hw1 qn16

2025-03-01

'##
qn16:

a. Explain why the econometric model above is a simple regression model like those discussed in this chapter.

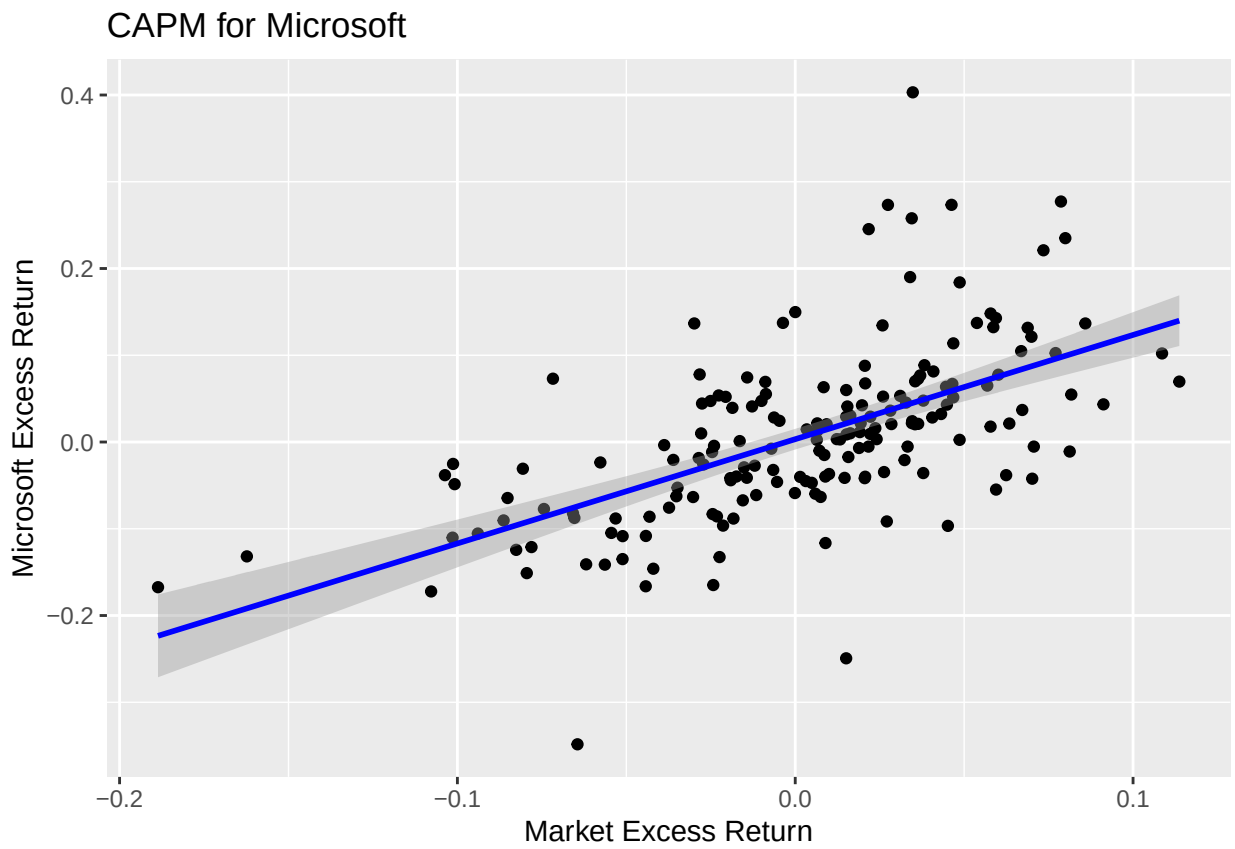
the model : rj −rf = j + j(rm −rf) + ej This is a simple regression model because it has a single independent variable, which is (rm −rf). and also a dependent variable, which is rj −rf. The coefficient j represents the slope, indicating the stock's sensitivity to the market. The intercept is j captures deviations from CAPM. There is also the error term ej to account for the variability not explained in the dependent variable.

'##
b.Which firm appears most aggressive? Which firm appears most defensive?

From betas printed above, we can conclude that: The firm with the highest beta value, which is Ford with a beta of 1.5 appears most aggressive. And the firm with the lowest beta value, which is ExxonMobil with a beta of 0.7 appears most defensive.

'##
c.Finance theory says that the intercept parameter j should be zero. Does this seem correct given your estimates? For the Microsoft stock, plot the fitted regression line along with the data scatter.

```
##         GE.(Intercept)        IBM.(Intercept)       Ford.(Intercept)
##          -0.0009586682           0.0060525497           0.0037789112
##  Microsoft.(Intercept)     Disney.(Intercept) ExxonMobil.(Intercept)
##           0.0032496009           0.0010469237           0.0052835329
```



The printed intercepts, are quite close to zero, it seems to support the finance theory.

'##
d.Estimate the beta for each firm under the assumption that j = 0, do the estimates of the beta values change much?

```
##                                      Firm      Beta Beta_Zero_Int
## GE.mkt_excess                 GE.mkt_excess 1.1479521     1.1467633
## IBM.mkt_excess               IBM.mkt_excess 0.9768898     0.9843954
## Ford.mkt_excess             Ford.mkt_excess 1.6620307     1.6667168
## Microsoft.mkt_excess   Microsoft.mkt_excess 1.2018398     1.2058695
## Disney.mkt_excess         Disney.mkt_excess 1.0115207     1.0128190
## ExxonMobil.mkt_excess ExxonMobil.mkt_excess 0.4565208     0.4630727
```

After comparing the beta values with and without the intercept, it deems like the values did not change much.(the intercept term does not significantly affect the estimation of beta)