

Untitled

Kun, Giacomo, Neeharika, Francesca and Noor

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```
rm(list=ls())  
library(sandwich)  
library(lmtest)
```

```
## Loading required package: zoo
```

```
##
```

```
## Attaching package: 'zoo'
```

```
## The following objects are masked from 'package:base':
```

```
##
```

```
##      as.Date, as.Date.numeric
```

```
library(ggplot2)  
library(haven)  
library(stargazer)
```

```
##
```

```
## Please cite as:
```

```
## Hlavac, Marek (2022). stargazer: Well-Formatted Regression and Summary Statistics Tables.
```

```
## R package version 5.2.3. https://CRAN.R-project.org/package=stargazer
```

```
library(plm)  
library(lfe)
```

```
## Loading required package: Matrix
```

```
##
```

```
## Attaching package: 'lfe'
```

```
## The following object is masked from 'package:plm':
```

```
##
```

```
##      sargan
```

```
## The following object is masked from 'package:lmtest':
```

```
##
```

```
##      waldtest
```

```

library(sos)

## Loading required package: brew

##
## Attaching package: 'sos'

## The following object is masked from 'package:utils':
##
##      ?

beta = matrix(NA, 500, 3)

for (k in 1:500) {

  #generate state level unemp mean
  state <- rnorm(50, 6, 2)

  #generate state level unemp sds
  stva <- abs(rnorm(50, 1, 1/2))

  # Setting the initial level of unemployment for each county in 1980 such that every state
#is a cluster of correlated counties
  A <- matrix(cbind(rep(1980, 20), seq(1:20), rep(paste(1),20), rnorm(20, state[1], stva[1])), 20, 4)
  for (i in 2:50){
    unemp0 <- rnorm(20, state[i], stva[i])
    state_name <- rep(paste(i),20)
    county_name = seq((20*(i-1)+1),(20*i))
    c <- cbind("year"=rep(1980, 20), county_name, state_name,unemp0)
    A <- rbind(A,c)
  }

  #Transforming the cross-sectional in a panel
  for(i in 1981:2010){
    B = cbind(rep(i,1000), seq(1:1000), A[1:1000,3], A[1:1000,4])
    A=rbind(A,B)
  }

  A = as.data.frame(A)
  A$year = as.numeric(A$year)
  A$unemp0 = as.numeric(A$unemp0)
  A$state_name = as.numeric(A$state_name)
  A$county_name = as.numeric(A$county_name)

  #Defining the treatment groups and the treatment periods
  A$G1 = ifelse(A$state_name<=15 , 1, 0)
  A$G2 = ifelse(A$state_name>15&A$state_name<=30, 1, 0)
  A$T1 = ifelse(A$year>=1990, 1, 0)
  A$T2 = ifelse(A$year>=2005, 1, 0)

  A$D_early = A$G1*A$T1
  A$D_late = A$G2*A$T2
  A$D = ifelse(A$G1*A$T1==1|A$G2*A$T2==1, 1,0)

```

```

#Defining the Y for each model
A$unemp1=A$unemp0+A$D_early*5+A$D_late*5
A$unemp2=A$unemp0+A$D_early*2.5+A$D_late*7.5
A$unemp3=A$unemp0+A$D_early*(A$year-1989)+A$D_late*(A$year-2004)

A$state_name = as.factor(A$state_name)

reg1 = lm(unemp1~D, data = A)
reg2 = lm(unemp2~D, data = A)
reg3 = lm(unemp3~D*year, data = A)

beta[k,1]=coef(reg1)[2]
beta[k,2]=coef(reg2)[2]
beta[k,3]=coef(reg3)[3]
}

reg1 = lm(unemp1~D+state_name+as.factor(year), data = A)
reg2 = lm(unemp2~D+state_name+as.factor(year), data = A)
reg3 = lm(unemp3~D*year+as.factor(year)+state_name, data = A)

