

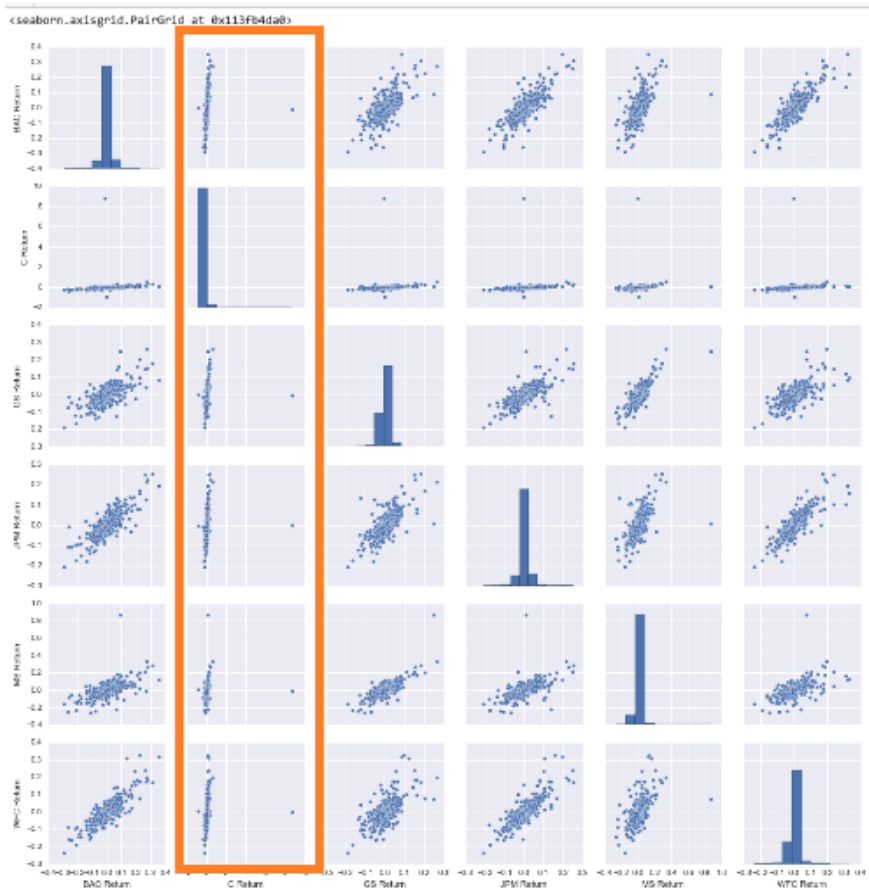
Data Capstone Project

Part 2- Analysis of stock market data of **Bank of America, Citigroup, Goldman Sachs, JP Morgan Chase, Morgan Stanley, Wells Fargo** from 2008 (early phases of financial crisis) till 2016

Note: The difference in fonts in graphs is due to the fact that some of the graphs were non-reproducible in GitHub. As a result, I have taken from Jupyter Notebooks which was my working environment for this project.

Citigroups' 2008:

- Citigroup underwent a huge crisis in the year 2008 which is evident from this pair-plot on the dataset:



Stock Volatility to major events

- Three banks, Bank of America, Goldman Sachs, JP Morgan Chase and Wells Fargo had stock process crash to the lowest on January 20, 2009.
- Co-incidentally, that day happened to be the first inauguration day of Mr. Barack Obama as the President of USA.
- Interestingly, JP Morgan Chases' stocks achieved an all-time high on the very next day!

