April 14, 2008; MRA #1
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2008 Volatility Forecasting Survey

Friday's 2% move down in the SPX on the back of GE's earnings miss illustrates that investors remain quite concerned about the challenges facing the US economy. The sell-off Friday was the 14th such daily move in the SPX that exceeded +/-2% in 2008, putting realized volatility for the year at 24%. This contrasts starkly with Q1 of 2007 during which the VIX touched 9.9, front month variance traded at an all time low of 9.65, and realized volatility was a meager 12.2%. It is interesting to note that there was not a single 2% move in the SPX during the period from October 2003 to June 2006.

Much has been written about the "information content" of implied volatility. Numerous academic studies have sought to determine if implied volatility is an efficient predictor of future realized volatility. However, implied volatility typically clears the market at a level that exceeds future realized volatility. For example, using the entire history of the VIX index, the average premium of the VIX to subsequently realized 21-day volatility in the SPX is 4.5. This premium is often attributed to the "net long" stance of equity market investors and the demand for portfolio protection via put options. A related explanation is that volatility is subject to periodic spikes upward (as has occurred recently) and implied volatility levels embed a risk premium required by providers of protection to account for this jump risk.

Here, we assess a recent survey conducted of 50 professionals within the equity derivatives market. The responses represent opinions of portfolio managers at hedge funds, insurance companies, money managers and sell-side trading desks and span strategies such as volatility trading, long/short equity, convertible arbitrage, overwriting, credit trading and global macro. In the survey, we ask the following questions:

1. *What will realized volatility be in the SPX for the remainder of 2008 ?*
2. *What will the high print be in the VIX for the remainder of 2008 ?*
3. *What will the low print be in the VIX for the remainder of 2008 ?*
4. *What will the level of the SPX be at year end 2008 ?*
5. *What factors are most important to your forecast ?*

On balance, the survey results speak to continued uncertainty among investors with respect to the ongoing impact of the credit crisis. As a result, a continuation of equity volatility is expected with the mean forecasted realized volatility in the SPX being 21% for the balance of 2008. If that were indeed the case, it would put realized volatility for all of 2008 at the highest level since 2002 when the SPX realized 26%. Not surprisingly, the overriding concern cited is the housing market and the related challenges of credit availability and banking system losses. It is the severity of these challenges that makes the pace of recovery difficult to predict according to one survey response. Several others suggested a two to three year adjustment process would be required in order to repair the damage done to balance sheets. Another surveyed believed that the extent of the dislocation means that the process could play out over five difficult years.

While several survey respondents did express the view that the worst of the Wall Street centered technical credit unwind may be behind us, there was a shared concern that a slowdown in the broad economy could be underway. As one respondent put it, "financials have seen the low for the year, cyclicals have not." Questions around the wherewithal of the consumer in the face of weakness in the jobs market, the loss of wealth in housing and low confidence were raised. One survey respondent expressed the view that the economy could slow tremendously as a further 10 to 15% decline in housing wipes out home equity and causes significant consumer retrenchment. Echoing this sentiment, a participant said "…if housing prices drop another 10%, my forecast of the severity of the coming recession will increase." Lastly, a rise in the savings rate was mentioned as impinging the rate of consumption going forward.

Several survey participants discussed the intervention of the Federal Reserve in preventing an even more protracted meltdown, but wondered what was next. One said "the Fed has taken out the disaster scenario with recent actions…but there are serious issues that companies have to deal with." Another said "the Fed has shown it is ready to defend against the liquidity catastrophe, but there isn't as much that can be done about fundamental economic weakness." Questions around the effectiveness of Fed policy were raised with one respondent suggesting the Fed "got lucky" and another saying the Fed "panicked". The shared view here was a concern that the Fed may need to inject even more liquidity into the banking system in the future and the result could be further deterioration in the dollar and dollar denominated assets. Another participant viewed the potential that the Fed would shift banking system losses to the taxpayer as a negative for an economic recovery. Among the other issues cited that may contribute to ongoing uncertainty were commercial real estate weakness, slowing global growth, the contraction of hedge funds, level 3 assets, trade policy, scapegoat politics around housing, unfunded pension liabilities, investor psychology, global deleveraging, and inflation.

