Lab6

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setwd ("C:/Users/usuario/OneDrive - University of East Anglia/PhD/First Semestre/Econometrics/Laboratories/Lab6") list.files()

```
library(data.table)

## Warning: package 'data.table' was built under R version 4.1.1

library(ggplot2)
library(stargazer)

## Warning: package 'stargazer' was built under R version 4.1.1

##
## Please cite as:

##  Hlavac, Marek (2018). stargazer: Well-Formatted Regression and Summary
Statistics Tables.

##  R package version 5.2.2. https://CRAN.R-project.org/package=stargazer

load("C:/Users/usuario/OneDrive - University of East Anglia/PhD/First
Semestre/Econometrics/Laboratories/Lab6/hprice1.RData")
dt.houseprice <- data.table(data)
rm(data)

#EXERCISE 1
# Estimate price = Bo +B1sqrft+B2bdrms+u

summary(dt.houseprice)

##      price           assess          bdrms          lotsize          sqrft
##  Min.   :111.0   Min.   :198.7   Min.   :2.000   Min.   : 1000   Min.
:1171
##  1st Qu.:230.0   1st Qu.:253.9   1st Qu.:3.000   1st Qu.: 5733   1st
Qu.:1660
##  Median :265.5   Median :290.2   Median :3.000   Median : 6430   Median
:1845
##  Mean   :293.5   Mean   :315.7   Mean   :3.568   Mean   : 9020   Mean
:2014
##  3rd Qu.:326.2   3rd Qu.:352.1   3rd Qu.:4.000   3rd Qu.: 8583   3rd
Qu.:2227
##  Max.   :725.0   Max.   :708.6   Max.   :7.000   Max.   :92681   Max.
:3880
```

```
##     colonial          lprice         lassess         llotsize
##  Min.   :0.0000   Min.   :4.710   Min.   :5.292   Min.   : 6.908
##  1st Qu.:0.0000   1st Qu.:5.438   1st Qu.:5.537   1st Qu.: 8.654
##  Median :1.0000   Median :5.582   Median :5.671   Median : 8.769
##  Mean   :0.6932   Mean   :5.633   Mean   :5.718   Mean   : 8.905
##  3rd Qu.:1.0000   3rd Qu.:5.788   3rd Qu.:5.864   3rd Qu.: 9.058
##  Max.   :1.0000   Max.   :6.586   Max.   :6.563   Max.   :11.437
##      lsqrft
##  Min.   :7.066
##  1st Qu.:7.415
##  Median :7.520
##  Mean   :7.573
##  3rd Qu.:7.708
##  Max.   :8.264
```

```
lm.price <- lm(price~ sqrft + bdrms, data = dt.houseprice)
stargazer(lm.price, type = 'text')
```

```
##
## ================================================
##                         Dependent variable:
##                     ---------------------------
##                                price
## ------------------------------------------------
## sqrft                         0.128***
##                                (0.014)
##
## bdrms                          15.198
##                                (9.484)
##
## Constant                       -19.315
##                               (31.047)
##
## ------------------------------------------------
## Observations                     88
## R2                              0.632
## Adjusted R2                     0.623
## Residual Std. Error       63.045 (df = 85)
## F Statistic           72.964*** (df = 2; 85)
## ================================================
## Note:               *p<0.1; **p<0.05; ***p<0.01
```

```
#Answ i): Price =-19.315 + 0.128sqrft + 15.198bdrms


average.house <- data.table( sqrft = 2014, bdrms =3.568 )
average.house
```

```
##    sqrft bdrms
## 1:  2014 3.568
```

```r
prediAverage <- predict(lm.price, newdata = average.house)
prediAverage
```

```
##        1
## 293.5827
```

```r
new.house1 <- data.table( sqrft = 2014, bdrms =4.568 )
new.house1
```

```
##    sqrft bdrms
## 1:  2014 4.568
```

```r
predinew1 <- predict(lm.price, newdata = new.house1)
predinew1
```

```
