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Research Spotlight

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CONCEPTS

Heading for the Sidelines— A Value Added Strategy?

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Sub-prime meltdown, global recession, collapsing dollar.

Since the S&P 500 reached its all-time high of 1,565 on October 9 of last year, the bellwether index of U.S. stocks has declined by over 16% through January 22. If the S&P remains at current levels for the rest of the month, January 2008 will go down as the 6th worst month for stock returns since the start of World War II. Such volatile market moves often seems to prompt investors to consider drastic asset allocation changes designed to prevent further losses. Unfortunately, our research suggests that seemingly well-intentioned reactions to significant market declines actually thwarts the long-term objective of wealth creation. We believe the better approach is to remain committed to a well-crafted and diversified asset allocation strategy that will minimize the impact of sharp market declines, but that will also allow long-term return and wealth-creation objectives to be realized.

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Our entire philosophy and investment strategy is built on the idea that in times of stress and uncertainty, human behavior, attitudes, and feelings are prone toward error and misjudgment. In that spirit, we wanted to investigate the idea of sitting on the stock market sidelines until the confusion and volatility abates. By looking at past market returns, we wanted to see if we could uncover any underlying truths that would help us decide if we should either follow or repress our feelings about the market's future direction.

In analyzing the "move to the sidelines" strategy, we wanted to study some of the implicit assumptions that underlie the idea. Specifically, in order for a sidelines strategy to be effective, both of the following assumptions must be true:

- 1) Recent market declines are useful predictors of future market declines
- 2) A future re-entry signal can be found that will result in round-trip total performance (after transaction costs) that is superior to simply maintaining one's pre-defined asset allocation

To test these assumptions, we designed an experiment using monthly S&P 500 data going back to 1941. Specifically, we looked at the viability of implementing a strategy where an investor would move from 100% stocks to 100% cash and back again based on varying signals generated from the movement of the S&P 500. We would very rarely advocate a 100% position in any individual asset class, including stocks. We believe much more stable and sustainable returns can be generated by building a well-diversified portfolio that encompasses many different asset classes and that is designed in accordance with an individual's specific risk and return objectives. Having said that, this publication addresses investor concerns regarding the sharp decline in the stock market. Hence, we are presenting research that focuses on equities only.

The first strategy we tested was a 5% sell signal followed by a 5% re-entry signal. Our portfolio would begin with a 100% investment in stocks but would move to 100% cash whenever the month-end value of the S&P 500 was 5% lower than the previous all-time high of the same index. This 100% cash position was then maintained until the S&P 500 rose to a level that was 5% higher than the worst low achieved after moving to cash. At this point, a 100% stock investment was re-established.

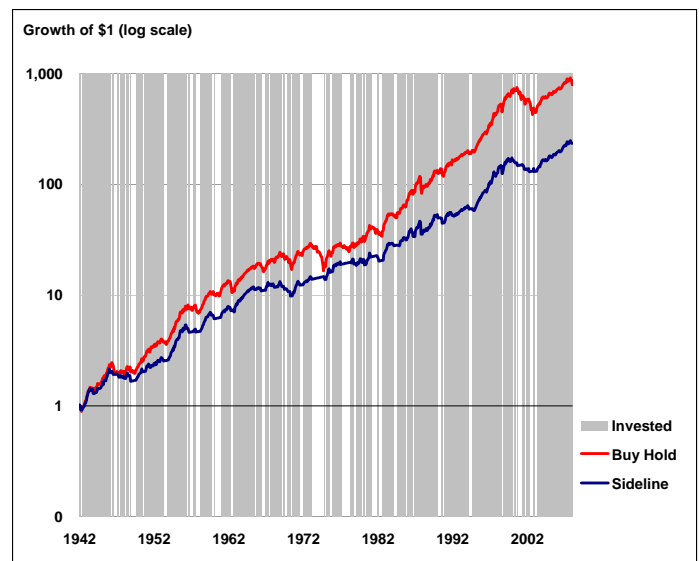
We believe the rationale behind this strategy is similar to the impetus behind many investors' concerns. The market has moved significantly off its prior highs, losses

have been suffered in the short-term, the market appears to be heading downward, and investors are willing to get back into the market once some strength has been demonstrated.

