



October 9th, 2008

**Third Quarter 2008 Client Letter**  
**“An Empirical Examination of Market Volatility”**

*“It is from time to time the duty of the serious investor to accept the depreciation of his holdings with equanimity and without reproaching himself” -John Maynard Keynes*

**Introduction**

In this letter, we examine the history of market declines. Bear markets are disheartening and even the most patient and disciplined investor may begin to question the merits of staying the course. Studying financial history and how markets have emerged from declines can help us put our current situation into perspective. It is because of bear markets that we expect a higher rate of return from the portion of our portfolio exposed to equity risk. Without the risk of loss and the unpredictable declines of markets on occasion, there would be little return premium over safer investments like treasury bills. Ultimately, studying market history can keep us grounded in a rational decision making process that will help lead to the best long term results.

**Recent Interview with Robert J. Shiller**

We do not go into detail about the current financial crisis attributed to subprime lending in this letter. However, we had the opportunity recently to interview Professor Robert Shiller from Yale University on our radio program. He recently published a book about the subprime crisis titled *The Subprime Solution: How Today's Global Financial Crisis Happened, and What to Do about It*. The full length interview will be available shortly on our radio program website, [www.successfulinvestingradio.com](http://www.successfulinvestingradio.com). Additional interviews of notable authors and academics are archived on the site as well. We recommend Robert's book if you are interested in learning more about how the housing bubble led to the current “financial crisis” and his solutions to improve our financial system over the long run. On the radio website you will find a list of recommended books that we have read and found useful in developing knowledge of investment theory. We established an agreement with Amazon.com to receive 4% of the revenue from book sales through the website, 100% of which will be donated to charity.

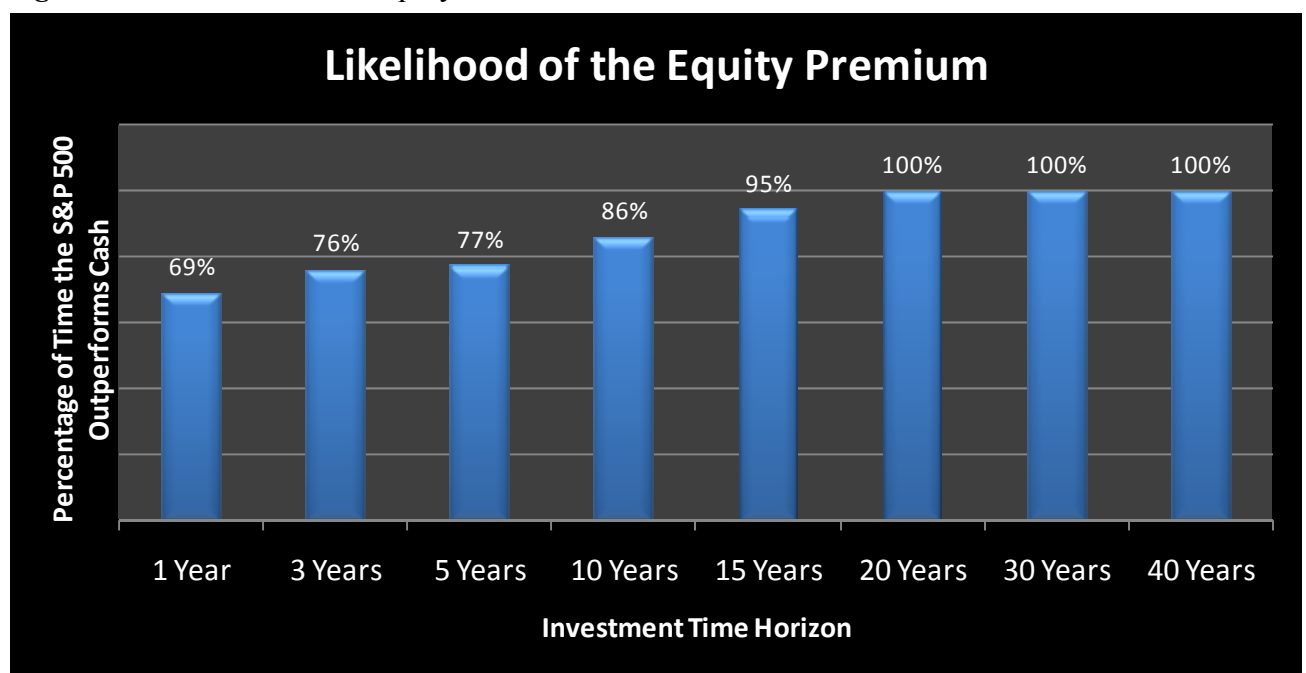
**Information versus Knowledge**

You may have noticed that in our communications we rarely go into detail about the current financial news underlying changes in the market. The media makes this information readily available and with the limited time you devote to reviewing your investment strategy it is our goal to share investment knowledge rather than information. What do we mean by knowledge versus information? Investment knowledge is information that can be put into practice to make better decisions, which in turn may produce better investment results. Information alone is merely a fact or piece of data that may tell a story but does little to enhance our ability to make better financial decisions. Before making a change in our investment strategy, we incorporate historical market data that has been put through rigorous academic testing for significance and most importantly, has been shown to provide value in practical application. In other words, the information we study must be capable of being translated into valuable knowledge to the investor.

For example, knowing after the fact that Washington Mutual stock collapsed as a result of its exposure to subprime mortgages is information. In contrast, knowing that proper diversification can greatly reduce the risk of catastrophic loss without reducing long term return expectations is a far more valuable piece of knowledge. That knowledge can be used to protect and grow wealth over the long run without the need to interpret the daily news. The tendency for investors to react to current events explains why studies have shown that most investors significantly underperform the market while patient, disciplined investors like Warren Buffet have done well.

Referring back to our example above, think of Washington Mutual employees who had the knowledge about proper diversification and acted on it by choosing to diversify rather than invest a large portion of their portfolio into Washington Mutual, a stock that declined nearly 100% in less than one year. Those that chose to diversify would have lost money too, but they would still have the ability to recover rather than being virtually wiped out. The historical data is clear; investors who hold a diversified portfolio of equities (tempered by the inclusion of fixed income for most investors) expose themselves to rewarded market risks (systematic risks). This type of market risk has provided U.S. investors with a premium over treasury bills with high frequency as shown in Figure 1. In the remainder of this letter we present questions along with our responses which are supported by historical data.

