MARKET TIIMING STUDIES

Testing Reveals Which Market Timing Strategies Are Most Effective

By David Vomund

In the last two issues of the *Opening Bell*, we've performed several S&P 500 timing studies using weekly indicators. Our goal was to find an indicator that would serve as a good intermediate-term tool for timing the market. We used weekly indicators in order to limit the number of trades.

The first indicator that we tested was the Nasdaq Composite's RSMD SPX indicator. We found that when this indicator favored the Nasdaq over the S&P 500, the market was generally more favorable. This is true even if you buy the S&P 500 index instead of the Nasdaq. When the Nasdaq outperforms, people are willing to take more aggressive positions, implying a more favorable market environment.

Using weekly charts, we tested several variations using the RSMD SPX indicator. In one strategy, we bought the S&P 500 once the Price Phase line (the faster line in the indicator) had its first weekly advance. The index was held until its first weekly decline. In another test, we waited for two consecutive weeks of reversal before we bought or sold.

Similar tests were run on the S&P 500's weekly MACD indicator. One strategy bought/sold after a one-week direction change while another strategy waited for a two-week direction change. A final test was to wait for the Phase Line to cross the Signal Line before trading.

The last series of tests which appear in this issue are based on use of the Directional Movement Index. We bought/sold the S&P 500 each time the indicator rose above or fell below zero.

Table 1 shows the results of our testing. The time period used for each test was January 1, 1996 through March 31, 2001. This includes both bull and bear market periods. The trading results include compounding and trades are placed using the opening price the day after the signal. The results are sorted by effectiveness, where the most effective trading strategy appears at the top of the table.

"AIQ's market timing model outperformed all of the strategies we tested...buying the day after a market timing buy signal of 95 or greater and selling the day after a market timing sell signal of 95 or greater, the return since 1996 was 123.67%."

Running all these tests has revealed three important findings:

1. When it comes to timing the market, counter-trend systems show the highest return.

2. A one-week direction change in the RSMD SPX indicator is significant.

3. AIQ's market timing model remains an effective timing system — the model outperformed all of the strategies tested.

Counter-Trend Market Timing Systems Are the Best Performers

It is difficult to find a method that works well in both trending environments and non-trending environments. From our testing we found that the strategies that caught the small moves and missed the big moves had the higher returns. The counter-trend systems returned more than the trend-following systems.

The best example is the top performing strategy in Table 1.

By buying the S&P 500 when its weekly MACD indicator falls below its Signal Line and then selling when it rises back above the Signal Line, the return was 98.22%. (Note: This is equivalent to buying when the MACD OSC falls below zero and selling when the MACD OSC rises above zero). That's right — you buy when the indicator is bearish and you sell when the indicator is bullish.

This strategy will be on the wrong side of the market every time a strong trend emerges but most of the time the market is not trending. Most often, by the time the S&P 500 rallies enough to move its weekly MACD above its Signal Line, the market is overbought and ready to roll over. Along the same lines, by the time the market falls enough to register a weekly MACD sell signal, then it is often time to buy. The trade-by-trade details are found in **Table 2**.

These findings hold true for

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other time periods as well. Running a test from 1990 to 1996 also shows the market does better when the weekly MACD OSC is bearish.

You can run this test in Expert Design Studio by using the following code:

buy if [MACD Osc]>0 and val([MACD Osc],1)<0.

sell if [MACD Osc]<0 and val([MACD Osc],1)>0.

RSMD SPX One-Week Change

In our testing results shown in Table 1, a MACD trading strategy may have provided the highest return but it may not be the best choice. Knowing that you will likely miss every strong trending market may be unacceptable.

My favorite strategy was the second best performer listed in Table 1. With this approach, you plot the Nasdaq Composite (OTC) and

Table 2

Buy Date	Sell Date	S&P 500 % Ch.
1/12/96	2/09/96	9.06
3/15/96	5/24/96	5.78
6/14/96	9/20/96	3.18
3/21/97	5/16/97	5.82
8/29/97	2/06/98	12.56
5/22/98	7/17/98	6.87
7/24/98	11/06/98	0.02
5/21/99	7/09/99	5.49
7/23/99	11/12/99	2.89
1/28/00	3/24/00	12.30
4/14/00	7/07/00	9.02
7/28/00	8/18/00	5.06
9/22/00	2/02/01	-6.85
2/23/01	4/27/01	0.58

