86%	1.80%	\$13,360	\$13,507	\$14,170
1993	7	-0.42%	-0.15%	-0.42%	-0.42%	0.10%	0.61%	\$13,303	\$13,487	\$14,110
1993	8	3.79%	6.24%	3.79%	3.79%	8.41%	1.69%	\$13,807	\$14,329	\$14,644
1993	9	0.65%	-0.01%	-0.79%	-0.79%	0.65%	0.40%	\$13,897	\$14,327	\$14,527
1993	10	6.18%	4.31%	2.08%	2.08%	6.18%	0.31%	\$14,756	\$14,945	\$14,829
1993	11	-3.02%	-2.12%	-1.00%	-1.00%	-3.02%	-0.97%	\$14,310	\$14,629	\$14,682
1993	12	10.66%	6.41%	1.22%	1.22%	10.66%	0.48%	\$15,835	\$15,566	\$14,862
1994	1	6.62%	5.00%	3.38%	3.38%	6.62%	1.39%	\$16,884	\$16,344	\$15,363
1994	2	-4.63%	-3.69%	-2.71%	-2.71%	-4.63%	-1.88%	\$16,102	\$15,741	\$14,946
1994	3	-4.81%	-4.60%	-4.39%	-4.39%	-4.81%	-2.20%	\$15,327	\$15,017	\$14,290
1994	4	2.76%	2.03%	1.29%	1.29%	2.76%	-0.83%	\$15,751	\$15,321	\$14,475
1994	5	-0.04%	0.77%	1.60%	1.60%	-0.04%	0.01%	\$15,744	\$15,440	\$14,707
1994	6	-2.03%	-2.24%	-2.45%	-2.45%	-2.03%	-0.18%	\$15,425	\$15,095	\$14,347
1994	7	5.28%	4.28%	3.28%	3.28%	5.28%	1.84%	\$16,239	\$15,741	\$14,817
1994	8	6.05%	5.08%	4.08%	4.08%	6.05%	0.15%	\$17,222	\$16,540	\$15,421
1994	9	-1.17%	-1.79%	-2.45%	-2.45%	-1.17%	-1.45%	\$17,020	\$16,244	\$15,044
1994	10	2.79%	2.53%	2.25%	2.25%	2.79%	-0.06%	\$17,496	\$16,654	\$15,382
1994	11	-4.32%	-4.00%	-3.65%	-3.65%	-4.32%	-0.18%	\$16,740	\$15,989	\$14,820
1994	12	-0.27%	0.57%	1.46%	1.46%	-0.27%	0.81%	\$16,695	\$16,080	\$15,036
1995	1	-4.83%	-1.12%	2.58%	2.58%	-4.83%	1.90%	\$15,889	\$15,899	\$15,425
1995	2	2.19%	3.07%	3.88%	3.88%	2.19%	2.17%	\$16,238	\$16,387	\$16,023

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	3	4.25%	3.57%	2.95%	2.95%	4.25%	0.68%	\$16,927	\$16,972	\$16,496
1995	4	2.78%	2.87%	2.94%	2.94%	2.78%	1.31%	\$17,398	\$17,458	\$16,982
1995	5	2.04%	3.04%	3.95%	3.95%	2.04%	3.95%	\$17,753	\$17,989	\$17,653
1995	6	0.04%	1.23%	2.31%	2.31%	0.04%	0.66%	\$17,760	\$18,210	\$18,061
1995	7	4.23%	3.74%	3.30%	3.30%	4.23%	-0.25%	\$18,511	\$18,891	\$18,658
1995	8	0.26%	-1.43%	0.26%	0.26%	-3.32%	1.18%	\$18,560	\$18,621	\$18,707
1995	9	4.21%	4.03%	4.21%	4.21%	3.82%	0.95%	\$19,342	\$19,371	\$19,495
1995	10	-0.36%	-0.69%	-0.36%	-0.36%	-1.07%	1.47%	\$19,272	\$19,238	\$19,424
1995	11	4.38%	3.27%	4.38%	4.38%	1.97%	1.44%	\$20,116	\$19,867	\$20,275
1995	12	1.93%	2.59%	1.93%	1.93%	3.38%	1.44%	\$20,505	\$20,382	\$20,667
1996	1	3.39%	2.54%	3.39%	3.39%	1.69%	0.63%	\$21,199	\$20,899	\$21,366
1996	2	0.92%	0.99%	0.92%	0.92%	1.06%	-1.76%	\$21,395	\$21,106	\$21,564
1996	3	0.98%	0.91%	0.98%	0.98%	0.84%	-0.77%	\$21,604	\$21,298	\$21,774
1996	4	1.46%	2.21%	1.46%	1.46%	2.98%	-0.49%	\$21,918	\$21,769	\$22,092
1996	5	2.54%	1.88%	2.54%	2.54%	1.21%	-0.18%	\$22,476	\$22,178	\$22,654
1996	6	0.38%	1.68%	0.38%	0.38%	2.99%	1.28%	\$22,562	\$22,550	\$22,740
1996	7	-4.42%	-4.55%	-4.42%	-4.42%	-4.68%	0.25%	\$21,565	\$21,523	\$21,735
1996	8	2.10%	2.88%	2.10%	2.10%	3.66%	-0.17%	\$22,017	\$22,143	\$22,191
1996	9	5.61%	3.32%	5.61%	5.61%	1.08%	1.70%	\$23,251	\$22,878	\$23,435
1996	10	2.76%	1.84%	2.76%	2.76%	0.91%	2.21%	\$23,892	\$23,299	\$24,081
1996	11	7.56%	6.05%	7.56%	7.56%	4.49%	1.75%	\$25,699	\$24,709	\$25,902

