

# Assignment 2

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```
if(!require("pacman")) install.packages("pacman")
pacman::p_load(tidyverse, gplots, ggmap, RStata,haven)
theme_set(theme_classic())
```

## R Markdown

```
options("RStata.StataPath")

## $RStata.StataPath
## NULL

options("RStata.StataVersion" = 13)
data<- read_dta(file = "capm4.dta")
data

## # A tibble: 132 x 9
##       date     dis      ge      gm      ibm      msft      xom      mkt riskfree
##       <dbl>    <dbl>    <dbl>    <dbl>    <dbl>    <dbl>    <dbl>    <dbl>    <dbl>
## 1 2.00e7  0.0809  0.0562 -0.0463 -0.0562  0.154   -0.0306  0.00453  0.00419
## 2 2.00e7  0.0474  0.00323 0.198   0.0596  0.136   0.0817  0.0732   0.00427
## 3 2.00e7 -0.0463  0.112   -0.0172 -0.00539 0.0560  0.0608  0.0513   0.00436
## 4 2.00e7  0.168   -0.0116 -0.00554 0.116   0.00698 0.0804  0.0109   0.00394
## 5 2.00e7 -0.0908 -0.0213  0.0742  0.0159  -0.0589 -0.0295 -0.0258   0.00381
## 6 2.00e7 -0.0723  0.0900 -0.0704 -0.0229  0.278   0.0124  0.0320   0.00392
## 7 2.00e7 -0.0152 -0.0125  0.0823  0.154   0.0144 -0.0158 -0.0233   0.00395
## 8 2.00e7 -0.203   -0.106  -0.189   -0.148  -0.127  -0.0627 -0.158   0.00391
## 9 2.00e7 -0.0752 -0.00172 -0.0559  0.141   0.147   0.0793  0.0638   0.00336
## 10 2.00e7  0.0636  0.0998  0.151   0.156   -0.0380 0.0142  0.0744   0.00296
## # ... with 122 more rows
```

## LINEAR MODELS

```
lm1<- lm((dis-riskfree) ~ (mkt-riskfree),data=data)
lm2<- lm((ge-riskfree) ~ (mkt-riskfree),data=data)
lm3<- lm((gm-riskfree) ~ (mkt-riskfree),data=data)
lm4<- lm((ibm-riskfree) ~ (mkt-riskfree),data=data)
lm5<- lm((msft-riskfree) ~ (mkt-riskfree),data=data)
lm6<- lm((xom-riskfree) ~ (mkt-riskfree),data=data)
lm1

##
## Call:
## lm(formula = (dis - riskfree) ~ (mkt - riskfree), data = data)
##
```

```

## Coefficients:
## (Intercept)      mkt
## -0.003543     0.894387
lm2

##
## Call:
## lm(formula = (ge - riskfree) ~ (mkt - riskfree), data = data)
##
## Coefficients:
## (Intercept)      mkt
## -0.003578     0.901264
lm3

##
## Call:
## lm(formula = (gm - riskfree) ~ (mkt - riskfree), data = data)
##
## Coefficients:
## (Intercept)      mkt
## -0.01494      1.26678
lm4