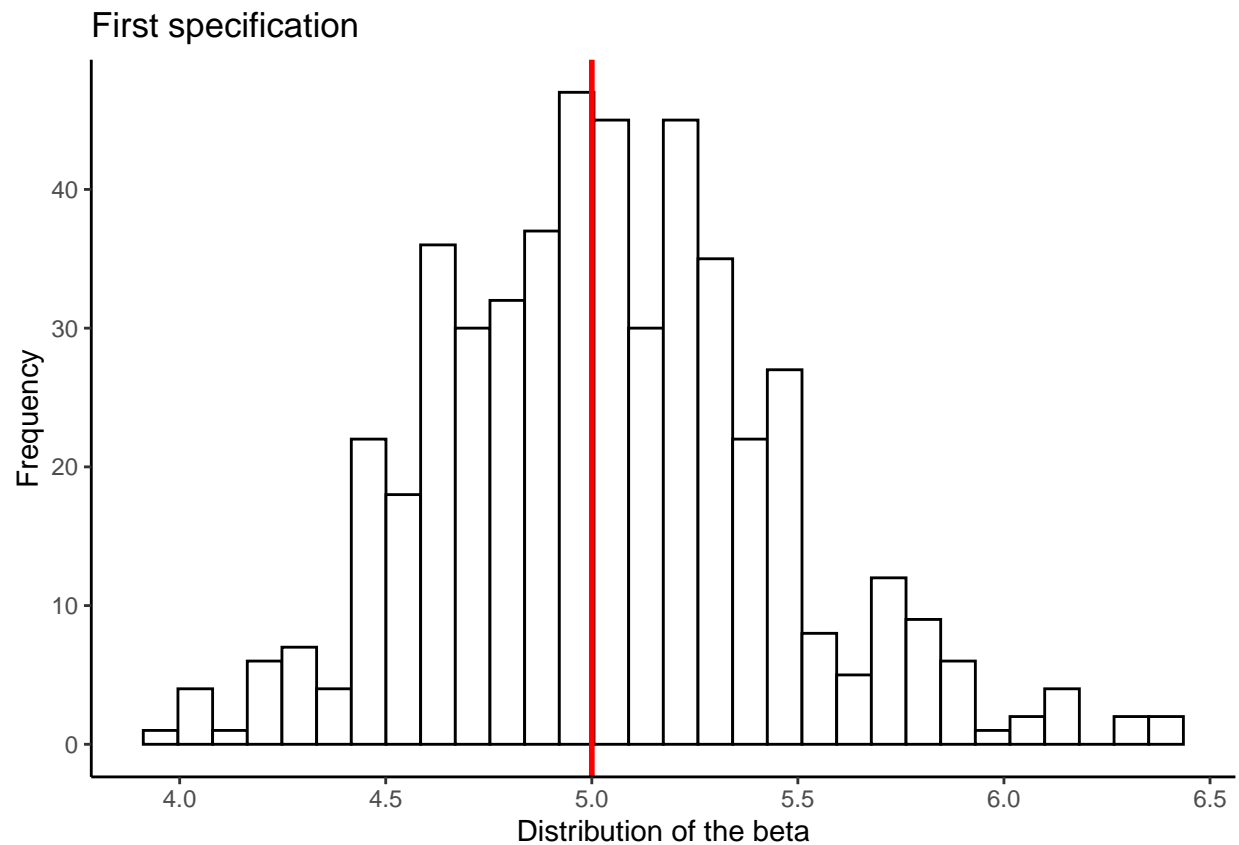
b = as.vector(3)
b[1]=coef(reg1)[2]
b[2]=coef(reg2)[2]
b[3]=coef(reg3)[83]

beta = as.data.frame(beta)

ggplot(beta, aes(x=V1))+
  geom_histogram(fill="white", color="black")+
  geom_vline(xintercept = b[1], size=1, color="red")+
  theme_classic()+
  labs(x="Distribution of the beta", y="Frequency", title = "First specification")