**Figure 1:** Likelihood of the Equity Premium



*\*January 1926 – December 2007. Equities represented by the S&P 500. Cash represented by One-Month T-bills*

The S&P data are provided by Standard & Poor's Index Services Group. One-Month Treasury Bills © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld). Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is not a guarantee of future results. Values change frequently and past performance may not be repeated. There is always the risk that an investor may lose money. Even a long-term investment approach cannot guarantee a profit. Economic, political, and issuer-specific events will cause the value of securities, and the portfolios that own them, to rise or fall. Because the value of your investment in a portfolio will fluctuate, there is a risk that you will lose money. Indices are referred to for comparative purposes only and do not represent similar asset classes in terms of components or risk exposure; thus, their returns may vary significantly. The S&P 500 Index measures the performance of large cap US stocks. One-Month T-Bills measure the performance of US government-issued Treasury bills.

## Questions and Answers

### **Recently the market has seemed exceptionally volatile. Is there any precedent for this type of instability?**

In the midst of what the media commonly titles a crisis, the situation can seem unique to history making past examples seem outdated and irrelevant. Each crisis has its own distinct stories and consequences, but the one resounding pattern is that in the end, financial markets recover. When we are in the midst of a market decline, the pain is more real to us than the memory of the pain experienced during previous declines. Without access to historical data, investors tend to believe that the current market decline is more severe than past declines. Investors also have the tendency to project the current trend indefinitely into the future. This can lead us to falsely believe that markets are more predictable than they really are. For example, surely there were some investors and portfolio managers who paired back their exposure to stocks as the negative news began to roll out. As we hear about these investors we begin to believe that we should have taken action at the same time. As the market continues a downward trend the emotions we experience as investors become stronger and the urge to get out while we still can becomes harder to resist. We begin to question the advice that has worked in the past and look to get out before we lose everything.

Author and physicist, Leonard Mlodinow, talks about the perception people have that events are more predictable than they really are. For example, in his book *The Drunkard's Walk: How Randomness Rules our Lives*, he uses the case made by some that Pearl Harbor should have been predicted because data existed in advance pointing to an inevitable attack. He goes on to show that the seemingly predictable event was far from easy to forecast in advance because of the sheer volume of data and other possibilities present prior to the attack. After the occurrence of an event the information that pointed to that event becomes the focal point of discussion not the hundreds or thousands of other possible scenarios that existed prior to the event. This happens in the stock market as well, the media is great at explaining why the market goes up or down after the fact. Often the reasons given seem so obvious and clear we feel like we should have been able to avoid the decline. Further, every day we experience a decline confirms our notion that the declines were predictable and that we should have trusted our instincts and gotten out. It is important to recognize that this is a cognitive error resulting from a natural behavioral tendency.

Looking at the data, we can deduce that the best strategy is to accept that markets decline and subsequently recover in unpredictable ways. Below, Figure 2 shows how the current market decline ranks against previous declines from 1950 to now (the current decline runs through October 8, 2008). It is worth noting that if we showed the data going back to 1926 the current decline would be much lower on the list in terms of severity. At this point, the recent decline has not exceeded the range of declines experienced since 1950.

**Figure 2:** 10 Worst Bear Markets for S&P 500 since 1950 (Daily Returns Excluding Dividends)

<b>Decline</b>	<b>Date of Market Peak</b>	<b>Date of Market Bottom</b>	<b>Date Market Recovered</b>	<b>Low Point of \$1 Million invested at the Peak</b>
-49.15%	3/24/2000	10/9/2002	5/29/2007	\$ 508,531
-48.20%	1/11/1973	10/3/1974	7/16/1980	\$ 517,964
-41.86%	10/9/2007	10/9/2008		\$ 581,363
-36.06%	11/29/1968	5/26/1970	3/3/1972	\$ 639,384
-33.51%	8/25/1987	12/4/1987	7/25/1989	\$ 664,905
-27.97%	12/12/1961	6/26/1962	8/30/1963	\$ 720,264
-27.11%	11/28/1980	8/12/1982	11/2/1982	\$ 728,864
-22.18%	2/9/1966	10/7/1966	5/3/1967	\$ 778,227
-21.47%	8/3/1956	10/22/1957	9/23/1958	\$ 785,254
-19.92%	7/16/1990	10/11/1990	2/12/1991	\$ 800,813

### Events Surrounding Major Declines

A look back at the events surrounding some of the major declines can be informative. The lesson is that every period of decline seems uniquely perilous, but in the past the market has always recovered.

#### 2000-2002

The largest market decline since 1950 began with the unprecedented bull market of the late 1990s. The commonly followed NASDAQ index increased by nearly 7 times from the end of 1994 through its peak on March 10, 2000, a 43% annualized return. During this time period, market commentators were proclaiming the beginning of a ‘new era’ where traditional stock valuation techniques no longer mattered. As such, the P/E ratio of the S&P 500 index reached a value of 32 before the market began to decline, much higher than the historical average.

Eventually investors realized that despite the ‘new era’, valuation levels were excessive. In addition, corporate profits decreased by 12.5% from the 2<sup>nd</sup> quarter of 2000 through the 3<sup>rd</sup> quarter of 2002. On top of that, the September 11<sup>th</sup> attacks struck the heart of the global financial system, and increased global political instability as the threat of terrorism and war rose drastically. Beginning at the end of 2001, the corporate world was shaken by the largest bankruptcies ever up to that point, including Enron and Worldcom.

#### 1973-1974

The 1973 Yom Kippur War was followed by an oil embargo on western countries by OPEC. As a result, the price of oil quadrupled. The high cost of energy and large government deficits from Vietnam War spending caused inflation to reach 8.78% in 1973 and 12.20% in 1974. At the same time, there was a recession from January 1974 – March 1975 in which US Real GDP declined 11.8%. Simultaneously, the Watergate scandal rocked the capital and resulted in Nixon’s resignation in 1974.

#### 1968-1970

The year 1968 was exceedingly turbulent in US history. The war in Vietnam was escalated by the Tet Offensive, and Martin Luther King Jr. and Robert Kennedy were assassinated. However the late 1960s was a bull market period characterized by intense stock speculation, especially by individual investors. The market finally peaked on November 11, 1968 and didn’t again reach that high point for 3.5 years.