The potential benefits of this strategy can be seen by looking at the long bear market of the early 1970's. Over the 13 month period ending December 31, 1972, the S&P 500 had gained over 23% and was at an all-time high. As a fallout from the U.S. withdrawal from the Bretton Woods Accord and as Middle East tensions escalated, the market began to decline in January 1973. By the end of February, the S&P had declined by more than 5% from its December high and our sell trigger would have been activated. From March 1973 to September 1974, the S&P 500 declined by nearly 30%. Over that entire 18 month period, there was not one sustained gain of over 5% that would have triggered a re-entry back into the market. Assuming we would have earned a money market rate on our cash, the sideline strategy would have saved a hypothetical investor over 35% of his or her assets.

Unfortunately, when judging a trading strategy such as this, one cannot simply look at the best outcome. When the long-term results of the sideline strategy are analyzed, the potential costs of timing the short-term moves of the market become evident. Starting our simulation in January 1941, we followed the above strategy for each month over the next 67 years. We assumed a 0.5% one-way transaction cost, an average money market rate of 3.5%, and an average S&P 500 dividend yield of 2.5%. Chart I details the growth of \$1 invested in both the sideline strategy and a simple buy and hold strategy. The shaded areas on the chart are the periods where the sideline strategy would have dictated a 100% equity commitment.

Chart I: Sideline Strategy vs Buy & Hold (5% Sell / Buy Trigger)



As can be seen, there are certainly periods where the sideline strategy would have protected against losses (e.g., 1974); however, the total return of each strategy over the 67 year simulation is dramatically different. If \$1,000 had been invested in 1941 in the sideline strategy, by 2007, approximately \$235,000 would have been amassed. If, on the other hand, \$1,000 had simply been invested in the S&P 500 and left untouched, over \$791,000 would have been available today. The excess value of a buy and hold strategy was over \$550,000 dollars. The average annual return earned for the sideline portfolio was 8.6% compared to 10.6% for the S&P buy and hold strategy.

Clearly, the 5% sell trigger and the 5% buy trigger are completely arbitrary. An infinite array of buy and sell triggers could be imagined based upon how sensitive an individual is to losses and gains. To put some bounds on the possibilities, we sensitized our simulation to a range of sell and buy triggers. We looked at varying the triggers by 1% within a range of 1% to 10%. We measured the excess value (or cost) of a buy and hold strategy for each of the 100 possibilities defined by our sensitivity analysis. Table I below details the excess value of the buy and hold strategy relative to the sideline strategy. Value is defined as the difference in average annual return.

| Buy Trigger | Sell Trigger | | | | | | | | | |
|-------------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% |
| 1% | 5.6 | 4.5 | 3.1 | 2.7 | 2.1 | 2.0 | 1.5 | 1.0 | 1.0 | 1.4 |
| 2% | 6.0 | 5.0 | 3.6 | 3.0 | 2.4 | 2.2 | 1.7 | 1.1 | 1.1 | 1.5 |
| 3% | 5.7 | 4.5 | 3.4 | 2.9 | 2.4 | 2.2 | 1.7 | 1.1 | 1.2 | 1.7 |
| 4% | 5.2 | 4.3 | 3.1 | 2.9 | 2.3 | 2.1 | 1.6 | 1.0 | 1.1 | 1.4 |
| 5% | 5.4 | 4.4 | 3.1 | 2.7 | 2.0 | 1.7 | 1.1 | 0.7 | 1.0 | 1.2 |
| 6% | 5.2 | 4.1 | 3.0 | 2.7 | 1.9 | 1.4 | 0.8 | 0.4 | 0.6 | 1.0 |
| 7% | 5.1 | 4.1 | 3.1 | 2.7 | 2.0 | 1.6 | 0.8 | 0.7 | 1.0 | 1.3 |
| 8% | 4.9 | 4.0 | 3.1 | 2.8 | 2.4 | 2.1 | 1.3 | 1.2 | 1.3 | 1.6 |
| 9% | 5.2 | 4.9 | 3.8 | 3.3 | 2.7 | 2.4 | 1.5 | 1.4 | 1.5 | 1.6 |
| 10% | 5.0 | 4.6 | 3.7 | 3.1 | 2.4 | 2.1 | 1.5 | 1.3 | 1.4 | 1.5 |

Amazingly, there is not one case out of the 100 simulations conducted where a sideline strategy would have produced more total wealth than simply remaining fully invested in the S&P 500. The closest to break-even would have been a strategy that utilized an 8% sell trigger with a 6% buy trigger; however, we have no reason to believe this result is anything but spurious. The clear implication of this analysis to us is that using past moves in the market (both negative on the sell side and positive on the buy side) does not improve returns over a strategy of being fully invested all of the time.