##        1
## 308.7809
```

```r
#Answ ii): $15.198  $308.7809 (thousand of dollars)

new.house2 <- data.table( sqrft = 2014+140, bdrms =4.568 )
new.house2
```

```
##    sqrft bdrms
## 1:  2154 4.568
```

```r
predinew2 <- predict(lm.price, newdata = new.house2)
predinew2
```

```
##        1
## 326.7619
```

```r
Dif<-predinew2-predinew1
Dif
```

```
##        1
## 17.98107
```

```r
#Answ iii):  $326.7619 (thousand of dollars) is 17.98 (thousand of dollars)
greater 2 than 1

#Answ iv):  63.2%

new.house3 <- data.table( sqrft = 2483, bdrms =4 )
new.house3
```

```
##    sqrft bdrms
## 1:  2483     4
```

```r
predinew3 <- predict(lm.price, newdata = new.house3)
predinew3
```

```
##        1
## 360.3849
```

```
#Answ v):  $360.3849 (thousand of dollars)
```

```
360.3849-300
```

```
## [1] 60.3849
```

```
#Answ vi):  60.39 (thousand of dollars) wich suggest that the buyer overpaid
the house
```

```
lm.price2 <- lm(price~ sqrft + bdrms + colonial, data = dt.houseprice)
stargazer(lm.price2, type = 'text')
```

```
##
## ================================================
##                         Dependent variable:
##                     ---------------------------
##                                price
## ------------------------------------------------
## sqrft                         0.130***
##                                (0.014)
##
## bdrms                          12.487
##                               (10.024)
##
## colonial                       13.078
##                               (15.436)
##
## Constant                       -21.552
##                               (31.210)
##
## ------------------------------------------------
## Observations                     88
## R2                              0.635
## Adjusted R2                     0.622
## Residual Std. Error      63.150 (df = 84)
## F Statistic           48.720*** (df = 3; 84)
## ================================================
## Note:               *p<0.1; **p<0.05; ***p<0.01
```

```
dt.houseprice[colonial==0, mean(price)]
```

```
## [1] 272.3704
```

```
lm.price3 <- lm(price~ colonial, data = dt.houseprice)
stargazer(lm.price3, type = 'text')
```

```
##
## ================================================
```

```
##                          Dependent variable:
##                      ---------------------------
##                                  price
## ------------------------------------------------
## colonial                        30.548
##                                (23.652)
##
## Constant                       272.370***
##                                (19.692)
##
## ------------------------------------------------
## Observations                      88
## R2                               0.019
## Adjusted R2                      0.008
## Residual Std. Error       102.321 (df = 86)
## F Statistic              1.668 (df = 1; 86)
## ================================================
## Note:                *p<0.1; **p<0.05; ***p<0.01
```

#Answ vii): In Average houses that are in colonial residences pay 13.078 (thousand of dollars)

#EXERCISE 2

```
load("C:/Users/usuario/OneDrive - University of East Anglia/PhD/First Semestre/Econometrics/Laboratories/Lab6/ceosal2.RData")
dt.ceosal <- data.table(data)
rm(data)
```

#i) Estimate a model relating annual salary to firm sales and market value. Make the model of the constant
#elasticity variety for both independent variables. Write the results out in equation form.

