Risk Management during the 2008 Crisis

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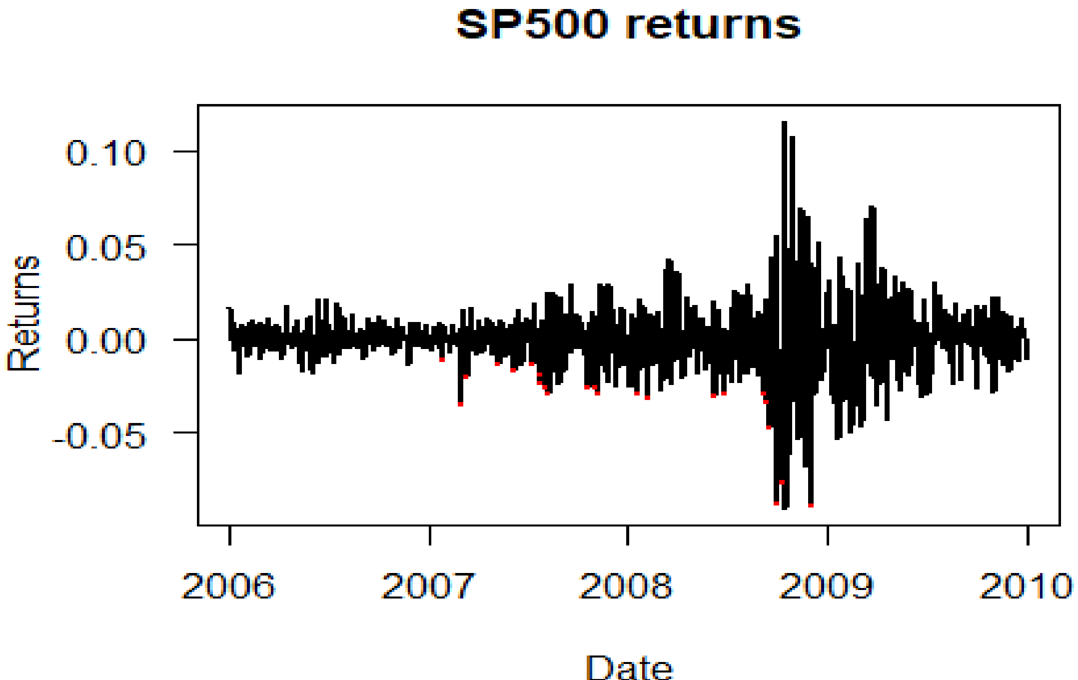
Timeline of events

- Lowering of Interest Rates
- House Prices went up
- Subprime Loans
- Mortgage Backed Securities or CDO s
- Increase in Interest Rates
- House Prices started going down
- Lenders started filing for Bankruptcy
- Stock Prices started to fall