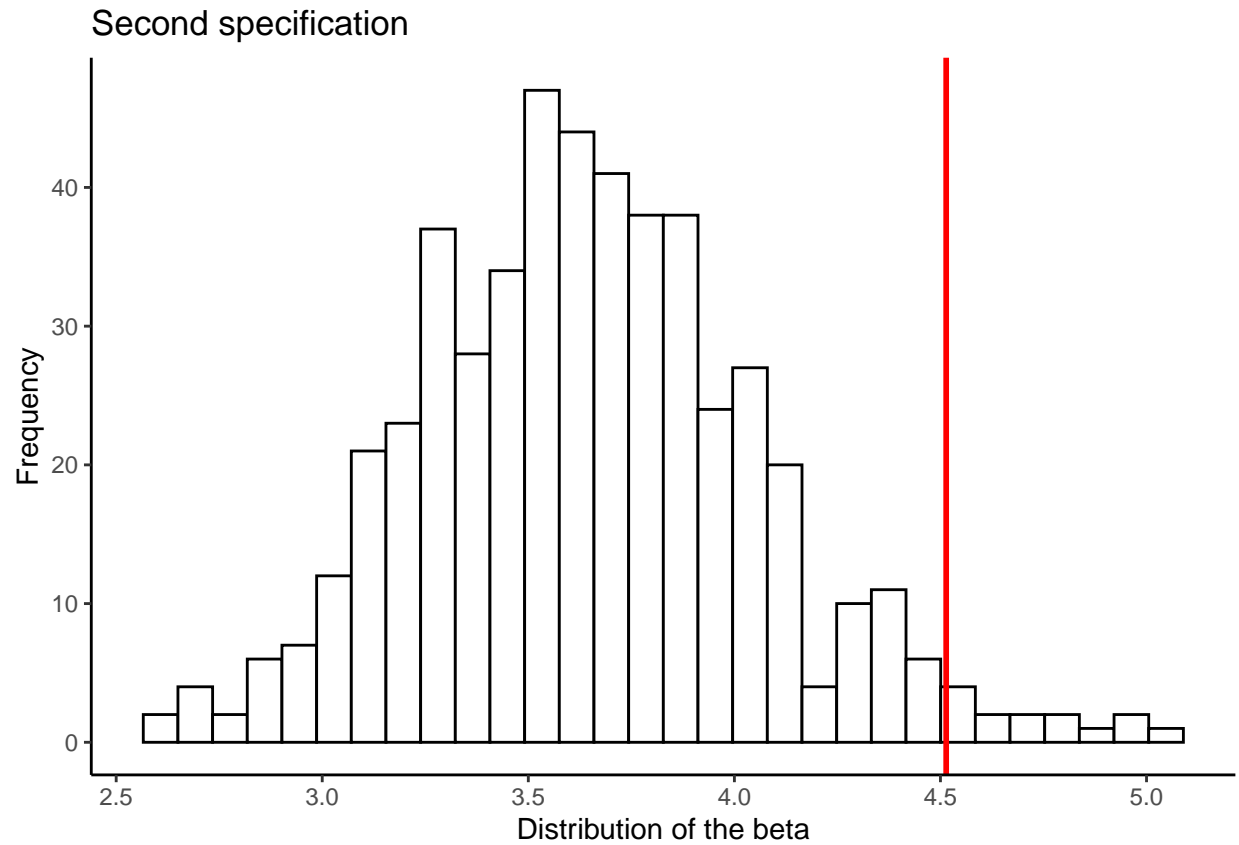
## 'stat_bin()' using 'bins = 30'. Pick better value with 'binwidth'.

```



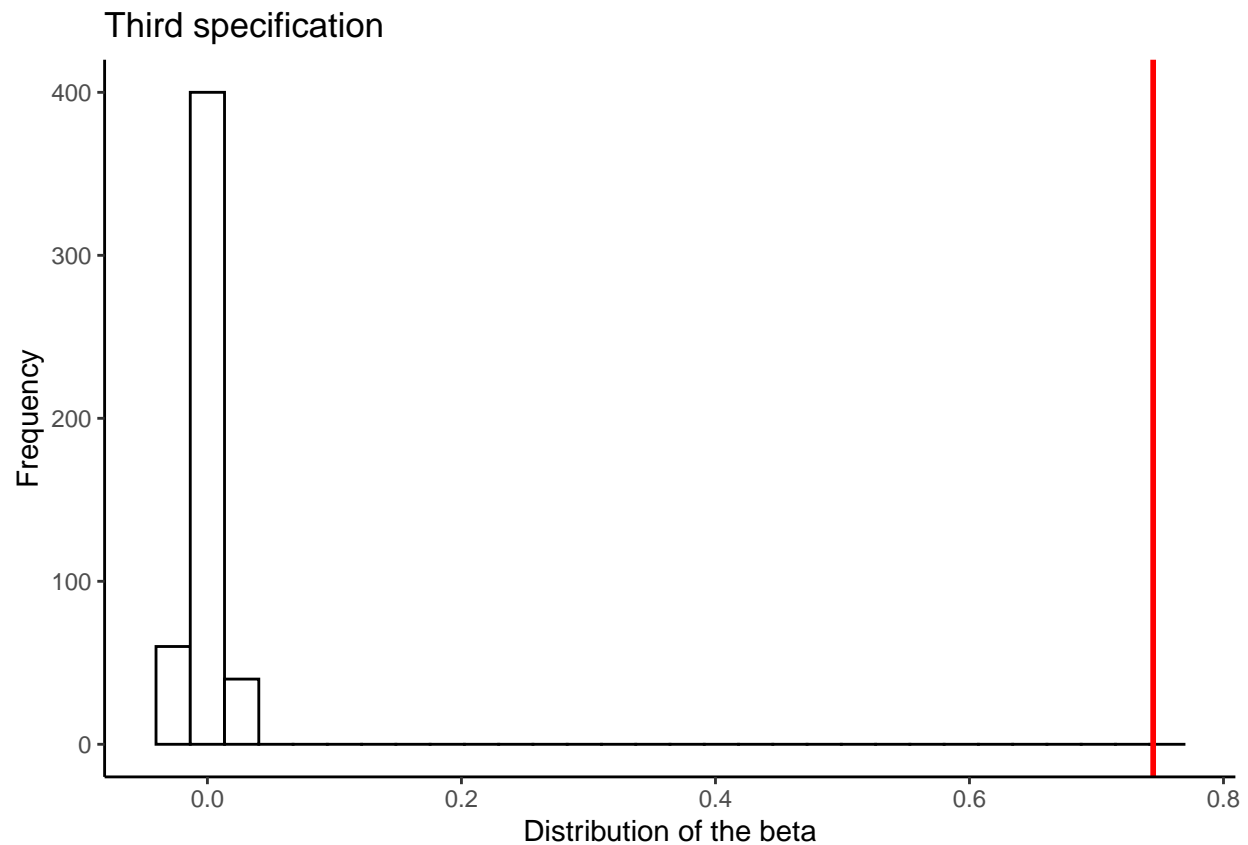
```
ggplot(beta, aes(x=V2))+  
  geom_histogram(fill="white", color="black")+  
  geom_vline(xintercept = b[2], size=1, color="red")+  
  theme_classic()+  
  labs(x="Distribution of the beta", y="Frequency", title = "Second specification")
```

'stat_bin()' using 'bins = 30'. Pick better value with 'binwidth'.



