

VOLATILITY IN PERSPECTIVE

By Ed Easterling

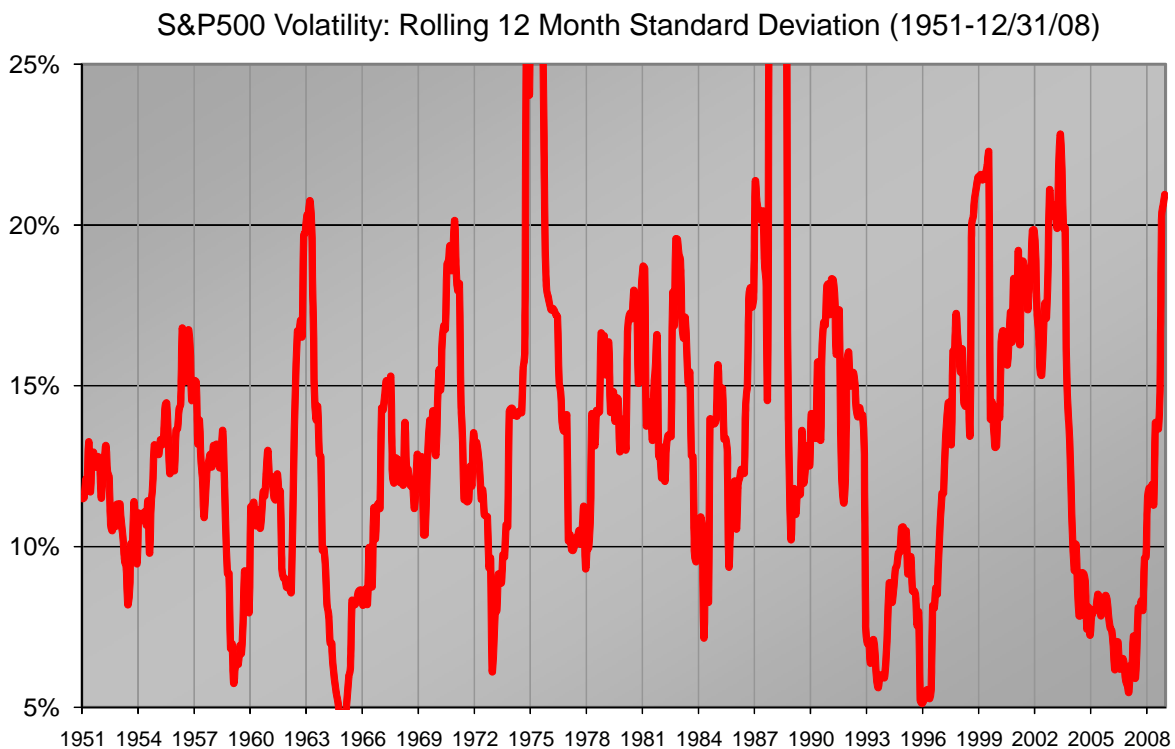
December 31, 2008 (updated)

All Rights Reserved

Who or what is rocking the boat? Market volatility has recently surged; investors have had to hold on and try to figure out what this means. Is the current level of volatility “normal” or is it extreme? The purpose of this presentation is to graphically put volatility into historical perspective. This will be updated every quarter or so until volatility again falls to levels of investor disinterest...which could be a while if history is a guide for what can be expected.

The first look at volatility uses the common measure of standard deviation. For this analysis, the monthly percentage changes in the S&P 500 Index are used and then the result is annualized to reflect a measure of the amount of variability in the market. This measure is often used by financial market professionals as an indication or measure of risk in models that assess risk versus return. It’s not important for this discussion to go into detail about the statistic—it is only necessary to appreciate that it is the most common measure of volatility and to recognize that a higher value means higher volatility.