Risk Measures

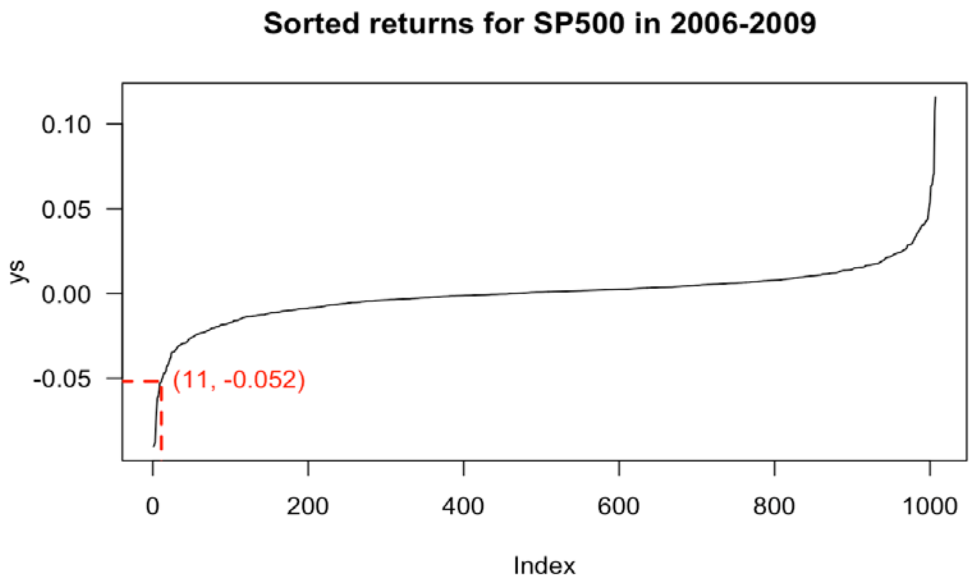
Volatility

- A measure that helps us understand how risky an investment is.
- Higher the volatility, riskier the investment.

