- Summary statistics for market return, risk-free rate, and three firms that are randomly chosen.

	Observation	SD	Min	Median	Mean	Max
UBS	**120**	**0.1122173**	**-0.273100**	**-0.0031590**	**0.0009131**	**0.4464000**
AXP		**0.112239**	**-0.27910**	**0..01022**	**0.01216**	**0.86350**
GE		**0.085445**	**-0.2729000**	**-0.0040130**	**0.0005073**	**0.2512000**
MKTRF		**0.04472619**	**-0.172300**	**0.012350**	**0.007869**	**0.113500**
RF		**0.0004569357**	**0.0000**	**0.00010**	**0.00024**	**0.00210**

- Check the intercepts of three capm models, use T test to see if they are significantly different from zero. Set significant level=5%.
  In theory, if the capm model perfectly explain the performance of a firm, the intercept should be zero.

Firm	Intercept	T value	P value of getting a more extreme result
UBS	**-0.011287**	**-1.385**	**0.169**
AXP	**-0.0005387**	**-0.068**	**0.946**
GE	**-0.010524**	**-1.97**	**0.0511**

H0: intercept =0 Alternative: Intercept significantly different from 0.
This is a two-tail test, so only if the p value is lower than 5/2=2.5% can we reject the null hypothesis and say that the intercept is statistically significantly different from zero.

In this case, all three firms are not, but GE is actually quite significant , just not enough to reject the null hypothesis.

- Check the beta of three firms, usually we consider one firm "aggressive" if its beta >1, meaning that the firm's performance strongly correlated with the market.

Firm	Beta estimation	Standard error	T value	P value
UBS	**1.567623**	**0.179884**	**8.715**	**2.14e-14**
AXP	**1.6325751**	**0.1749012**	**9.334**	**7.55e-16**
GE	**1.414527**	**0.117941**	**11.99**	**<2e-16**

H0: Beta equal or less than 1 Alternative: Beta>1

This is a one tail test, with 118 degree of freedom and 5 % significance, the critical value t is about 1.658. If the test statistic is larger than 1.658, we can reject the null hypothesis and say that Beta is statistically significantly larger than 1.

Test statistic of three firms:

UBS	AXP	GE
3.155495	3.616757	3.514698

All test statistic > critical t value, all three firms are very significant, all are considered "aggressive stock".

- The expected premium of three firms when market premium = 5%/-5%, and construct the 95% confidence interval.

The predicted premium of each firm under -5/+5 market premium:

	5%	-5%
UBS	6.709415%	-8.966815%
AXP	8.109005%	-8.216746%
BE	6.020235%	-8.125035%

The 95% confidence interval of firm expected premium:

	When market premium = 5%	When market premium=-5%
UBS	[-10.70666%, 24.12550%]	[-26.382895%, 8.449265%]
AXP	[-8.825935%, 25.043945%]	[-25.151686%, 8.718194%]
GE	[-5.398425%, 17.438895%]	[-19.543695%, 3.293625%]