```
ggplot(beta, aes(x=V3))+  
  geom_histogram(fill="white", color="black")+  
  geom_vline(xintercept = b[3], size=1, color="red")+  
  theme_classic()+  
  labs(x="Distribution of the beta", y="Frequency", title = "Third specification")
```

```
## 'stat_bin()' using 'bins = 30'. Pick better value with 'binwidth'.
```



```
library(haven)
data<- read_dta("data_ps5.dta")
```

```
#checking for missing values
table(is.na(data))
```

```
##
## FALSE
## 28784
```

```
#3.1.a
#we need to create lowage*post variable - lwpost
data$lwpost<-data$lowage*data$post
#for this outcome variable is ln_avwage
did1A<-lm(ln_avwage~lowage, data = data)
did1B<-lm(ln_avwage~post, data = data)
did1C<-lm(ln_avwage~lowage+post+lwpost, data = data)
summary(did1A)
```

```
##
## Call:
## lm(formula = ln_avwage ~ lowage, data = data)
##
## Residuals:
```

```
##      Min      1Q   Median      3Q      Max
## -1.22316 -0.14876  0.00805  0.13918  2.03894
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.834467   0.004721  600.37  <2e-16 ***
## lowage      -0.569343   0.009701  -58.69  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2645 on 4110 degrees of freedom
## Multiple R-squared:  0.456, Adjusted R-squared:  0.4558
## F-statistic: 3445 on 1 and 4110 DF, p-value: < 2.2e-16
```

```
summary(did1B)
```

```
##
## Call:
## lm(formula = ln_avwage ~ post, data = data)
##
## Residuals:
##      Min      1Q   Median      3Q      Max
## -1.58580 -0.15257  0.07674  0.23472  1.53359
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.627768   0.007776  337.93  <2e-16 ***
## post         0.142707   0.010960   13.02  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.3514 on 4110 degrees of freedom
## Multiple R-squared:  0.03962, Adjusted R-squared:  0.03938
## F-statistic: 169.5 on 1 and 4110 DF, p-value: < 2.2e-16
```

```
summary(did1C)
```

```
##
## Call:
## lm(formula = ln_avwage ~ lowage + post + lwpost, data = data)
##
## Residuals:
##      Min      1Q   Median      3Q      Max
## -1.1884 -0.1384  0.0101  0.1425  1.9259
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.775202   0.006414  432.675  < 2e-16 ***
## lowage      -0.625905   0.013216 -47.361  < 2e-16 ***
## post         0.117927   0.009048  13.034  < 2e-16 ***
## lwpost       0.110907   0.018591   5.965 2.64e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## Residual standard error: 0.2534 on 4108 degrees of freedom
## Multiple R-squared: 0.5007, Adjusted R-squared: 0.5004
## F-statistic: 1373 on 3 and 4108 DF, p-value: < 2.2e-16

#3.1.b outcome var is net_pcm
did2A<-lm(net_pcm~lowwage, data = data)
did2B<-lm(net_pcm~post, data = data)
did2C<-lm(net_pcm~lowwage+post+lwpost, data = data)
summary(did2A)

##
## Call:
## lm(formula = net_pcm ~ lowwage, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.00666 -0.05551 -0.02337  0.02633  0.92470
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.063933   0.002726  23.451 < 2e-16 ***
## lowwage      0.044120   0.005602   7.876 4.28e-15 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1527 on 4110 degrees of freedom
## Multiple R-squared: 0.01487, Adjusted R-squared: 0.01463
## F-statistic: 62.04 on 1 and 4110 DF, p-value: 4.279e-15

summary(did2B)