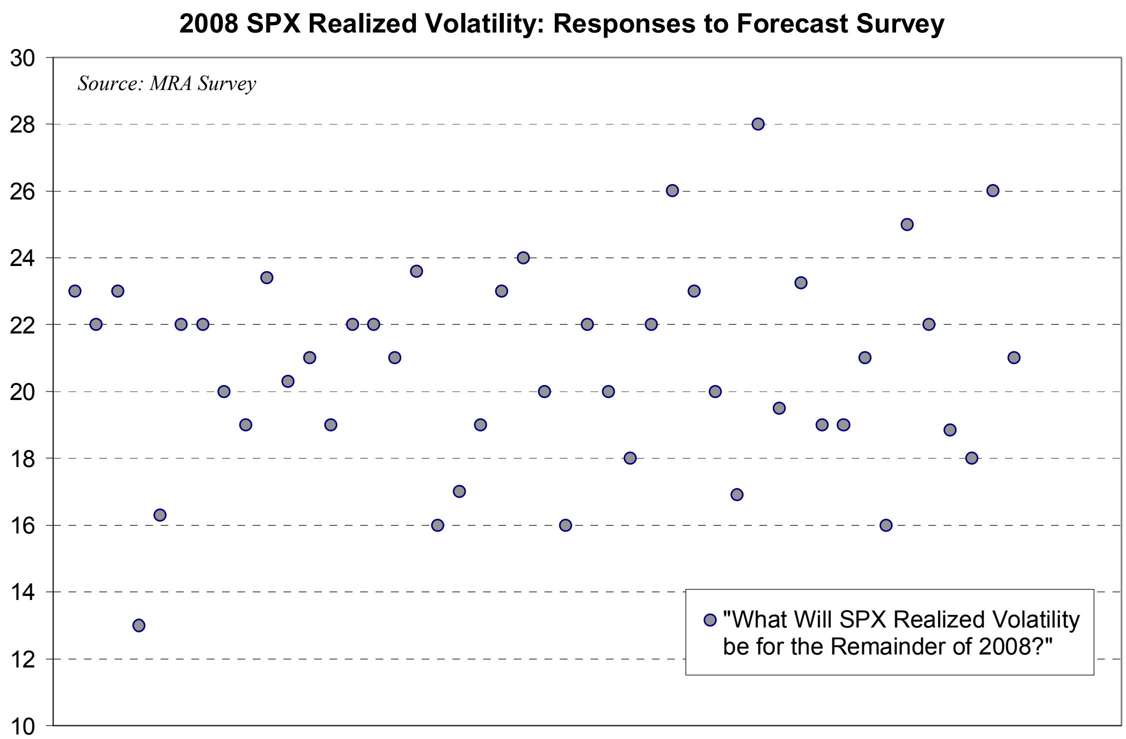
Analysis of the Survey

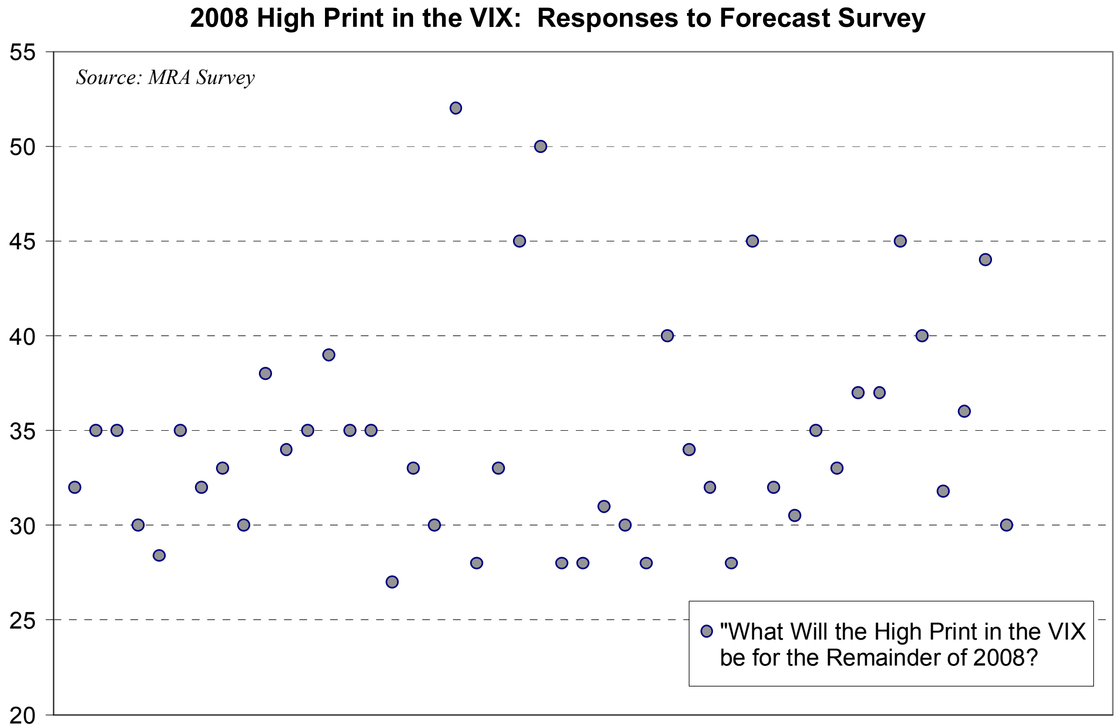
The survey results are provided below and on the graphs that follow. As discussed, the average realized volatility forecast is 21% for the next 9 months, with most responses between 18 and 24%. Interestingly, this is a full 4 volatility points above a previous survey taken in November 2007 (*Barron's, "The Trader", 11/26/07*). A logical conclusion is that investors have become more convinced that a new, substantially higher equity volatility regime is here to stay. Currently, Dec'08 SPX variance trades at roughly 24%, a 3 vol point premium to expectations.