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
1996	12	-1.97%	0.21%	-1.97%	-1.97%	2.55%	-0.85%	\$25,192	\$24,762	\$25,391
1997	1	6.23%	4.25%	6.23%	6.23%	2.27%	0.24%	\$26,762	\$25,814	\$26,973
1997	2	0.79%	1.52%	0.79%	0.79%	2.28%	0.11%	\$26,973	\$26,206	\$27,186
1997	3	-4.14%	-4.12%	-4.14%	-4.14%	-4.10%	-0.97%	\$25,857	\$25,127	\$26,062
1997	4	5.96%	5.14%	5.96%	5.96%	4.30%	1.49%	\$27,397	\$26,418	\$27,614
1997	5	6.09%	6.64%	6.09%	6.09%	7.21%	0.88%	\$29,065	\$28,173	\$29,295
1997	6	4.45%	5.30%	4.45%	4.45%	6.17%	1.16%	\$30,360	\$29,666	\$30,600
1997	7	7.97%	5.63%	7.97%	7.97%	3.26%	2.81%	\$32,778	\$31,335	\$33,038
1997	8	-5.61%	-6.47%	-5.61%	-5.61%	-7.37%	-0.86%	\$30,940	\$29,309	\$31,184
1997	9	5.47%	6.06%	5.47%	5.47%	6.71%	1.45%	\$32,632	\$31,086	\$32,890
1997	10	-3.35%	-5.81%	-3.35%	-3.35%	-8.43%	1.44%	\$31,538	\$29,280	\$31,788
1997	11	4.60%	2.74%	4.60%	4.60%	0.64%	0.33%	\$32,989	\$30,081	\$33,250
1997	12	1.72%	2.36%	1.72%	1.72%	3.10%	1.04%	\$33,558	\$30,791	\$33,823
1998	1	1.11%	1.02%	1.11%	1.11%	0.92%	1.32%	\$33,930	\$31,104	\$34,199
1998	2	7.19%	7.38%	7.19%	7.19%	7.57%	-0.10%	\$36,371	\$33,399	\$36,659
1998	3	5.10%	4.90%	5.10%	5.10%	4.70%	0.33%	\$38,227	\$35,037	\$38,529
1998	4	1.01%	1.58%	1.01%	1.01%	2.16%	0.52%	\$38,612	\$35,591	\$38,918
1998	5	-1.74%	-1.98%	-1.74%	-1.74%	-2.21%	1.02%	\$37,939	\$34,887	\$38,239
1998	6	4.07%	1.32%	4.07%	4.07%	-1.42%	0.81%	\$39,484	\$35,347	\$39,796
1998	7	-1.05%	0.50%	-1.05%	-1.05%	2.14%	0.23%	\$39,068	\$35,525	\$39,377
1998	8	-14.47%	-14.66%	-14.47%	-14.47%	-14.85%	1.90%	\$33,413	\$30,317	\$33,677

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
1998	9	6.41%	1.19%	6.41%	6.41%	-4.15%	1.96%	\$35,555	\$30,677	\$35,837
1998	10	8.16%	9.25%	8.16%	8.16%	10.49%	-0.56%	\$38,458	\$33,516	\$38,762
1998	11	6.07%	5.98%	6.07%	6.07%	5.87%	0.48%	\$40,793	\$35,518	\$41,116
1998	12	5.81%	3.59%	5.81%	5.81%	1.11%	0.39%	\$43,161	\$36,792	\$43,503
1999	1	4.20%	1.65%	4.20%	4.20%	-0.90%	0.79%	\$44,975	\$37,400	\$45,331
1999	2	-3.12%	-1.98%	-3.12%	-3.12%	-0.77%	-1.77%	\$43,570	\$36,661	\$43,915
1999	3	4.00%	4.36%	4.00%	4.00%	4.74%	0.57%	\$45,311	\$38,260	\$45,670
1999	4	3.85%	4.71%	3.85%	3.85%	5.58%	0.40%	\$47,057	\$40,061	\$47,429
1999	5	-2.39%	-3.22%	-2.39%	-2.39%	-4.06%	-0.88%	\$45,933	\$38,770	\$46,296
1999	6	5.56%	4.43%	5.56%	5.56%	3.29%	-0.49%	\$48,485	\$40,489	\$48,868
1999	7	-3.13%	-1.20%	-3.13%	-3.13%	0.81%	-0.39%	\$46,967	\$40,002	\$47,339
1999	8	-0.50%	0.01%	-0.50%	-0.50%	0.53%	-0.08%	\$46,734	\$40,008	\$47,104
1999	9	-2.74%	-1.56%	-2.74%	-2.74%	-0.40%	1.26%	\$45,454	\$39,383	\$45,813
1999	10	6.33%	4.08%	6.33%	6.33%	1.90%	0.33%	\$48,329	\$40,989	\$48,712
1999	11	2.02%	2.08%	2.02%	2.02%	2.14%	0.02%	\$49,307	\$41,841	\$49,697
1999	12	5.98%	7.70%	5.98%	5.98%	9.43%	-0.48%	\$52,255	\$45,062	\$52,668
2000	1	-5.03%	-5.87%	-5.03%	-5.03%	-6.71%	-0.18%	\$49,625	\$42,416	\$50,018
2000	2	-1.91%	0.71%	-1.91%	-1.91%	3.38%	1.18%	\$48,679	\$42,719	\$49,064
2000	3	9.76%	5.50%	9.76%	9.76%	1.39%	1.40%	\$53,430	\$45,069	\$53,853
2000	4	-3.01%	-3.79%	-3.01%	-3.01%	-4.62%	-0.49%	\$51,824	\$43,359	\$52,234
2000	5	-2.04%	-0.57%	-2.04%	-2.04%	1.00%	-0.17%	\$50,768	\$43,113	\$51,169

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
2000	6	2.49%	4.12%	2.49%	2.49%	5.81%	2.15%	\$52,030	\$44,890	\$52,442
2000	7	-1.49%	-1.48%	-1.49%	-1.49%	-1.46%	0.88%	\$51,255	\$44,228	\$51,660
2000	8	6.19%	3.62%	6.19%	6.19%	1.05%	1.40%	\$54,427	\$45,827	\$54,858
2000	9	-5.29%	-5.01%	-5.29%	-5.29%	-4.72%	0.76%	\$51,548	\$43,531	\$51,956
2000	10	-0.43%	-1.12%	-0.43%	-0.43%	-1.84%	0.56%	\$51,327	\$43,042	\$51,733
2000	11	-2.50%	-5.26%	-7.88%	-7.88%	-2.50%	1.58%	\$50,045	\$40,777	\$47,658
2000	12	5.02%	2.76%	0.50%	0.50%	5.02%	1.79%	\$52,557	\$41,903	\$47,898
2001	1	2.62%	3.08%	3.55%	3.55%	2.62%	1.76%	\$53,935	\$43,195	\$49,596
2001	2	-5.22%	-7.19%	-9.14%	-9.14%	-5.22%	0.91%	\$51,119	\$40,090	\$45,064
2001	3	0.54%	-7.31%	-6.36%	-6.36%	-8.23%	0.54%	\$51,397	\$37,159	\$42,200
2001	4	-0.46%	6.64%	7.77%	7.77%	5.52%	-0.46%	\$51,158	\$39,627	\$45,479
2001	5	0.74%	-0.07%	0.65%	0.65%	-0.79%	0.74%	\$51,536	\$39,601	\$45,775
2001	6	0.53%	-2.23%	-2.45%	-2.45%	-2.01%	0.53%	\$51,808	\$38,717	\$44,655
2001	7	2.23%	-1.72%	-1.00%	-1.00%	-2.46%	2.23%	\$52,964	\$38,050	\$44,209
2001	8	1.11%	-3.52%	-6.27%	-6.27%	-0.67%	1.11%	\$53,550	\$36,711	\$41,435
2001	9	0.90%	-9.25%	-8.09%	-8.09%	-10.38%	0.90%	\$54,030	\$33,316	\$38,083
2001	10	1.86%	2.29%	1.90%	1.90%	2.69%	1.86%	\$55,036	\$34,080	\$38,804
2001	11	-1.34%	6.05%	7.65%	7.65%	4.47%	-1.34%	\$54,299	\$36,143	\$41,774
2001	12	-0.67%	1.86%	0.87%	0.87%	2.88%	-0.67%	\$53,934	\$36,817	\$42,139
2002	1	0.79%	-2.07%	-1.47%	-1.47%	-2.67%	0.79%	\$54,359	\$36,055	\$41,519
2002	2	0.86%	0.78%	-1.94%	-1.94%	3.54%	0.86%	\$54,824	\$36,337	\$40,715