```
lm.ceosalary <- lm(lsalary~ lsales + lmktval, data = dt.ceosal)
stargazer(lm.ceosalary, type = 'text')
```

```
##
## ================================================
##                          Dependent variable:
##                      ---------------------------
##                                 lsalary
## ------------------------------------------------
## lsales                          0.162***
##                                 (0.040)
##
## lmktval                         0.107**
##                                 (0.050)
##
## Constant                        4.621***
```

```
##                                (0.254)
##
## ------------------------------------------------
## Observations                     177
## R2                              0.299
## Adjusted R2                     0.291
## Residual Std. Error       0.510 (df = 174)
## F Statistic           37.129*** (df = 2; 174)
## ================================================
## Note:                *p<0.1; **p<0.05; ***p<0.01
```

```
#Answ i): lsalary = 4.621 + 0.162lsales + 0.107lmktval
```

```
lm.ceosalary1 <- lm(lsalary~ lsales + lmktval + profits, data = dt.ceosal)
stargazer(lm.ceosalary1, type = 'text')
```

```
##
## ================================================
##                         Dependent variable:
##                     ---------------------------
##                                lsalary
## ------------------------------------------------
## lsales                        0.161***
##                                (0.040)
##
## lmktval                         0.098
##                                (0.064)
##
## profits                         0.00004
##                                (0.0002)
##
## Constant                       4.687***
##                                (0.380)
##
## ------------------------------------------------
## Observations                     177
## R2                              0.299
## Adjusted R2                     0.287
## Residual Std. Error       0.512 (df = 173)
## F Statistic           24.636*** (df = 3; 173)
## ================================================
## Note:                *p<0.1; **p<0.05; ***p<0.01
```

```
#Answ ii): Profits are not in logarithmic form, ii) No because R2 is 0.29
```

```
#Answ iii)  the coefficient is significant because the pvalue is < 0.05. An
increment in 1% of the market value increases the CEO salary in 0.162%
```

```
exp(0.00004)
```

```
## [1] 1.00004

#Answ iv)  the coefficient is significant because the pvalue is > 0.05. An
increment in one unitof the profits increases the CEO salary in 0.004%

lm.ceosalary2 <- lm(lsalary~ lsales + lmktval + profits +  ceoten + comten,
data = dt.ceosal)
stargazer(lm.ceosalary2, type = 'text')

##
## ================================================
##                         Dependent variable:
##                     ---------------------------
##                               lsalary
## ------------------------------------------------
## lsales                       0.191***
##                               (0.040)
##
## lmktval                       0.077
##                               (0.062)
##
## profits                       0.0001
##                              (0.0001)
##
## ceoten                       0.017***
##                               (0.006)
##
## comten                       -0.010***
##                               (0.003)
##
## Constant                     4.697***
##                               (0.376)
##
## ------------------------------------------------
## Observations                    177
## R2                             0.349
## Adjusted R2                    0.330
## Residual Std. Error      0.496 (df = 171)
## F Statistic           18.342*** (df = 5; 171)
## ================================================
## Note:               *p<0.1; **p<0.05; ***p<0.01

stargazer(lm.ceosalary, lm.ceosalary1, lm.ceosalary2, type = 'text')

##
##
================================================================================
==============
##                                                 Dependent variable:
##                     ---------------------------------------------------------
-----------------
```

```
