



IQS Research Brief

Is the VIX too low?

June 15, 2009

In this IQS Research Brief, we analyze the question of the level of the VIX using the cross sectional returns of the S&P 500 universe and the volatility of time series of S&P 500 equal-weighted monthly returns. The VIX index is a forward looking measure of S&P 500 volatility. Is it forecastable?

Observations for Charts in the Appendices.

Note that all charts range from 1995 – 2009.

A – S&P 500 Equal-Weighted Monthly returns. Shows the monthly returns to the equal-weighted S&P 500 universe. Note the larger spread in returns (and more volatile) from 1997-2002 as compared to 2003-2007. How about 2008-2009?

B – S&P 500 Cross Sectional Volatility of Monthly Returns. This chart calculates the standard deviation of the returns for a given month for the 500 stocks in the universe. The larger the spread the higher the volatility. The results are similar to what was found in A.

C – S&P 500 Volatility of Time-Series of Monthly Returns. For this chart, we calculate the standard deviation of monthly returns (equal-weighted) over 12 months. Note that the pattern again is similar to A and B, but look at the magnitude of the recent period.

D – We overlay S&P 500 of Equal-Weighted Returns (A) with the VIX. The pattern is consistent with intuition. Higher volatility of returns for higher VIX. The VIX has been declining while volatility of returns remains high. Is the VIX high enough for the latest data point?

E - We overlay S&P 500 Cross Sectional Volatility of Monthly Returns (B) with the VIX. Again, the pattern is consistent with intuition. The two lines seem to track each other quite well.

F – We overlay S&P 500 Volatility of Time-Series of Monthly Returns (C) with the VIX. The lines have tracked reasonably well over time. However, the latest data points suggest that either the VIX is too low or that recent realized volatility in returns will dampen sharply.

Conclusion:

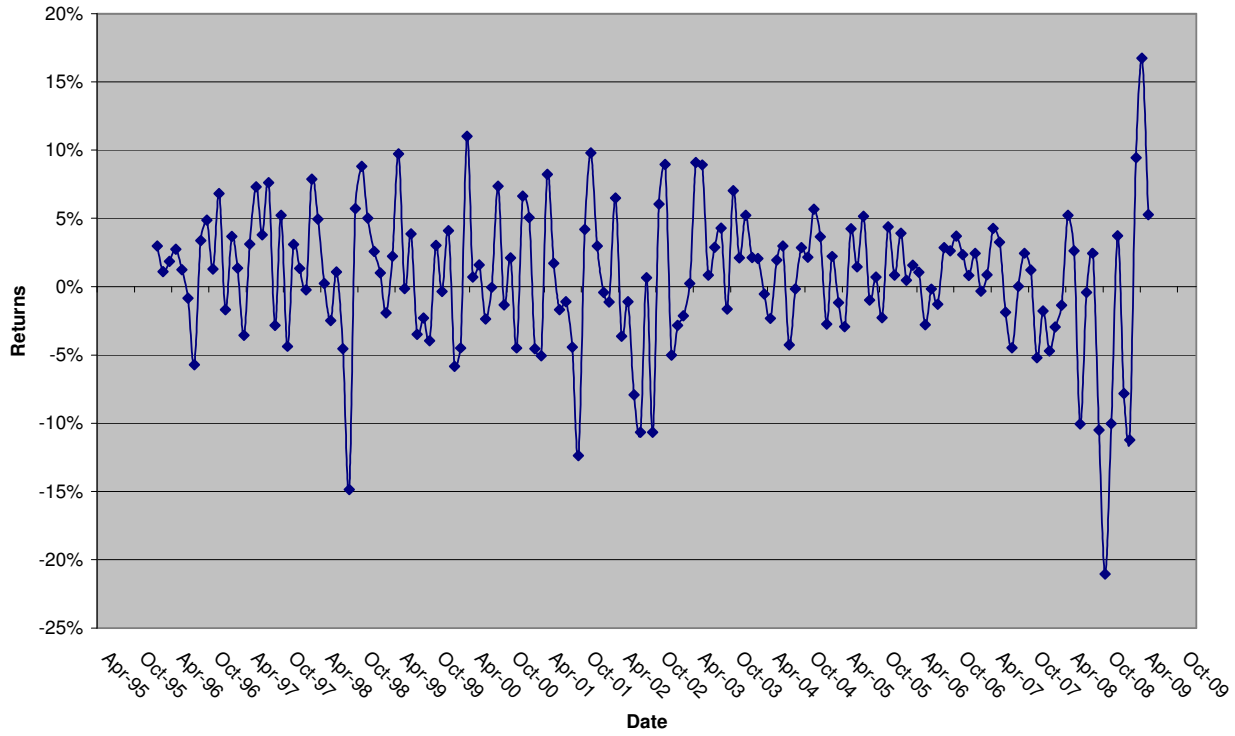
The VIX is an index that does a pretty good job of forecasting S&P 500 volatility. Can you reverse the causality and say that recent volatility predicts the VIX? If so, then the recent patterns in S&P 500 volatility suggest that the VIX is too low.

