

Untitled

Luis Barrios

27/11/2021

```
## [1] "depa"      "year"      "pbireg"    "prodcafe"  "pbiagri"
## [6] "precha"    "areacosech" "peareg"    "edusup"    "exportcafe"
## [11] "pob"       "pobre"
```

modelos econometricos

efectos fijos

```
## Oneway (individual) effect Within Model
##
## Call:
## plm(formula = pobre ~ prodcafe + edusup, data = dataagro, model = "within",
##      index = c("depa", "year"), effects = "twoways")
##
## Balanced Panel: n = 24, T = 13, N = 312
##
## Residuals:
##      Min.      1st Qu.      Median      3rd Qu.      Max.
## -20.78727  -2.90332   -0.28357    2.64122   20.97157
##
## Coefficients:
##              Estimate Std. Error t-value Pr(>|t|)
## prodcafe -1.2818e-04  4.9699e-05  -2.5791  0.01041 *
## edusup   -2.4287e+00  1.8486e-01 -13.1381 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Total Sum of Squares:    12664
## Residual Sum of Squares: 7628
## R-Squared:    0.39766
## Adj. R-Squared: 0.34501
## F-statistic: 94.4094 on 2 and 286 DF, p-value: < 2.22e-16
```

efectos aleatorios

```
## Oneway (individual) effect Random Effect Model
##      (Swamy-Arora's transformation)
##
## Call:
## plm(formula = pobre ~ prodcafe + edusup, data = dataagro, model = "random",
```

```
##      index = c("depa", "year"), effects = "twoways")
##
## Balanced Panel: n = 24, T = 13, N = 312
##
## Effects:
##              var std.dev share
## idiosyncratic 26.671   5.164 0.222
## individual    93.672   9.678 0.778
## theta: 0.8536
##
## Residuals:
##      Min.   1st Qu.     Median   3rd Qu.     Max.
## -17.59693  -3.15756  -0.39059   2.68335  19.73670
##
## Coefficients:
##              Estimate Std. Error z-value Pr(>|z|)
## (Intercept)  6.2143e+01 3.0989e+00 20.0532 < 2e-16 ***
## prodcafe    -1.0202e-04 4.3716e-05 -2.3338 0.01961 *
## edusup      -2.4277e+00 1.7235e-01 -14.0859 < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Total Sum of Squares:    13739
## Residual Sum of Squares: 8229.2
## R-Squared:    0.40102
## Adj. R-Squared: 0.39714
## Chisq: 206.875 on 2 DF, p-value: < 2.22e-16
```

pooled

```
## Pooling Model
##
## Call:
## plm(formula = pobre ~ prodcafe + edusup, data = dataagro, model = "pooling",
##      index = c("depa", "year"), effects = "twoways")
##
## Balanced Panel: n = 24, T = 13, N = 312
##
## Residuals:
##      Min.   1st Qu.     Median   3rd Qu.     Max.
## -21.7236  -6.7218  -1.3673   4.2337  34.9272
##
## Coefficients:
##              Estimate Std. Error t-value Pr(>|t|)
## (Intercept)  5.8290e+01 2.1230e+00 27.4558 <2e-16 ***
## prodcafe    -6.0890e-06 2.7842e-05 -0.2187 0.827
## edusup      -2.2282e+00 1.4219e-01 -15.6703 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Total Sum of Squares:    62803
## Residual Sum of Squares: 34001
## R-Squared:    0.4586
```

Table 1: Random model

term	estimate	std.error	statistic	p.value
(Intercept)	62.143	3.099	20.053	0.00
prodcafe	0.000	0.000	-2.334	0.02
edusup	-2.428	0.172	-14.086	0.00

```
## Adj. R-Squared: 0.4551
```

```
## F-statistic: 130.872 on 2 and 309 DF, p-value: < 2.22e-16
```

```
#Elección entre modelos ##Test de Hausman
```

```
##
```

```
## Hausman Test
```

```
##
```

```
## data: pobre ~ prodcafe + edusup
```

```
## chisq = 1.5291, df = 2, p-value = 0.4655
```

```
## alternative hypothesis: one model is inconsistent
```

si es menor a 0.05 usar efectos fijos, si es mayor usar efectos aleatorios en esta ocasion el p-value es mayor a 0.05, por lo tanto seguiremos con efectos aleatorios

Breusch Pagan

```
##
```

```
## Lagrange Multiplier Test - (Breusch-Pagan) for balanced panels
```

```
##
```

```
## data: pobre ~ prodcafe + edusup
```

```
## chisq = 1053.7, df = 1, p-value < 2.2e-16
```