##                                                 lsalary
##                              (1)                  (2)
(3)
## ------------------------------------------------------------------------
-----------------
## lsales                     0.162***             0.161***
0.191***
##                             (0.040)              (0.040)
(0.040)
##
## lmktval                     0.107**               0.098
0.077
##                             (0.050)              (0.064)
(0.062)
##
## profits                                           0.00004
0.0001
##                                                  (0.0002)
(0.0001)
##
## ceoten
0.017***
##
(0.006)
##
## comten
-0.010***
##
(0.003)
##
## Constant                   4.621***             4.687***
4.697***
##                             (0.254)              (0.380)
(0.376)
##
## ------------------------------------------------------------------------
-----------------
## Observations                 177                  177
177
## R2                          0.299                0.299
0.349
## Adjusted R2                 0.291                0.287
0.330
## Residual Std. Error    0.510 (df = 174)      0.512 (df = 173)
0.496 (df = 171)
## F Statistic         37.129*** (df = 2; 174) 24.636*** (df = 3; 173)
18.342*** (df = 5; 171)
##
========================================================================
==============
```

```
## Note:                                                    *p<0.1;
**p<0.05; ***p<0.01

#Answ v) 1.7%

##Answ vi) An increment in 1 year of tenure increases the CEO salary in 1.7%,
An increment in 1 year of comten decreases the CEO salary in 1%. Both
variables comten and ceoten are significant

summary(dt.ceosal)

##      salary            age          college            grad
##  Min.   : 100.0   Min.   :33.00   Min.   :0.0000   Min.   :0.0000
##  1st Qu.: 471.0   1st Qu.:52.00   1st Qu.:1.0000   1st Qu.:0.0000
##  Median : 707.0   Median :57.00   Median :1.0000   Median :1.0000
##  Mean   : 865.9   Mean   :56.43   Mean   :0.9718   Mean   :0.5311
##  3rd Qu.:1119.0   3rd Qu.:62.00   3rd Qu.:1.0000   3rd Qu.:1.0000
##  Max.   :5299.0   Max.   :86.00   Max.   :1.0000   Max.   :1.0000
##      comten          ceoten           sales          profits
##  Min.   : 2.0   Min.   : 0.000   Min.   :   29   Min.   :-463.0
##  1st Qu.:12.0   1st Qu.: 3.000   1st Qu.:  561   1st Qu.:  34.0
##  Median :23.0   Median : 6.000   Median : 1400   Median :  63.0
##  Mean   :22.5   Mean   : 7.955   Mean   : 3529   Mean   : 207.8
##  3rd Qu.:33.0   3rd Qu.:11.000   3rd Qu.: 3500   3rd Qu.: 208.0
##  Max.   :58.0   Max.   :37.000   Max.   :51300   Max.   :2700.0
##      mktval          lsalary          lsales          lmktval
##  Min.   :  387   Min.   :4.605   Min.   : 3.367   Min.   : 5.958
##  1st Qu.:  644   1st Qu.:6.155   1st Qu.: 6.330   1st Qu.: 6.468
##  Median : 1200   Median :6.561   Median : 7.244   Median : 7.090
##  Mean   : 3600   Mean   :6.583   Mean   : 7.231   Mean   : 7.399
##  3rd Qu.: 3500   3rd Qu.:7.020   3rd Qu.: 8.161   3rd Qu.: 8.161
##  Max.   :45400   Max.   :8.575   Max.   :10.845   Max.   :10.723
##     comtensq         ceotensq          profmarg
##  Min.   :   4.0   Min.   :   0.0   Min.   :-203.077
##  1st Qu.: 144.0   1st Qu.:   9.0   1st Qu.:   4.231
##  Median : 529.0   Median :  36.0   Median :   6.834
##  Mean   : 656.7   Mean   : 114.1   Mean   :   6.420
##  3rd Qu.:1089.0   3rd Qu.: 121.0   3rd Qu.:  10.947
##  Max.   :3364.0   Max.   :1369.0   Max.   :  47.458

#vii) The average of comten is 22.5 years. It could be that after a certain
amount of time productivity of CEO decreases a higher rate that increases in
the initial years.

# viii)Predict te values of CEO
fit.val <- fitted.values(lm.ceosalary2)

fit.val
```

```