## 1987

After a long bull run in the mid 1980s, the United States economy began to slow in 1986. The bear market culminated on Black Monday, October 19, 1987 when the Dow Jones Industrial Average fell by an all-time record of 22.7%. The crash was preceded by similarly extreme declines in the European markets and Hong Kong. The dramatic and entirely unprecedented fall resulted in the failure of popular hedging strategies such as portfolio insurance.

### **On September 29 the Dow Jones Industrial Average dropped a record 778 points. How does this compare with previous one day drops in the market?**

The record drop in the DJIA was shocking for many investors and reported as a historic event by the media. While true that it was the single largest point drop in history, investors should not be concerned about point changes. Percentage changes should be the focus instead, and September 29 was the 17<sup>th</sup> largest percentage drop in one day since 1926, not the largest. Figure 3 presents the 20 largest percentage drops along with the hypothetical point drop at the current price level, and the effect on the value of a \$1 million portfolio that day. The market has experienced many single day declines of 5% or more (sometimes with no major news that day), there is no evidence that the U.S. market has gotten more risky or volatile than historically. One thing is sure, the equity markets have shown a propensity to decline and do so very quickly at times. The knowledge that volatility has always been present in the market and that this time is not unique should help us not to panic.

**Figure 3:** Top 20 Percentage Daily Declines in the Dow Jones Industrial Average

Day	Decline	Point Drop	Point Drop Converted to Today's Level	Value of \$1 million portfolio after decline	Day	Decline	Point Drop	Point Drop Converted to Today's Level	Value of \$1 million portfolio after decline
1	10/19/1987	-22.6%	-2,519.5	773,898.07	11	10/18/1937	-7.2%	-801.9	928,033.66
2	10/28/1929	-13.5%	-1,501.2	865,281.19	12	10/27/1997	-7.2%	-800.5	928,161.95
3	10/29/1929	-11.7%	-1,307.0	882,711.79	13	10/5/1932	-7.2%	-797.1	928,471.05
4	10/5/1931	-10.7%	-1,196.2	892,650.70	14	9/17/2001	-7.1%	-794.4	928,706.54
5	11/6/1929	-9.9%	-1,104.9	900,846.01	15	9/24/1931	-7.1%	-787.8	929,304.25
6	8/12/1932	-8.4%	-936.4	915,965.17	16	7/20/1933	-7.1%	-787.5	929,329.99
7	1/4/1932	-8.1%	-902.6	918,998.72	17	9/29/2008	-7.0%	-777.7	930,209.91
8	10/26/1987	-8.0%	-895.8	919,605.69	18	10/13/1989	-6.9%	-769.5	930,945.27
9	6/16/1930	-7.9%	-876.5	921,342.46	19	1/8/1988	-6.9%	-763.4	931,487.56
10	7/21/1933	-7.8%	-874.0	921,566.59	20	2/27/1933	-6.8%	-761.6	931,649.33

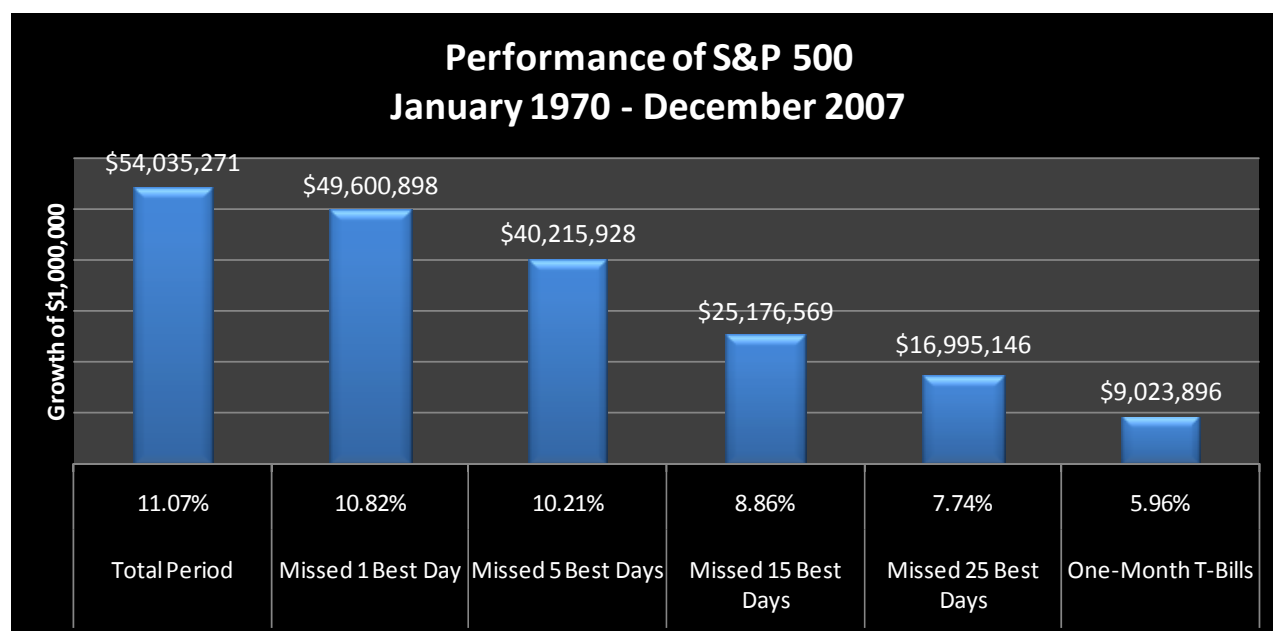
*\*Points are percentage change times the 9/28/08 close price of 11,143.13*

### **Should I avoid equities until conditions improve?**

Many investors ask themselves whether it is prudent to stay out of the stock market entirely until the economic situation is less murky. At the very least, an investor with their wealth in cash no longer has to lose sleep over the wild gyrations of the Dow Jones or be concerned by dismal news stories. This strategy may make us feel better because we are taking control of our portfolio and taking action to avoid further loss which in itself can be an emotionally rewarding exercise. The reason that most advisors do not recommend this strategy is because while you prevent the risk of further declines you also prevent the opportunity of participating in the positive returns that inevitably follow down

markets. By the time things appear brighter, the market has already adjusted stock prices to reflect the better economic conditions. The result is that an investor takes on equity risk until they begin to lose capital, at which time they switch to inflation risk (by owning purely cash, fixed income or fixed annuities), only after the market has gone up does the investor decide to increase their equity risk again. This strategy can cause an investor to receive below market returns and even below bond returns while taking on equity risk a portion of the time. That equity risk may be taken at a time when future equity returns may not be high and the risk is highest, after the market has gone up and things look great. The long term risk premium that equities have afforded has come in short and substantial upswings. Missing just a few days during the recovery of a market can substantially reduce the return, as shown in Figure 4. For example, missing only 15 days of the over 9,000 trading days in the time period cut in half the portfolio ending value.