Standard Deviation as a measure of Stock volatility:

- Citigroup has the highest standard deviation among all the banks for the entire period.
- This is because of the severity of the crisis which the group suffered in 2008

```

BACReturns    0.036650
CReturns      0.179969
GSReturns     0.025346
JPMReturns    0.027656
MSReturns     0.037820
WFCReturns    0.030233
dtype: float64

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- However in 2015, standard deviations of all the banks were nearly the same.
- This indicates '*weathering of storm*' by all banks.

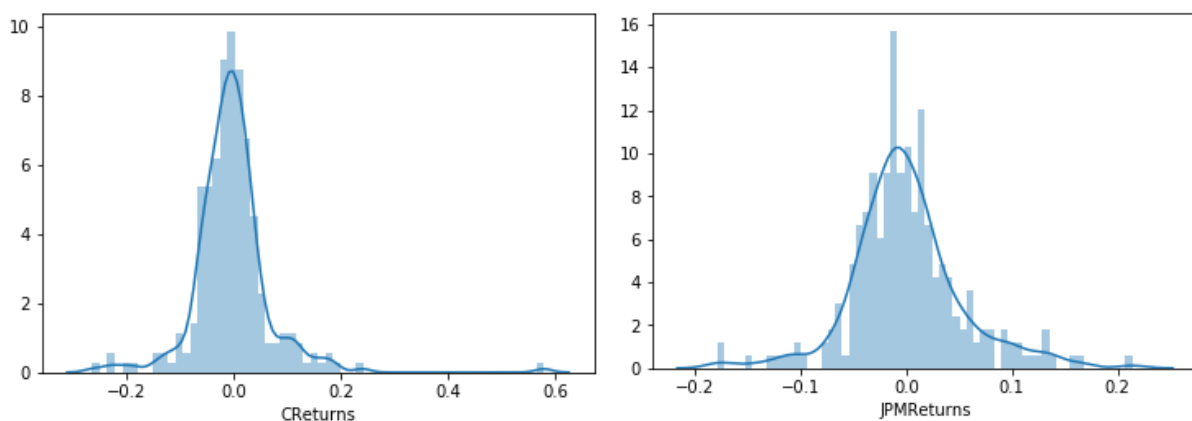
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BACReturns    0.016163
CReturns      0.015289
GSReturns     0.014046
JPMReturns    0.014017
MSReturns     0.016249
WFCReturns    0.012591
dtype: float64

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Distribution-plot Comparison Of JPM Chase And Citigroup:

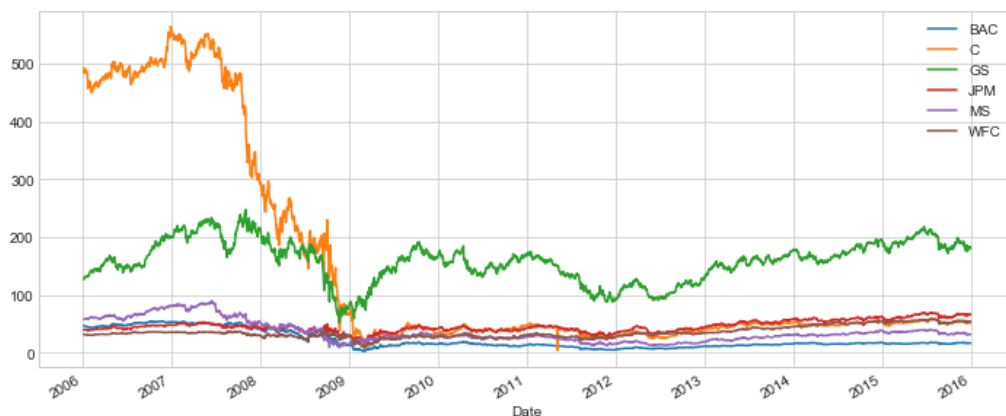
- A simple distribution between these two banks reveals the struggle Citigroup went through in 2008:



- We can see that Citigroups' stock fluctuated till 0.6 whereas JPM Chases' deviation was only up to 0.2

Similarity Between Citigroup And Goldman Sachs In 2008:

<matplotlib.legend.Legend at 0x1e168529978>



- This line plot shows that both Citigroups' and Goldman Sachs' stocks took a hit during the financial crisis.
- However, Goldman Sachs recovered quickly whereas Citigroups' recovery was more gradual.

Co-relations Using Heatmaps:

During the entire time period, we can see a high co-relation in terms among the following banks:

- Wells Fargo and JPM Chase and
- Bank of America and Morgan Stanley

<seaborn.matrix.ClusterGrid at 0x1e16903fd68>