The results of this analysis surprised us somewhat in that we expected that at least some of the 100 simulations we tested would have produced superior

results due to pure random chance. Exploring further, we believe we have found an explanation for why the buy and hold strategy has been so dominant to a sideline strategy. It turns out that using a sideline strategy is not only incapable of predicting future market declines, utilizing such a strategy actually biases your portfolio toward *missing* some of the very best times in the market.

By looking at the very worst times in the market over the last 67 years, it appears as though stocks exhibit significant mean reversion tendencies at extreme observations. In other words, not only are negative returns a poor predictor of future declines, there is actually a tendency for some of the very best times in the market to follow the very worst. Table II below highlights the twenty worst months for the S&P 500 Index since 1941. Along with the monthly return, the price return for the S&P over the next 12 and 36 months is also shown.

Table II: Worst Monthly Returns (1941 to 2008)

| Month | Rank | S&P Price Return | Return Next 12 Months | Annual Return Next 36 Month |
|--------------------------------|------|------------------|-----------------------|-----------------------------|
| Oct 1987 | 1 | (21.8) | 10.8 | 6.5 |
| Aug 1998 | 2 | (14.6) | 37.9 | 5.8 |
| Sep 1974 | 3 | (11.9) | 32.0 | 15.0 |
| Nov 1973 | 4 | (11.4) | (27.1) | 2.1 |
| Sep 2002 | 5 | (11.0) | 22.2 | 14.7 |
| Jan 2008 | 6 | (10.8) | Unknown | Unknown |
| Nov 1948 | 7 | (10.6) | 8.9 | 15.8 |
| Mar 1980 | 8 | (10.2) | 33.2 | 14.4 |
| Sep 1946 | 9 | (10.2) | 1.0 | 1.4 |
| Aug 1990 | 10 | (9.4) | 22.6 | 12.8 |
| Feb 2001 | 11 | (9.2) | (10.7) | (2.6) |
| Oct 1978 | 12 | (9.2) | 9.3 | 9.4 |
| Apr 1970 | 13 | (9.0) | 27.5 | 9.5 |
| Aug 1974 | 14 | (9.0) | 20.4 | 10.3 |
| May 1962 | 15 | (8.6) | 18.7 | 14.0 |
| Sep 1986 | 16 | (8.5) | 39.1 | 14.7 |
| Nov 1987 | 17 | (8.5) | 18.8 | 11.8 |
| Jun 1962 | 18 | (8.2) | 26.7 | 15.4 |
| Sep 2001 | 19 | (8.2) | (21.7) | 2.3 |
| Nov 2000 | 20 | (8.0) | (13.3) | (7.0) |
| Average 20 Worst Months | | (10.4) | 13.5 | 8.7 |
| Average 1941 to 2008 | | | 7.2 | 7.2 |

As mentioned earlier, if the month were to end with the market at current levels, January 2008 would go down as the 6th worst month in the past 67 years. Of course, the return for the S&P 500 over the next 12 and 36 months is unknown now, but examine the subsequent returns for the 19 other dreadful months where we do know the future outcome. For the entire 67 year period the S&P 500 has produced an average annual return of 7.2% on a price-only basis. If at the end each of the 19 worst months in modern market history an investor had made a 100% commitment to the S&P 500, his return over the ensuing 12 months would have averaged



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13.5% or nearly double the average market return over the entire period. In 15 of the possible 19 periods, the market rose over the 12 months following the worst months. Looking at the subsequent 36 months, an investor's return would have been an annualized 8.7% (over 1.5% higher than average) and positive returns were earned in 17 of the 19 periods analyzed.

This tendency for the market to produce significantly above-average returns immediately following strongly negative returns is the mathematical reason why sideline strategies fail. Unless an investor can predict the declines in the market before they start, much of the financial loss will already be incurred by the time a sell signal is triggered. Similarly, unless a market bottom can be forecasted before it actually occurs, some of the best market returns will be missed as investors are waiting for their buy signal to materialize.

This simulation is evaluating the very simple idea of moving between 100% cash and 100% stocks. As we mentioned earlier, we would very rarely advocate a 100% position in any individual asset class, including stocks. We believe much more stable and sustainable returns can be generated by building a well-diversified portfolio that encompasses many different asset classes

and that is designed in accordance with an individual's specific risk and return objectives. The point of this research is to highlight that reacting to recent market moves may satisfy a desire to take action, but often times these decisions can create significant opportunity costs that may significantly undermine long-term objectives. The optimal strategy is to prepare for future volatility in advance. Create and follow a sound asset allocation strategy and implement your plan by utilizing quality investment vehicles that provide the prospect for returns in excess of the market as well as downside protection when markets inevitably decline.

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