

# Project C

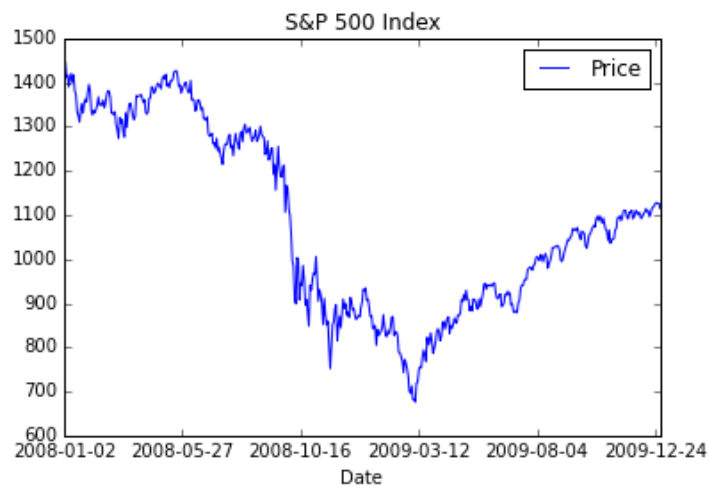
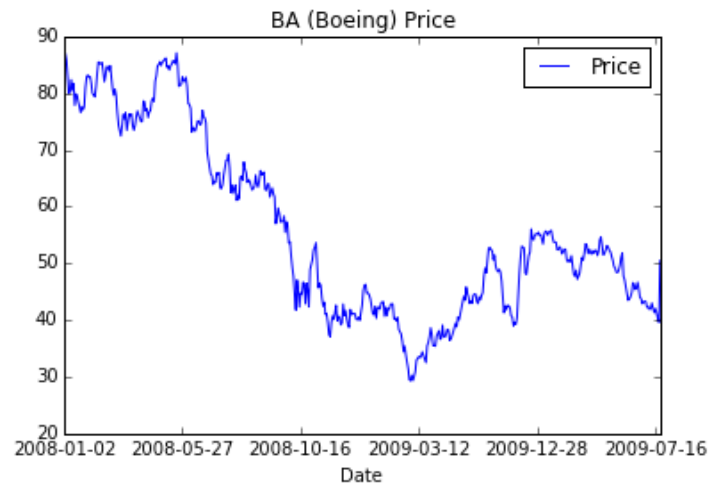
Haosu Tang

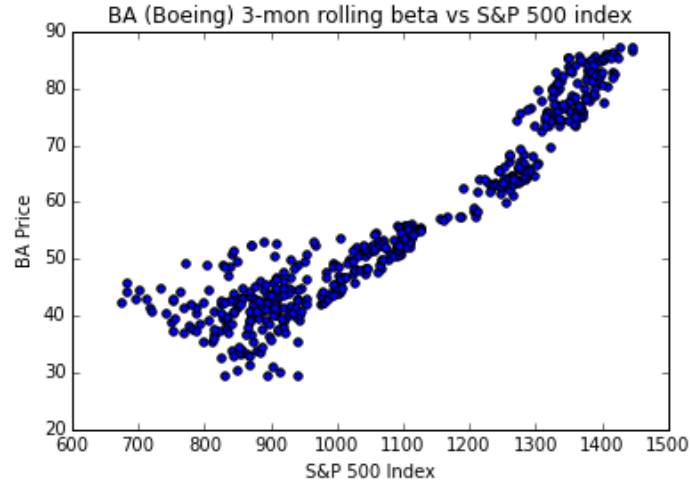
November 8, 2015

## 1 Beta

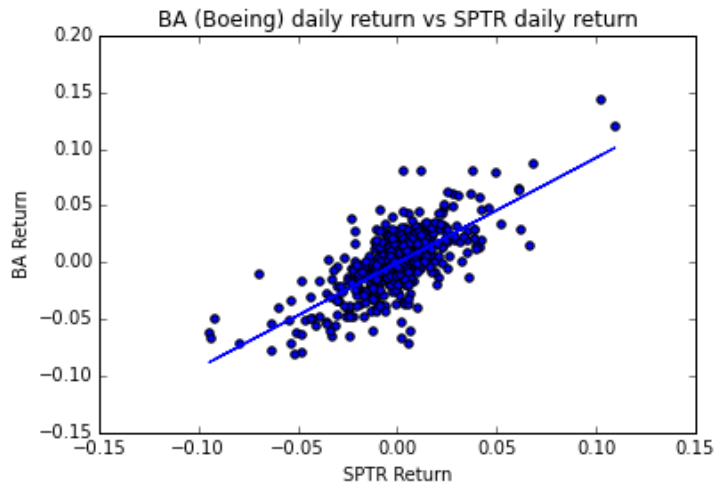
I chose BA (Boeing company) to do this analysis. Data range: 2008-01-01 to 2009-12-31, during which the financial crisis happened and the market was highly volatile.

(a). Time series plots of the 3-month rolling beta, S&P 500 and scatter plot of beta vs S&P500.





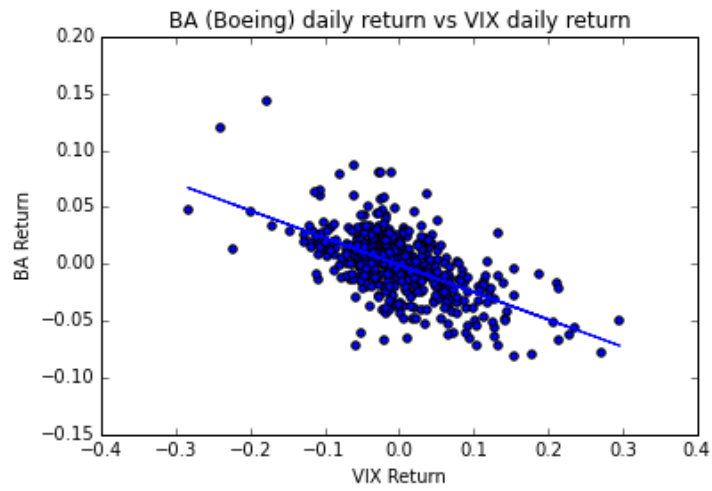
(b). A scatter plot of 1-day stock returns vs. the SPTR 1-day return and the linear regression fitting line.



Equation for linear regression:

- (With intercept):  $\hat{y} = -0.00041234 + 0.92471118\hat{x}$
- (Intercept = 0):  $\hat{y} = 0.92509641\hat{x}$

(c). A scatter plot of 1-day stock returns vs. the VIX 1-day return and the linear regression fitting line.



- (With intercept):  $\hat{y} = -0.00084599 - 0.23941314\hat{x}$
- (Intercept = 0):  $\hat{y} = -0.23939968\hat{x}$