**Figure 4: The Cost of Missing the Market’s Best Days**



The S&P data are provided by Standard & Poor’s Index Services Group. One-Month Treasury Bills © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld). Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is not a guarantee of future results. Values change frequently and past performance may not be repeated. There is always the risk that an investor may lose money. Even a long-term investment approach cannot guarantee a profit. Economic, political, and issuer-specific events will cause the value of securities, and the portfolios that own them, to rise or fall. Because the value of your investment in a portfolio will fluctuate, there is a risk that you will lose money. Indices are referred to for comparative purposes only and do not represent similar asset classes in terms of components or risk exposure; thus, their returns may vary significantly. The S&P 500 Index measures the performance of large cap US stocks. One-Month T-Bills measure the performance of US government-issued Treasury bills.

In any given year, the stock market has outperformed cash 69% of the time, as was shown in Figure 1. This data should warn us of the danger inherent with market timing. We may eliminate further temporary declines in our portfolio by shifting to cash however there is a high likelihood that we would miss some of the subsequent market recovery.

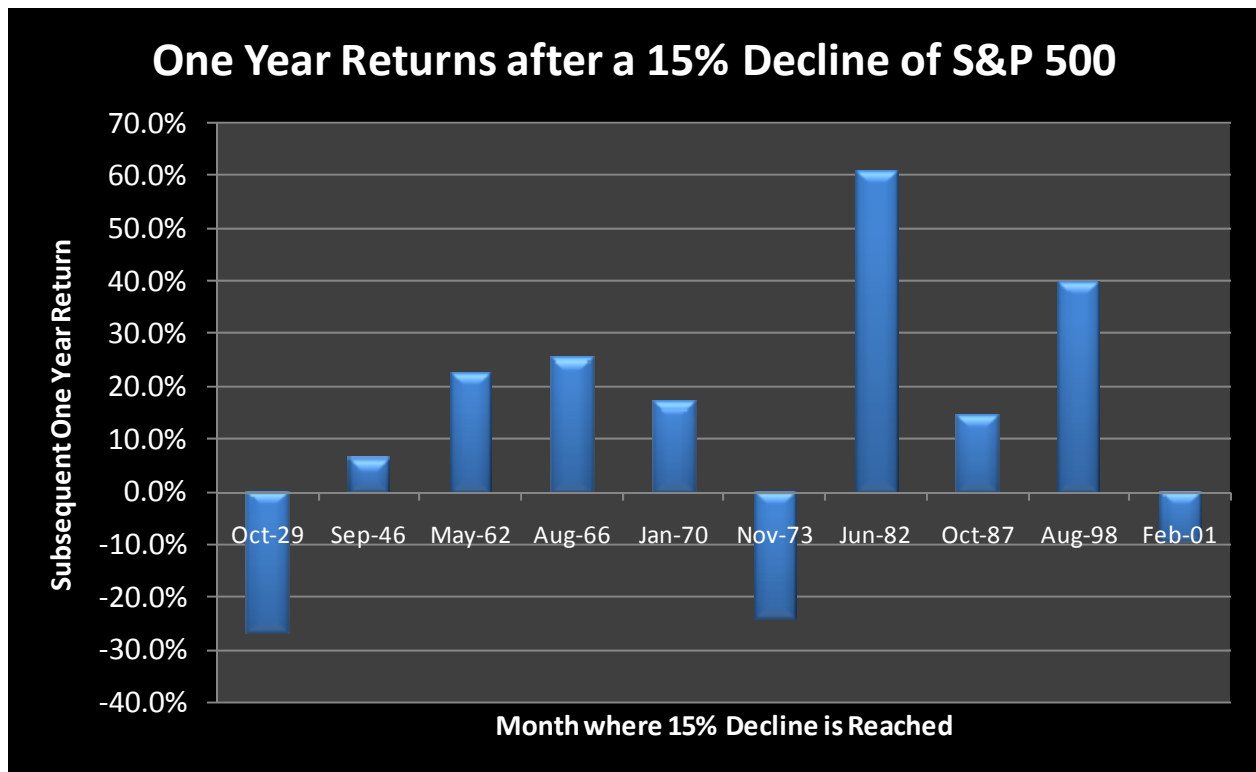
### **Flight to Safety Example**

To illustrate this, we constructed a test to see what would have happened in the past if we moved to cash after experiencing declines in the stock market. Since 1926, the S&P 500 has declined 15% or more 11 times, when using monthly returns and taking in to account dividends. Sometimes these

declines were brief, such as in 1998, and other times they were followed by much larger losses, as was the case during the Great Depression.

A reasonable person might decide that after a 15% decline, due to market uncertainty, to avoid stock market exposure for one year in order for things to settle down. The one year time period is for illustration purposes, over longer time periods stocks have on average outperformed cash as well. Figure 5 shows the one year stock market performance after the stock market had declined by 15%. In 7 out of 10 cases, the stock market was positive. The average one year return for the ten cases (following 15% declines) was 12.78%, versus an average one year return of 4.70% from cash.

**Figure 5:** Flight-to-Safety Strategy during Major Market Declines



Stock market returns represented by the S&P 500 Index.

The S&P data are provided by Standard & Poor's Index Services Group. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is not a guarantee of future results. Values change frequently and past performance may not be repeated. There is always the risk that an investor may lose money. Even a long-term investment approach cannot guarantee a profit. Economic, political, and issuer-specific events will cause the value of securities, and the portfolios that own them, to rise or fall. Because the value of your investment in a portfolio will fluctuate, there is a risk that you will lose money. Indices are referred to for comparative purposes only and do not represent similar asset classes in terms of components or risk exposure; thus, their returns may vary significantly. The S&P 500 Index measures the performance of large cap US stocks.