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	3	-1.46%	4.84%	3.74%	3.74%	5.89%	-1.46%	\$54,024	\$38,097	\$42,239
2002	4	1.70%	-3.15%	-6.07%	-6.07%	-0.41%	1.70%	\$54,942	\$36,895	\$39,673
2002	5	0.81%	1.89%	-0.75%	-0.75%	4.22%	0.81%	\$55,388	\$37,590	\$39,374
2002	6	0.29%	-5.56%	-7.13%	-7.13%	-4.24%	0.29%	\$55,546	\$35,500	\$36,564
2002	7	0.48%	-10.19%	-7.72%	-7.72%	-12.22%	0.48%	\$55,815	\$31,881	\$33,742
2002	8	1.66%	1.51%	0.65%	0.65%	2.25%	1.66%	\$56,740	\$32,362	\$33,962
2002	9	1.53%	-11.63%	-10.87%	-10.87%	-12.27%	1.53%	\$57,609	\$28,599	\$30,269
2002	10	-0.61%	8.28%	8.78%	8.78%	7.84%	-0.61%	\$57,259	\$30,966	\$32,927
2002	11	-0.16%	5.25%	6.16%	6.16%	4.46%	-0.16%	\$57,170	\$32,591	\$34,954
2002	12	2.27%	-3.14%	-6.14%	-6.14%	-0.50%	2.27%	\$58,466	\$31,566	\$32,808
2003	1	0.06%	-3.88%	-2.62%	-2.62%	-5.14%	0.06%	\$58,499	\$30,341	\$31,946
2003	2	1.38%	-1.43%	-1.52%	-1.52%	-1.33%	1.38%	\$59,308	\$29,908	\$31,461
2003	3	-0.12%	-0.97%	0.96%	0.96%	-2.94%	-0.12%	\$59,235	\$29,618	\$31,762
2003	4	0.87%	9.40%	8.25%	8.25%	10.61%	0.87%	\$59,748	\$32,401	\$34,384
2003	5	1.82%	5.61%	5.26%	5.26%	5.97%	1.82%	\$60,837	\$34,218	\$36,194
2003	6	-0.13%	2.12%	1.26%	1.26%	3.01%	-0.13%	\$60,756	\$34,942	\$36,650
2003	7	4.28%	3.00%	1.74%	1.74%	4.28%	-3.34%	\$63,355	\$35,990	\$37,289
2003	8	3.71%	2.82%	1.93%	1.93%	3.71%	0.61%	\$65,706	\$37,007	\$38,010
2003	9	1.13%	0.04%	-1.07%	-1.07%	1.13%	2.70%	\$66,448	\$37,022	\$37,602
2003	10	7.23%	6.45%	5.64%	5.64%	7.23%	-0.96%	\$71,253	\$39,412	\$39,724
2003	11	1.45%	1.16%	0.86%	0.86%	1.45%	0.17%	\$72,285	\$39,871	\$40,067

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
2003	12	8.02%	6.66%	5.22%	5.22%	8.02%	0.89%	\$78,079	\$42,528	\$42,158
2004	1	1.69%	1.75%	1.82%	1.82%	1.69%	0.86%	\$79,395	\$43,274	\$42,926
2004	2	2.99%	2.19%	1.38%	1.38%	2.99%	1.03%	\$81,772	\$44,219	\$43,517
2004	3	-0.83%	-1.17%	-1.51%	-1.51%	-0.83%	0.80%	\$81,093	\$43,702	\$42,859
2004	4	-3.72%	-2.66%	-1.58%	-1.58%	-3.72%	-2.61%	\$78,079	\$42,541	\$42,183
2004	5	1.03%	1.20%	1.36%	1.36%	1.03%	-0.42%	\$78,886	\$43,049	\$42,756
2004	6	2.48%	2.20%	1.93%	1.93%	2.48%	0.56%	\$80,838	\$43,997	\$43,581
2004	7	-2.73%	-3.02%	-3.31%	-3.31%	-2.73%	0.96%	\$78,631	\$42,668	\$42,138
2004	8	1.19%	0.79%	0.38%	0.38%	1.19%	1.94%	\$79,565	\$43,004	\$42,299
2004	9	3.44%	2.26%	1.07%	1.07%	3.44%	0.16%	\$82,303	\$43,977	\$42,751
2004	10	1.52%	1.52%	1.51%	1.51%	1.52%	0.85%	\$83,555	\$44,645	\$43,398
2004	11	6.93%	5.52%	4.05%	4.05%	6.93%	-0.80%	\$89,349	\$47,108	\$45,154
2004	12	3.09%	3.24%	3.39%	3.39%	3.09%	0.92%	\$92,109	\$48,633	\$46,686
2005	1	-1.59%	-2.02%	-2.45%	-2.45%	-1.59%	0.65%	\$90,642	\$47,649	\$45,540
2005	2	5.12%	3.61%	2.09%	2.09%	5.12%	-0.62%	\$95,280	\$49,370	\$46,494
2005	3	-2.74%	-2.26%	-1.76%	-1.76%	-2.74%	-0.49%	\$92,670	\$48,254	\$45,676
2005	4	-2.72%	-2.32%	-1.91%	-1.91%	-2.72%	1.36%	\$90,146	\$47,133	\$44,802
2005	5	0.65%	1.89%	3.17%	3.17%	0.65%	1.06%	\$90,728	\$48,026	\$46,221
2005	6	1.55%	0.83%	0.13%	0.13%	1.55%	0.55%	\$92,130	\$48,427	\$46,280
2005	7	4.54%	4.13%	3.71%	3.71%	4.54%	-0.99%	\$96,315	\$50,425	\$47,995
2005	8	3.94%	1.53%	-0.91%	-0.91%	3.94%	1.36%	\$100,112	\$51,199	\$47,557

