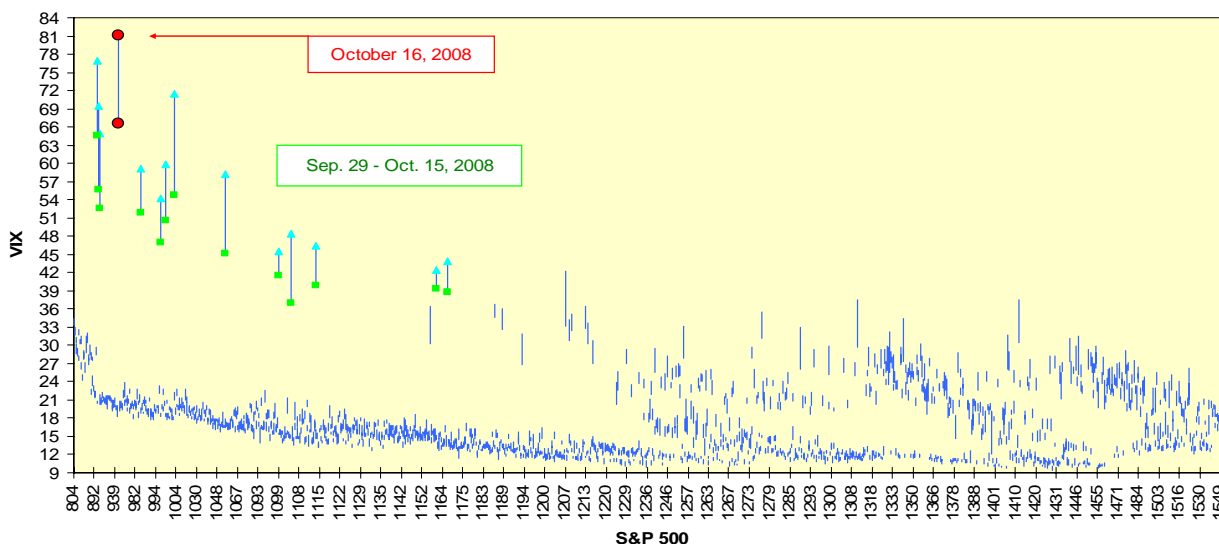


Volatility And Capitulation

Last week's [column](#) focused on how the presence of volatility and variance trading instruments has changed the nature of volatility itself. Last week's trade, including the huge last-hour rallies on Monday and Thursday and the huge last-hour plunge on Wednesday confirmed this thesis rather well.

Last week also witnessed the VIX' first foray over 80; in fact, last Thursday's range of 14.66 on the VIX exceeded the measure's level for most of the mid-2003 – mid-2006 period. Let's update a chart from [August 2007](#) wherein the daily ranges of the VIX are plotted against the closing level of the S&P 500 (SPX) itself. The Y-axis on that chart from May 2003 to July 2007 topped out at 25, and the VIX-SPX relationship exhibited its expected negative correlation.

VIX Shock & Regress Since March 12, 2003



The updated chart's Y-axis now extends over 80 and I had to extend the starting date back to the start of the market's breakout in March 2003. All of the VIX' daily ranges from Monday, September 29 – Wednesday, October 15 are highlighted with green squares at the low and turquoise diamonds at the top. Last Thursday's VIX high is marked in red.

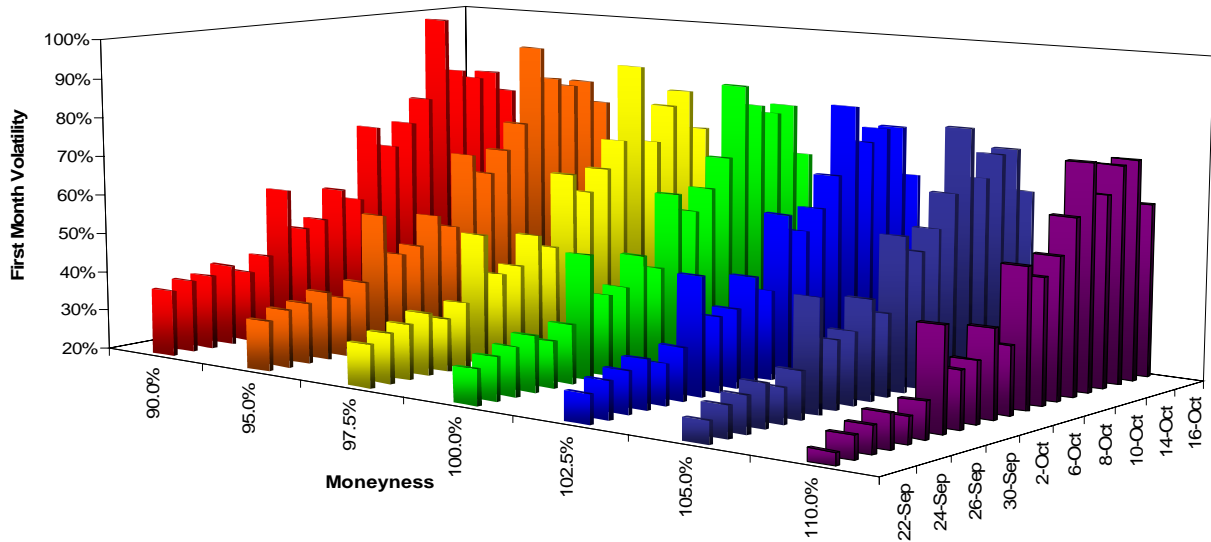
The market clearly was able to accommodate much higher levels of volatility and for a sustained period of time than any simpleton's "buy with the VIX over 30 or 40 or whatever" trading system would allow. We must ask ourselves if the nature of the options market had changed during the credit crisis.