##        1        2        3        4        5        6        7        8
## 7.151210 6.393152 6.185158 6.727215 6.303558 7.308279 6.231130 6.748995
##        9       10       11       12       13       14       15       16
## 6.424304 6.585552 6.408581 6.145786 6.752264 6.879309 6.845969 6.175660
##       17       18       19       20       21       22       23       24
## 6.295709 6.403426 6.671835 6.235924 6.693955 6.456440 6.504184 6.062382
##       25       26       27       28       29       30       31       32
## 7.187849 6.022501 6.737172 6.053943 6.745318 7.080347 7.106430 6.788409
##       33       34       35       36       37       38       39       40
## 6.696870 7.412483 6.645554 7.005641 6.414824 5.972263 7.110380 7.505438
##       41       42       43       44       45       46       47       48
## 6.589509 6.651134 7.254880 7.492498 6.567925 6.131221 7.361337 6.146312
##       49       50       51       52       53       54       55       56
## 6.479542 7.291735 6.698195 7.070538 6.314608 6.640608 6.321764 7.146681
##       57       58       59       60       61       62       63       64
## 6.450431 6.881708 6.147497 7.110562 6.500695 7.250963 6.593601 6.249849
##       65       66       67       68       69       70       71       72
## 6.819407 6.139394 6.320636 6.481749 6.149719 6.417198 6.656593 6.862629
##       73       74       75       76       77       78       79       80
## 5.978020 6.504380 6.308556 6.239654 7.205570 6.311297 6.739545 6.590062
##       81       82       83       84       85       86       87       88
## 6.743376 6.490247 6.668438 6.583575 6.377373 5.897672 6.461920 6.887926
##       89       90       91       92       93       94       95       96
## 6.306490 6.533651 6.655575 6.812945 7.237178 6.889879 6.324359 6.268027
##       97       98       99      100      101      102      103      104
## 6.798066 6.429280 6.108671 6.749980 7.067770 6.225946 6.575369 6.202740
##      105      106      107      108      109      110      111      112
## 6.675238 7.088067 7.197106 6.265588 6.321395 6.779425 6.510574 6.553468
##      113      114      115      116      117      118      119      120
## 7.135835 6.569187 6.370065 6.486983 6.014815 6.407470 6.904112 6.135279
##      121      122      123      124      125      126      127      128
## 6.880983 6.343876 6.541797 6.135624 6.677713 6.374578 7.262607 6.816456
##      129      130      131      132      133      134      135      136
## 6.783862 6.312388 6.569609 6.426906 6.570901 6.388564 7.347109 6.696450
##      137      138      139      140      141      142      143      144
## 6.218194 6.645024 6.609878 6.903268 6.586107 6.571357 6.948757 6.783637
##      145      146      147      148      149      150      151      152
## 6.849768 6.312563 6.305372 6.602141 6.216801 6.562929 6.067363 6.249218
##      153      154      155      156      157      158      159      160
## 7.121833 6.786744 6.749534 6.702540 6.753174 6.808535 6.159579 6.383498
##      161      162      163      164      165      166      167      168
## 6.158513 6.831989 6.582561 6.877790 6.518624 6.560536 6.638389 6.012189
##      169      170      171      172      173      174      175      176
## 6.628056 6.252875 6.371145 6.124556 5.936547 6.102017 6.249027 6.385066
##      177
## 6.052239

head(fit.val)
```

```
##        1        2        3        4        5        6
## 7.151210 6.393152 6.185158 6.727215 6.303558 7.308279

new.house4 <- data.table(lsales = 8.7323, lmktval=10.0519, profits=966,
ceoten=2, comten=9)
new.house4

##    lsales lmktval profits ceoten comten
## 1: 8.7323 10.0519     966      2      9

predinew4 <-predict(lm.ceosalary2, newdata = new.house4)
predinew4

##        1
## 7.151208

#ix) Estimate R2

summary(lm.ceosalary2)$r.squared

## [1] 0.3490874

summary(lm.ceosalary2)

##
## Call:
## lm(formula = lsalary ~ lsales + lmktval + profits + ceoten +
##     comten, data = dt.ceosal)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.5307 -0.2737 -0.0251  0.2910  1.9999
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  4.697e+00  3.759e-01  12.497  < 2e-16 ***
## lsales       1.909e-01  3.998e-02   4.774 3.86e-06 ***
## lmktval      7.726e-02  6.237e-02   1.239  0.21713
## profits      6.456e-05  1.479e-04   0.437  0.66298
## ceoten       1.694e-02  5.552e-03   3.052  0.00264 **
## comten      -9.539e-03  3.354e-03  -2.844  0.00500 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4961 on 171 degrees of freedom
## Multiple R-squared:  0.3491, Adjusted R-squared:  0.3301
## F-statistic: 18.34 on 5 and 171 DF,  p-value: 1.473e-14

#x) Calculate the residuals
residuals<-residuals(lm.ceosalary2)
residuals