Figure 1. S&P 500 Index Volatility: Rolling Volatility (1950 to Present)



Copyright 2003-2008, Crestmont Research (www.CrestmontResearch.com)

Let's look at almost six decades of volatility...to put volatility into perspective. To present a view of volatility and its change over time, Figure 1 presents the twelve-month rolling standard deviation for the S&P 500 Index. The concept of rolling periods just means that the value that is used for each month is the 'standard deviation' for the most recent twelve months. So as the market goes through periods of higher and lower volatility, the measure reflects those changes.

As you can see in Figure 1, volatility tends to average near 15% (the average that many models and academics use for stock market volatility). Yet one of the most interesting aspects of the history of volatility is that it tends to move around a lot. Although most periods generally fall within a band of 10% to 20% volatility, there have been periods when volatility was unusually high and periods when it was unusually low...and often extreme periods in one direction are followed by oppositely extreme periods. The time between the light grey vertical bars on the graph represent three-year periods. So some of the extreme periods can last for a while, yet few last a long time.

For most of the past four years, volatility had been unusually low—and, in late 2006 and early 2007, volatility fell into the lowest three percent of all periods since 1950. No wonder that investors and market spectators had become complacent to market volatility...or maybe complacency about risk led to the low volatility. Nonetheless, the waters of the market were unusually calm. So almost any increase in volatility is startling and anxiety-producing. This longer-term measure (which is a little slow to react since it requires twelve months of information) has recently increased to just over 20%. That's a lot higher than its low of 5.5% in January 2007. Although this measure now exceeds 15%, recently higher volatility may drive this chart to even loftier levels soon.

For a better reflection of near-term changes and trends in volatility, we can look at two other measures: the frequency of days each month that close up or down by more than 1% and the intra-day range expressed as a percentage. The first of these measures reflects the "six o'clock news summary" of daily volatility—since significant moves in the market often make the news—and the second reflects the "rollercoaster" that many professionals experience. For example, there are days when the market opens higher or lower and stays there—so measuring 1% days reflects the magnitude of daily changes. Therefore, with only a week or month of trading days, we can quickly see emerging changes in the overall level of volatility.

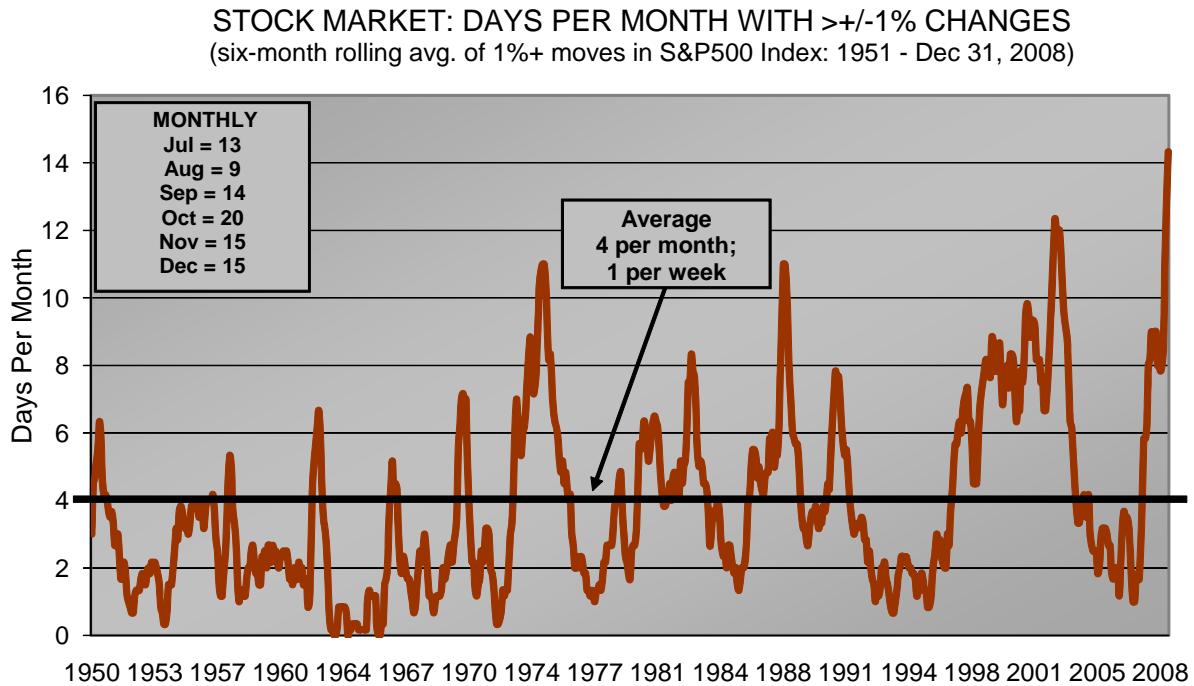
On other days, when the market professionals get home with that worn-out-look, the market may have swung wildly yet closed with little change from the previous day. So to capture that aspect of volatility, we can measure the difference between the high and low and present it as a percentage of the previous closing price. A higher percentage reflects higher volatility.