Skew And Risk Of Ruin

Options are a form of insurance. If you are long a stock or index and want to buy put option protection against a decline, you should never pay more than the present value of that option's strike as that would be over-insuring against the maximum loss. As most option buyers, call or put, tend [against my advice](#) to buy out-of-the-money (OTM) strikes that offer incomplete protection but cost less, the volatility of those strikes tends to get bid higher than that of the at-the-money option (ATM). The hedging of gamma risk and the use of option vertical and box spreads as interest rate trades enters into this process as well. As a result, a chart of option volatility across strikes tends to be higher the further you move away from the ATM strike. This looks like a smile, and thus the name "smile" is used.

But markets tend to have asymmetric risk profiles; in the case of stocks where most investors are net long, put options are more in demand even at higher prices. This skews the smile toward strikes lower than the ATM. Let's map the daily SPX option volatility for the SPX between the September option expiration and last Thursday against "moneyness," or a strike at a percentage of the ATM strike.

S&P 500 Volatility After September Expiration



If we rearrange the data to a percentage of ATM volatility, a pattern emerges. As volatility rose, the higher-priced strike volatility rose relative to the ATM volatility and the lower-priced strike volatility fell on a relative basis. This suggests option buyers in general and put option buyers in particular were willing to buy insurance closer to or even above the ATM strike.

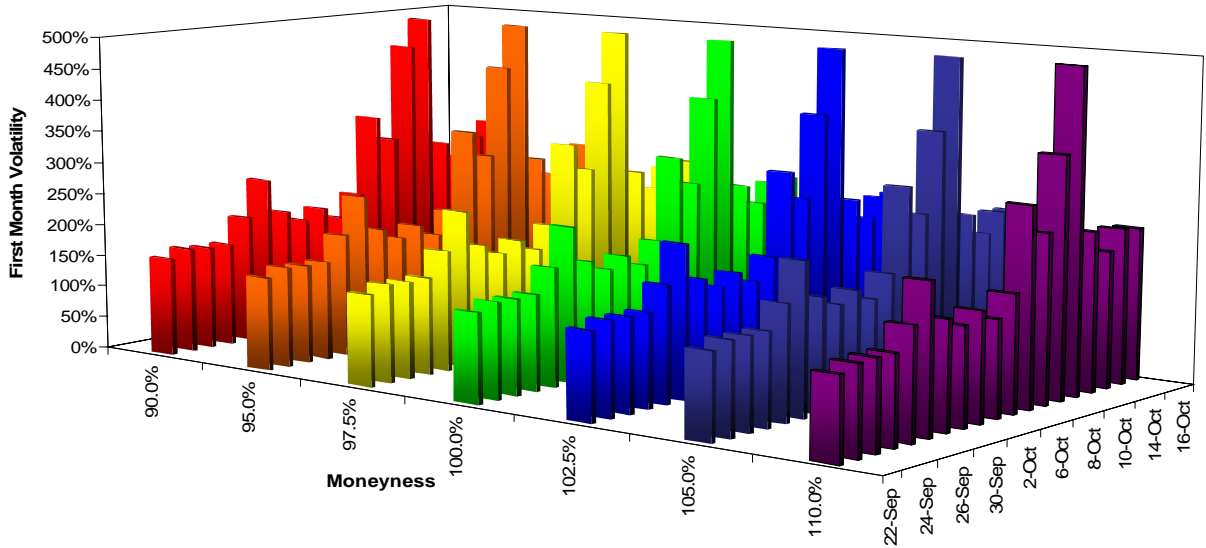
As an aside, the VIX' weighting methodology emphasizes the ATM volatilities more than the wing volatilities; this mechanical reason contributed to the VIX' push higher.