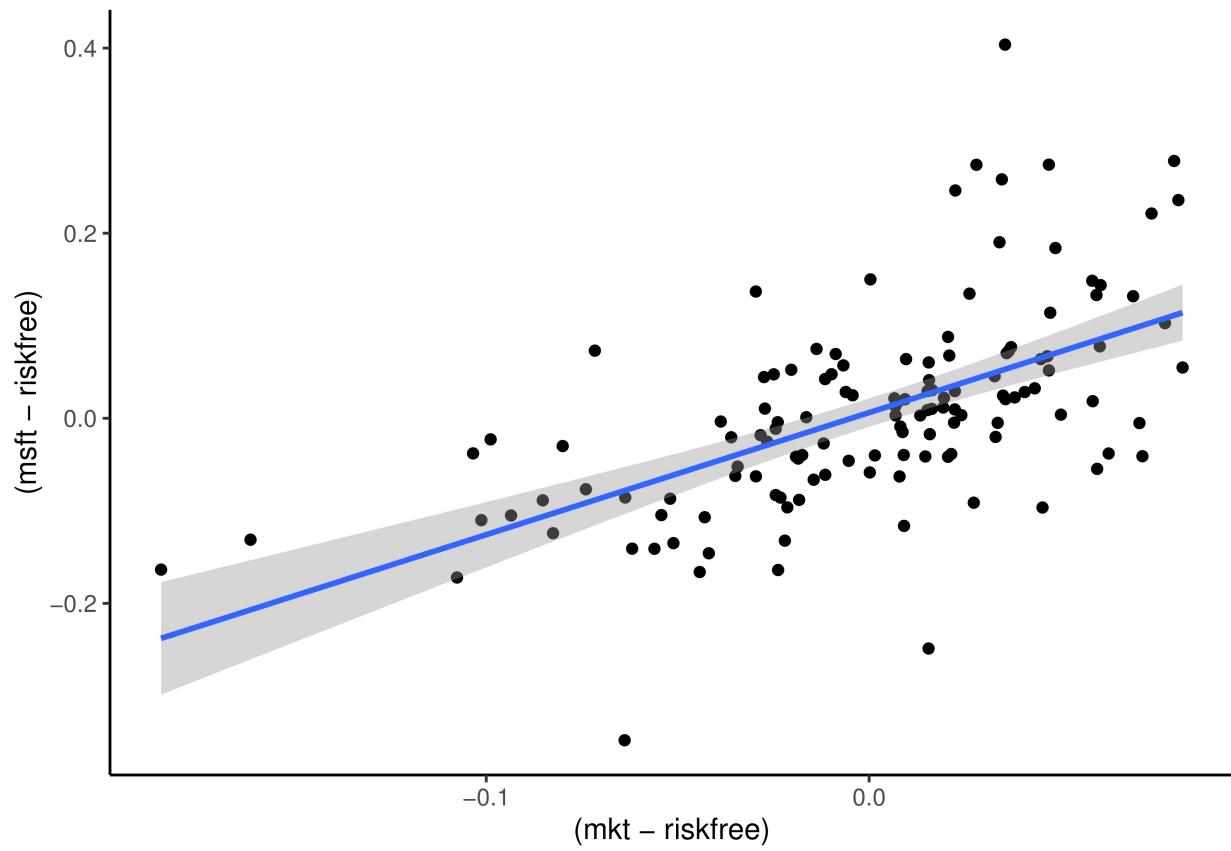
##
## Call:
## lm(formula = (ibm - riskfree) ~ (mkt - riskfree), data = data)
##
## Coefficients:
## (Intercept)      mkt
## 0.002675      1.187180
lm5

##
## Call:
## lm(formula = (msft - riskfree) ~ (mkt - riskfree), data = data)
##
## Coefficients:
## (Intercept)      mkt
## 0.00257       1.31839
lm6

##
## Call:
## lm(formula = (xom - riskfree) ~ (mkt - riskfree), data = data)
##
## Coefficients:
## (Intercept)      mkt
## 0.006776      0.412614

SCATTER PLOT FOR MICROSOFT
ggplot(data,aes(x=(mkt-riskfree),y=(msft-riskfree)))+
  geom_point()+
  geom_smooth(method='lm')

```



When INTERCEPT =0

```

in0_1 <- lm((dis-riskfree) ~ 0+ (mkt-riskfree),data=data)
in0_2 <- lm((ge-riskfree) ~ 0+ (mkt-riskfree),data=data)

in0_3 <- lm((gm-riskfree) ~ 0+(mkt-riskfree),data=data)
in0_4<- lm((ibm-riskfree) ~ 0+(mkt-riskfree),data=data)

in0_5<- lm((msft-riskfree) ~ 0+(mkt-riskfree),data=data)

in0_6<- lm((xom-riskfree) ~ 0+(mkt-riskfree),data=data)
in0_1

## 
## Call:
## lm(formula = (dis - riskfree) ~ 0 + (mkt - riskfree), data = data)
## 
## Coefficients:
##       mkt
## 0.8906

in0_2

## 
## Call:
## lm(formula = (ge - riskfree) ~ 0 + (mkt - riskfree), data = data)
## 
## Coefficients:
```

```

##      mkt
## 0.8974
in0_3

##
## Call:
## lm(formula = (gm - riskfree) ~ 0 + (mkt - riskfree), data = data)
##
## Coefficients:
##      mkt
## 1.251
in0_4

##
## Call:
## lm(formula = (ibm - riskfree) ~ 0 + (mkt - riskfree), data = data)
##
## Coefficients:
##      mkt
## 1.19
in0_5

##
## Call:
## lm(formula = (msft - riskfree) ~ 0 + (mkt - riskfree), data = data)
##
## Coefficients:
##      mkt
## 1.321
in0_6

