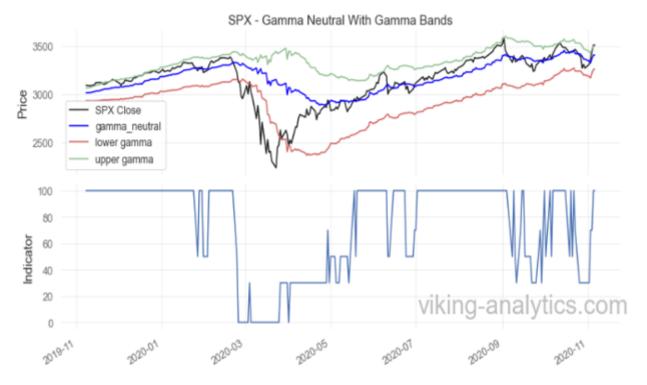


# Viking Analytics: Weekly Gamma Band Update 11/09/2020

We share the Weekly Gamma Bands Update by Viking Analytics. The report uses options gamma to help you better manage risk and your equity allocations.

#### Gamma Band Update 11/09/20

- The SPX Gamma Band model can be viewed as a long-only trend-following model that
  reduces exposure when options markets show elevated risk. Since 2007, following this model
  would have resulted in similar returns with lower risk exposure.
   � � The model has resulted in a 74% improvement in riskadjusted return since 2007 measured by the Sharpe Ratio. �
- The Gamma Band model increased S&P 500 exposure to 100% last Thursday and entered this week with a full allocation. �At the time of writing, the S&P 500 was trading over 3,600, meaningfully higher than the upper band.��
- Our binary Smart Money Indicator continues to have a full allocation, and this is discussed in greater detail below.
- SPX skew, which measures the relative cost of puts to calls, shows that risk appetite is no longer fearful following the U.S. presidential election. Put buyers are no longer paying a large premium compared to call buyers.
- We publish several signals each day, ranging from a fast signal in ThorShield to a less active signal (as represented by the Gamma Bands and published in the daily SPX report).
   �Samples of our SPX and ThorShield daily reports can be downloaded from our website.



Date	Close	Upper Band	Gamma	Lower Band	Model
			Neutral		Allocation
10-26-20	3,465.39	3,523	3,420	3,241	70%
11-02-20	3,269.96	3,462	3,364	3,201	30%
11-09-20	3,509.44	3,494	3,406	3,260	100%

# **Smart Money Residual Index**

This indicator compares ?smart money? options buying to ?hot money? options buying.� Generally, smart money will purchase options to insure stable returns over a longer term.� Smart money has in-depth knowledge and data in support of their options activity. In contrast, ?Hot money? acts based on speculation, seeking a large payoff.

At the moment, hot money is more cautious than smart money, and the back-test for this model supports a long position during this time.� When the Residual Sentiment Index in the second graph turns to red, then this model will cut all equity exposure to zero.� When the market is in the red regime below, the market has an overall negative return.



### **SPX Skew? the Price of Protection**

In evaluating equity market risk, we also consider the cost of buying puts versus the cost of buying calls.� When puts command a larger-than-usual premium to calls, then the market will have higher volatility (in the red zone below), and this might be a signal reduce equity exposure.�

Ahead of an important U.S. presidential election, the put buyers are paying a meaningful premium for the protection.�



## **Gamma Band Background**

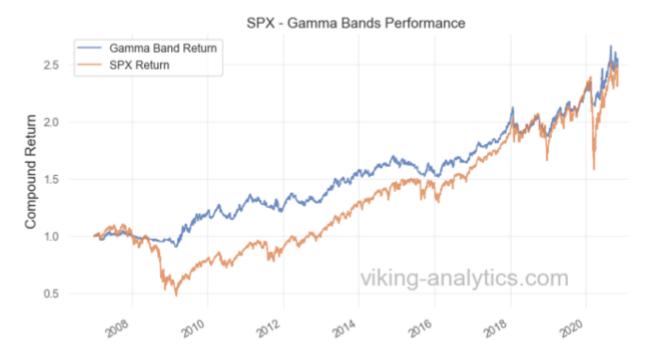
Market participants are increasingly aware of how the options markets can affect the equity markets in a way that can be viewed as the ?tail wagging the dog.?�

We created a <u>Gamma Band indicator</u> to demonstrate the effectiveness of the Gamma Neutral level in reducing equity tail risk.&#2013266080; In our model, we compare the daily close of the SPX to the Gamma Neutral and Lower band levels to adjust our equity exposure allocation from 0% to 100%.&#2013266080;&#2013266080;

We back-tested this strategy from 2007 to the present and discovered a 74% increase in risk-adjusted returns (shown below).� The Gamma Band model is a relatively slow but reliable signal if one?s goal is to increase risk-adjusted returns.� We also publish a faster, daily signal in a portfolio model which we call Thor?s Shield.� Thor Shield has a 20-year Sharpe of 1.5 and a rolling 1-year Sharpe of over 3.4.� Free samples of our daily SPX report and Thor?s Shield model can be downloaded from our website.

	sharpe	kurtosis	annual_vol
Gamma Band Return	0.73	8.21	0.10
SPX Return	0.42	12.61	0.21

<sup>\*</sup> Gamma Bands improve backtested Sharpe by: 73.6%



#### **Authors**

Viking Analytics is a quantitative research firm that creates tools to navigate complex markets.� If you would like to learn more, please visit our website, or download a complimentary report.

Erik Lytikainen, the founder of Viking Analytics, has over twenty-five years of experience as a financial analyst, entrepreneur, business developer, and commodity trader. Erik holds an MBA from the University of Maryland and a B.S. in Mechanical Engineering from Virginia Tech.

Rob McBride has 15+ years of experience in the systematic investment space and is a former Managing Director at a multi-billion dollar hedge fund. Furthermore, he has deep experience with market data, software, and model building in financial markets. Rob has a M.S. in Computer Science from the South Dakota School of Mines and Technology.