

Dissecting The Holy Grail Of Market Timing

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Exploring a volatility based moving average strategy that shortens the moving average period when volatility exceeds a certain level

To determine an appropriate volatility threshold, we start by looking at volatility levels at each of the peak and trough points during the 64 year history. As expected, the volatility is much lower at the peaks (10.36%) than the troughs (21.47%).

DD#	Peak	Peak Vol	Trough	Trough Vol	# Days Calendar	# Days Calendar
			1/3/1950			
1	1/6/1953	5.80%	9/14/1953	9.63%	251	1099
2	8/3/1956	6.77%	10/22/1957	16.74%	445	1054
3	8/3/1959	6.58%	10/25/1960	13.72%	449	650
4	12/31/1961	5.92%	6/26/1962	33.10%	177	432
5	2/10/1966	5.31%	10/7/1966	17.62%	239	1325
6	9/26/1967	6.78%	3/5/1968	9.61%	161	354
7	12/2/1968	6.01%	5/26/1970	19.04%	540	272
8	1/12/1973	8.08%	10/3/1974	28.50%	629	962
9	9/2/1976	9.23%	3/6/1978	8.76%	550	700
10	12/1/1980	18.56%	8/12/1982	12.61%	619	1001
11	10/11/1983	12.43%	7/3/1984	13.23%	266	425
12	8/26/1987	12.54%	12/4/1987	41.45%	100	1149
13	7/17/1990	12.99%	10/11/1990	19.53%	86	956
14	3/27/2000	26.23%	10/9/2002	31.05%	926	3455
15	10/10/2007	14.10%	3/9/2009	38.35%	516	1827
16	5/2/2011	8.39%	10/3/2011	30.59%	154	784
17	2/1/2015					1217
Avg Volatility	at Peak	10.36%	at Trough	21.47%	382	1039
Midpoint			15.91%			

Based on this we began by testing a strategy that uses a 200 day moving average if the volatility is below the midpoint of 16%, and uses a 50 day moving average if it is above 16%.

Daily returns for a 50/200 volatility (16%) based moving average strategy					
	Number of Trading Days	Sum of Daily Returns	Average of Daily Returns	StDev Daily Returns	64 Year Annual Avg
Peak-to-Trough	4239	-190.33%	-0.04%	0.45%	-2.97%
Trough-to-Peak	12144	628.04%	0.05%	0.71%	9.81%
Grand Total	16383	437.71%	0.03%	0.65%	6.84%

It does not improve on the simple 200 moving average strategy. Lastly we test different volatility thresholds:

Analysis of other 50/200 using different volatility thresholds					
	Number of Trading Days	Sum of Daily Returns	Sum of Daily Returns	Sum of Daily Returns	Sum of Daily Returns
30 day HV		20.00%	22.00%	25.00%	30.00%
Peak-to-Trough	4239	-189.50%	-189.48%	-176.50%	-179.14%
Trough-to-Peak	12144	660.16%	670.84%	668.96%	670.28%
Grand Total	16383	470.66%	481.36%	492.46%	491.14%

Improves with a higher volatility threshold, but not significantly different from the simple 200 day moving average strategy.