##
## Call:
## lm(formula = net_pcm ~ post, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.96393 -0.05882 -0.02792  0.02500  0.92331
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.083567   0.003399  24.586 < 2e-16 ***
## post        -0.018242   0.004791  -3.808 0.000142 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1536 on 4110 degrees of freedom
## Multiple R-squared: 0.003516, Adjusted R-squared: 0.003273
## F-statistic: 14.5 on 1 and 4110 DF, p-value: 0.0001422
```



```
summary(did2C)
```

```
##
## Call:
## lm(formula = net_pcm ~ lowwage + post + lwpost, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.99595 -0.05545 -0.02361  0.02641  0.93060
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.069897   0.003856  18.125 < 2e-16 ***
## lowwage      0.058032   0.007946   7.303 3.35e-13 ***
## post        -0.011868   0.005440  -2.182  0.0292 *
## lwpost       -0.027400   0.011178  -2.451  0.0143 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1524 on 4108 degrees of freedom
## Multiple R-squared:  0.01986,    Adjusted R-squared:  0.01915
## F-statistic: 27.75 on 3 and 4108 DF,  p-value: < 2.2e-16
```

```
stargazer(did1C, did2C, type="text")
```

```
##
## =====
##                               Dependent variable:
##                               -----
##                               ln_avwage      net_pcm
##                               (1)           (2)
## -----
## lowwage                        -0.626***      0.058***
##                               (0.013)        (0.008)
##
## post                          0.118***      -0.012**
##                               (0.009)        (0.005)
##
## lwpost                        0.111***      -0.027**
##                               (0.019)        (0.011)
##
## Constant                      2.775***      0.070***
##                               (0.006)        (0.004)
## -----
## Observations                   4,112        4,112
## R2                             0.501        0.020
## Adjusted R2                    0.500        0.019
## Residual Std. Error (df = 4108) 0.253        0.152
## F Statistic (df = 3; 4108)     1,373.397***  27.751***
## =====
## Note:                          *p<0.1; **p<0.05; ***p<0.01
```

```
stargazer(did1C, did2C, type="latex")
```

```
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac@spol.cz
## % Date and time: Thu, Apr 14, 2022 - 17:07:18
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lcc}
## \hline \hline
## \hline \hline
## & \multicolumn{2}{c}{\textit{Dependent variable:}} \\\
## \cline{2-3}
## \hline \hline
## & ln\_avwage & net\_pcm \\\
## \hline \hline
## & (1) & (2) \\\
## \hline \hline
## lowage &  $-\$0.626^{***}$  &  $0.058^{***}$  \\\
## & (0.013) & (0.008) \\\
## & & \\\
## post &  $0.118^{***}$  &  $-\$0.012^{**}$  \\\
## & (0.009) & (0.005) \\\
## & & \\\
## lwpost &  $0.111^{***}$  &  $-\$0.027^{**}$  \\\
## & (0.019) & (0.011) \\\
## & & \\\
## Constant &  $2.775^{***}$  &  $0.070^{***}$  \\\
## & (0.006) & (0.004) \\\
## & & \\\
## \hline \hline
## Observations & 4,112 & 4,112 \\\
## R2 & 0.501 & 0.020 \\\
## Adjusted R2 & 0.500 & 0.019 \\\
## Residual Std. Error (df = 4108) & 0.253 & 0.152 \\\
## F Statistic (df = 3; 4108) & 1,373.397*** & 27.751*** \\\
## \hline
## \hline \hline
## \textit{Note:} & \multicolumn{2}{r}{ $^{*}p < 0.1$ ;  $^{**}p < 0.05$ ;  $^{***}p < 0.01$ } \\\
## \end{tabular}
## \end{table}
```

#3.2

```
SE1 = coeftest(did1C, vcov. = vcovCL, cluster = ~regno )
SE2 = coeftest(did2C, vcov. = vcovCL, cluster = ~regno )

Pre_tr1 = sqrt(SE1[1,2]^2+SE1[2,2]^2)
Pre_tr_t1 =(SE1[1,1]+SE1[2,1])/Pre_tr1
Post_c1 = sqrt(SE1[1,2]^2+SE1[3,2]^2)
Post_c_t1 =(SE1[1,1]+SE1[3,1])/Post_c1

Post_tr1 = sqrt(SE1[1,2]^2+SE1[2,2]^2+SE1[3,2]^2+SE1[4,2]^2)
Post_tr_t1 =(SE1[1,1]+SE1[2,1]+SE1[3,1]+SE1[4,1])/Post_tr1
```