To get that level of volatility, it would take a lot more volatility than we have had recently! ...and even that would not be unprecedented.

First, let's look at the frequency of days each month that the market closed up or down by 1% or more. At times in the past, there may have been one day or none per month, while at other times, the market moved by one percent virtually every other day. Keep in mind that most months average about 21 trading days.

As reflected in Figure 2, the historical average going back almost six decades reflects approximately four “1% days” per month...thus about one per week. In the past few years, it was common for it to be less than half of the average. Yet, as recently as 2002, there were times when “1% days” occurred more often than every other day. In June 2007, the tremors started and awakened the market. The increase in volatility has continued. The past six months, although somewhat erratic, have been enough to drive the measure in the graph—the six-month moving average—into above-average territory. If we continue to repeat the past few months, then Figure 1 will soon show a level of volatility that is not just above average, but well above 20%.

Figure 2. S&P 500 Index Volatility: 1% Days (1950 to Present)

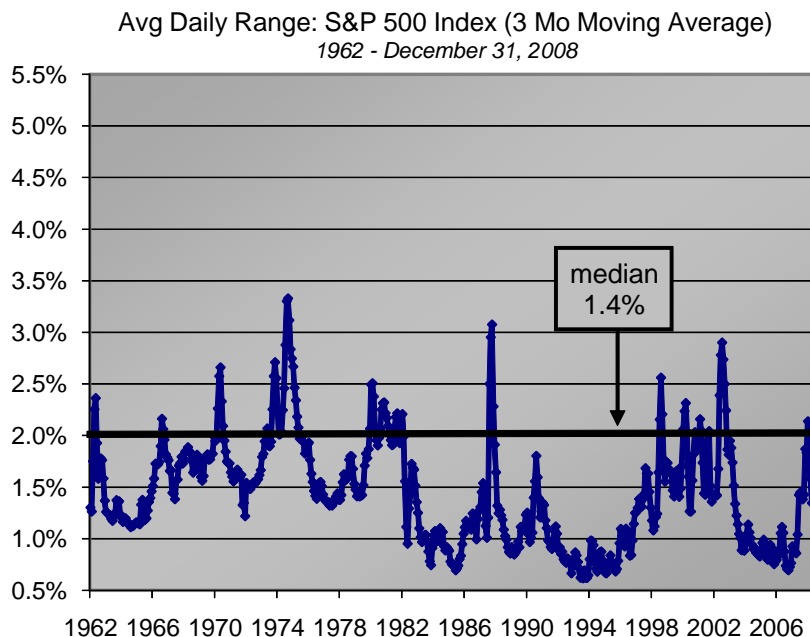


Copyright 2006-2008, Crestmont Research (www.CrestmontResearch.com)

Next, let’s look at the other shorter-term measure of volatility trends and changes: the average daily range. This one could be called the “rollercoaster factor” since it measures the trough-to-peak each day as a percent of the market index. For example, if the S&P 500 Index starts at 1015 and falls to 1000 before ending at 1014, the daily range was 15 points (i.e. 1015 minus 1000) or 1.5% (i.e. 15 divided by 1000). The intra-day information that is needed for this measure is available from 1962, providing over four decades of data. The average daily swing over more than forty years has been approximately 1.4%. At today’s levels, that’s about 13 points for the S&P 500 Index (note: the equivalent for the Dow Jones Industrial Average would be almost 120 points intra-day).