```

```
##            1            2            3            4            5
6
## -0.094172931  0.003777270 -0.247622247 -0.248705293 -0.094967530 -
0.335672471
##            7            8            9           10           11
12
##  0.620054466  0.390665454 -0.203713548  0.412043532 -0.009986326 -
0.273667839
##           13           14           15           16           17
18
##  0.337812440 -0.332523520  0.101968184 -0.674401819  0.409929626
1.020142090
##           19           20           21           22           23
24
##  0.206491280  0.175894249 -0.541222088  0.308599141  0.118552765 -
0.557050907
##           25           26           27           28           29
30
## -0.472465176 -0.141967576  0.320726309 -0.455520992 -0.025098407 -
1.376564474
##           31           32           33           34           35
36
##  0.288062820  0.332035064 -0.405300736  0.081946817 -0.484346636
0.191794369
##           37           38           39           40           41
42
## -0.121404278 -1.112450520  0.328004060 -0.038067324 -0.153358342
0.022163855
##           43           44           45           46           47
48
##  0.049635426  0.118849795  0.778084795 -0.137259210 -0.195071349 -
0.039289284
##           49           50           51           52           53
54
## -0.357049148 -0.251198272 -0.340352206 -0.673608656  0.160824865
0.071132950
##           55           56           57           58           59
60
##  0.662952374  0.313809714 -0.085680572 -0.066067924  0.329475110
0.585195406
##           61           62           63           64           65
66
## -0.088876225  0.322568110 -0.280053207 -0.073981637 -0.554106143
0.015463781
##           67           68           69           70           71
72
##  0.125083233 -0.048808517  0.757035957 -0.045586103  0.352816281
0.139527065
##           73           74           75           76           77
78
```

```
##  0.074069206  1.430133545 -0.450622767 -0.345251508  0.519760010 -
0.379051946
##           79           80           81           82           83
84
##  0.039239503 -0.010811116  0.113086458  0.551164892  0.301352756
0.549721205
##           85           86           87           88           89
90
## -0.241807799 -0.738616405 -0.300713147  0.241371765  0.697484367 -
0.681448384
##           91           92           93           94           95
96
## -0.178602606 -0.038720980  0.140581332  0.423341800 -0.546706307 -
0.138976570
##           97           98           99          100          101
102
##  0.031728227 -0.502354298 -0.006112680  0.450444734  0.399028815 -
0.029502190
##          103          104          105          106          107
108
##  1.999904092 -0.136631803 -0.083564109  0.069668135  0.027647225
0.631105993
##          109          110          111          112          113
114
## -0.077228626  0.391463022  0.215659871  0.190591571 -2.530665018 -
0.048565767
##          115          116          117          118          119
120
## -0.029706181 -0.160833572  0.541963053 -0.677370304  0.334384730 -
0.171699858
##          121          122          123          124          125
126
## -0.208950076 -0.362461541 -0.555344823  0.425406589  0.213912560 -
0.358420439
##          127          128          129          130          131
132
## -0.264097194 -0.273983980 -0.057628127  1.083946878 -0.369099696
0.010845563
##          133          134          135          136          137
138
## -0.390884109  0.208581421  0.303535516  0.052309489 -0.374649311
0.039588153
##          139          140          141          142          143
144
##  0.028690190 -0.211184138 -0.849534942  0.448834080  0.211312109
0.281122134
##          145          146          147          148          149
150
## -0.069846244  0.682287041  0.697693754 -0.125168799  0.191727373
0.469694951
```

```
##          151          152          153          154          155
156
## -0.093553106  0.156010281  0.153339066  0.153478653  0.291002351 -
0.416542251
##          157          158          159          160          161
162
## -0.212143999 -0.724035261 -0.279045352  0.767987841  0.613422517 -
0.545991495
##          163          164          165          166          167
168
