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MARKET TIMING 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 posi-

tions, 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

DAVID VOMUND



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

*"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%."*

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.

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.

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**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.*

## 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 other time periods as well. Running a test from 1990 to 1996 also shows the market does better when the

*"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."*

**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

weekly MACD OSC is bearish.

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

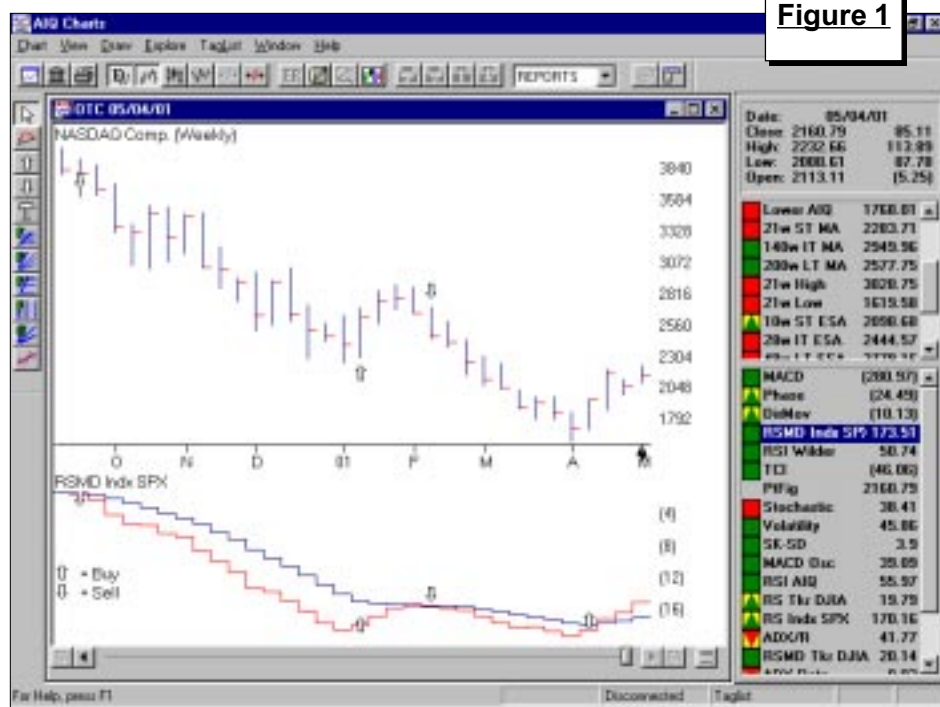
buy if [MACD Osc]>0 and val([MACD Osc],1)<0.

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 look at its weekly RSMD SPX indicator.



MARKET TIMING STUDIES *continued*

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** on page 3 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.

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.

## 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

**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

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

**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

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**.



MARKET TIMING STUDIES *continued***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 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. ■

*David Vomund publishes VIS Alert, a weekly investment newsletter. For a sample copy of the newsletter, call (775) 831-1544 or go to [www.visalert.com](http://www.visalert.com).*

## MARKET REVIEW

Heading into May, the AIQ timing model was on its March 26 buy signal. As of May 17, the model is still in a bullish mode. The only signal registered thus far in May was a 96 buy signal on May 4. Since the March 26 buy signal, the markets have staged strong recoveries. The S&P 500 has rallied 12% and the Nasdaq has rallied 14%. Despite the advance, the Nasdaq is still 43% off its highs.

Fueling the rally was a fifth interest rate cut by the Federal Reserve. The lower rates helped to push the S&P 500 above a strong resistance level at 1275. This level acted as support at the start of this year, acted as resistance in late

February, and then acted as resistance at the start of May.

One would expect technology stocks to dominate the industry group rankings but in the first half of May the leading sectors were commodity related. From May 1 to May 17, Fidelity's Gold sector fund increased about 11%. The next best performers were Chemicals, Industrial Materials, and Paper & Forest Products. These funds increased about 7% over the same time period.