Table 1

Summary Results (1996 to 2001 Q1)
Results include compounding

Strategy	S&P 500 % Return	Round Trip Trades/Year
Buy when weekly MACD falls below Signal Line. Sell when it rises above the Signal Line.	98.22%	2.9
Buy when OTC's weekly RSMD SPX rises for one week. Sell when it falls for one week.	86.09%	4.4
Buy when the weekly MACD decreases in value. Sell when it increases in value.	76.90%	6.3
Buy when the weekly MACD decreases in value for two consecutive weeks. Sell when it increases in value for two consecutive weeks.	62.06%	3.2
Buy when weekly DirMov falls below zero. Sell when it rises above zero.	47.30%	2.3
Buy when OTC's weekly RSMD SPX rises for two consecutive weeks. Sell when it falls for two consecutive weeks.	46.03%	3.1
Buy when OTC's weekly RSMD SPX falls for two consecutive weeks. Sell when it rises for two consecutive weeks.	38.90%	3.1
Buy when weekly DirMov rises above zero. Sell when it falls below zero.	37.72%	2.3
Buy when weekly MACD rises in value for two consecutive weeks. Sell when it falls for two consecutive weeks.	25.17%	3.2
Buy when weekly MACD rises in value. Sell when it falls in value.	14.67%	6.3
Buy when OTC's weekly RSMD SPX falls for one week. Sell when it rises for one week.	9.01%	4.4
Buy when weekly MACD rises above its Signal Line. Sell when it falls below the Signal Line.	2.33%	2.9

This information is believed to be reliable but accuracy cannot be guaranteed. Past performance does not guarantee future results.

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look at its weekly RSMD SPX indicator. When the Phase Line (the fast line) is falling, then this strategy is out of the market. Once the indicator rises for one week, then buy the S&P 500. The return since 1996 is 86%. To achieve that return you are only in the market 52% of the time.

Figure 1 shows this strategy. Up arrows are placed when the RSMD SPX indicator has its first weekly rise after a downturn. Down arrows are placed every time the indicator experiences its first weekly downturn.

Notice how one would have avoided most of the bear market by following this strategy. Other than a short period in January and again in April, the indicator favored the S&P 500 over the Nasdaq, meaning the market environment was difficult.

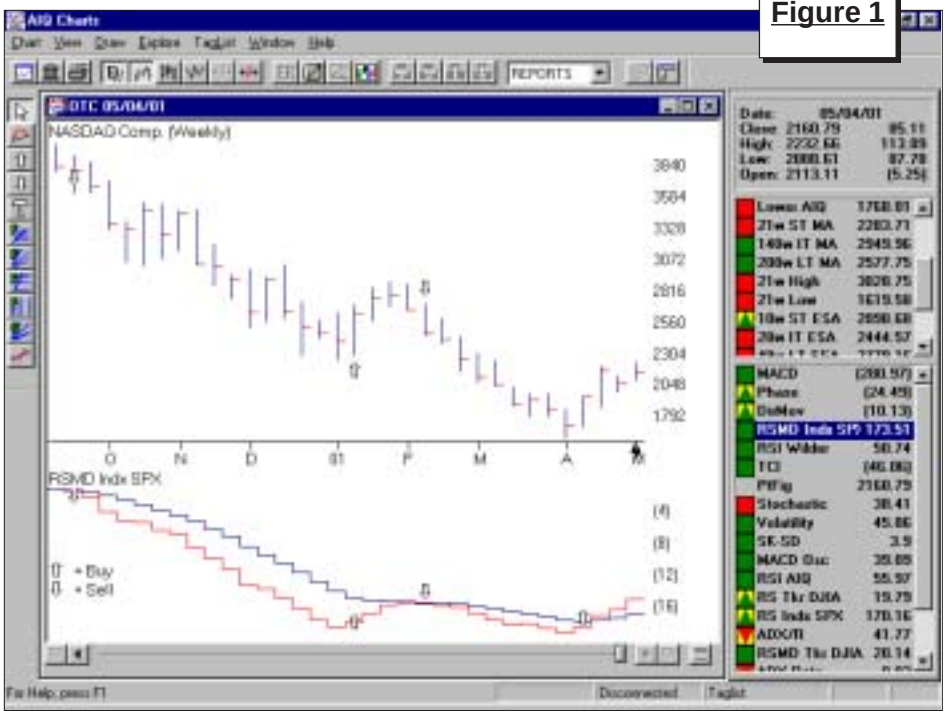
To apply this strategy, you have to visually examine the direction of the RSMD SPX indicator. The value to the right of the indicator is meaningless. To best see the indicator, use the *Increase Spacing* icon to plot as little data as possible. You can also use the *Zoom* feature to enlarge the indicator.