## -0.013080071  0.330069548  0.626572032 -0.418498226 -0.097358697 -
0.101392063
##          169          170          171          172          173
174
## -0.685256020 -0.106545805 -0.044995563 -0.740060933 -0.360597740 -
0.881660844
##          175          176          177
## -0.290602876  1.320196718  0.045835330

stargazer(residuals, type = "text")

head(residuals)

##           1           2           3           4           5           6
## -0.09417293  0.00377727 -0.24762225 -0.24870529 -0.09496753 -0.33567247

#xi) Correlation Coefficient between lmktval and profits 0.77689759

corremk_pro <- cor(dt.ceosal, y= NULL, use = "everything", method =
"pearson")

corremk_pro

##                salary         age     college         grad       comten
## salary    1.000000000  0.11538394 -0.06702522 -0.002999832  0.037698187
## age       0.115383944  1.00000000 -0.17806227 -0.123163323  0.479413536
## college  -0.067025223 -0.17806227  1.00000000  0.181445273 -0.157109257
## grad     -0.002999832 -0.12316332  0.18144527  1.000000000 -0.228334613
## comten    0.037698187  0.47941354 -0.15710926 -0.228334613  1.000000000
## ceoten    0.142947678  0.33874170 -0.10628842 -0.102806453  0.315121243
## sales     0.380223875  0.12713402 -0.02149227  0.076326224  0.104399833
## profits   0.393927574  0.11474310 -0.04598209  0.097825529  0.143737237
## mktval    0.406307097  0.10717932 -0.02757797  0.122976062  0.136095997
## lsalary   0.886687117  0.09055855 -0.06504402  0.013136956 -0.002314525
## lsales    0.431751700  0.19390790 -0.07677381  0.083490527  0.237819855
## lmktval   0.441878721  0.13103224 -0.05730098  0.150120021  0.101931416
## comtensq  0.032751945  0.51327067 -0.15901123 -0.242566842  0.965136572
## ceotensq  0.069365886  0.32981691 -0.07776329 -0.120318867  0.324613068
## profmarg -0.028935381  0.01467793 -0.01753083 -0.015395225  0.047173910
##                ceoten       sales     profits       mktval      lsalary
## salary    0.142947678  0.38022387  0.39392757  0.406307097  0.886687117
```

```
## age       0.338741704  0.12713402  0.11474310  0.107179325  0.090558546
## college  -0.106288424 -0.02149227 -0.04598209 -0.027577967 -0.065044017
## grad     -0.102806453  0.07632622  0.09782553  0.122976062  0.013136956
## comten    0.315121243  0.10439983  0.14373724  0.136095997 -0.002314525
## ceoten    1.000000000 -0.06771469 -0.02160675  0.006609425  0.114728023
## sales    -0.067714685  1.00000000  0.79828723  0.754661598  0.409832114
## profits  -0.021606750  0.79828723  1.00000000  0.918127962  0.396694779
## mktval    0.006609425  0.75466160  0.91812796  1.000000000  0.403093726
## lsalary   0.114728023  0.40983211  0.39669478  0.403093726  1.000000000
## lsales   -0.037685375  0.71770779  0.60633246  0.578540457  0.529960173
## lmktval  -0.043469363  0.67805976  0.77689759  0.809066274  0.481490997
## comtensq  0.325551517  0.09411415  0.13347104  0.128006880 -0.024982111
## ceotensq  0.928526216 -0.05965380 -0.01011938  0.010011458  0.051806764
## profmarg  0.048804692 -0.01735348  0.12547925  0.067018760 -0.059272154
##               lsales     lmktval    comtensq    ceotensq    profmarg
## salary    0.43175170  0.44187872  0.03275195  0.06936589 -0.02893538
## age       0.19390790  0.13103224  0.51327067  0.32981691  0.01467793
## college  -0.07677381 -0.05730098 -0.15901123 -0.07776329 -0.01753083
## grad      0.08349053  0.15012002 -0.24256684 -0.12031887 -0.01539523
## comten    0.23781985  0.10193142  0.96513657  0.32461307  0.04717391
## ceoten   -0.03768537 -0.04346936  0.32555152  0.92852622  0.04880469
## sales     0.71770779  0.67805976  0.09411415 -0.05965380 -0.01735348
## profits   0.60633246  0.77689759  0.13347104 -0.01011938  0.12547925
## mktval    0.57854046  0.80906627  0.12800688  0.01001146  0.06701876
## lsalary   0.52996017  0.48149100 -0.02498211  0.05180676 -0.05927215
## lsales    1.00000000  0.73592316  0.19920093 -0.02741558 -0.01459387
## lmktval   0.73592316  1.00000000  0.08350722 -0.03623371  0.06077802
## comtensq  0.19920093  0.08350722  1.00000000  0.35366851  0.03649651
## ceotensq -0.02741558 -0.03623371  0.35366851  1.00000000  0.02129125
## profmarg -0.01459387  0.06077802  0.03649651  0.02129125  1.00000000
```