

Markets behaviour in times of COVID



FTL Big Data Hackathon - by team CONFIFI

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Is Covid-19 affecting the stock market ?



How is Covid-19 affecting the stock market ?

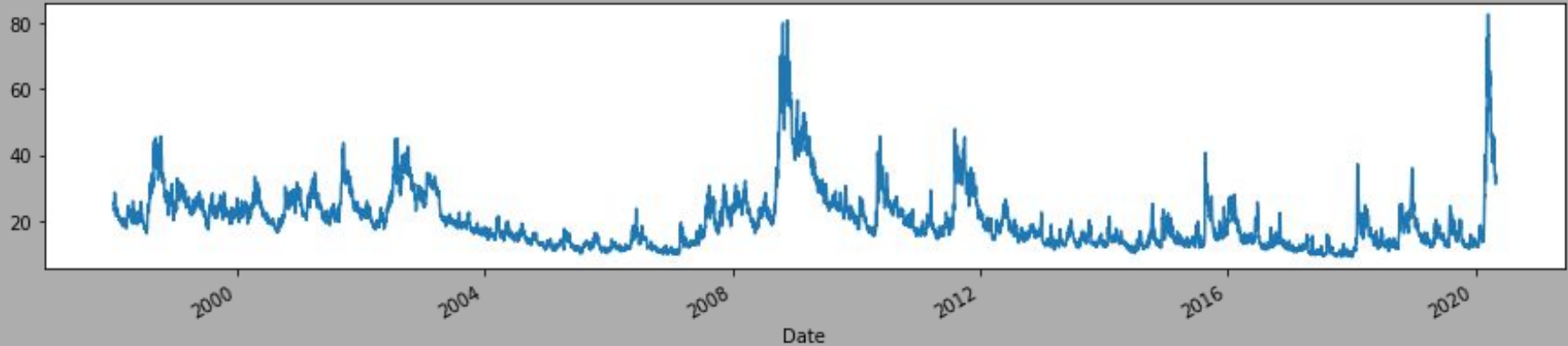


How is Covid-19 affecting risk assessment methods ?



Is Covid-19 affecting the market ?