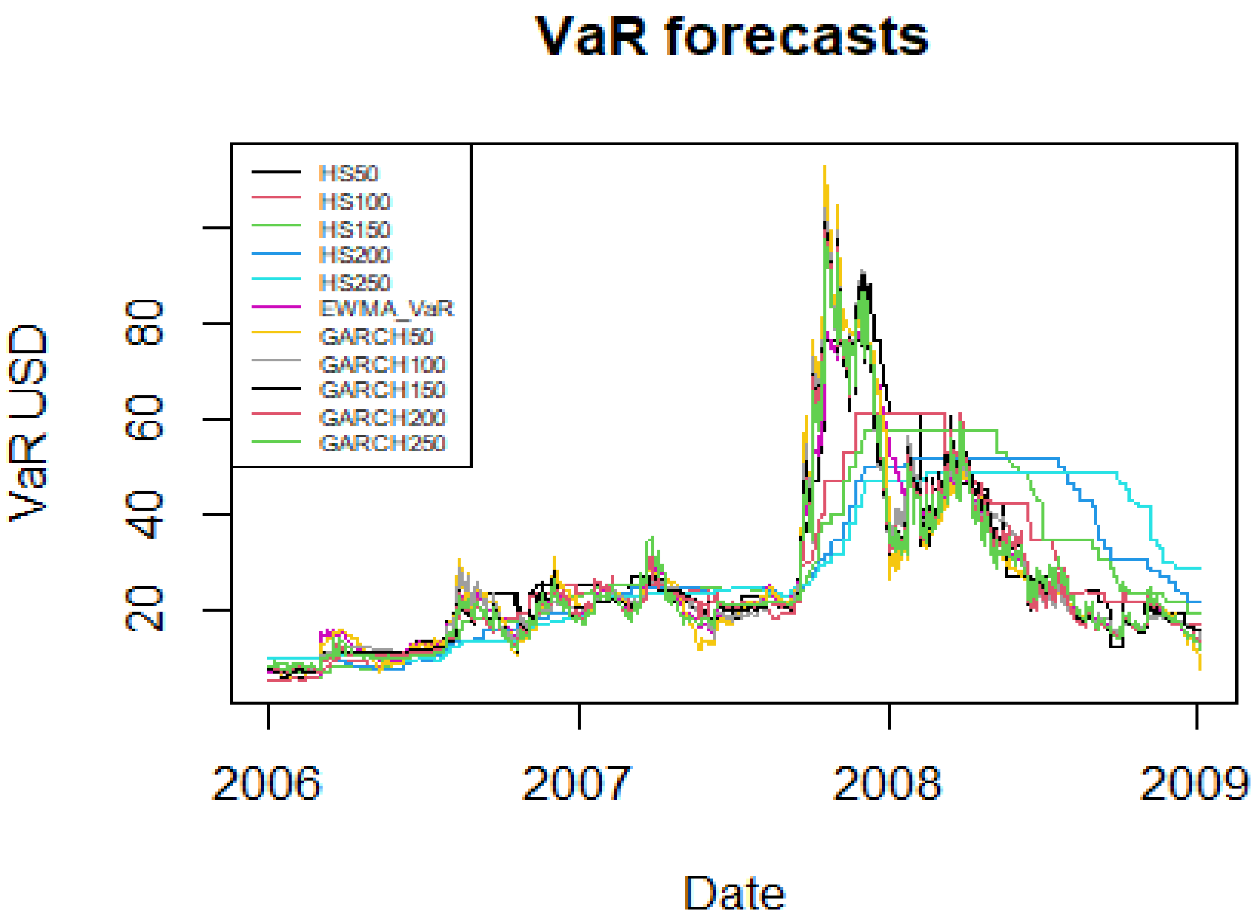


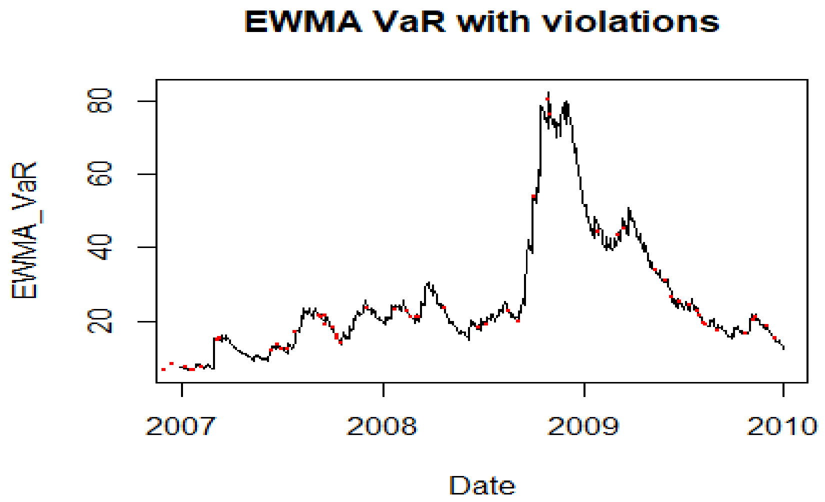
Value at Risk (VaR)

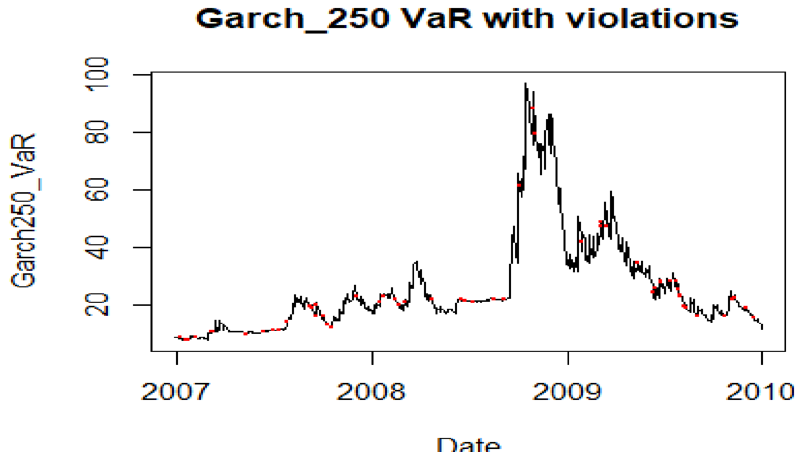
- A statistic that measures how much money could be lost by an investment over a certain period of time.
- Calculated VaR at 99% is **52%**.
- VaR is **not ideal** for Highly Volatile conditions



Calculating VaR using different Methods







VaR vs. ES

Losses
- VaR calculates only the percentages of losses that exceeds the probability
- ES calculates the magnitude of losses

Subadditivity
- VaR violates this property and the diversification effect
- ES follows this property

Complexity
- VaR is easier and less complex
- ES is more difficult to estimate and larger sample size is required

Expected Shortfall (ES)

- A risk measure that quantifies the amount of losses in an investment portfolio.
- Calculated ES at 97.5% is **53%**.
- $ES^{97.5\%}$ has been used by the BASEL III standards

“The Big Short”

What is Shorting?

- It is an investment strategy which investors use for stocks that they believe would decrease in value in the future. They bet on the decline in the stock price.

How does Shorting work?

- Investors borrows a security and sells it and then buy it back later for less.

Investors who made money during the Financial Crisis through Shorting:

- John Paulson
- Micheal Burry
- Steve Eisman