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
2005	9	5.17%	3.05%	0.79%	0.79%	5.17%	-1.10%	\$105,289	\$52,763	\$47,935
2005	10	-2.68%	-2.21%	-1.68%	-1.68%	-2.68%	-0.81%	\$102,463	\$51,598	\$47,130
2005	11	3.58%	3.67%	3.76%	3.76%	3.58%	0.48%	\$106,130	\$53,490	\$48,904
2005	12	4.87%	2.56%	0.02%	0.02%	4.87%	0.99%	\$111,304	\$54,861	\$48,915
2006	1	8.68%	5.66%	2.65%	2.65%	8.68%	-0.11%	\$120,962	\$57,967	\$50,209
2006	2	-0.04%	0.10%	0.25%	0.25%	-0.04%	0.38%	\$120,917	\$58,028	\$50,337
2006	3	4.26%	2.79%	1.24%	1.24%	4.26%	-1.00%	\$126,063	\$59,646	\$50,961
2006	4	5.48%	3.49%	1.33%	1.33%	5.48%	-0.20%	\$132,968	\$61,729	\$51,640
2006	5	-6.01%	-4.55%	-2.90%	-2.90%	-6.01%	-0.09%	\$124,979	\$58,921	\$50,144
2006	6	-0.13%	-0.01%	0.13%	0.13%	-0.13%	0.10%	\$124,822	\$58,918	\$50,208
2006	7	1.32%	0.98%	0.61%	0.61%	1.32%	1.35%	\$126,469	\$59,495	\$50,513
2006	8	2.53%	2.45%	2.36%	2.36%	2.53%	1.64%	\$129,674	\$60,954	\$51,706
2006	9	0.05%	1.25%	2.56%	2.56%	0.05%	0.81%	\$129,741	\$61,714	\$53,032
2006	10	4.63%	3.96%	3.25%	3.25%	4.63%	0.72%	\$135,744	\$64,160	\$54,756
2006	11	3.72%	2.84%	1.88%	1.88%	3.72%	1.11%	\$140,799	\$65,983	\$55,786
2006	12	4.89%	3.23%	1.40%	1.40%	4.89%	-0.48%	\$147,683	\$68,118	\$56,566
2007	1	1.23%	1.36%	1.49%	1.49%	1.23%	-0.08%	\$149,493	\$69,043	\$57,411
2007	2	-1.43%	-1.70%	-1.97%	-1.97%	-1.43%	1.51%	\$147,350	\$67,869	\$56,280
2007	3	3.33%	2.22%	1.11%	1.11%	3.33%	0.02%	\$152,254	\$69,376	\$56,906
2007	4	4.66%	4.54%	4.42%	4.42%	4.66%	0.51%	\$159,348	\$72,526	\$59,420
2007	5	4.35%	3.92%	3.48%	3.48%	4.35%	-0.78%	\$166,275	\$75,367	\$61,486

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
2007	6	0.99%	-0.32%	-1.67%	-1.67%	0.99%	-0.38%	\$167,917	\$75,128	\$60,460
2007	7	-0.74%	-1.88%	-3.09%	-3.09%	-0.74%	0.84%	\$166,679	\$73,717	\$58,591
2007	8	-1.04%	0.17%	1.50%	1.50%	-1.04%	1.34%	\$164,942	\$73,845	\$59,468
2007	9	7.87%	5.86%	3.72%	3.72%	7.87%	0.72%	\$177,915	\$78,170	\$61,683
2007	10	6.32%	4.06%	1.58%	1.58%	6.32%	0.93%	\$189,151	\$81,348	\$62,657
2007	11	-2.97%	-3.53%	-4.19%	-4.19%	-2.97%	1.81%	\$183,533	\$78,473	\$60,034
2007	12	-1.98%	-1.39%	-0.70%	-0.70%	-1.98%	0.31%	\$179,901	\$77,382	\$59,613
2008	1	-8.84%	-7.43%	-6.02%	-6.02%	-8.84%	1.79%	\$163,993	\$71,633	\$56,027
2008	2	1.55%	-0.89%	-3.25%	-3.25%	1.55%	0.10%	\$166,539	\$70,999	\$54,206
2008	3	0.58%	0.07%	-0.44%	-0.44%	0.58%	0.30%	\$167,497	\$71,050	\$53,967
2008	4	6.79%	5.84%	4.86%	4.86%	6.79%	-0.40%	\$178,867	\$75,198	\$56,591
2008	5	2.55%	1.93%	1.28%	1.28%	2.55%	-0.69%	\$183,430	\$76,651	\$57,318
2008	6	-9.13%	-8.79%	-8.44%	-8.44%	-9.13%	-0.01%	\$166,691	\$69,912	\$52,481
2008	7	-3.45%	-2.17%	-0.83%	-0.83%	-3.45%	0.00%	\$160,943	\$68,393	\$52,045
2008	8	-5.73%	-2.19%	1.45%	1.45%	-5.73%	0.70%	\$151,716	\$66,897	\$52,798
2008	9	-13.11%	-10.96%	-8.91%	-8.91%	-13.11%	-1.11%	\$131,825	\$59,567	\$48,095
2008	10	-2.53%	-19.13%	-16.79%	-16.79%	-21.71%	-2.53%	\$128,486	\$48,171	\$40,019
2008	11	3.64%	-7.05%	-7.17%	-7.17%	-6.91%	3.64%	\$133,166	\$44,773	\$37,148
2008	12	3.33%	3.98%	1.07%	1.07%	7.37%	3.33%	\$137,596	\$46,553	\$37,544
2009	1	-0.70%	-10.65%	-8.41%	-8.41%	-12.89%	-0.70%	\$136,637	\$41,596	\$34,386
2009	2	-0.43%	-9.90%	-10.66%	-10.66%	-9.10%	-0.43%	\$136,053	\$37,479	\$30,721