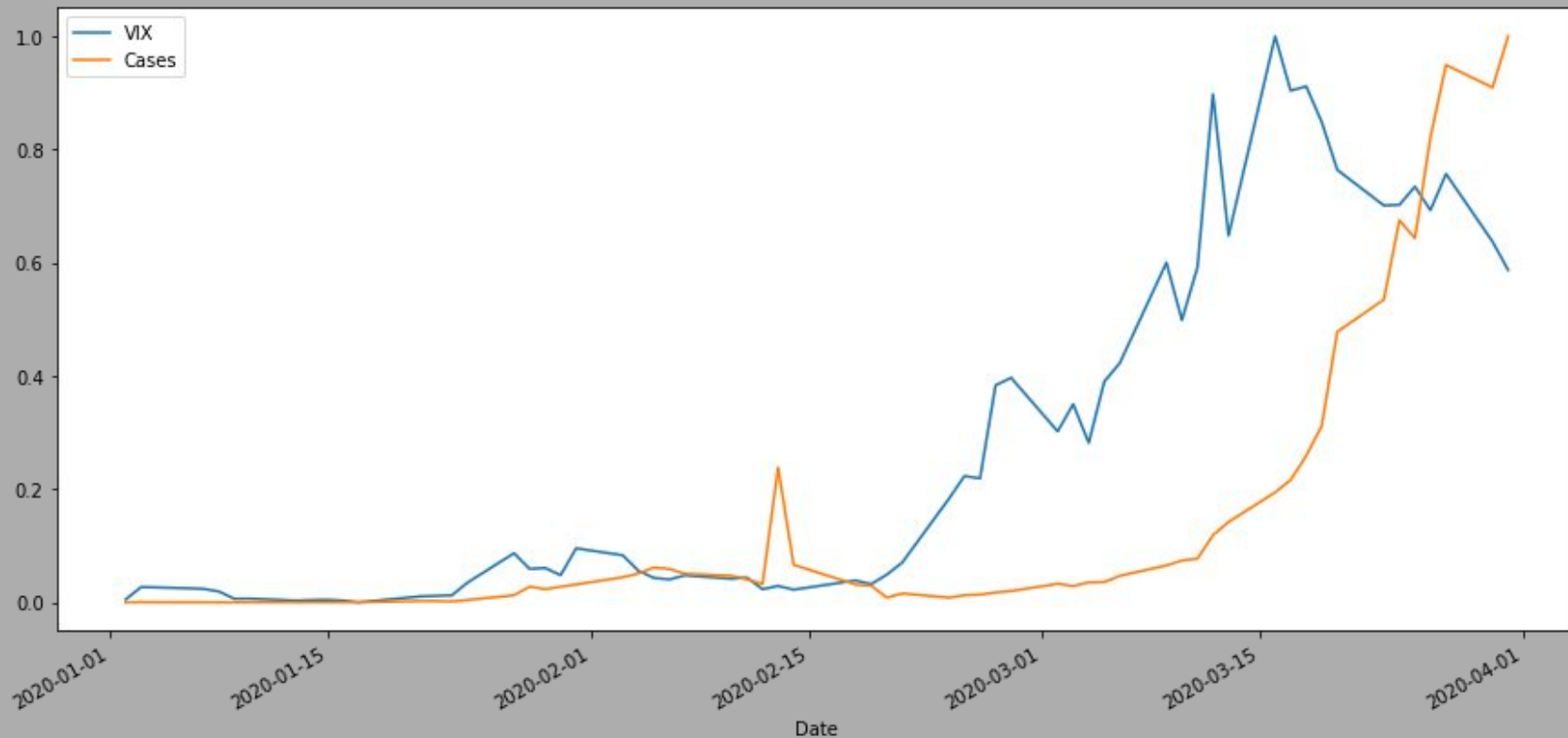
Historical evolution of the VIX



VIX : this volatility index is used by stock and options traders to gauge the market's anxiety level. It reached a historical high in March 16th, during the Covid financial crash.



Is Covid-19 affecting the market ?

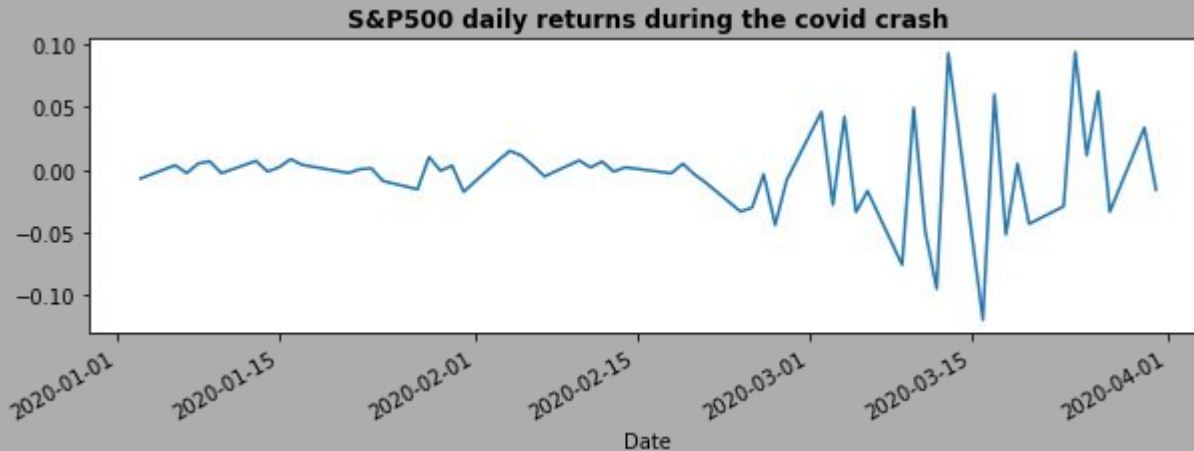




- Correlation coefficient = **+64%**
- Number of cases have a positive impact on market volatility



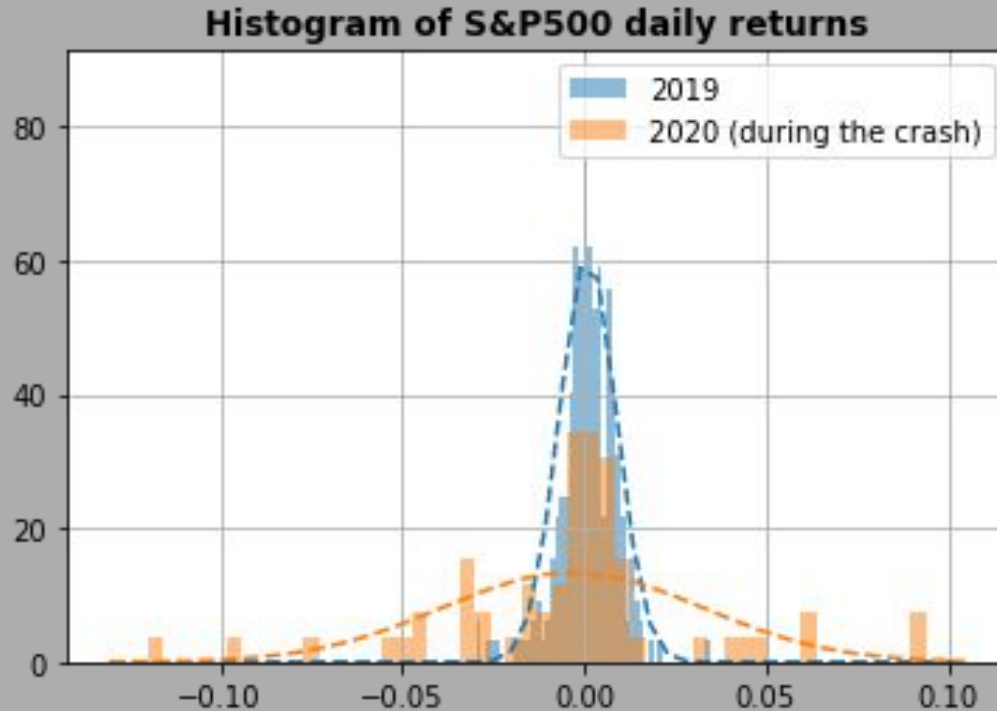
How is covid affecting the market ?