**I'm not ready to abandon the market completely, but should I consider a more conservative asset allocation?**

The five years ending in 2007 provided above average equity returns within our globally diversified portfolios. Knowing that market declines are inevitable during the bull market we created detailed investment policy statements that included long term data showing and emphasizing the historical declines experienced for each asset allocation our clients hold. Additionally, we researched and

incorporated a risk tolerance survey built by scientists and psychologists to provide a better measurement tool for us to use in understanding your potential reaction to risk and linking that to our portfolio recommendations. We offer our clients' ongoing retirement/cash flow analysis. This cash flow analysis includes sophisticated statistical analysis that incorporates market volatility into the generation of success probabilities. We believe that if you are considering changing your asset allocation that we examine and repeat the above mentioned steps first to help us assure that we are making the best decision possible. Many times when we put things in the context of your long term goals and review the plans that we originally set up we find that minimal changes are warranted as a result of market declines because they were already built into our plans. However, real life experience is the best indicator of your true risk tolerance, if you can't sleep at night these days than your allocation may be too aggressive. If that is the case we want to talk to you and devise the most efficient approach to adjusting your asset allocation.

You have to be aware that changing your allocation may have costs in addition to foregone gains such as taxes and transaction costs.

### **Are we entering another Great Depression?**

The current credit crunch is often compared with the Great Depression in the news media. From the high of the Dow Jones Industrial Average in 1929 to its low in 1932 the index declined 89%. It didn't regain its previous peak until November of 1954. The only time the S&P 500 experienced a negative 10 year return was during the Great Depression. Many investors are concerned whether we are on the brink of a similar incident.

Despite certain similarities in the banking crisis of today and that of the Great Depression, there are important differences, shown in Figure 6. In summary, a repeat of the Great Depression is unlikely. The possibility of a severe financial meltdown does exist, along with the risk of many other political, military or natural catastrophes. These risks are well known to investors, and thus reflected in the current price of equities. As we have argued in previous letters, attempting to outguess the market has proven unsuccessful for even the brightest and most experienced professional money managers.

**Figure 6:** Factors in the Great Depression

<b>Possible Contributing Factor</b>	<b>Why today's situation is different?</b>
<b>Restrictive Monetary Policy</b>	Federal Reserve chairman Ben Bernanke, a student of the depression, has promised to create however much liquidity as is necessary to avoid a money supply contraction similar to the 1930s.
<b>Restrictive Fiscal Policy</b>	Congress has already passed one stimulus package and there may be another
<b>'Runs' on consumer banks</b>	FDIC insurance, now with a minimum insured level of \$250,000 should prevent waves of consumers from withdrawing deposits of troubled banks
<b>'Dust Bowl' record drought</b>	Agriculture is a much less important component of the economy today than it was in the 1930s, making it much more resilient to natural disasters.

### **Isn't Empirical's globally diversified approach supposed to protect me from downturns?**

The Empirical 100% equity portfolio was down 23.1% for the one year period ending 9/30/08, while the S&P 500 index was down 22.0% over the same time period. However, just because Empirical's globally diversified portfolio underperformed the US stock market index this period doesn't mean that



the approach is ineffective. Looking back at the 11 downturns since 1926, we can use globally diversified model performance for periods beginning with 1970, that's when international equity benchmarks became available. Of the 5 downturns since 1970, the Empirical model performance has outperformed the S&P 500 over the same time period 4 out of 5 times. Considering all five periods, the average return of the Empirical model over the S&P 500 is 8.29%. Based on this past evidence, Empirical's globally diversified investment approach remains valid despite the current market environment. Further, it is important to note that since 1970 the worst decline experienced by the S&P was -44.70% while the worst decline of our globally diversified model portfolio was -35.07%. We expect the global portfolio to underperform the S&P 500 on occasion, however, that does not invalidate the potential for better long term return and risk characteristics through global diversification. The data in Figure 7 below illustrates these points clearly, without examining these issues in a historical context it is perfectly understandable why investors may feel that global diversification is not working these days. Figure 8 reinforces this point by showing that the top 3 downturns for the S&P 500 have been much more severe than the worst 3 periods for the global equity model.

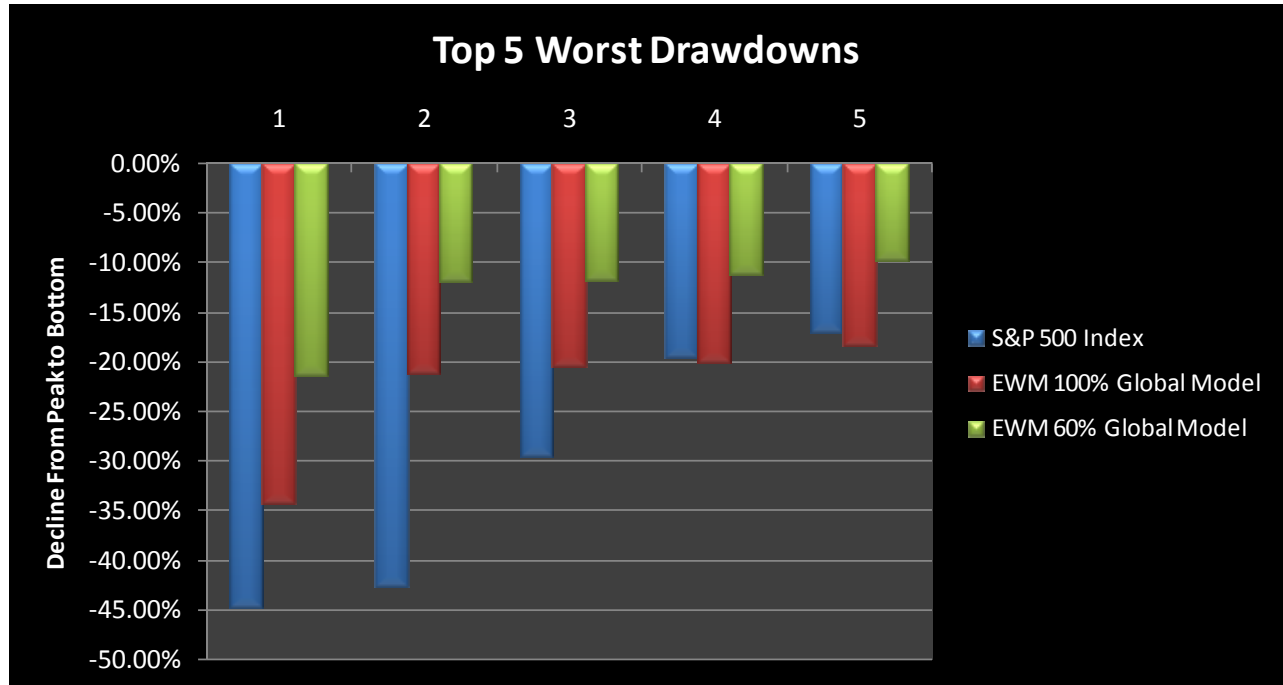
**Figure 7: Performance of Global Equity Model during Market Downturns (Monthly Returns Including Div.)**