Despite increasing market averages, there were some sectors with small losses during the first half of May. These groups included Medical Delivery, Wireless, Natural Gas, and Utilities Growth. ■

## STOCK DATA MAINTENANCE

The following table shows stock splits and large dividends:

Stock	Ticker	Split	Approx. Date
Knight Transport	KNGT	3:2	06/04/01
Cortech Inc.	CRTQ	2:1	06/04/01
Perking Elmer	PKI	2:1	06/04/01
Genzyme Corp.	GENZ	2:1	06/04/01
Universal Health	UNH	2:1	06/04/01
Columbia Software	COLM	3:2	06/05/01
Fair Isaac & Co.	FIC	3:2	06/05/01
Whole Foods Mkts.	WFMI	2:1	06/05/01
Cross Timbers Oil	XTO	3:2	06/06/01
Oneok Inc.	OKE	2:1	06/12/01
Equitable Res.	EQT	2:1	06/12/01
Johnson & Johnson	JNJ	2:1	06/13/01
Applebee's Int'l	APPB	3:2	06/13/01
Int'l Bancshares	IBOC	5:4	06/18/01
Genesee & Way	GNWR	3:2	06/06/01
Fulton Financial Corp.	FULT	5%	06/26/01

**Trading Suspended:**

Allin Corp. (ALLN), Arch Wireless Inc. (ARCH), Delta Financial Corp. (DFC), drKoop.com Inc. (KOOP), Myers Industries (MYE), PSINet Inc. (PSIX), Theglobe.com Inc. (TGLO), UTI Energy Corp. (UTI).

**Name/Ticker Changes:**

Banc Stock Group (BSGK) to Diamond Hill Inv. Group (DHIL)  
Caldera Systems (CALD) to Caldera Int'l (CALD)  
Cummins Engine (CUM) to Cummins Inc. (CUM)

## USING THE DIRECTIONAL MOVEMENT INDEX -- WHEN IT WORKS AND WHEN IT DOESN'T

By David Vomund

Some indicators work best in trending situations while others work best in non-trending situations. The Directional Movement Index (DirMov) is an indicator that favors trending markets.

The DirMov was designed to be used in conjunction with the ADX/ADXR indicator. The ADX/ADXR indicator tells you whether there is a trend while the DirMov tells you the direction of the trend.

A positive value in the DirMov indicates an uptrend while a negative value indicates a downtrend. Those who believe that "the trend is your friend" will only go long when the DirMov indicator is above zero or go short when the DirMov indicator is below zero.

Testing the DirMov on the S&P 500 reveals several important facts about market timing and trend analysis.

Similar to our market timing testing in the last two issues of the *Opening Bell*, we tested the DirMov indicator using a weekly chart. Listed in **Table 5** are trades using the weekly DirMov indicator.

The left section of the table lists trades when the weekly DirMov is above zero. When the DirMov indicator moves above the zero line we purchased the S&P 500 on the following day's opening price. The S&P 500 is held until the DirMov moves below zero.

On the right side of the table, we see the results of trading the S&P 500 during times when the DirMov