S&P500 : stock performance of 500 large companies listed on stock exchanges in the United States

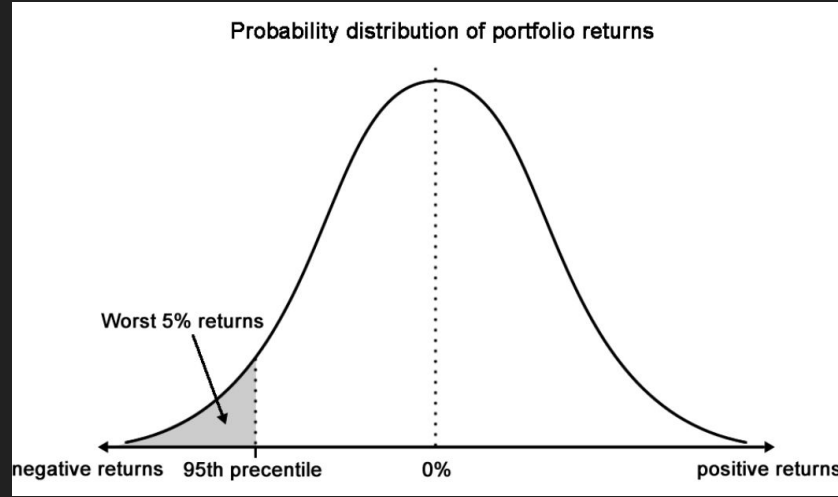


How is Covid-19 affecting the market ?





How is Covid-19 affecting risk assessment ?

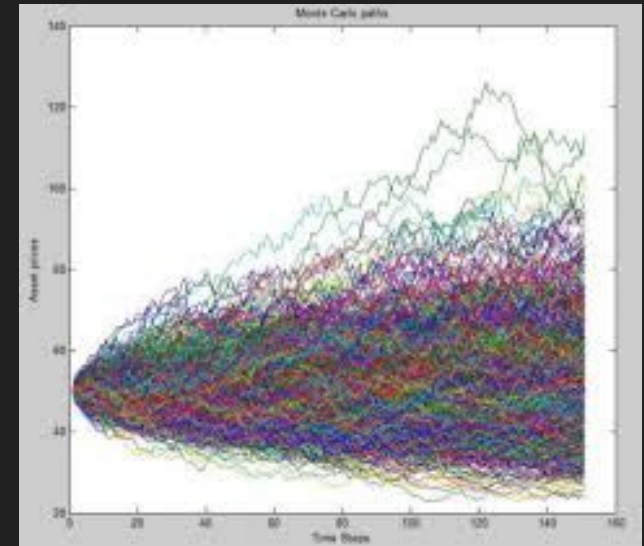


- **VAR** : Value at risk is a measure of the risk of loss for investments. It estimates how much a set of investments might lose, given normal market conditions, in a set time period such as a day.



How is Covid-19 affecting risk assessment ?

- **Monte Carlo Simulation** : Technique used to understand the impact of risk and uncertainty in financial models. It helps visualize most potential outcomes to have a better idea regarding the risk of a decision.