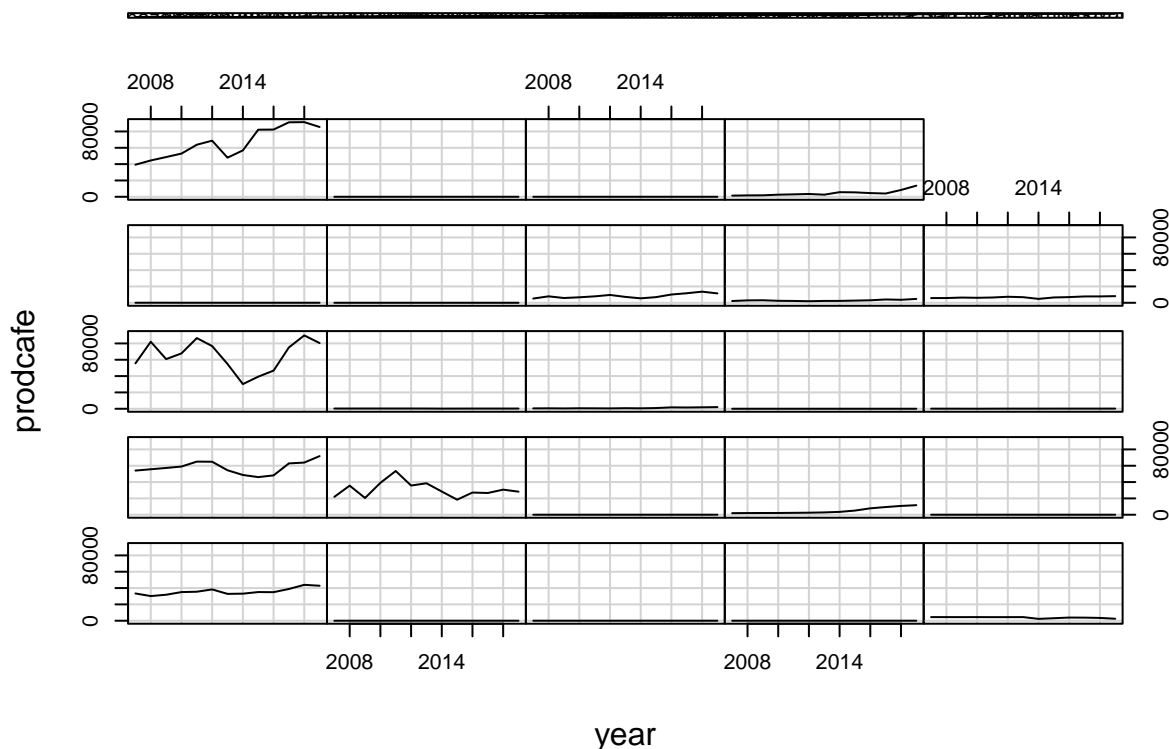
```
## alternative hypothesis: significant effects
```

como es menor a 0.05, si hay diferencia significativa entre los departamentos por lo tanto es apropiado utilizar el modelo de efectos aleatorios

Tabla de random model

#graficos ###graficos que relacionan la produccion de cafe a través de los años por departamento

Given : depa



Warning in plot.window(...): "reg.line" is not a graphical parameter

Warning in plot.xy(xy, type, ...): "reg.line" is not a graphical parameter

Warning in axis(side = side, at = at, labels = labels, ...): "reg.line" is not a graphical parameter

Warning in axis(side = side, at = at, labels = labels, ...): "reg.line" is not a graphical parameter

Warning in box(...): "reg.line" is not a graphical parameter

Warning in title(...): "reg.line" is not a graphical parameter

Warning in scatterplot.default(X[, 2], X[, 1], groups = X[, 3], xlab = xlab, : number of groups exceeds number of colors are recycled

Warning in smoother(.x[subs], .y[subs], col = col[i], log.x = logged("x"), : could not fit smooth