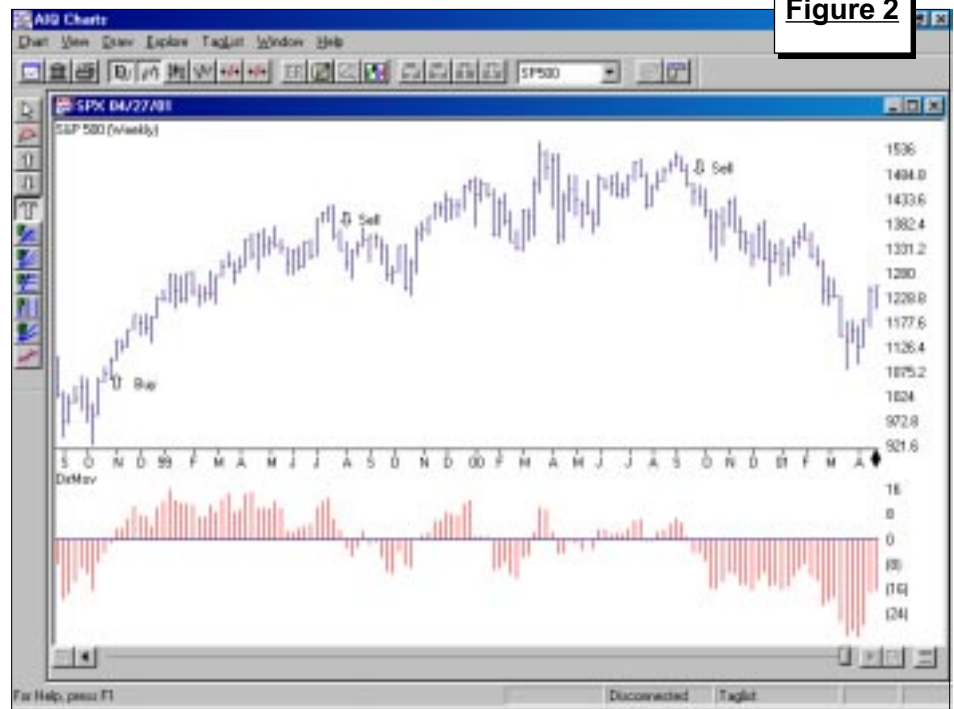


Figure 2

indicator is bearish. For this section, we bought the S&P 500 when the DirMov falls below zero and sold when the DirMov rises above zero.

This reveals an important element about the market — most often it is non-trending.

We performed this same test using the S&P 500's *daily* DirMov indicator. The results were the same.

Those who went long when the indicator was bearish outperformed those who used the indicator in the conventional way.

Looking at **Figure 2**, we see why this is so. The indicator worked perfectly in late 1998 and 1999. During that time, the DirMov rose above zero

giving a buy signal and it kept the trader in until August when it finally fell below zero (see buy and sell arrows on chart).

The indicator has worked very well during this bear market as well.

*"If an indicator performs well during trending situations, then it will likely whipsaw and give unprofitable trades during consolidations....Conversely, those who rely on counter-trend indicators will be right most often but must be aware that their systems will fail them during times when a trending situation emerges."*

Since 1996, a trader who bought the S&P 500 during times when the DirMov indicator was bearish outperformed a trader who went long when the indicator was bullish.

WORKING WITH INDICATORS *continued* . . .

In late September it fell below zero and as of this writing has yet to give a buy signal.

Figure 2 reveals two cases where the DirMov works very well. So why haven't its trading results improved? The answer is revealed in the time period between the 1999 long trade and the 2000 sell signal.

During this time, the S&P 500 zigzagged in a trading range and the DirMov indicator gave several whipsaw signals. By the time the S&P 500 rose enough to move the indicator above zero, it turned south, giving an unprofitable trade.

The reason the DirMov indicator failed to outperform was because the S&P 500 is usually nontrending. None of the whipsaw trades were big losers but a streak of small losing trades is as damaging as a large losing trade.

### Important Lessons To Be Learned

There is an important lesson for those who are revising their trading systems in order to avoid vicious bear markets. If you create a system that keeps you out of the market through an entire bear market, then the system may perform poorly during normal periods.

There is also an important lesson to be learned for all indicators that do well in trending market environments. If an indicator performs well during trending situations, then it will likely whipsaw and give unprofitable trades during consolidations. Traders need to be prepared for the whipsaws and accept them as part of the system.

Conversely, those who rely on counter-trend indicators will be right most often but must be aware that their systems will fail them during times when a trending situation emerges.

We've seen that the DirMov

Table 5

### Trade Details For Weekly Directional Movement Index

When the DirMov is Positive			When the DirMov is Negative		
Buy Date	Sell Date	% Change	Buy Date	Sell Date	% Change
N/A	5/10/96	5.87	5/10/96	5/17/96	2.58
5/17/96	7/12/96	-3.40	7/12/96	9/13/96	5.32
9/13/96	4/4/97	11.37	4/4/97	5/2/97	7.26
5/2/97	10/31/97	12.50	10/31/97	12/5/97	7.56
12/5/97	12/12/97	-3.09	12/12/97	1/30/98	2.82
1/30/98	8/7/98	11.14	8/7/98	11/6/98	4.73
11/6/98	8/6/99	13.96	8/6/99	8/27/99	3.69
8/27/99	9/3/99	0.67	9/3/99	11/5/99	0.96
11/5/99	1/28/00	-0.74	1/28/00	3/17/00	7.67
3/17/00	4/14/00	-7.37	4/14/00	6/2/00	8.90
6/2/00	7/28/00	-3.88	7/28/00	8/11/00	3.66
8/11/00	9/22/00	-1.57	9/22/00	N/A	-13.75
Return = <b>37.73%</b>			Return = <b>47.29%</b>		
Trades per Year = 2.3%			Trades per Year = 2.3%		

indicator works best during trending situations but struggles during consolidations. The Dow Jones Industrial Average has been nontrending for two years so the DirMov is a poor performer.

The Nasdaq Composite, however, enters strong uptrends and strong downtrends so applying the DirMov indicator is more appropriate.