	<b>Beginning of Stock Market Decline</b>	<b>Low Point of Downturn</b>	<b>Lowest Return of Downturn for S&amp;P 500</b>	<b>Model Global Equity After-Fee Return over Downturn Period</b>	<b>Return Difference between Global Equity Model and S&amp;P 500</b>
<b>1</b>	Aug-29	Jun-32	-83.40%		
<b>2</b>	May-46	Nov-46	-21.80%		
<b>3</b>	Dec-61	Jun-62	-22.30%		
<b>4</b>	Jan-66	Sep-66	-15.60%		
<b>5</b>	Nov-68	Jun-70	-29.20%		
<b>6</b>	Dec-72	Sep-74	-42.60%	-35.07%	7.55%
<b>7</b>	Nov-80	Jul-82	-16.90%	-7.92%	8.99%
<b>8</b>	Aug-87	Nov-87	-29.50%	-22.02%	7.51%
<b>9</b>	Jun-98	Aug-98	-15.40%	-18.26%	-2.89%
<b>10</b>	Aug-00	Sep-02	-44.70%	-24.47%	20.26%
<b>11</b>	Oct-07		-16.90%		
	<b>Average</b>				<b>8.29%</b>

The S&P data are provided by Standard & Poor's Index Services Group. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is not a guarantee of future results. Values change frequently and past performance may not be repeated. There is always the risk that an investor may lose money. Even a long-term investment approach cannot guarantee a profit. Economic, political, and issuer-specific events will cause the value of securities, and the portfolios that own them, to rise or fall. Because the value of your investment in a portfolio will fluctuate, there is a risk that you will lose money. Indices are referred to for comparative purposes only and do not represent similar asset classes in terms of components or risk exposure; thus, their returns may vary significantly. The S&P 500 Index measures the performance of large cap US stocks. The investment returns are hypothetical model returns, not actual returns and should not be interpreted as an indication of such performance. The portfolios were designed well after the beginning date of the performance time period. The purpose is to estimate how Empirical's model portfolios would have performed historically based on the best available data. These portfolios were created with the benefit of hindsight, and do not take into account actual market conditions and available knowledge that would have impacted an investment advisor's decisions. There is no indication that the back-tested results could, or would, have been achieved by Empirical had the program been activated during the years presented. Past performance may not be indicative of future performance. (Calculating historical model returns is a method of estimating the risk of investing strategies. However, capital markets are constantly changing and poor performance in the past is not a worst case scenario.) The investment strategy that the back-tested results were based upon can be changed at any time in order to show better performance, was based on hindsight, and can continue to be tested and adjusted until the desired results are achieved. Some of the funds in the Empirical model portfolios were not in existence in 1970. Prior to a fund's inception month, the performance of a similar fund or index adjusted by the fund's expense ratio is used. Similar funds were selected based on the historical return and risk characteristics. The estimated expense ratio is deducted monthly. Portfolios are assumed to be rebalanced annually. Model portfolios do not include an allocation to cash. All performance data includes dividends. The model performance includes advisory costs estimated by Empirical's maximum fee, 1.25%. Taxes and trading costs are not included. When index performance is used, estimated mutual fund expenses are

deducted from index performance each month. The estimate used is the expense ratio of the current fund in the Empirical portfolio. Since indexes do not represent actual portfolios, they do not include several important costs, such as trading costs within funds, market impact costs, bid/ask spreads and other factors, which negatively impact performance.

**Figure 8: Top 5 Worst Drawdowns (Monthly Returns Including Dividends)**



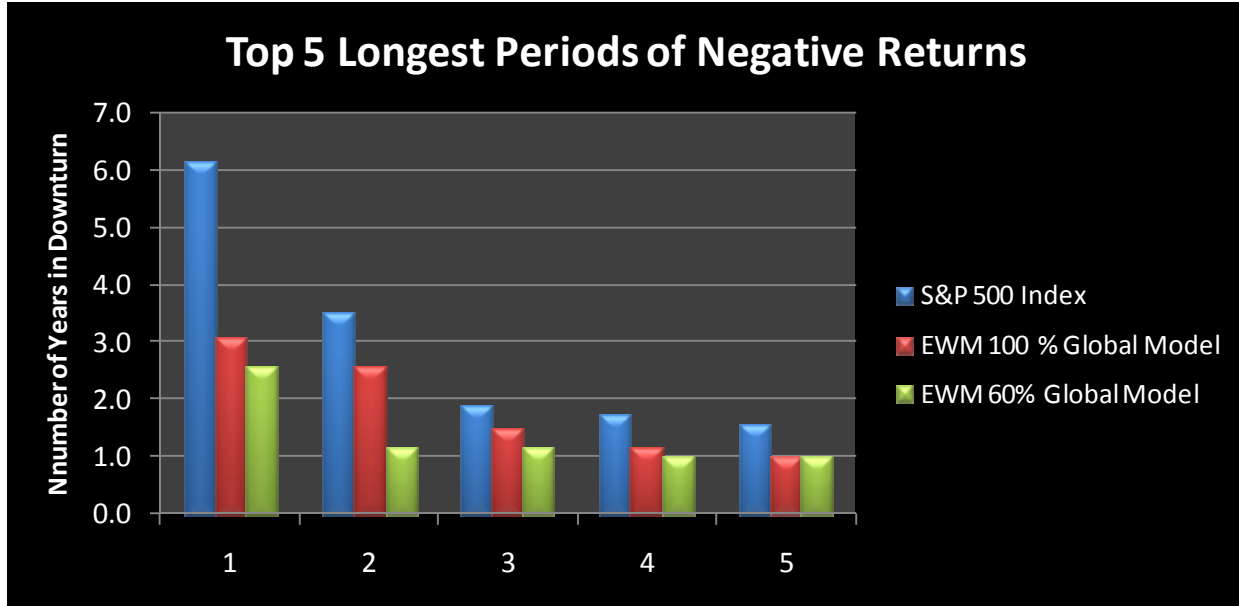
The S&P data are provided by Standard & Poor's Index Services Group. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is not a guarantee of future results. Values change frequently and past performance may not be repeated. There is always the risk that an investor may lose money. Even a long-term investment approach cannot guarantee a profit. Economic, political, and issuer-specific events will cause the value of securities, and the portfolios that own them, to rise or fall. Because the value of your investment in a portfolio will fluctuate, there is a risk that you will lose money. Indices are referred to for comparative purposes only and do not represent similar asset classes in terms of components or risk exposure; thus, their returns may vary significantly. The S&P 500 Index measures the performance of large cap US stocks. The investment returns are hypothetical model returns, not actual returns and should not be interpreted as an indication of such performance. The portfolios were designed well after the beginning date of the performance time period. The purpose is to estimate how Empirical's model portfolios would have performed historically based on the best available data. These portfolios were created with the benefit of hindsight, and do not take into account actual market conditions and available knowledge that would have impacted an investment advisor's decisions. There is no indication that the back-tested results could, or would, have been achieved by Empirical had the program been activated during the years presented. Past performance may not be indicative of future performance. (Calculating historical model returns is a method of estimating the risk of investing strategies. However, capital markets are constantly changing and poor performance in the past is not a worst case scenario.) The investment strategy that the back-tested results were based upon can be changed at any time in order to show better performance, was based on hindsight, and can continue to be tested and adjusted until the desired results are achieved. Some of the funds in the Empirical model portfolios were not in existence in 1970. Prior to a fund's inception month, the performance of a similar fund or index adjusted by the fund's expense ratio is used. Similar funds were selected based on the historical return and risk characteristics. The estimated expense ratio is deducted monthly. Portfolios are assumed to be rebalanced annually. Model portfolios do not include an allocation to cash. All performance data includes dividends. The model performance includes advisory costs estimated by Empirical's maximum fee, 1.25%. Taxes and trading costs are not included. When index performance is used, estimated mutual fund expenses are deducted from index performance each month. The estimate used is the expense ratio of the current fund in the Empirical portfolio. Since indexes do not represent actual portfolios, they do not include several important costs, such as trading costs within funds, market impact costs, bid/ask spreads and other factors, which negatively impact performance.