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	3	1.48%	8.03%	8.76%	8.76%	7.27%	1.48%	\$138,069	\$40,487	\$33,412
2009	4	0.36%	11.20%	9.56%	9.56%	12.91%	0.36%	\$138,561	\$45,020	\$36,606
2009	5	0.85%	10.32%	5.62%	5.62%	15.10%	0.85%	\$139,741	\$49,666	\$38,663
2009	6	0.54%	-1.20%	0.22%	0.22%	-2.53%	0.54%	\$140,498	\$49,069	\$38,748
2009	7	1.43%	9.61%	7.58%	7.58%	11.56%	1.43%	\$142,501	\$53,784	\$41,684
2009	8	1.01%	3.08%	3.60%	3.60%	2.60%	1.01%	\$143,943	\$55,440	\$43,184
2009	9	1.19%	5.16%	3.72%	3.72%	6.52%	1.19%	\$145,653	\$58,303	\$44,789
2009	10	0.41%	-1.80%	-1.87%	-1.87%	-1.73%	0.41%	\$146,253	\$57,256	\$43,953
2009	11	1.36%	5.87%	5.98%	5.98%	5.76%	1.36%	\$148,241	\$60,615	\$46,582
2009	12	-1.68%	1.77%	1.95%	1.95%	1.62%	-1.68%	\$145,756	\$61,690	\$47,488
2010	1	1.57%	-4.99%	-3.60%	-3.60%	-6.38%	1.57%	\$148,051	\$58,611	\$45,777
2010	2	0.20%	1.92%	3.09%	3.09%	0.72%	0.20%	\$148,348	\$59,738	\$47,192
2010	3	-0.08%	6.36%	6.01%	6.01%	6.73%	-0.08%	\$148,235	\$63,537	\$50,030
2010	4	0.93%	0.08%	1.58%	1.58%	-1.48%	0.93%	\$149,613	\$63,589	\$50,819
2010	5	0.88%	-9.61%	-8.00%	-8.00%	-11.36%	0.88%	\$150,923	\$57,476	\$46,756
2010	6	1.61%	-2.58%	-5.25%	-5.25%	0.41%	1.61%	\$153,350	\$55,994	\$44,302
2010	7	0.93%	8.38%	7.00%	7.00%	9.85%	0.93%	\$154,782	\$60,689	\$47,401
2010	8	-4.61%	-4.57%	-4.53%	-4.53%	-4.61%	1.48%	\$147,653	\$57,917	\$45,254
2010	9	11.67%	10.27%	8.92%	8.92%	11.67%	-0.01%	\$164,880	\$63,866	\$49,290
2010	10	4.36%	4.07%	3.79%	3.79%	4.36%	0.36%	\$172,068	\$66,468	\$51,157
2010	11	-4.60%	-2.30%	0.00%	0.00%	-4.60%	-0.57%	\$164,152	\$64,939	\$51,157

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
2010	12	8.92%	7.77%	6.67%	6.67%	8.92%	-1.14%	\$178,796	\$69,984	\$54,570
2011	1	1.39%	1.87%	2.36%	2.36%	1.39%	0.08%	\$181,277	\$71,295	\$55,856
2011	2	2.59%	3.01%	3.42%	3.42%	2.59%	0.16%	\$185,972	\$73,437	\$57,765
2011	3	0.03%	0.05%	0.03%	0.03%	0.08%	-0.00%	\$186,019	\$73,476	\$57,779
2011	4	6.96%	4.94%	2.95%	2.95%	6.96%	1.32%	\$198,976	\$77,105	\$59,483
2011	5	-2.77%	-1.97%	-1.15%	-1.15%	-2.77%	1.31%	\$193,457	\$75,587	\$58,801
2011	6	-1.01%	-1.34%	-1.67%	-1.67%	-1.01%	-0.39%	\$191,509	\$74,575	\$57,818
2011	7	-2.05%	-2.49%	-2.05%	-2.05%	-2.93%	1.57%	\$187,589	\$72,718	\$56,635
2011	8	-5.45%	-7.30%	-5.45%	-5.45%	-9.14%	1.47%	\$177,372	\$67,412	\$53,550
2011	9	-7.04%	-9.67%	-7.04%	-7.04%	-12.41%	0.89%	\$164,880	\$60,890	\$49,779
2011	10	10.91%	11.47%	10.91%	10.91%	12.09%	0.16%	\$182,875	\$67,876	\$55,211
2011	11	-0.23%	-1.25%	-0.23%	-0.23%	-2.35%	-0.30%	\$182,448	\$67,030	\$55,082
2011	12	1.02%	-0.38%	1.02%	1.02%	-1.93%	1.08%	\$184,304	\$66,778	\$55,643
2012	1	4.46%	6.12%	4.46%	4.46%	7.78%	0.87%	\$192,533	\$70,866	\$58,127
2012	2	4.31%	5.43%	4.31%	4.31%	6.51%	-0.05%	\$200,825	\$74,711	\$60,631
2012	3	-0.33%	1.43%	3.28%	3.28%	-0.33%	-0.58%	\$200,158	\$75,778	\$62,620
2012	4	-0.64%	-0.88%	-0.64%	-0.64%	-1.12%	1.14%	\$198,878	\$75,111	\$62,220
2012	5	-6.02%	-8.23%	-6.02%	-6.02%	-10.41%	0.95%	\$186,910	\$68,930	\$58,475
2012	6	4.11%	4.45%	4.11%	4.11%	4.80%	0.04%	\$194,590	\$71,995	\$60,878
2012	7	1.37%	1.20%	1.37%	1.37%	1.02%	1.39%	\$197,255	\$72,859	\$61,712
2012	8	2.24%	1.92%	2.24%	2.24%	1.60%	0.03%	\$201,673	\$74,261	\$63,094

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
2012	9	2.58%	2.71%	2.58%	2.58%	2.85%	0.11%	\$206,869	\$76,274	\$64,720
2012	10	-1.86%	-0.70%	-1.86%	-1.86%	0.51%	0.12%	\$203,022	\$75,743	\$63,516
2012	11	0.56%	2.11%	0.56%	0.56%	3.69%	0.20%	\$204,159	\$77,344	\$63,872
2012	12	0.90%	2.18%	0.90%	0.90%	3.43%	-0.20%	\$206,001	\$79,029	\$64,448
2013	1	5.18%	4.06%	5.18%	5.18%	2.95%	-0.71%	\$216,664	\$82,238	\$67,784
2013	2	1.34%	0.24%	1.34%	1.34%	-0.88%	0.55%	\$219,565	\$82,439	\$68,692
2013	3	3.74%	1.93%	3.74%	3.74%	0.05%	0.08%	\$227,774	\$84,032	\$71,260
2013	4	1.91%	2.67%	1.91%	1.91%	3.48%	0.91%	\$232,121	\$86,272	\$72,620
2013	5	2.33%	0.97%	2.33%	2.33%	-0.47%	-1.71%	\$237,524	\$87,111	\$74,310
2013	6	-1.35%	-2.88%	-1.35%	-1.35%	-4.55%	-1.66%	\$234,316	\$84,607	\$73,307
2013	7	5.07%	5.19%	5.07%	5.07%	5.32%	0.20%	\$246,201	\$88,998	\$77,025
2013	8	-2.91%	-2.03%	-2.91%	-2.91%	-1.04%	-0.64%	\$239,032	\$87,190	\$74,782
2013	9	3.12%	4.77%	3.12%	3.12%	6.60%	0.96%	\$246,494	\$91,351	\$77,117
2013	10	4.59%	3.43%	4.59%	4.59%	2.18%	0.78%	\$257,799	\$94,480	\$80,653
2013	11	3.03%	1.75%	3.03%	3.03%	0.35%	-0.35%	\$265,606	\$96,136	\$83,096
2013	12	2.51%	2.35%	2.51%	2.51%	2.17%	-0.65%	\$272,283	\$98,397	\$85,185
2014	1	-3.47%	-4.19%	-3.47%	-3.47%	-4.91%	1.54%	\$262,837	\$94,272	\$82,230
2014	2	4.56%	5.16%	4.56%	4.56%	5.76%	0.48%	\$274,824	\$99,133	\$85,980
2014	3	0.82%	0.64%	0.82%	0.82%	0.46%	-0.15%	\$277,088	\$99,771	\$86,688
2014	4	0.72%	1.52%	0.72%	0.72%	2.31%	0.78%	\$279,095	\$101,283	\$87,316
2014	5	2.33%	1.56%	2.33%	2.33%	0.79%	1.05%	\$285,611	\$102,863	\$89,355