##
## Call:
## lm(formula = (xom - riskfree) ~ 0 + (mkt - riskfree), data = data)
##
## Coefficients:
##      mkt
## 0.4199

Question 14)

fair<- read_dta(file = "fair4.dta")
fair

## # A tibble: 33 x 9
##   year vote party person duration war growth inflation goodnews
##   <dbl> <dbl> <dbl> <dbl>    <dbl> <dbl> <dbl>    <dbl>    <dbl>
## 1 1880  50.2    -1     0    1.75     0   3.88    1.97     9
## 2 1884  49.8    -1     0     2     0   1.59    1.05     2
## 3 1888  50.4     1     1     0     0  -5.55    0.604    3
## 4 1892  48.3    -1     1     0     0   2.76    2.27     7
## 5 1896  47.8     1     0     0     0  -10.0    3.41     6
## 6 1900  53.2    -1     1     0     0  -1.42    2.55     7
## 7 1904  60.0    -1     0     1     0  -2.42    1.44     5
## 8 1908  54.5    -1     0    1.25     0  -6.28    1.88     8

```

```

##   9 1912 54.7    -1      1    1.5      0   4.16   2.17      8
## 10 1916 51.7     1      1     0      0   2.23   4.25      3
## # ... with 23 more rows

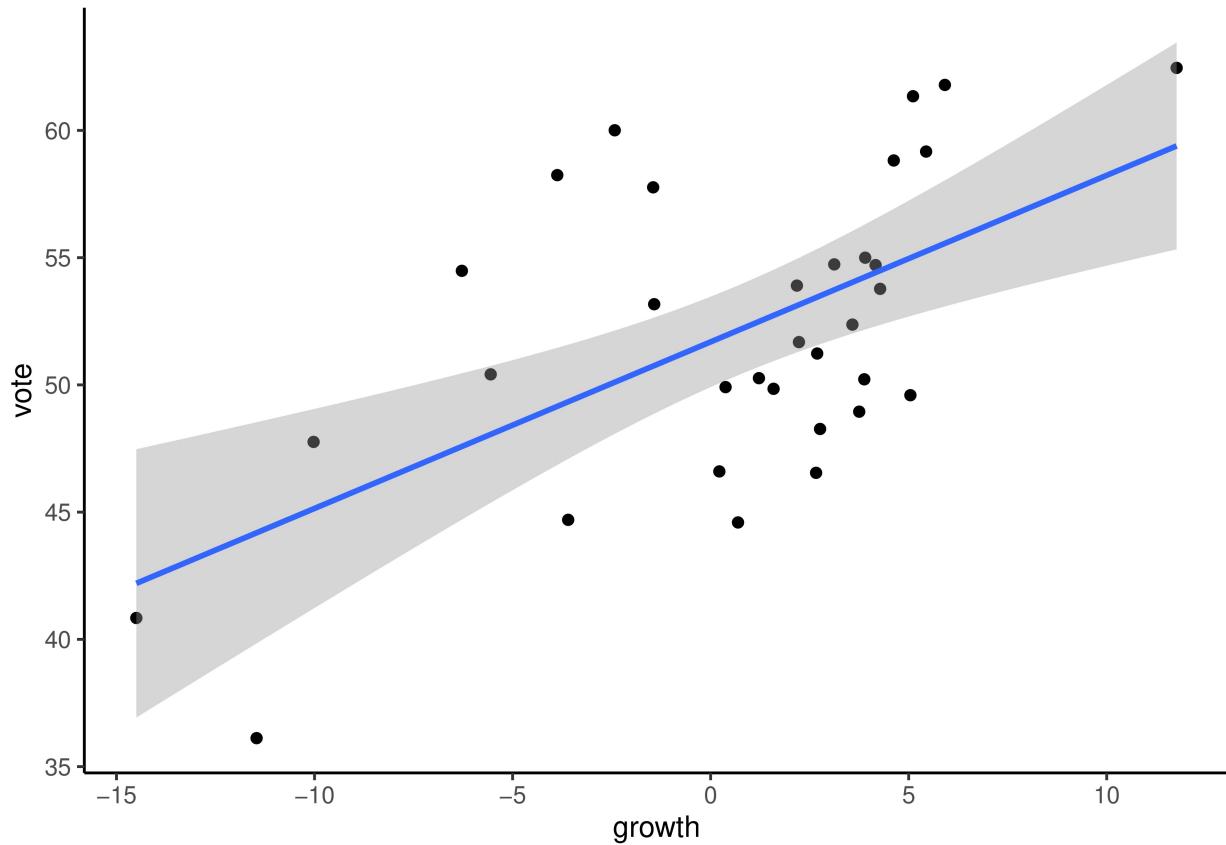
```

SCATTER PLOT

```

ggplot(fair,aes(x=growth,y=vote))+
  geom_point()+
  geom_smooth(method='lm')

```



##REGRESSION