### Recovery Times

Let's examine another insightful statistic, the time it took investors to recover their capital after the onset of a market decline. Figure 9 below shows the five longest recovery periods for three different portfolios. If we could choose between two portfolios that experienced similar declines but in which one had a shorter recovery time; we would certainly prefer the portfolio with the shortest recovery period. In Figure 9 below we see that in all five of the worst recovery periods the global portfolio

recovered faster than the S&P 500. This important fact is not apparent when simply examining short term return differences between a globally diversified portfolio and the S&P 500.

**Figure 9: Top 5 Longest Periods of Negative Returns (Monthly Returns Including Dividends)**



The S&P data are provided by Standard & Poor's Index Services Group. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is not a guarantee of future results. Values change frequently and past performance may not be repeated. There is always the risk that an investor may lose money. Even a long-term investment approach cannot guarantee a profit. Economic, political, and issuer-specific events will cause the value of securities, and the portfolios that own them, to rise or fall. Because the value of your investment in a portfolio will fluctuate, there is a risk that you will lose money. Indices are referred to for comparative purposes only and do not represent similar asset classes in terms of components or risk exposure; thus, their returns may vary significantly. The S&P 500 Index measures the performance of large cap US stocks. The investment returns are hypothetical model returns, not actual returns and should not be interpreted as an indication of such performance. The portfolios were designed well after the beginning date of the performance time period. The purpose is to estimate how Empirical's model portfolios would have performed historically based on the best available data. These portfolios were created with the benefit of hindsight, and do not take into account actual market conditions and available knowledge that would have impacted an investment advisor's decisions. There is no indication that the back-tested results could, or would, have been achieved by Empirical had the program been activated during the years presented. Past performance may not be indicative of future performance. (Calculating historical model returns is a method of estimating the risk of investing strategies. However, capital markets are constantly changing and poor performance in the past is not a worst case scenario.) The investment strategy that the back-tested results were based upon can be changed at any time in order to show better performance, was based on hindsight, and can continue to be tested and adjusted until the desired results are achieved. Some of the funds in the Empirical model portfolios were not in existence in 1970. Prior to a fund's inception month, the performance of a similar fund or index adjusted by the fund's expense ratio is used. Similar funds were selected based on the historical return and risk characteristics. The estimated expense ratio is deducted monthly. Portfolios are assumed to be rebalanced annually. Model portfolios do not include an allocation to cash. All performance data includes dividends. The model performance includes advisory costs estimated by Empirical's maximum fee, 1.25%. Taxes and trading costs are not included. When index performance is used, estimated mutual fund expenses are deducted from index performance each month. The estimate used is the expense ratio of the current fund in the Empirical portfolio. Since indexes do not represent actual portfolios, they do not include several important costs, such as trading costs within funds, market impact costs, bid/ask spreads and other factors, which negatively impact performance.

**With my assets down significantly, am I still on track to retire and reach my other financial goals?**

The best way for us to answer that question is to sit down with you and update your retirement plan with your current portfolio values. As mentioned previously, the plan that we have built for you incorporated the expected volatility for your specific asset allocation. Your financial advisor at Empirical can perform an analysis to determine whether you're still on target to achieve your financial goals and if any adjustments should be made. By understanding your particular circumstances and utilizing sophisticated financial planning software, we can estimate the probability of you attaining your goals based on historical market assumptions.

Most clients find that when they look at the benchmark of meeting their financial goals they are still on track or ahead of schedule. This exercise can make the market declines less stressful.

### **Are there any positives or opportunities with this market downturn?**

The Chinese symbol for crises is a combination of two other symbols, one representing danger and one representing opportunity. We have clients who are at a variety of different stages in life and who possess their own individual financial circumstances. There are different opportunities for each of us, let's examine a few.

### **Dollar Cost Averaging**

For those who are younger and who are aggressively saving for retirement or education for their children, market declines present the opportunity to enhance long term returns by purchasing more shares at lower prices. As equities decline and become less expensive the expected return goes up. Dollar cost averaging into a globally diversified portfolio is a great way to take advantage of market declines.