```

diff_G1 = sqrt(Post_c1^2+Post_tr1^2)
diff_P1 = sqrt(Pre_tr1^2+Post_tr1^2)

Pre_tr2 = sqrt(SE2[1,2]^2+SE2[2,2]^2)
Pre_tr_t2 =(SE2[1,1]+SE2[2,1])/Pre_tr2
Post_c2 = sqrt(SE2[1,2]^2+SE2[3,2]^2)
Post_c_t2 =(SE2[1,1]+SE2[3,1])/Post_c2

Post_tr2 = sqrt(SE2[1,2]^2+SE2[2,2]^2+SE2[3,2]^2+SE2[4,2]^2)
Post_tr_t2 =(SE2[1,1]+SE2[2,1]+SE2[3,1]-SE2[4,1])/Post_tr2

diff_G2 = sqrt(Post_c2^2+Post_tr2^2)
diff_P2 = sqrt(Pre_tr2^2+Post_tr2^2)

#3.3
# we need the time variable - the year in which treatment has begun in our case 1999

did3<-lm(ln_avwage~lwpost+as.factor(year)+regno, data = data)
Clust_se_did3 = coeftest(did3, vcov. = vcovCL, cluster = ~regno )

stargazer(did3, Clust_se_did3, keep = c("lwpost"), type = "text")

```

```

##
## =====
##                               Dependent variable:
##                               -----
##                               ln_avwage
##                               OLS                coefficient
##                               test
##                               (1)                (2)
## -----
## lwpost                0.071***                0.071***
##                        (0.011)                (0.025)
## -----
## Observations                4,112
## R2                0.901
## Adjusted R2                0.871
## Residual Std. Error    0.129 (df = 3155)
## F Statistic            29.988*** (df = 956; 3155)
## =====
## Note:                *p<0.1; **p<0.05; ***p<0.01

```

```

stargazer(did3, Clust_se_did3, keep = c("lwpost"), type = "latex")

```

```

##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac@sp.i.cas.cz
## % Date and time: Thu, Apr 14, 2022 - 17:07:25
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
##   \begin{tabular}{@{\extracolsep{5pt}}lcc}

```

```
## \[-1.8ex]\hline
## \hline \[-1.8ex]
## & \multicolumn{2}{c}{\textit{Dependent variable:}} \\\
## \cline{2-3}
## \[-1.8ex] & \ln\_avwage & \\\
## \[-1.8ex] & \textit{OLS} & \textit{coefficient} \\\
## & \textit{} & \textit{test} \\\
## \[-1.8ex] & (1) & (2)\\
## \hline \[-1.8ex]
## lwpost & 0.071$^{***}$ & 0.071$^{***}$ \\\
## & (0.011) & (0.025) \\\
## & & \\\
## \hline \[-1.8ex]
## Observations & 4,112 & \\\
## R$^{2}$ & 0.901 & \\\
## Adjusted R$^{2}$ & 0.871 & \\\
## Residual Std. Error & 0.129 (df = 3155) & \\\
## F Statistic & 29.988$^{***}$ (df = 956; 3155) & \\\
## \hline
## \hline \[-1.8ex]
## \textit{Note:} & \multicolumn{2}{r}{\textit{$^{*}$p$<$0.1; $^{**}$p$<$0.05; $^{***}$p$<$0.01}} \\\
## \end{tabular}
## \end{table}
```

```
did3A<-lm(net_pcm~lwpost+as.factor(year)+regno, data = data)
Clust_se_did3A = coeftest(did3A, vcov. = vcovCL, cluster = ~regno )

stargazer(did3A, Clust_se_did3A, keep = c("lwpost"), type = "text")
```

```
##
## =====
##                               Dependent variable:
##                               -----
##                               net_pcm
##                               OLS                coefficient
##                               test
##                               (1)                (2)
## -----
## lwpost                -0.012*                -0.012
##                               (0.007)                (0.012)
## -----
## Observations                4,112
## R2                0.788
## Adjusted R2                0.724
## Residual Std. Error    0.081 (df = 3155)
## F Statistic    12.277*** (df = 956; 3155)
## =====
## Note:                *p<0.1; **p<0.05; ***p<0.01
```