Figure 3 reflects that the average daily range has recently increased significantly, from an extended period of less than half the historical average to the current level that is clearly above average.

Figure 3. S&P 500 Index Volatility: Daily Range (1962 to Present)



Copyright 2004-2008, Crestmont Research (www.CrestmontResearch.com)

In Figure 4, as an update to the information originally presented on page 48 of *Unexpected Returns* and discussed in the book, the table reflects the propensity for the stock market to perform well in lower volatility periods and perform poorly in higher volatility periods. The principles of valuation and volatility that are explored in *Unexpected Returns* are the key drivers of stock market returns and performance over multi-year periods. As a result, the current environment of higher volatility certainly suggests that defensive and/or hedged strategies are appropriate.

Figure 4. S&P 500 Index Volatility: Relationship To Market Returns

**Relationship Of Volatility & Market Returns
(S&P 500 Index: 1962–December 31, 2008)**

MONTHLY DATA: S&P 500 INDEX AVERAGE DAILY RANGE

Quartile	Volatility Range	% Chance Up Month	% Chance Dn Month	If Up Avg Gain	If Down Avg Loss	Expected Gain/(Loss)
1st	0% - 1.0%	68%	32%	2.8%	-1.9%	1.3%
2nd	1.0% - 1.4%	63%	37%	3.0%	-2.1%	1.1%
3rd	1.4% - 1.8%	58%	42%	3.1%	-3.1%	0.5%
4th	1.8% - 6.6%	43%	57%	5.0%	-4.9%	-0.7%

ANNUAL DATA (1962–2006): S&P 500 INDEX AVERAGE DAILY RANGE

Quartile	Volatility Range	% Chance Up Year	% Chance Dn Year	If Up Avg Gain	If Down Avg Loss	Expected Gain/(Loss)
1st	0% - 1.1%	92%	8%	14.9%	-1.5%	13.5%
2nd	1.1% - 1.5%	82%	18%	17.2%	-9.0%	12.5%
3rd	1.5% - 1.8%	83%	17%	14.2%	-11.6%	9.9%
4th	1.8% - 2.7%	33%	67%	16.3%	-19.4%	-7.5%

Copyright 2004-2008, Crestmont Research (www.CrestmontResearch.com)

CONCLUSION

This is not the first time in the past four years that volatility in the stock market has suddenly increased. Most of the previous periods were short and quickly resolved. Yet this time does appear to have more fundamental factors driving the disruption. There are several ways to measure volatility, some with longer-term, bigger-picture perspective. Others provide a shorter-term, more current view of conditions. All measures currently reflect an increase in volatility and the more responsive measures reflect a major surge in volatility.

The current level of volatility is approaching or exceeding the levels experienced during and around 2002. An historical perspective of volatility reflects that higher volatility periods are normal and can extend for quarters or years. Many investors had anchored on the previous extreme low volatility years as a normal condition and are surprised by the recent conditions. A true understanding of history provides a more rational perspective and can help investors take action to protect their portfolios should the current conditions persist. The saying goes: “that which does not kill us, make us stronger”...we may be in for quite a workout from the markets.

Ed Easterling is the president and founder of Crestmont Holdings, LLC, an Oregon-based investment management and research firm that manages a fund of hedge funds and publishes provocative research on the financial markets at www.CrestmontResearch.com. In addition, he is a Senior Fellow at the Alternative Investment Center, and previous member of the adjunct faculty, at SMU's Cox School of Business. Mr. Easterling is the author of Unexpected Returns: Understanding Secular Stock Market Cycles.