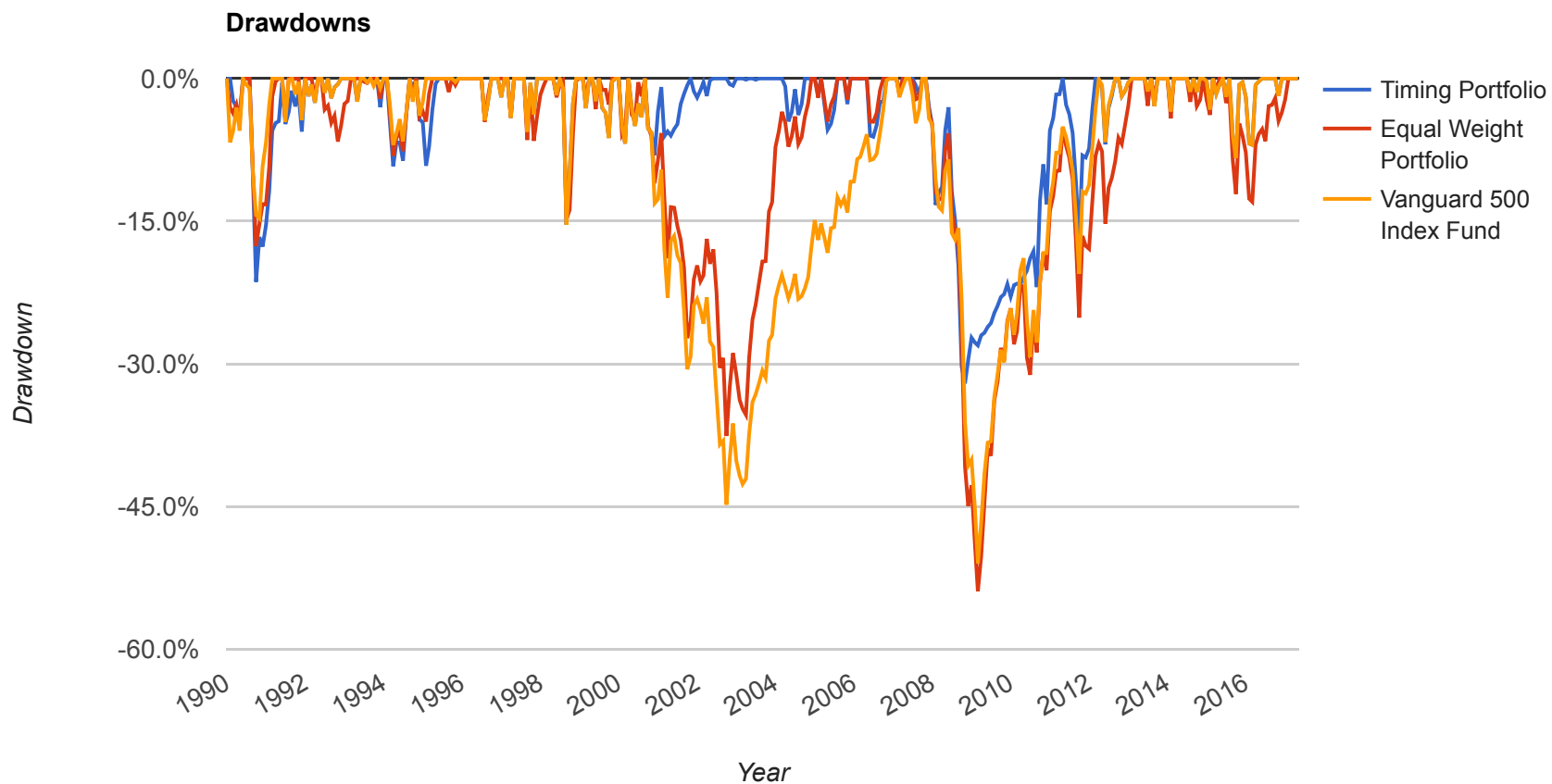
Year	Month	Timing Return	Equal Weight Portfolio Return	Vanguard 500 Index Fund Return	Vanguard 500 Index Fund (VFINX)	Harbor International Fund Insti Cl (HAINX)	Vanguard Total Bond Market Index Fd (VBMFX)	Timing Balance	Equal Weight Portfolio Balance	Vanguard 500 Index Fund Balance
2014	6	2.05%	1.15%	2.05%	2.05%	0.24%	0.11%	\$291,472	\$104,046	\$91,188
2014	7	-1.39%	-2.45%	-1.39%	-1.39%	-3.55%	-0.26%	\$287,426	\$101,493	\$89,922
2014	8	3.99%	2.29%	3.99%	3.99%	0.52%	1.13%	\$298,886	\$103,820	\$93,508
2014	9	-1.42%	-2.69%	-1.42%	-1.42%	-4.08%	-0.73%	\$294,648	\$101,025	\$92,182
2014	10	2.42%	0.67%	2.42%	2.42%	-1.28%	0.94%	\$301,788	\$101,705	\$94,416
2014	11	2.68%	2.33%	2.68%	2.68%	1.92%	0.65%	\$309,883	\$104,075	\$96,948
2014	12	-0.26%	-2.29%	-0.26%	-0.26%	-4.65%	0.09%	\$309,064	\$101,694	\$96,692
2015	1	-3.01%	-1.58%	-3.01%	-3.01%	-0.14%	2.31%	\$299,754	\$100,091	\$93,779
2015	2	5.73%	6.29%	5.73%	5.73%	6.83%	-1.08%	\$316,942	\$106,388	\$99,157
2015	3	-1.59%	-1.22%	-1.59%	-1.59%	-0.85%	0.40%	\$311,891	\$105,094	\$97,576
2015	4	0.95%	2.90%	0.95%	0.95%	4.76%	-0.36%	\$314,851	\$108,140	\$98,502
2015	5	1.27%	0.68%	1.27%	1.27%	0.14%	-0.45%	\$318,858	\$108,878	\$99,756
2015	6	-1.93%	-2.57%	-1.93%	-1.93%	-3.17%	-1.00%	\$312,695	\$106,074	\$97,828
2015	7	2.08%	0.99%	2.08%	2.08%	-0.04%	0.76%	\$319,199	\$107,121	\$99,863
2015	8	-6.04%	-7.05%	-6.04%	-6.04%	-8.02%	-0.35%	\$299,915	\$99,568	\$93,830
2015	9	-2.49%	-3.93%	-2.49%	-2.49%	-5.34%	0.76%	\$292,447	\$95,655	\$91,493
2015	10	8.42%	8.42%	8.42%	8.42%	8.42%	0.01%	\$317,079	\$103,711	\$99,199
2015	11	0.29%	-1.31%	0.29%	0.29%	-2.92%	-0.27%	\$317,987	\$102,353	\$99,483
2015	12	-1.59%	-1.92%	-1.59%	-1.59%	-2.27%	-0.38%	\$312,922	\$100,386	\$97,899
2016	1	-4.98%	-5.25%	-4.98%	-4.98%	-5.52%	1.43%	\$297,349	\$95,118	\$93,027
2016	2	-0.15%	-0.38%	-0.15%	-0.15%	-0.62%	0.66%	\$296,918	\$94,753	\$92,892