```
stargazer(did3A, Clust_se_did3A, keep = c("lwpost"), type = "latex")
```

```
##
```

```
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac@vse.cz
## % Date and time: Thu, Apr 14, 2022 - 17:07:32
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lcc}
## \hline
## \hline \hline
## & \multicolumn{2}{c}{\textit{Dependent variable:}} \\
## \cline{2-3}
## \hline \hline & net\_pcm & \\
## \hline \hline & \textit{OLS} & \textit{coefficient} \\
## & \textit{test} & \\
## \hline \hline & (1) & (2) \\
## \hline \hline
## lwpost &  $-\$0.012^{***}$  &  $-\$0.012$  \\
## & (0.007) & (0.012) \\
## & & \\
## \hline \hline
## Observations & 4,112 & \\
##  $R^2$  & 0.788 & \\
## Adjusted  $R^2$  & 0.724 & \\
## Residual Std. Error & 0.081 (df = 3155) & \\
## F Statistic &  $12.277^{***}$  (df = 956; 3155) & \\
## \hline
## \hline \hline
## \textit{Note:} & \multicolumn{2}{r}{ $^{***}p < 0.01$ ;  $^{**}p < 0.05$ ;  $^{*}p < 0.1$ } \\
## \end{tabular}
## \end{table}
```

#3.4

#ind specific time trend

```
trial3 <- lm(ln_avwage~lwpost+year*as.factor(sic2), data = data)
Clust_se_trial3 = coefest(trial3, vcov. = vcovCL, cluster = ~regno )

stargazer(trial3, Clust_se_trial3, keep = c("lwpost"), type = "text")
```

```
##
## =====
##                               Dependent variable:
##                               -----
##                               ln_avwage
##                               OLS                coefficient
##                               test
##                               (1)                (2)
## -----
## lwpost                -0.413***                -0.413***
##                       (0.016)                (0.028)
## -----
## Observations                4,112
## R2                        0.378
## Adjusted R2                0.363
```

```
## Residual Std. Error      0.286 (df = 4014)
## F Statistic      25.129*** (df = 97; 4014)
## =====
## Note:                      *p<0.1; **p<0.05; ***p<0.01
```

```
stargazer(trial3, Clust_se_trial3, keep = c("lwpost"), type = "latex")
```

```
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac@sp.i.cas.cz
## % Date and time: Thu, Apr 14, 2022 - 17:07:34
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
##   \begin{tabular}{@{\extracolsep{5pt}}lcc}
##     \hline
##     \hline \hline \hline
##     & \multicolumn{2}{c}{\textit{Dependent variable:}} \\
##     \cline{2-3}
##     \hline \hline & ln\_avwage & \\
##     \hline \hline & \textit{OLS} & \textit{coefficient} \\
##     & \textit{test} \\
##     \hline \hline & (1) & (2) \\
##     \hline \hline
##     lwpost &  $-0.413^{***}$  &  $-0.413^{***}$  \\
##     & (0.016) & (0.028) \\
##     & & \\
##     \hline \hline
##     Observations & 4,112 & \\
##     R2 & 0.378 & \\
##     Adjusted R2 & 0.363 & \\
##     Residual Std. Error & 0.286 (df = 4014) & \\
##     F Statistic & 25.129*** (df = 97; 4014) & \\
##     \hline
##     \hline \hline
##     \textit{Note:} & \multicolumn{2}{r}{ $^{*}p<0.1$ ;  $^{**}p<0.05$ ;  $^{***}p<0.01$ } \\
##     \end{tabular}
##   \end{table}
```

```
trial3A <- lm(net_pcm~lwpost+year*as.factor(sic2), data = data)
Clust_se_trial3A = coeftest(trial3A, vcov. = vcovCL, cluster = ~regno )

stargazer(trial3A, Clust_se_trial3A, keep = c("lwpost"), type = "text")
```

```
##
## =====
##                               Dependent variable:
##                               -----
##                               net_pcm
##                               OLS                coefficient
##                               test
##                               (1)                (2)
## -----
## lwpost                0.003                0.003
```

```
##                                (0.007)                (0.012)
##
## -----
## Observations                4,112
## R2                          0.285
## Adjusted R2                 0.268
## Residual Std. Error      0.132 (df = 4014)
## F Statistic              16.489*** (df = 97; 4014)
## =====
## Note:                      *p<0.1; **p<0.05; ***p<0.01
```

```
stargazer(trial3A, Clust_se_trial3A, keep = c("lwpost"), type = "latex")
```

```
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac@vse.cz
## % Date and time: Thu, Apr 14, 2022 - 17:07:34
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
##   \begin{tabular}{@{\extracolsep{5pt}}lcc}
##     \hline
##     \hline \hline
##     & \multicolumn{2}{c}{\textit{Dependent variable:}} & \\
##     \cline{2-3}
##     \hline & net\_pcm & & \\
##     \hline & \textit{OLS} & \textit{coefficient} & \\
##     & \textit{test} & & \\
##     \hline & (1) & (2) & \\
##     \hline & lwpost & 0.003 & 0.003 \\
##     & & (0.007) & (0.012) \\
##     & & & \\
##     \hline & Observations & 4,112 & \\
##     & R2 & 0.285 & \\
##     & Adjusted R2 & 0.268 & \\
##     & Residual Std. Error & 0.132 (df = 4014) & \\
##     & F Statistic & 16.489*** (df = 97; 4014) & \\
##     \hline
##     \hline & \textit{Note:} & \multicolumn{2}{r}{*p<0.1; **p<0.05; ***p<0.01} \\
##     \end{tabular}
## \end{table}
```