Notes:

- The S&P 500 equal-weighted return takes into account only stocks that were in the S&P 500 for the entire month.
- For the VIX, we plot the closing value for the VIX index on the last trading day of each month.
- For the returns, cross sectional and time-series volatility, we show the values as of the month-end. For instance, on 5/31/2009, we show the closing VIX value on that day. On the same day, we show the returns and volatility during May, 2009.

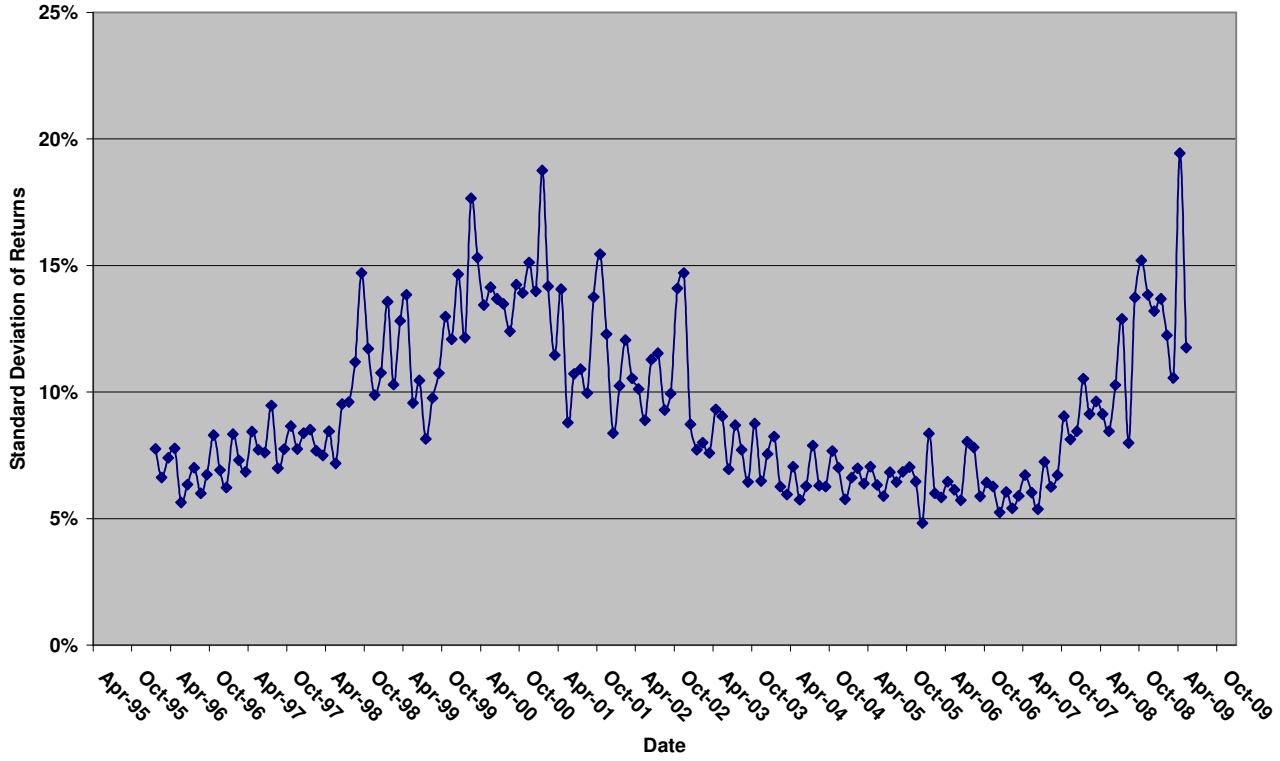
Appendix A:

S&P 500 Monthly Equal-Weighted Returns
1995-2009



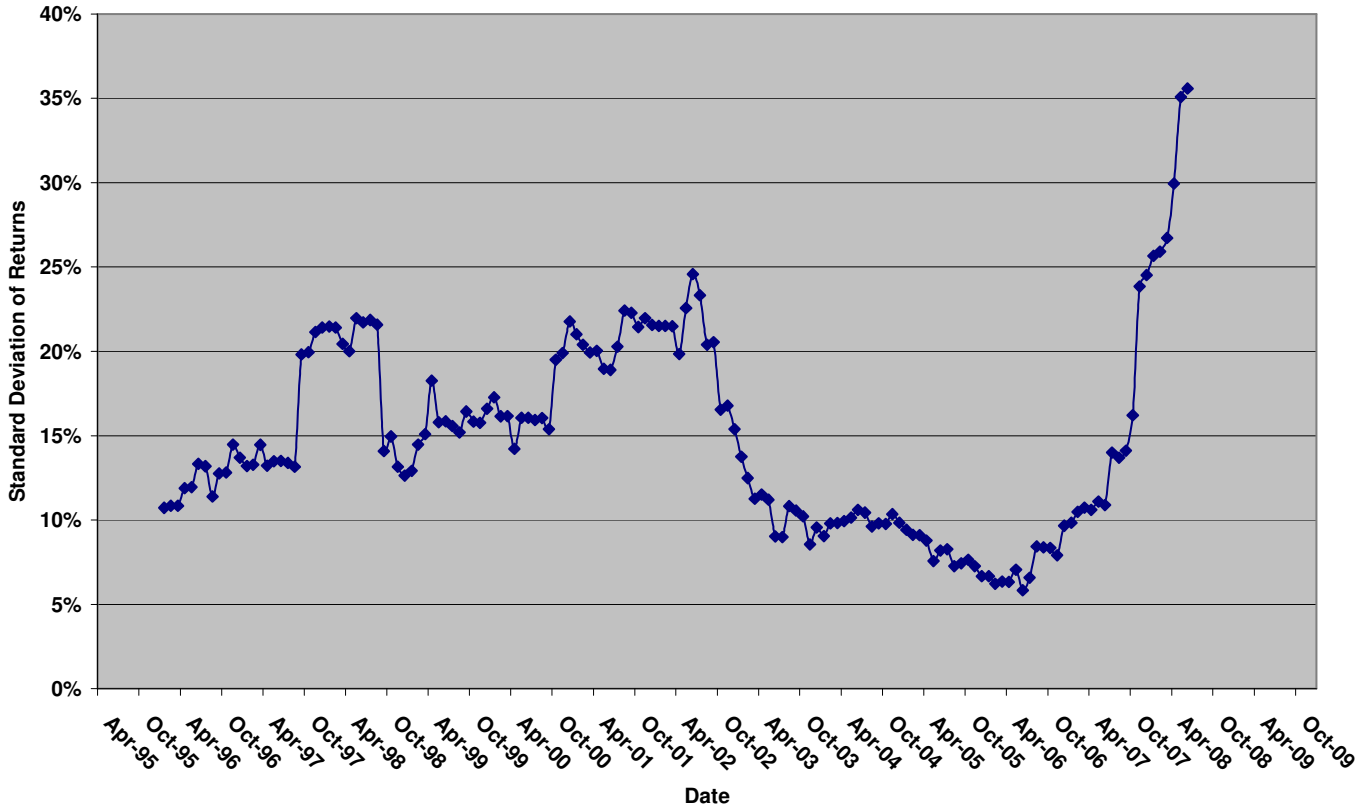
Appendix B:

S&P 500 Cross Sectional Volatility of Monthly Returns
1995-2009



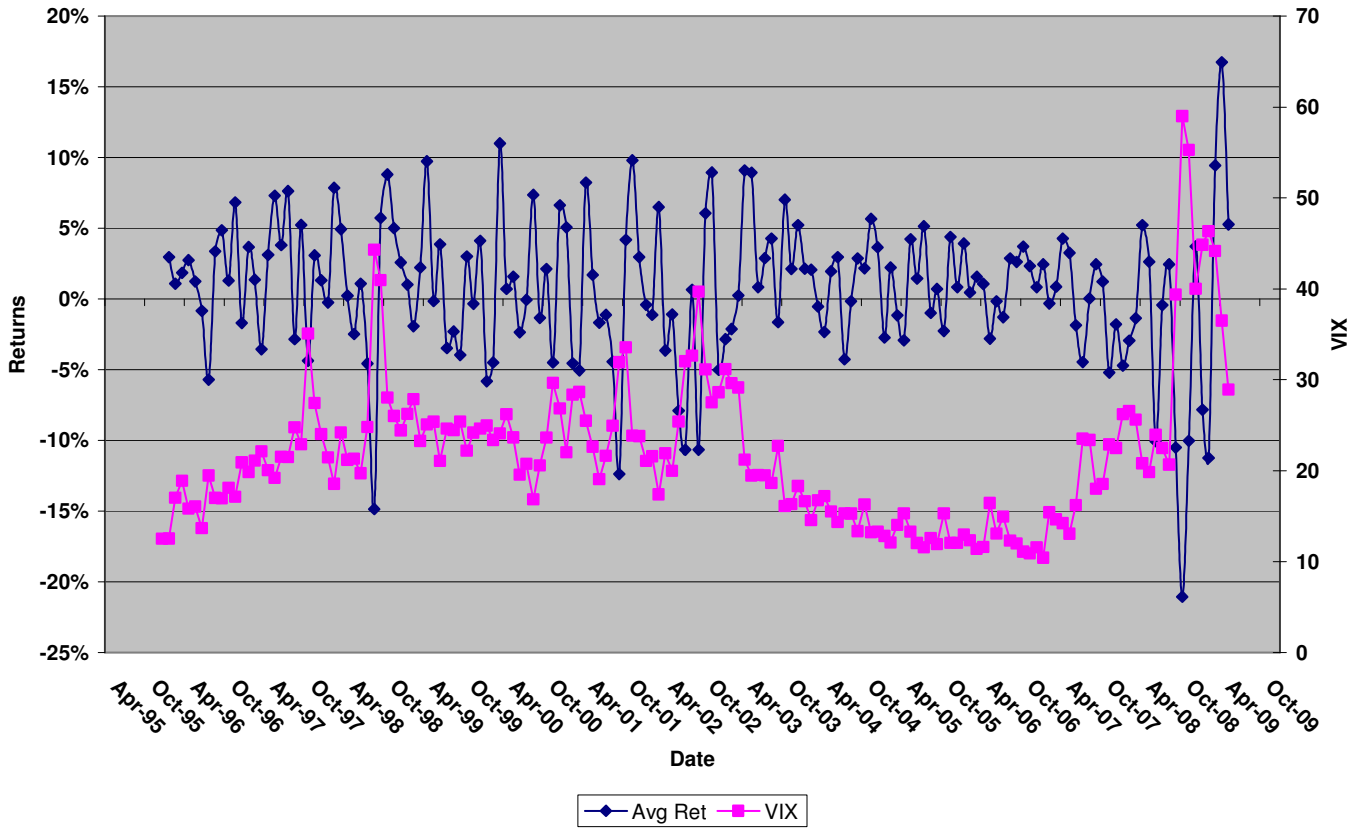
Appendix C:

