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
```

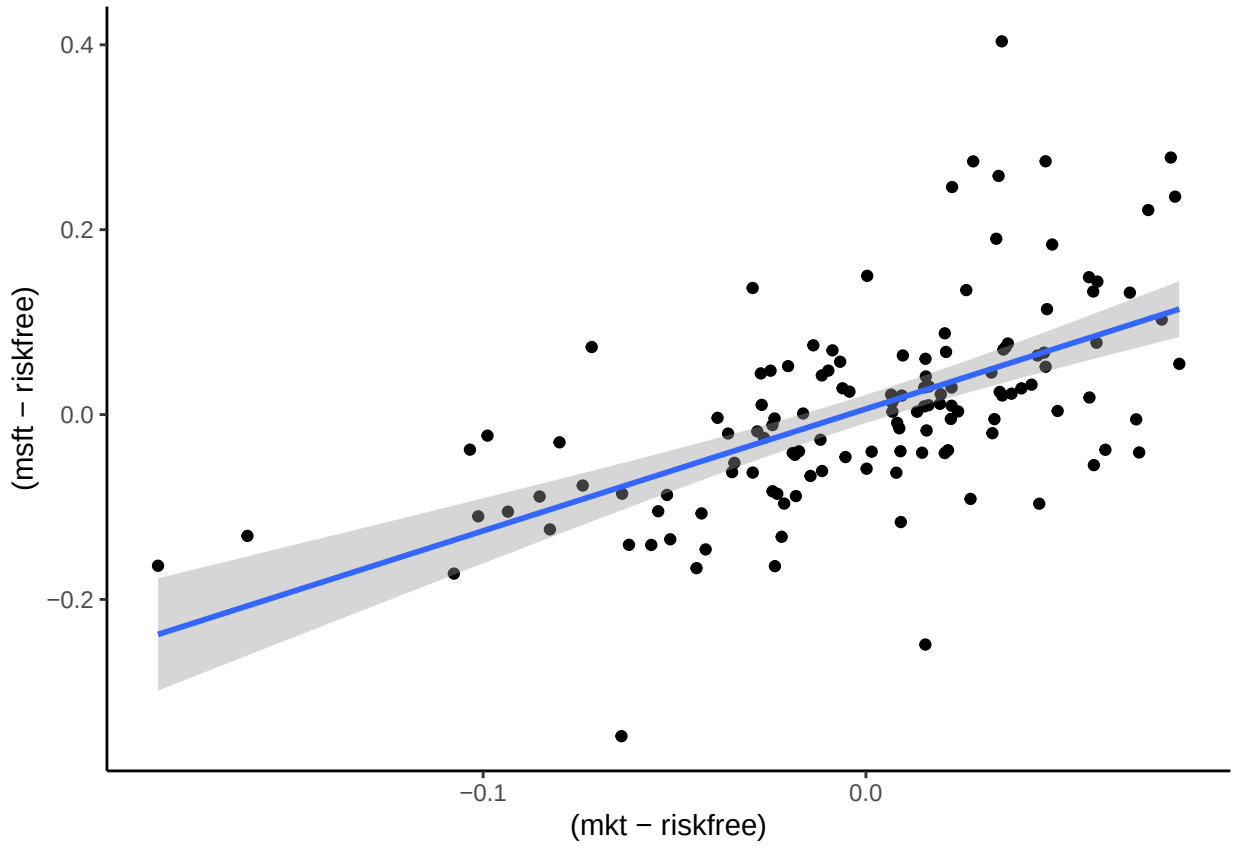
```
##
## Call:
## lm(formula = (msft - riskfree) ~ (mkt - riskfree), data = data)
##
## Coefficients:
## (Intercept)          mkt
##     0.00257      1.31839
```

```
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)