Restated, buying these options with their more negative delta and higher gamma meant put option buyers were insuring not so much on a price decline as on the stocks going to zero. And why not; the several large financial firms had in fact gone to zero and others, such as Morgan Stanley were threatening to join them.

Morgan Stanley Case Study

If we duplicate the raw data chart above for Morgan Stanley, we see some volatility numbers so high as to be virtually meaningless; by October 9, several were above 400%. On Friday, October 10, as rumors swirled Mitsubishi UFJ would back away from its capital infusion, the October \$12.50 put expiring on October 17th settled at \$4.80 while the stock itself closed at \$9.68. In essence, the market was assigning a close to 50% probability Morgan Stanley would be singing in the choir eternal, as Monty Python might phrase it.

Morgan Stanley Volatility After September Expiration



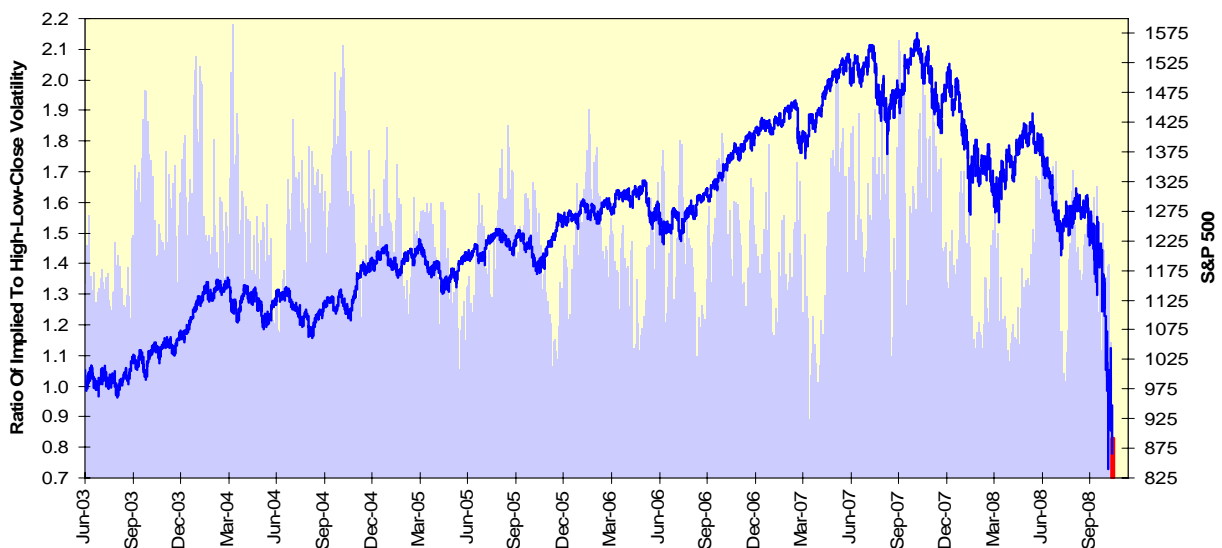
Whenever you see an insurance cost rise toward levels such as these, you have to start looking for behavioral changes. Bluntly, only an idiot would pay more than 50% of the stock's price to insure it from a loss of the remaining less than 50% loss. At that point, just sell the stock and end the misery. This, collectively across traders and stocks marks the market "capitulation" of legend and song.

Normalized VIX And Local Bottoms

If, as admonished last week and above, there is no such thing as an *absolute* level of the VIX marking a capitulation, it is still possible for a *relative* level of the VIX to do so. Let's revisit an analysis last used in my [June call](#) for a top in the euro, the ratio of implied volatility to high-low-close volatility. This volatility incorporates the effects of intraday range along with interday change.

If this ratio, which I dubbed excess volatility, falls while high-low-close volatility itself is rising, that is evidence the insurance buyers are walking away. The reading for Thursday, October 16th of 0.82, marked with a heavy red column, was the lowest in the data sample used.

Excess Volatility At Low



This relative volatility measure is consistent with the ability of the VIX to move higher and sustain those levels, with option skews pricing in the risk of ruin and with price action. As such, it may mark a local capitulation bottom, which is not to say it will mark the overall bottom in this bear market if conditions deteriorate anew.