### **Rebalancing Opportunities**

For investors who are not adding to their portfolios because they are at or near retirement, there is still opportunity to purchase equities at lower prices as a result of rebalancing. Since most of our clients own fixed income in their portfolio there is a need to rebalance their portfolios back to the target mix of stocks and bonds. This exercise has the effect of buying stocks after declines when they have higher expected returns and reducing stock exposure after they have increased. One of the fund companies that we use for several asset classes is Dimensional Fund Advisors (DFA). A study done by Morningstar concluded that DFA was the only mutual fund company in which investors' actual dollar-weighted returns were higher than the published time-weighted returns. It is our belief that this is because DFA funds are available only through financial advisors. Advisors like Empirical tend to be disciplined in their rebalancing approach.

### **Tax Loss Harvesting**

Clients with taxable accounts have the opportunity to bank capital losses during market declines. We have been taking advantage of the current market to negate realized gains and build a pool of capital losses that can be used indefinitely in the future. Some losses can be taken each year directly off of ordinary income and others will be used to offset future capital gains. Our tax management system is described in the 4<sup>th</sup> Quarter 2007 letter posted on our website.

### **Summary**

The objective of this letter was to arm you with the knowledge that market declines like the one we are experiencing currently are a necessary part of investing. We should not make decisions absent of understanding our market history. A globally diversified mix of stocks and bonds remains the best way to achieve your long term objectives in spite of short term setbacks. Much of the information put out in the daily media is exactly that, information and not useful knowledge. For most of us, the best approach is to build a foundation of knowledge regarding how markets really work and then ignore the daily news if that news causes us to feel the need to react.

On the final page, you will find one final chart that displays the performance of the S&P 500 from 1926 to July 2008. The diagram graphically separates bull markets from bear markets, showing how past bull markets overwhelm bear markets in both length and total growth.

Your financial success is our number one objective, during times like these we encourage you to call, email, or meet with us to discuss your situation. We will be contacting you to discuss this letter and your quarterly report.

Sincerely,

A handwritten signature in cursive script that reads "Kenneth R. Smith".

The Empirical Wealth Management Team  
Kenneth R. Smith, CFP®, MS  
Chief Executive Officer

# Bull and Bear Markets

S&P 500 Index (USD)

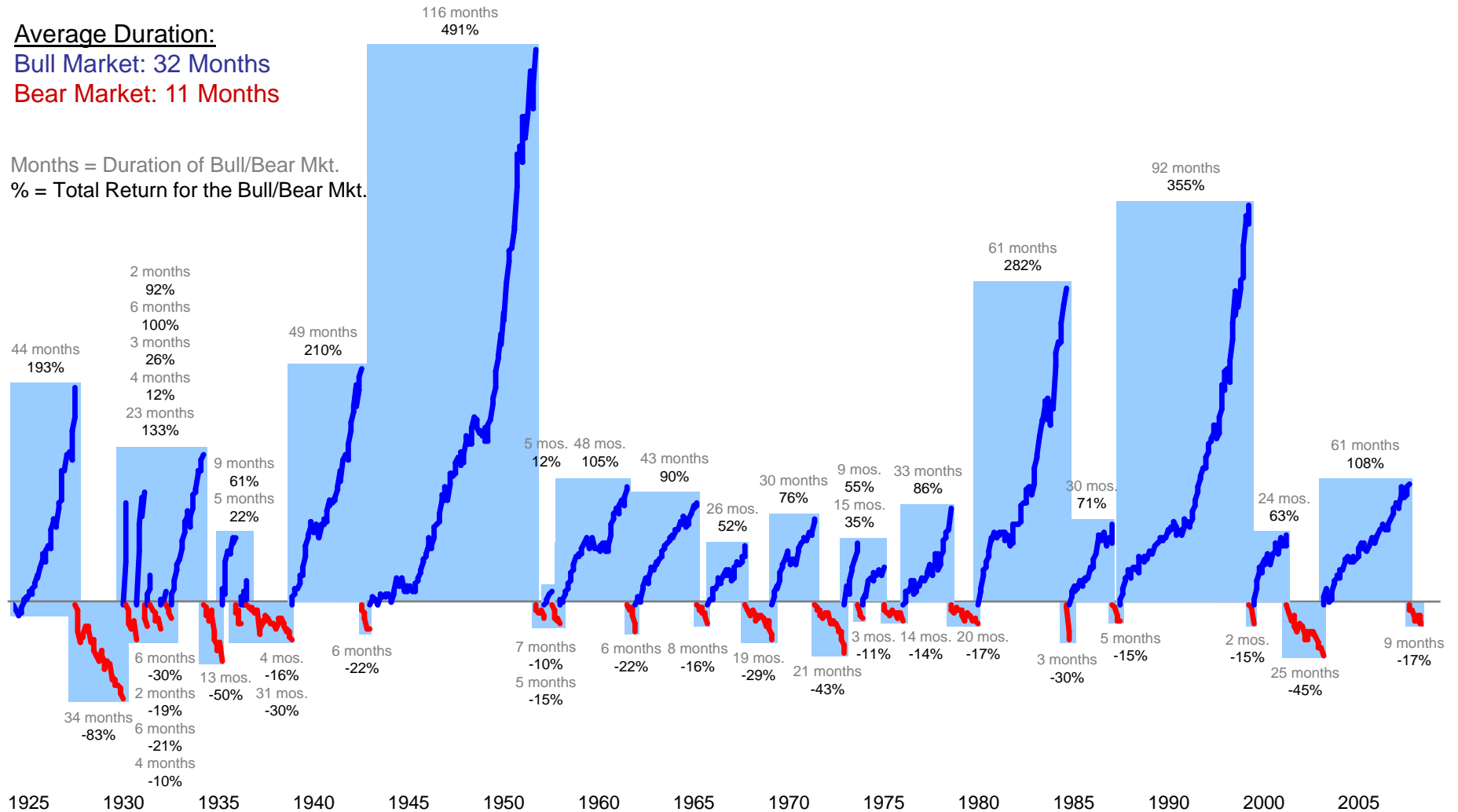
Monthly Returns: January 1926-July 2008

Average Duration:

**Bull Market: 32 Months**

**Bear Market: 11 Months**

Months = Duration of Bull/Bear Mkt.  
% = Total Return for the Bull/Bear Mkt.



The S&P data are provided by Standard & Poor's Index Services Group.

Bull and bear markets are defined in hindsight using cumulative monthly returns. A bear market (1) begins with a negative monthly return, (2) must achieve a cumulative return less than or equal to -10%, and (3) ends at the most negative cumulative return prior to achieving a positive cumulative return. All data points which are not considered part of a bear market are designated as a bull market.