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
2016	3	6.78%	6.91%	6.78%	6.78%	7.04%	0.94%	\$317,035	\$101,299	\$99,186
2016	4	0.37%	1.21%	0.37%	0.37%	2.06%	0.38%	\$318,220	\$102,528	\$99,556
2016	5	1.78%	0.53%	1.78%	1.78%	-0.71%	0.02%	\$323,894	\$103,075	\$101,331
2016	6	0.25%	-1.33%	0.25%	0.25%	-2.94%	1.94%	\$324,703	\$101,701	\$101,585
2016	7	3.68%	3.96%	3.68%	3.68%	4.26%	0.64%	\$336,640	\$105,728	\$105,319
2016	8	0.13%	0.12%	0.13%	0.13%	0.11%	-0.17%	\$337,076	\$105,857	\$105,456
2016	9	0.01%	0.75%	0.01%	0.01%	1.52%	-0.08%	\$337,104	\$106,646	\$105,464
2016	10	-1.83%	-2.47%	-1.83%	-1.83%	-3.13%	-0.80%	\$330,925	\$104,008	\$103,531
2016	11	3.70%	0.92%	3.70%	3.70%	-1.97%	-2.65%	\$343,165	\$104,967	\$107,361
2016	12	1.96%	1.41%	1.96%	1.96%	0.79%	0.24%	\$349,900	\$106,442	\$109,468
2017	1	1.88%	2.73%	1.88%	1.88%	3.58%	0.29%	\$356,490	\$109,348	\$111,529
2017	2	3.96%	2.49%	3.96%	3.96%	1.04%	0.66%	\$370,616	\$112,071	\$115,949
2017	3	0.10%	1.98%	0.10%	0.10%	3.88%	-0.07%	\$370,987	\$114,287	\$116,065
2017	4	1.02%	2.07%	1.02%	1.02%	3.09%	0.76%	\$374,764	\$116,647	\$117,247

Metric	Timing Model	Equal Weight Portfolio	Vanguard 500 Index Fund
Mean Return (monthly)	1.18%	0.85%	0.84%
Mean Return (annualized)	15.16%	10.65%	10.56%
Compound Return (monthly)	1.11%	0.75%	0.75%
Compound Return (annualized)	14.18%	9.40%	9.42%
Volatility (monthly)	3.79%	4.32%	4.14%

Metric	Timing Model	Equal Weight Portfolio	Vanguard 500 Index Fund
Volatility (annualized)	13.14%	15.16%	14.47%
Max. Drawdown	-32.07%	-53.93%	-50.97%
Market Correlation	0.70	0.94	0.99
Beta^(*)	0.65	0.98	1.00
Alpha (annualized)	7.63%	0.31%	-0.00%
R²	50.69%	87.78%	100.00%
Sharpe Ratio	0.87	0.49	0.51
Sortino Ratio	1.40	0.70	0.74
Treynor Ratio (%)	17.52	7.55	7.30
Skewness	-0.43	-0.75	-0.59
Excess Kurtosis	1.65	1.77	1.26
Historical Value-at-Risk (95%)	-5.01%	-7.30%	-6.90%
Delta Normal Value-at-Risk (95%)	-6.23%	-7.10%	-6.81%
Conditional Value-at-Risk (95%)	-7.85%	-10.37%	-9.36%
Positive Periods	221 out of 328 (67.38%)	212 out of 328 (64.63%)	212 out of 328 (64.63%)
Gain/Loss Ratio	1.11	0.91	0.91

^(*) 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	Nov 2007	Oct 2008	1 year	Apr 2011	3 years 6 months	-32.07%
2	Aug 1990	Sep 1990	2 months	Dec 1991	1 year 5 months	-21.39%
3	May 2011	Sep 2011	5 months	Feb 2012	10 months	-17.14%
4	Jul 1998	Aug 1998	2 months	Nov 1998	5 months	-15.38%
5	Feb 1994	Mar 1994	2 months	Aug 1994	7 months	-9.22%