"In our testing results shown in Table 1, a MACD trading strategy may have provided the highest return but it may not be the best choice. Knowing that you will likely miss every strong trending market may be unacceptable."

The buy and sell signals using this strategy are found in **Table 3**. Once you can duplicate these signals on your machine, then you understand the strategy.

Before running backtests, I applied this technique but waited for the indicator to move two consecutive weeks. Now I know that a one-week change is worthy of attention.

Figure 1



AIQ's Market Timing Model

Studying these market timing techniques helped us to better appreciate AIQ's market timing model. AIQ's market timing model outperformed all of the strategies we tested. By simply buying the day after a market timing buy signal of 95 or greater using ticker DJIA and selling the day after a market timing sell signal of 95 or greater, the return since 1996 was 123.67% with an average of 6.3 round trip trades per year.

Could AIQ's timing model have worked better over the last few years? Certainly.

It successfully kept traders out of the March 2001 drop and has been on a buy signal throughout the April 2001 advance, but it also remained on a buy signal throughout the September-October 2000 drop.

Another bad period was the fourth quarter of 1999 when the model remained on a sell at the same time that the market rallied. The trading results of the AIQ market timing model are found in **Table 4**.

In Conclusion

Market timing is very difficult. Those who expect to find a model that will keep them invested every time the market advances and out every time the market declines will always be disappointed. There is a long list of market timing "gurus" who have had a hot hand at some point in the past. But none have withstood the test of time.

The AIQ timing model may have the highest individual return but it may be advisable to combine its signals with further analysis.

For example, if you combine AIQ's market timing model with the top ranked MACD strategy by

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entering the market anytime either system is on a buy signal, then the overall return increases to 132% with an average of 2.9 round trip trades per year.

If you combine the bullish RSMD SPX, the second highest strategy in Table 1, with the Expert Ratings then the overall return since 1996 is 99%.

We've learned a great deal about the market and the individual indicators from our testing. In our testing we used the default parameters without any backfitting. The buy and sell signals that you see for each test, including the Expert Rating buy and sell signals, are the actual ones you would have seen at the time.

Beware of backfitted trading systems. Their historical tests are outstanding, but you unfortunately can't trade in the rear view mirror. ■

Table 3

Buy Date	Sell Date	S&P 500 % Ch.
2/16/96	6/7/96	3.91
8/30/96	10/18/96	9.03
12/6/96	12/20/96	1.25
1/3/97	2/7/97	5.55
4/11/97	4/18/97	3.89
5/2/97	6/13/97	9.88
6/20/97	7/4/97	2.03
7/11/97	10/17/97	3.00
1/23/98	3/20/98	14.78
3/27/98	4/10/98	1.39
4/17/98	5/22/98	-1.09
6/26/98	8/21/98	-4.58
9/25/98	10/2/98	-4.03
10/30/98	2/19/99	12.79
4/2/99	4/16/99	1.96
6/25/99	8/6/99	-1.14
8/27/99	10/22/99	-3.46
11/5/99	3/17/00	6.87
6/9/00	7/28/00	-2.54
8/25/00	9/8/00	-0.79
1/12/01	2/9/01	-0.27
3/23/01	3/30/01	1.80
4/13/01	N/A	5.57

Table 4

Buy Date	Sell Date	S&P 500 % Ch.
01/16/96	04/03/96	7.80
04/15/96	04/17/96	-0.14
05/08/96	06/07/96	4.43
07/09/96	08/29/96	0.41
09/09/96	01/06/97	12.64
01/07/97	03/13/97	4.82
03/02/97	08/08/97	19.06
09/02/97	11/18/97	1.15
12/29/97	01/08/98	0.28
01/12/98	04/17/98	19.54
06/02/98	06/10/98	1.74
06/16/98	07/21/98	7.13
07/29/98	09/03/98	-12.70
09/08/98	10/05/98	-3.41
10/08/98	12/03/98	19.88
12/29/98	01/13/99	0.26
01/25/99	02/25/99	0.89
04/16/99	06/09/99	-0.03
06/29/99	07/20/99	1.90
08/02/99	08/18/99	0.36
09/27/99	10/12/99	2.32
10/14/99	10/25/99	0.80
01/05/00	01/24/00	-0.04
01/31/00	04/14/00	-2.72
04/20/00	05/03/00	-1.36
05/05/00	05/19/00	-1.79
05/26/00	06/16/00	6.27
06/30/00	07/24/00	0.67
08/01/00	11/10/00	-5.01
11/22/00	11/30/00	-0.56
12/04/00	01/02/01	-3.15
02/23/01	03/09/01	-1.0
03/26/01	N/A	8.39