	Realized Volatility	High VIX Print	Low VIX Print	SPX Year End
Average	20.9	34.4	17.3	1355.0
High	28.0	50.0	22.5	1580.0
Low	16.0	27.0	13.0	1100.0

Source: MRA Survey

The variance of realized volatility forecasts is to be expected in an environment where assessments of the risk factors that impact equity prices are changing daily. Whereas mid 2003 to mid 2007 could be characterized as both a low vol and low vol of vol environment, we are now in a "technically driven market, causing elevated levels of vol" and as another put it a "trader's market" where it's "difficult to have conviction about any vol forecast."




2008 High Print in the VIX: Responses to Forecast Survey
Source: MRA Survey
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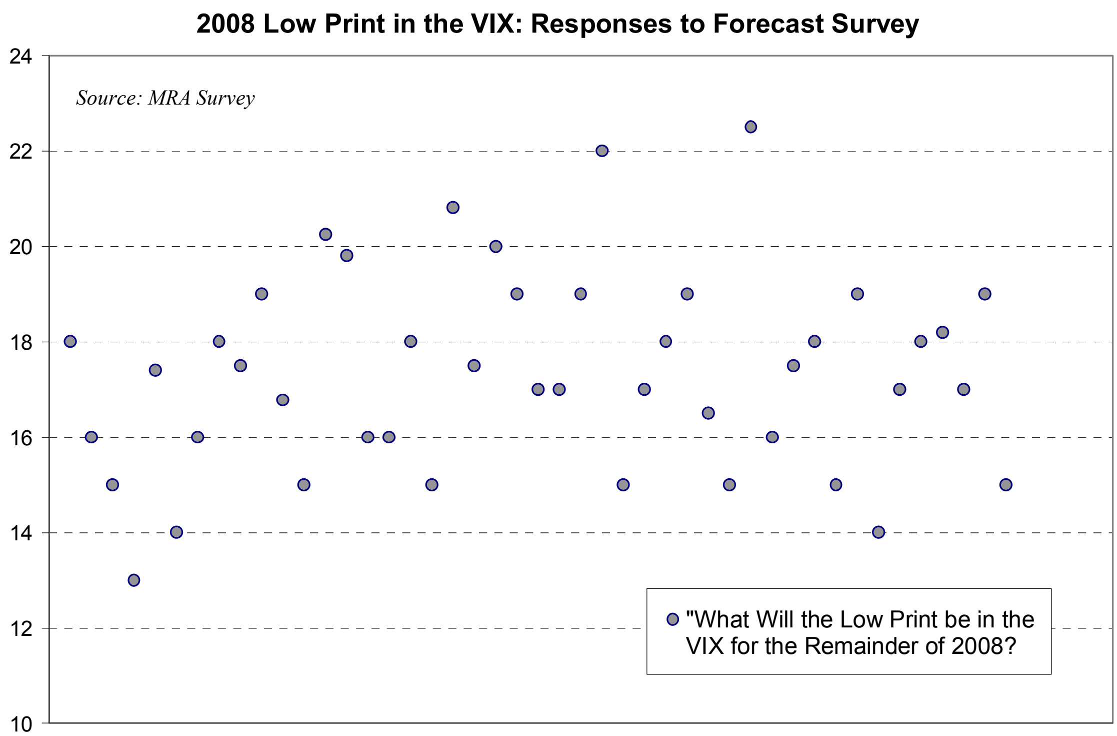
2008 Low Print in the VIX: Responses to Forecast Survey
Source: MRA Survey
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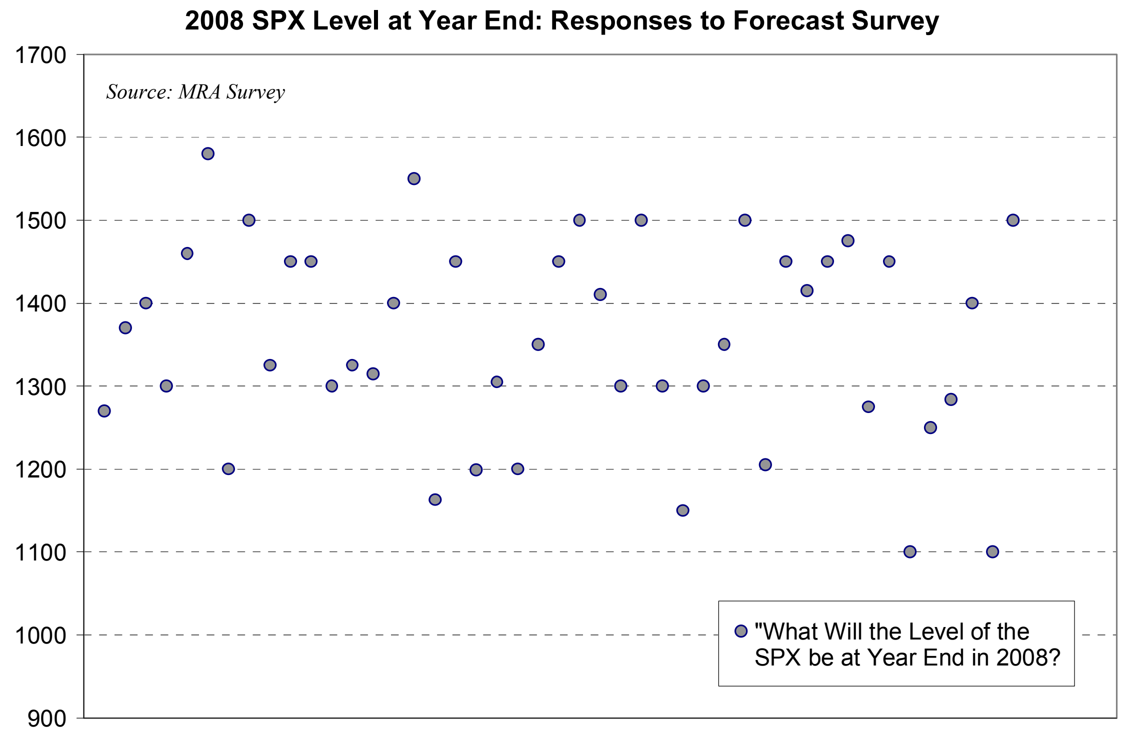

Interestingly, despite the overall view that the market will continue to exhibit volatility going forward, the expectations of where the SPX will be at year end are reasonably centered. For example, 70% of the forecasts for the SPX level lie within +/-10% of spot. This profile is more characteristic of a distribution with a volatility of around 12%, not the 21% average realized volatility forecast. Furthermore, an extremely high percentage, 88% of those surveyed, believe the SPX will fall within +/-15% of current spot at year end. As one participant put it, a "trader's vol market" and another predicted a "12-month range bound market within 10% bands." However, the overhang of the "psychology of fear" in the words of one response should provide support to risk premiums throughout the year.

Correlation Analysis

Some interesting insights can be gained by looking at correlations of responses to different questions. For example, one would expect that on average, those participants who saw a higher level of average realized volatility for the balance of 2008, would likely foresee a lower level of the SPX at year end. That is indeed the case (the correlation of the responses in these two categories is -54.3%). In a similar fashion, the higher the participant believed the VIX would print at some point during 2008, the lower, on average, was the forecast of the SPX at year end for that respondent (a negative correlation of 41.4%). Conversely, where the participant believed the VIX could drift materially lower over the course of 2008, there was a greater degree of optimism in the SPX forecast. Thus the correlation between the "VIX Low Print" question and the "SPX Year End" question was -53.9%.