Volatility of Time Series (12 mths) of S&P 500 Monthly Returns
1995-2009



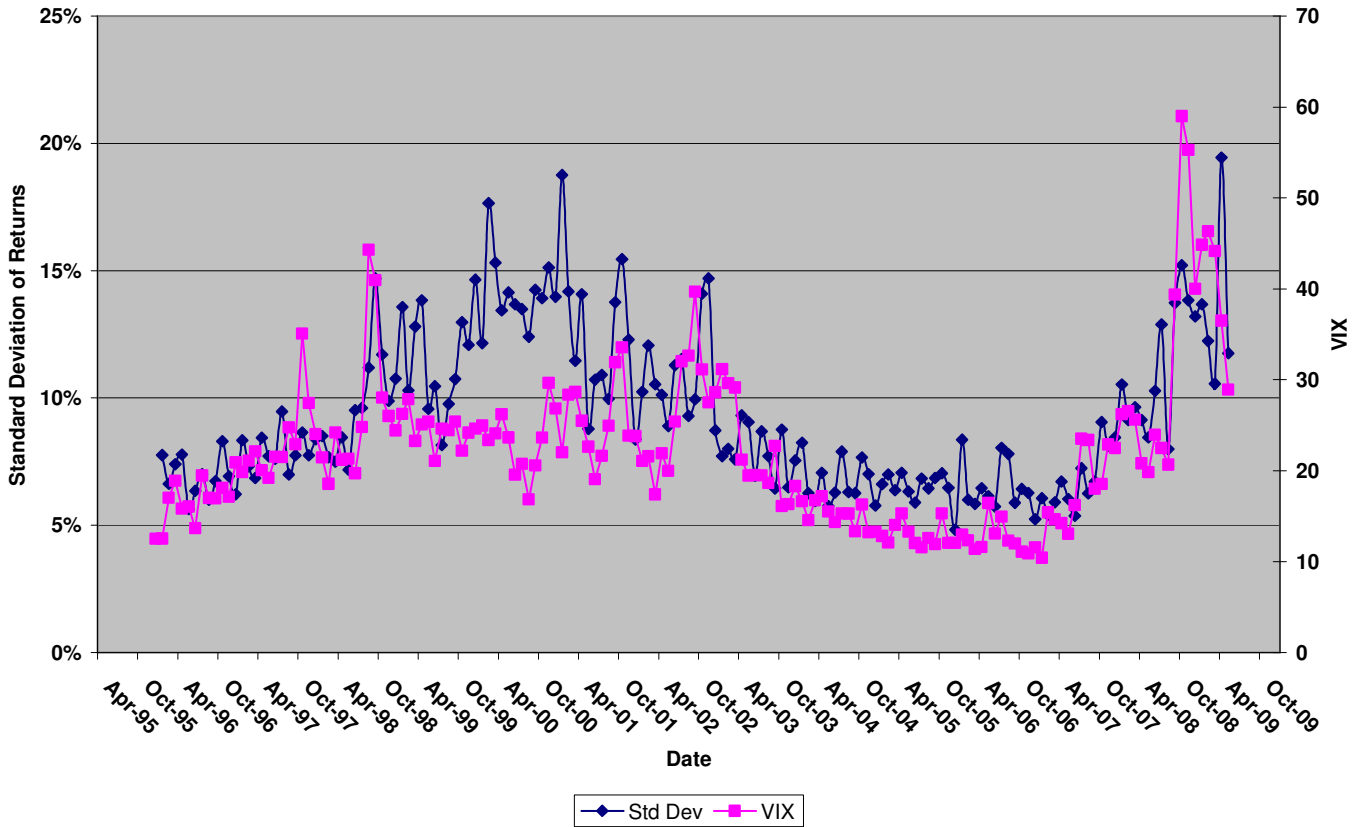
Appendix D:

S&P 500 Monthly Equal-Weighted Returns vs VIX
1995-2009



Appendix E:

S&P 500 Cross Sectional Volatility of Monthly Returns vs VIX
1995-2009



Appendix F:

Volatility of Time Series (12 mths) of S&P 500 Monthly Returns vs VIX
1995-2009