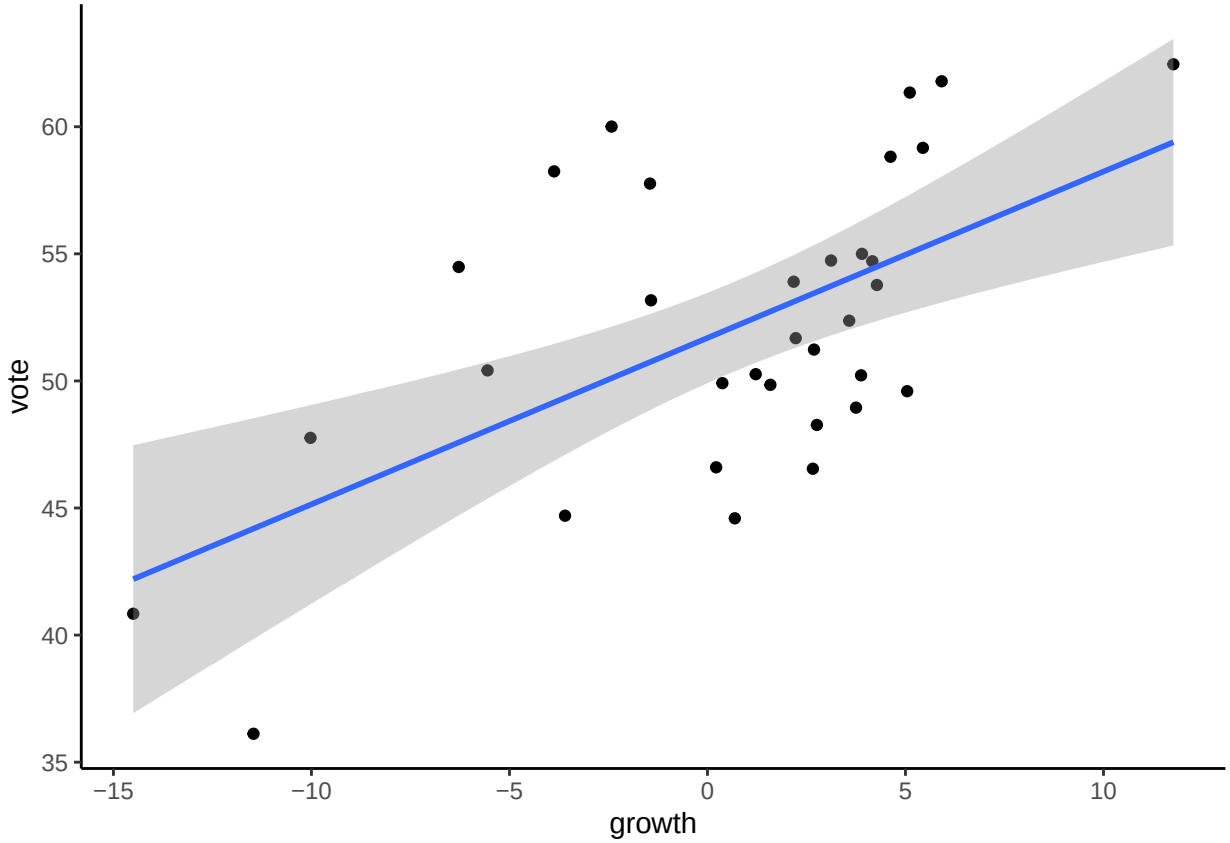
```
fair<- read_dta(file = "fair4.dta")
fair
```

```
## # 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')
```



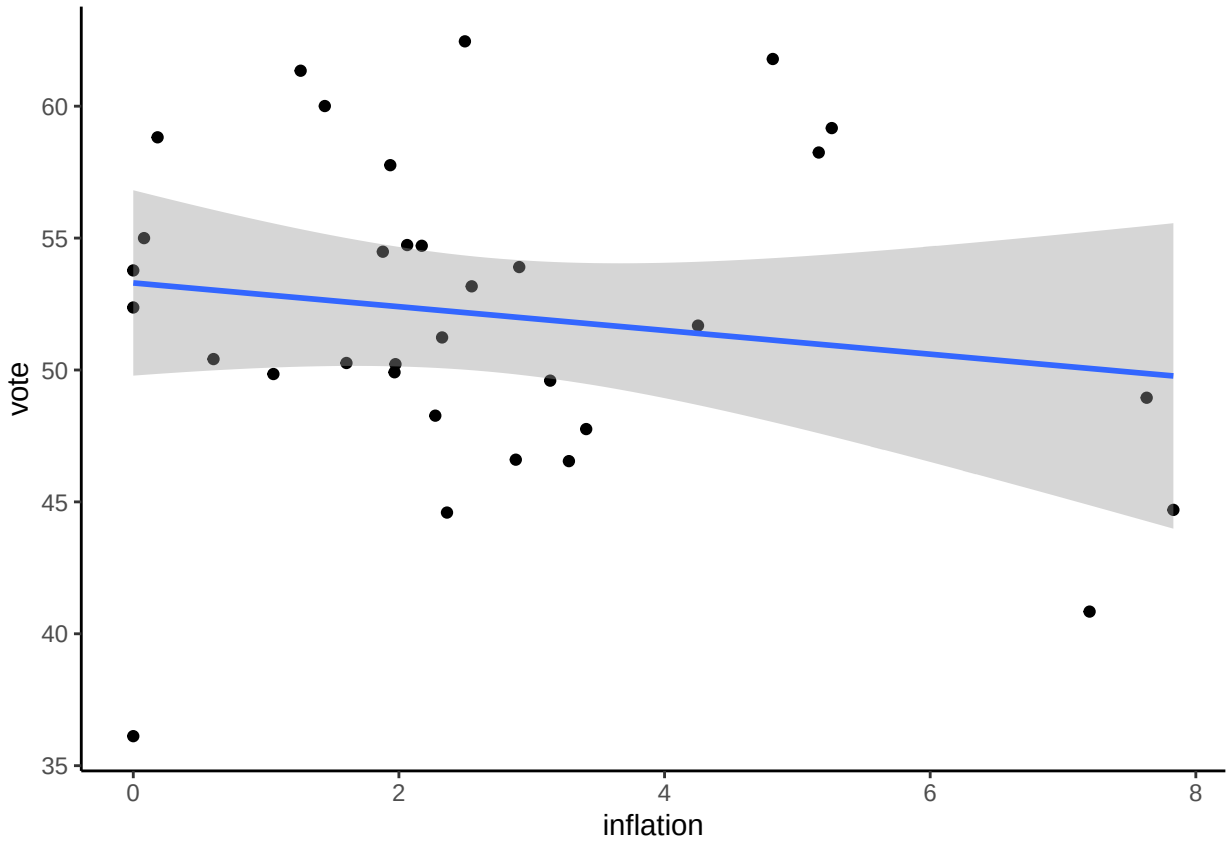
##REGRESSION

```
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
```