Correlation Matrix of Question Responses

	Rvol	VIX High	VIX Low	SPX Yr End
Rvol		44.6%	35.8%	-54.3%
VIX High			33.1%	-41.4%
VIX Low				-53.9%
SPX Yr End				

Source: MRA Survey

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A Brief Comparison to Past Periods of Crisis

A great deal can be learned from looking at the characteristics of previous cycles of equity market volatility and determining which aspects of the current one are similar and which are unique. While a more complete analysis will be offered in the forthcoming piece "Equity Volatility…A Macro Perspective", we provide the following chart to summarize key risk variables during this and past periods of market turbulence. The table shows the most extreme reading of 1 and 6 month realized SPX volatility, the VIX, 6 month variance, and the IG index.

Year	Type	High 1 Mo RV	High VIX	High 6 Mo RV	High 6 Mo Var	IG BPS
1997	Thai Baht Deval	36.9	38.2	20.8	32.6	46
1998	LTCM Unwind	44.2	45.7	25.4	50.8	63
2000	P/E Expansion	34.6	33.5	24.8	31.5	79
2001	Bubble Burst	35.6	43.7	25.6	32.6	125
2002	Credit Crisis	47.1	45.1	32.2	41.1	183
2007	Leverage Unwind	26.7	32.2	20.9	28.8	84
2008	Leverage Unwind	30.6	31.1	NA	29.1	198

Source: MRA, Bloomberg Data, BAS

We had stated during 2007, that it was unusual that short dated SPX implied volatility had not spiked and the term structure of implied volatility had not inverted to the extent it had in previous periods of stress. Despite the cracks in the credit market, the equity market had not started to exhibit the kind of volatility it has over the past few months. Still, even in 2008, although realized volatility is 24% for the entire year, the high print in the VIX is only 31.1. The disconnect here is that while volatility in financials has exploded and volatility in the energy sector has been high, other sectors have not experienced true spikes in realized volatility. For comparison, during the one-month period in 2002 where the SPX realized 47.1%, there was unprecedented volatility in pharma stocks, with the PPH realizing 52.5%. In addition, at that time (and during periods like 2001), the extent of stock to stock and sector to sector correlation was higher than it has been in 2008. This can be explained by the relative strength of energy, commodity and material-related equities recently. Realized correlation among equities remains a question mark for many with respect to the overall level of index volatility. Over the past month, realized correlation has been roughly 50%, a reasonably low reading given that realized volatility in the SPX has been north of 25%. This speaks to the tremendous levels of current single stock and sector realized volatility levels (the XLF has realized 50% over the past month).

Conclusions

The survey results provide meaningful insights regarding professional investor sentiment in the areas of volatility and market direction. It is clear that the last several months of market volatility (and dysfunction) have investors accepting of higher volatility regime. This change in investor psychology is largely self-fulfilling, the equivalent of a loose poker game where it doesn't take a real hand to bet and chip counts swing from hand to hand. If indeed, the "volatile within a range" scenario does play out, it suggests a buy the middle, sell the wings volatility profile.

The survey responses also point to considerable concern over the "Main Street" part of the puzzle. Worries about the health of the consumer were a common theme and skepticism around the economy and corporate profits was shared by many. Indeed, we may be in the "eighth or top of the ninth inning" in the sub prime crisis as John Mack recently said, but severe headwinds face the consumer right now. Recall that during the consumer's brief retreat in 2001 as stock market wealth deteriorated, housing prices were still rising at a healthy pace. Studies have shown that consumers are more sensitive to the loss of housing wealth than to the loss of stock market wealth, as the latter is viewed as more transitory in nature. By Bernanke's own account, for each dollar lost in housing wealth, the consumer will spend 4 to 9 cents less. If there is a 10% decline in housing wealth (estimated at 20 trillion), the impact to spending is between 100 and 200bln, which would constitute 20 to 40% of the entire growth in PCE in both 2006 and 2007. Add to this, the weakness in the jobs market, low readings of consumer confidence and throw on top, the Fed measure "financial obligations ratio" that shows the US consumer is at an all time high in terms of expenses to personal income and you have a case for substantial retrenchment. If indeed the consumer has in fact finally capitulated, the impact to earnings will be material and the result will be substantially higher levels of volatility.

~ Dean Curnutt