Warning in smoother(.x[subs], .y[subs], col = col[i], log.x = logged("x"), :

```
## could not fit smooth

## Warning in smoother(.x[subs], .y[subs], col = col[i], log.x = logged("x"), :
## could not fit smooth

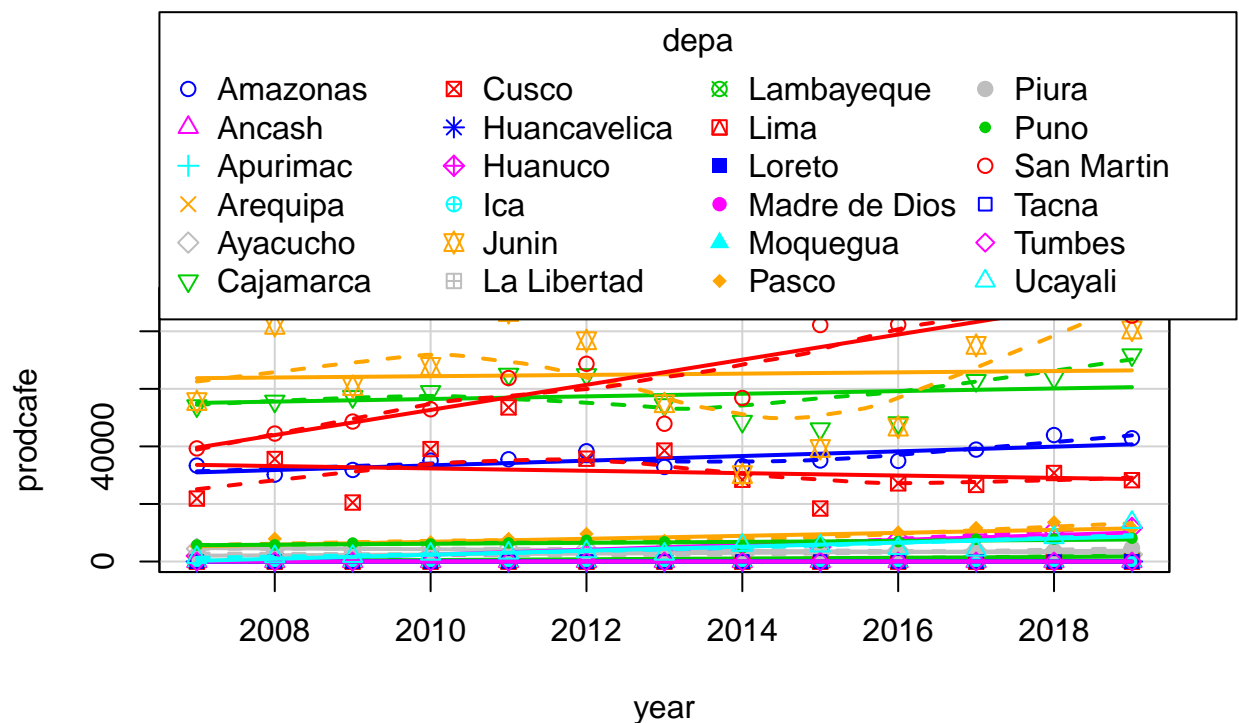
## Warning in smoother(.x[subs], .y[subs], col = col[i], log.x = logged("x"), :
## could not fit smooth

## Warning in smoother(.x[subs], .y[subs], col = col[i], log.x = logged("x"), :
## could not fit smooth

## Warning in smoother(.x[subs], .y[subs], col = col[i], log.x = logged("x"), :
## could not fit smooth

## Warning in smoother(.x[subs], .y[subs], col = col[i], log.x = logged("x"), :
## could not fit smooth

## Warning in smoother(.x[subs], .y[subs], col = col[i], log.x = logged("x"), :
## could not fit smooth
```



HETEROGENEIDAD

```
##por departamentos
```

```
## Warning in arrows(x, li, x, pmax(y - gap, li), col = barcol, lwd = lwd, : zero-
```