```

lm1<- lm(vote ~ growth,data=fair)
lm1

```

```

##
## Call:
## lm(formula = vote ~ growth, data = fair)
##
## Coefficients:
## (Intercept)      growth
##      51.6908      0.6545

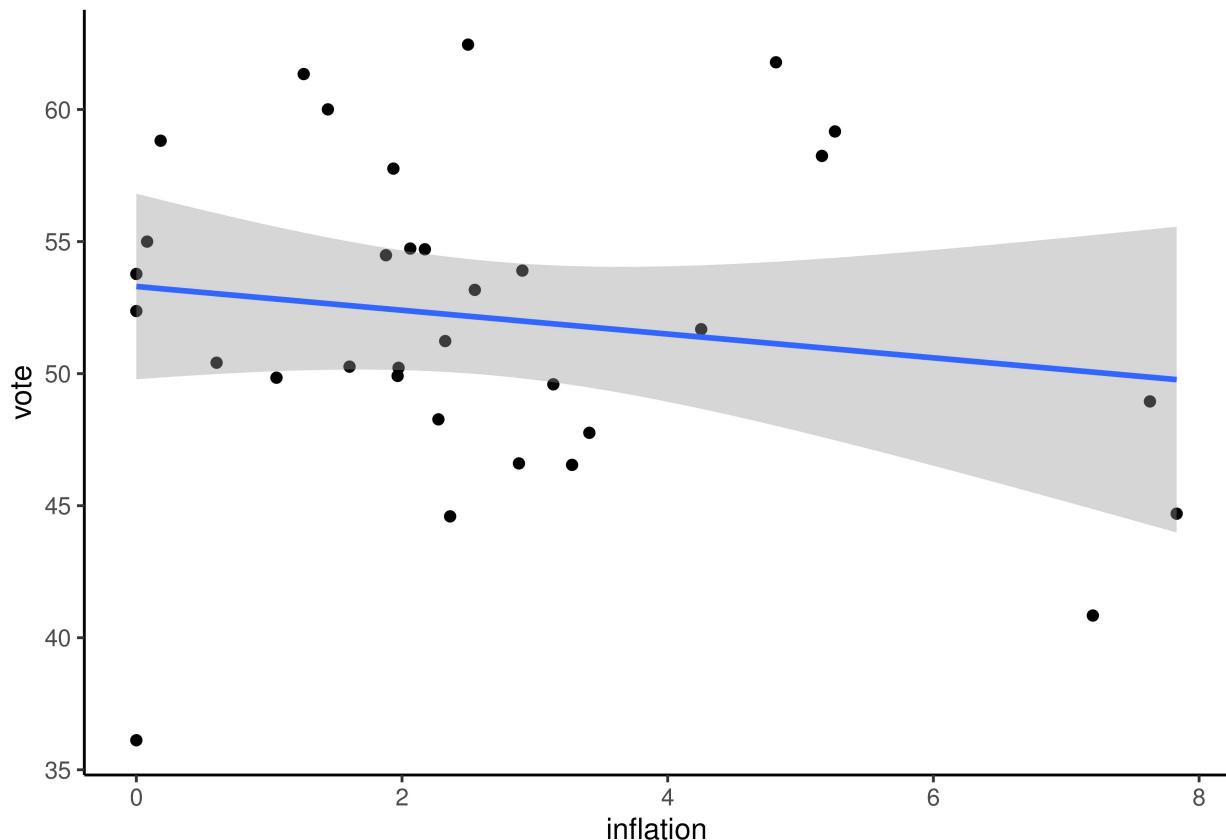
```

## VOTE vs INFLATION

```

ggplot(fair,aes(x=inflation,y=vote))+
  geom_point()+
  geom_smooth(method='lm')

```



```
lm2<- lm(vote ~ inflation,data=fair)
lm2
```

```
##
## Call:
## lm(formula = vote ~ inflation, data = fair)
##
## Coefficients:
## (Intercept)      inflation
##      53.2999        -0.4502
```