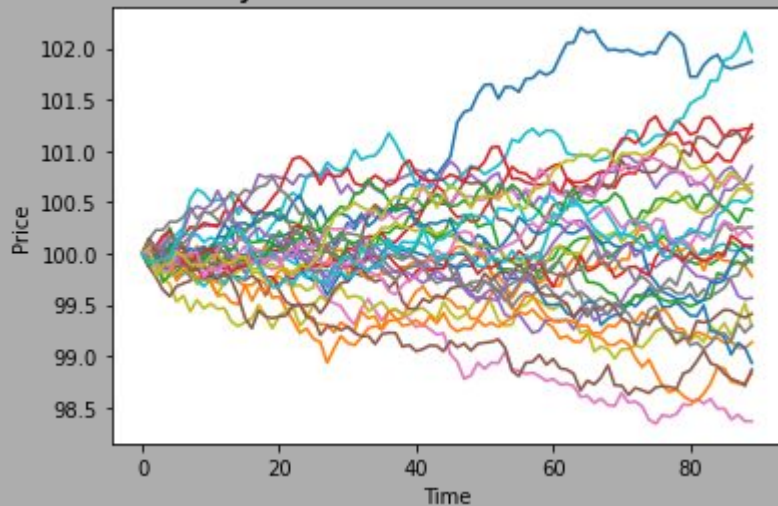




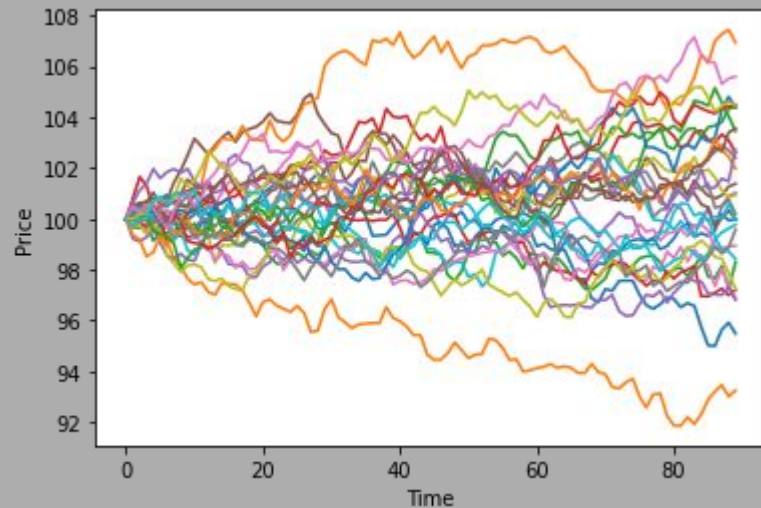
How is Covid affecting risks in the market ?

Predictions on 2019 vs. 2020 data

90-day random walk with data from 2019



90 Random walk with data from Covid crash

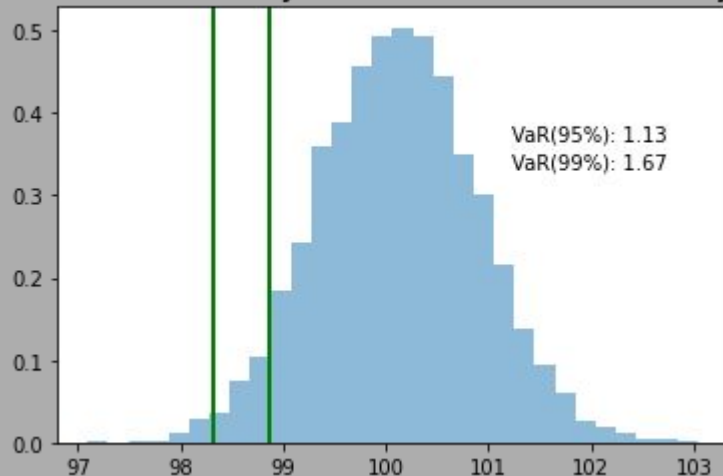




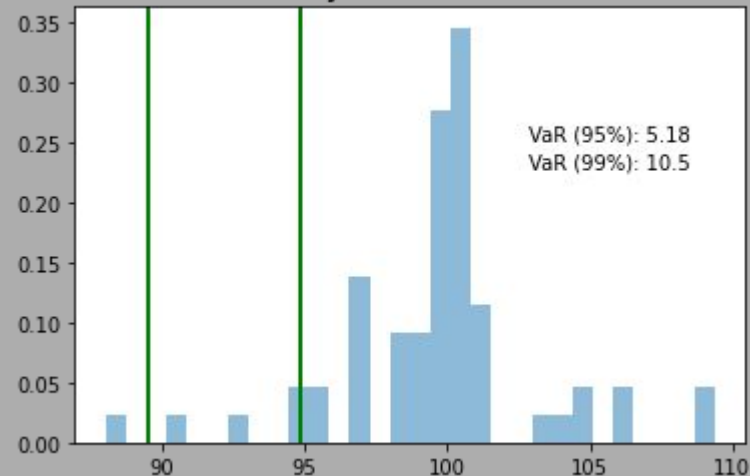
How is Covid affecting risks in the market ?

Risk assessment = VaR(Montecarlo)

Prediction on daily returns from 2019 data (90 days)



Realized daily returns from 2020 data



Conclusion :



Covid-19 cases progression strongly correlates with stock markets anxiety levels.



Covid-19 flattened the stock markets' normal distribution curve of daily returns. Higher standard deviation.



Risk assessment using the Montecarlo simulation on past data gives inaccurate results and cannot help in decision making.