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
6	Nov 1994	Jan 1995	3 months	May 1995	7 months	-9.18%
7	Aug 2015	Sep 2015	2 months	May 2016	10 months	-8.38%
8	Sep 2000	Nov 2000	3 months	Oct 2001	1 year 2 months	-8.05%
9	Mar 2012	May 2012	3 months	Aug 2012	6 months	-6.93%
10	Jan 2000	Feb 2000	2 months	Mar 2000	3 months	-6.84%
11	Jul 1999	Sep 1999	3 months	Nov 1999	5 months	-6.25%
12	May 2006	Jun 2006	2 months	Oct 2006	6 months	-6.13%
13	Aug 1997	Aug 1997	1 month	Nov 1997	4 months	-5.61%
14	Mar 2005	Apr 2005	2 months	Jul 2005	5 months	-5.39%
15	Apr 2000	May 2000	2 months	Aug 2000	5 months	-4.98%
16	Mar 2004	Apr 2004	2 months	Sep 2004	7 months	-4.52%
17	Jul 1996	Jul 1996	1 month	Sep 1996	3 months	-4.42%
18	Mar 1997	Mar 1997	1 month	Apr 1997	2 months	-4.14%
19	Feb 1990	Apr 1990	3 months	May 1990	4 months	-3.86%
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	Aug 1992	Aug 1992	1 month	Nov 1992	4 months	-2.07%
30	Nov 2001	Dec 2001	2 months	May 2002	7 months	-2.00%
31	Dec 1996	Dec 1996	1 month	Jan 1997	2 months	-1.97%
32	Jun 2015	Jun 2015	1 month	Jul 2015	2 months	-1.93%
33	Oct 2012	Oct 2012	1 month	Jan 2013	4 months	-1.86%
34	Oct 2016	Oct 2016	1 month	Nov 2016	2 months	-1.83%
35	Jul 2007	Aug 2007	2 months	Sep 2007	3 months	-1.77%
36	May 1998	May 1998	1 month	Jun 1998	2 months	-1.74%
37	Mar 2015	Mar 2015	1 month	May 2015	3 months	-1.59%
38	Jan 2005	Jan 2005	1 month	Feb 2005	2 months	-1.59%
39	Jun 1992	Jun 1992	1 month	Jul 1992	2 months	-1.49%
40	Feb 2007	Feb 2007	1 month	Mar 2007	2 months	-1.43%
41	Sep 2014	Sep 2014	1 month	Oct 2014	2 months	-1.42%
42	Jul 2014	Jul 2014	1 month	Aug 2014	2 months	-1.39%
43	Jun 2013	Jun 2013	1 month	Jul 2013	2 months	-1.35%
44	Sep 1994	Sep 1994	1 month	Oct 1994	2 months	-1.17%
45	Oct 2002	Nov 2002	2 months	Dec 2002	3 months	-0.76%
46	Jul 1993	Jul 1993	1 month	Aug 1993	2 months	-0.42%
47	Oct 1995	Oct 1995	1 month	Nov 1995	2 months	-0.36%
48	Jun 2003	Jun 2003	1 month	Jul 2003	2 months	-0.13%
49	Mar 2003	Mar 2003	1 month	Apr 2003	2 months	-0.12%

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
50	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%
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	Mar 1997	Mar 1997	1 month	Apr 1997	2 months	-4.12%
19	Nov 1991	Nov 1991	1 month	Dec 1991	2 months	-3.88%

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
20	Dec 2014	Jan 2015	2 months	Feb 2015	3 months	-3.83%
21	May 1999	May 1999	1 month	Jun 1999	2 months	-3.22%
22	Jul 2014	Sep 2014	3 months	Nov 2014	5 months	-2.90%
23	Jun 2013	Jun 2013	1 month	Jul 2013	2 months	-2.88%
24	Jul 1999	Sep 1999	3 months	Oct 1999	4 months	-2.73%
25	Oct 2005	Oct 2005	1 month	Nov 2005	2 months	-2.21%
26	Jun 2007	Jul 2007	2 months	Sep 2007	4 months	-2.19%
27	Nov 1993	Nov 1993	1 month	Dec 1993	2 months	-2.12%
28	Aug 2013	Aug 2013	1 month	Sep 2013	2 months	-2.03%
29	Jan 2005	Jan 2005	1 month	Feb 2005	2 months	-2.02%
30	Mar 1992	Mar 1992	1 month	Apr 1992	2 months	-1.98%
31	Feb 1999	Feb 1999	1 month	Mar 1999	2 months	-1.98%
32	Sep 1994	Sep 1994	1 month	Oct 1994	2 months	-1.79%
33	Feb 2007	Feb 2007	1 month	Mar 2007	2 months	-1.70%
34	Aug 1995	Aug 1995	1 month	Sep 1995	2 months	-1.43%
35	Mar 2015	Mar 2015	1 month	Apr 2015	2 months	-1.22%
36	Oct 1995	Oct 1995	1 month	Nov 1995	2 months	-0.69%
37	Jun 1993	Jul 1993	2 months	Aug 1993	3 months	-0.48%
38	Sep 1991	Sep 1991	1 month	Oct 1991	2 months	-0.04%
39	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
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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%
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	Jan 1992	Mar 1992	3 months	Apr 1992	4 months	-2.55%

Rank	Drawdown Start	Drawdown End	Drawdown Length	Recovery By	Recovery Time	Drawdown
23	Apr 1993	Apr 1993	1 month	May 1993	2 months	-2.42%
24	May 1999	May 1999	1 month	Jun 1999	2 months	-2.39%
25	Aug 1992	Aug 1992	1 month	Nov 1992	4 months	-2.07%
26	Dec 1996	Dec 1996	1 month	Jan 1997	2 months	-1.97%
27	Feb 2007	Feb 2007	1 month	Apr 2007	3 months	-1.97%
28	Jun 2015	Jun 2015	1 month	Jul 2015	2 months	-1.93%
29	Oct 2012	Oct 2012	1 month	Jan 2013	4 months	-1.86%
30	Oct 2016	Oct 2016	1 month	Nov 2016	2 months	-1.83%
31	May 1998	May 1998	1 month	Jun 1998	2 months	-1.74%
32	Mar 2015	Mar 2015	1 month	May 2015	3 months	-1.59%
33	Jun 1992	Jun 1992	1 month	Jul 1992	2 months	-1.49%
34	Sep 2014	Sep 2014	1 month	Oct 2014	2 months	-1.42%
35	Jul 2014	Jul 2014	1 month	Aug 2014	2 months	-1.39%
36	Jun 2013	Jun 2013	1 month	Jul 2013	2 months	-1.35%
37	Nov 1993	Nov 1993	1 month	Dec 1993	2 months	-1.00%
38	Sep 1993	Sep 1993	1 month	Oct 1993	2 months	-0.79%
39	Jul 1993	Jul 1993	1 month	Aug 1993	2 months	-0.42%
40	Oct 1995	Oct 1995	1 month	Nov 1995	2 months	-0.36%

#	Start	End	Months	Assets	Asset Performance	Timing Portfolio	Equal Weight Portfolio	Vanguard 500 Index Fund
1	Jan 1990	Nov 1990	11	100.00% Harbor International Fund Insti Cl (HAINX)	HAINX: -7.11%	-7.11%	-6.49%	-5.88%