```
#firm specific time trend
trial4 <- lm(ln_avwage~lwpost+year*regno, data = data)
Clust_se_trial4=coefest(trial4, vcov. = vcovCL, cluster = ~regno )

stargazer(trial4, Clust_se_trial4, keep = c("lwpost"), type = "text")
```

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

```
##          -----
##          ln_avwage
##          OLS          coefficient
##          test
##          (1)          (2)
## -----
## lwpost          0.075***          0.075***
##          (0.014)          (0.023)
## -----
## Observations          4,112
## R2          0.962
## Adjusted R2          0.932
## Residual Std. Error          0.094 (df = 2261)
## F Statistic          31.329*** (df = 1850; 2261)
## =====
## Note:          *p<0.1; **p<0.05; ***p<0.01
```

```
stargazer(trial4, Clust_se_trial4, keep = c("lwpost"), type = "latex")
```

```
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac@spu.cz
## % Date and time: Thu, Apr 14, 2022 - 17:08:00
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
##   \begin{tabular}{@{\extracolsep{5pt}}lcc}
##     \hline
##     \hline \hline
##     & \multicolumn{2}{c}{\textit{Dependent variable:}} & \\
##     \cline{2-3}
##     \hline & ln\_avwage & \\
##     \hline & \textit{OLS} & \textit{coefficient} \\
##     & \textit{test} & \\
##     \hline & (1) & (2) \\
##     \hline
##     lwpost & 0.075*** & 0.075*** \\
##     & (0.014) & (0.023) \\
##     & & \\
##     \hline
##     Observations & 4,112 & \\
##     R2 & 0.962 & \\
##     Adjusted R2 & 0.932 & \\
##     Residual Std. Error & 0.094 (df = 2261) & \\
##     F Statistic & 31.329*** (df = 1850; 2261) & \\
##     \hline
##     \hline \hline
##     \textit{Note:} & \multicolumn{2}{r}{*p<0.1; **p<0.05; ***p<0.01} \\
##     \end{tabular}
## \end{table}
```

```
trial4A <- lm(net_pcm~lwpost+year*regno, data = data)
Clust_se_trial4A=coefest(trial4A, vcov. = vcovCL, cluster = ~regno )
```



```
stargazer(trial4A, Clust_se_trial4A, keep = c("lwpost"), type = "text")
```

```
##
## =====
##                               Dependent variable:
##                               -----
##                               net_pcm
##                               OLS               coefficient
##                               test
##                               (1)               (2)
## -----
## lwpost                -0.041***             -0.041**
##                      (0.010)             (0.016)
## -----
## Observations                4,112
## R2                        0.892
## Adjusted R2                0.804
## Residual Std. Error      0.068 (df = 2261)
## F Statistic             10.141*** (df = 1850; 2261)
## =====
## Note:                      *p<0.1; **p<0.05; ***p<0.01
```

```
stargazer(trial4A, Clust_se_trial4A, keep = c("lwpost"), type = "latex")
```

```
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac@vse.cz
## % Date and time: Thu, Apr 14, 2022 - 17:08:30
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
##   \begin{tabular}{@{\extracolsep{5pt}}lcc}
##     \hline
##     & \multicolumn{2}{c}{\textit{Dependent variable:}} \\
##     \cline{2-3}
##     & net\_pcm & \\
##     & \textit{OLS} & \textit{coefficient} \\
##     & & \textit{test} \\
##     & (1) & (2) \\
##     \hline
##     lwpost & -0.041*** & -0.041** \\
##     & (0.010) & (0.016) \\
##     \hline
##     Observations & 4,112 & \\
##     R2 & 0.892 & \\
##     Adjusted R2 & 0.804 & \\
##     Residual Std. Error & 0.068 (df = 2261) & \\
##     F Statistic & 10.141*** (df = 1850; 2261) & \\
##     \hline
##     \hline
## \end{table}
```

```
## \textit{Note:} & \multicolumn{2}{r}{ $\$^{*}$  $p < 0.1$ ;  $\$^{**}$  $p < 0.05$ ;  $\$^{***}$  $p < 0.01$ } \\
## \end{tabular}
## \end{table}
```