Along the same lines, stocks tend to trend more than the market averages so the DirMov indicator works well for trending stocks. ■

### S&P 500 Changes

#### Changes to the S&P 500 Index and Industry Groups:

Pepsi Bottling Group (PBG) will replace Adaptec Inc. (ADPT). PBG is added to the Soft-Drinks (SODAGR) group.

### New S&P 500 Structure

Standard & Poor's has created a new group structure that AIQ is now adopting.

To update your structure, go to [www.pewd.com/downloads](http://www.pewd.com/downloads). Click on **newsp500 install ins** for instructions.



## “STOCKS FOR THE LONG RUN” BY JEREMY SIEGEL

A very timely article appeared in *The Wall Street Journal* on March 14, 2000, titled: “Big-Cap Tech Stocks Are a Sucker Bet.” The author, Jeremy Siegel, correctly called the top in technology stocks. The difference between Mr. Siegel and the other bears at the time is that Mr. Siegel recommended a fully invested position throughout the 1990s and is still a long-term bull for the overall market.

Mr. Siegel presents his long-term investment strategies in his book, *Stocks for the Long Run* (McGraw Hill, 1998). With research dating back to 1802, *Stocks for the Long Run* convincingly argues that equities outperform all other investments.

This book isn't about technical analysis or daytrading but it is worthy reading for AIQ users. Most of us have a portion of our portfolios in long-term holdings and one of Mr. Siegel's key points is the benefit of remaining fully invested in the market. He found that the real return (after inflation) on equities has averaged 7% per year over the past 195 years. In addition, that 7% return has remained stable over major subperiods. Whether you look at 1802-1870, 1871-1925, or 1926 to the present, the real return averages 7% per year.

Over long time periods, stocks have a higher return than bonds and Mr. Siegel presents a case that stocks are also less risky. After you factor in inflation, stocks have never offered investors a negative real return for holding periods of 17 years or more. The same can't be said of bonds. Stocks are a safer long-term investment for the preservation of purchasing power.

Although stocks dominate bonds

over the long term, the same can't be said over short time periods. Mr. Siegel found that over a 1 year time period, stocks outperformed bonds only about three out of every five years. This is why it is hard for many investors to stay in stocks.

Of interest to today's market, there is a discussion on how the market anticipates future events. The author explains: “The worst course an investor can take is to follow the prevailing sentiment about economic activity. This will lead to buying at high prices when times are good and everyone is

*“Most of us have a portion of our portfolios in long-term holdings and one of Mr. Siegel's key points is the benefit of remaining fully invested in the market.”*

optimistic, and selling at the low when the recession nears its trough and pessimism prevails.”

Mr. Siegel presents an interesting discussion on how people want explanations for the daily movement in the stock market and how the press is more than willing to provide them. When the market goes up, commentators explain why it is rising. Later in the day when prices turn south, they'll have reasons why the market is down.

In reality, there is no fundamental explanation for the daily movement in the market. It is part of the normal ebb and flow of buyers and sellers setting prices.

You might think that economic and political news should be the major source of market movement. Not so says Mr. Siegel. He writes: “Since 1885, when Dow Jones averages were first formulated, there

have been 123 days when the Industrial Average has changed by 5% or more. Of these, only 28 can be identified with a specific political or economic world event, such as war, political changes, or governmental policy shifts.” He also notes that four out of the five largest moves in the stock market over the past century for which there is a clearly identifiable cause have been directly associated with monetary policy.

In the *Opening Bell*, we focus on trading strategies and often ignore the subject of asset allocation. Given the long-term history of the market,

Mr. Siegel discusses what percentage of a portfolio should be invested in stocks. He suggests that conservative investors with a 1 year time horizon should have 25% of their assets invested in stocks. That number increases to 42% for a 5 year time horizon.

For risk-taking investors, 75% of their assets should be invested in stocks if they have a 1 year time period. If they have a 5 year time horizon, then 77% of the portfolio should be in equities. No bonds or money market instruments should be held if you are an aggressive investor and have a 10 year time horizon.

Jeremy Siegel is a professor of finance at the Wharton School but his book does not read like a college textbook. Those new to investing or who want a better understanding of the historical characteristics of the market will enjoy and profit from this book.

This and other financial books can be purchased at Traders Library by calling 800-272-2855, or visit the web site at [www.traderslibrary.com](http://www.traderslibrary.com). ■