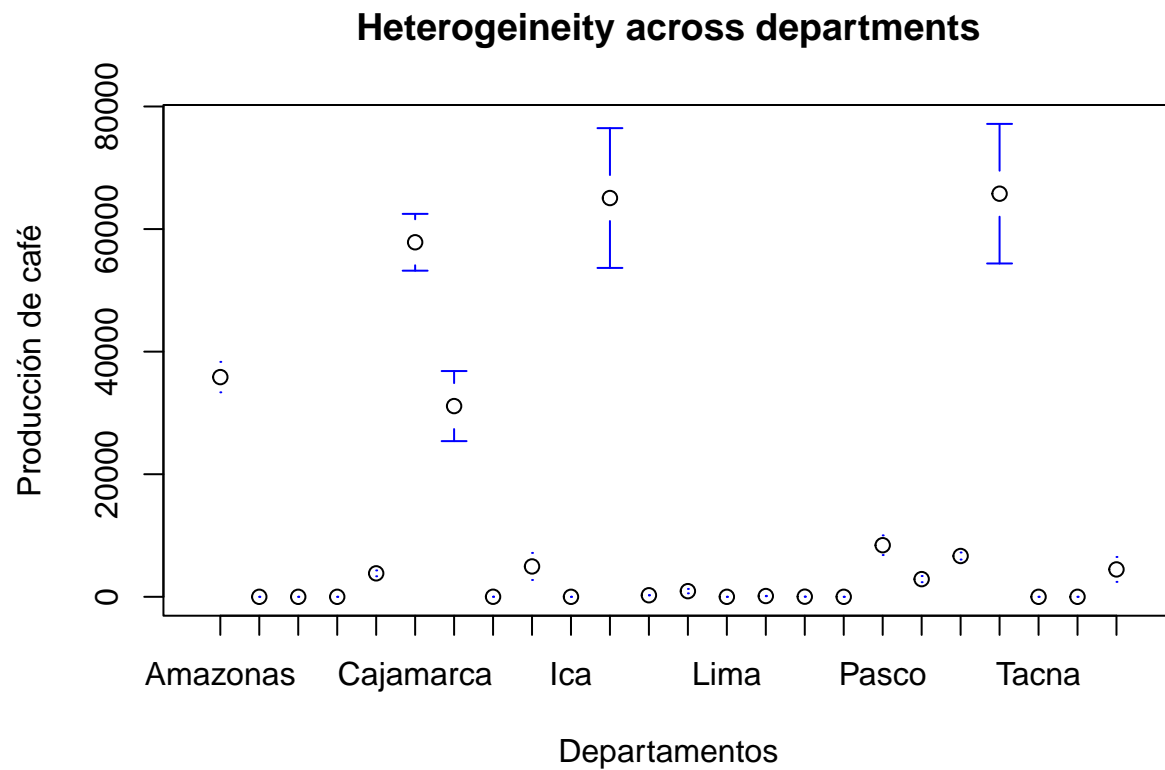


```
## length arrow is of indeterminate angle and so skipped

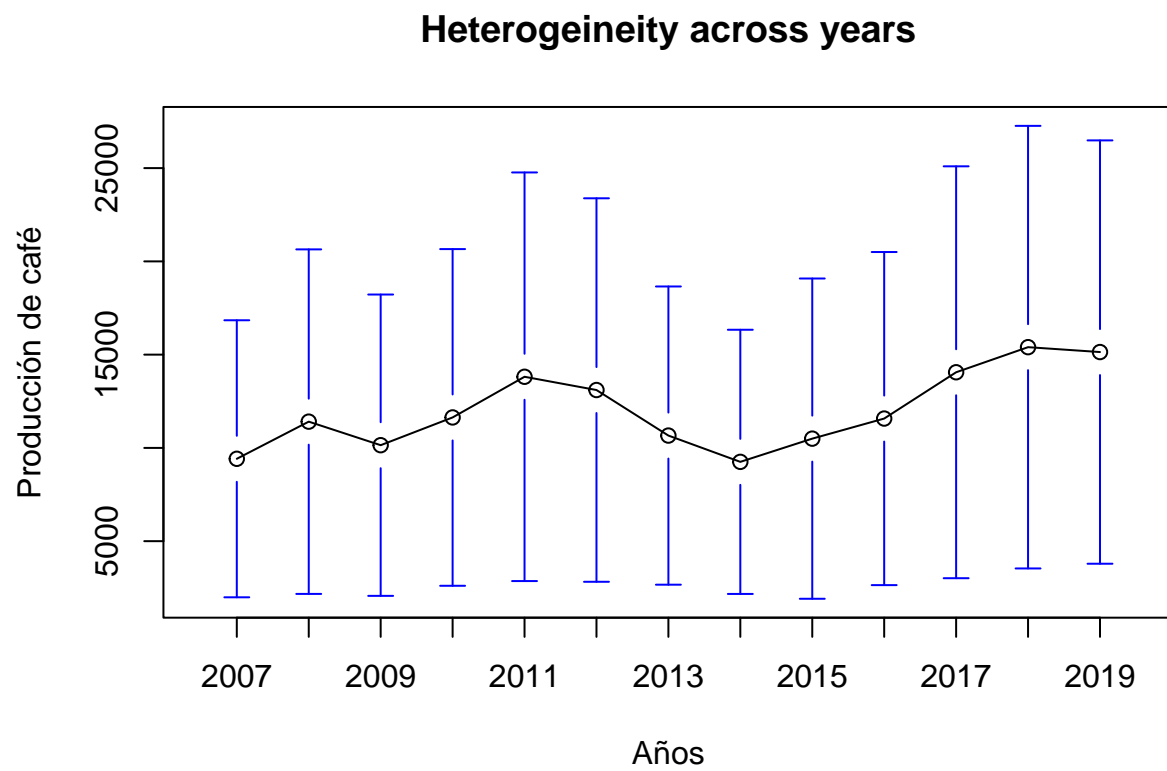
## Warning in arrows(x, ui, x, pmin(y + gap, ui), col = barcol, lwd = lwd, : zero-
## length arrow is of indeterminate angle and so skipped

## Warning in arrows(x, ui, x, pmin(y + gap, ui), col = barcol, lwd = lwd, : zero-
## length arrow is of indeterminate angle and so skipped

## Warning in arrows(x, ui, x, pmin(y + gap, ui), col = barcol, lwd = lwd, : zero-
## length arrow is of indeterminate angle and so skipped
```

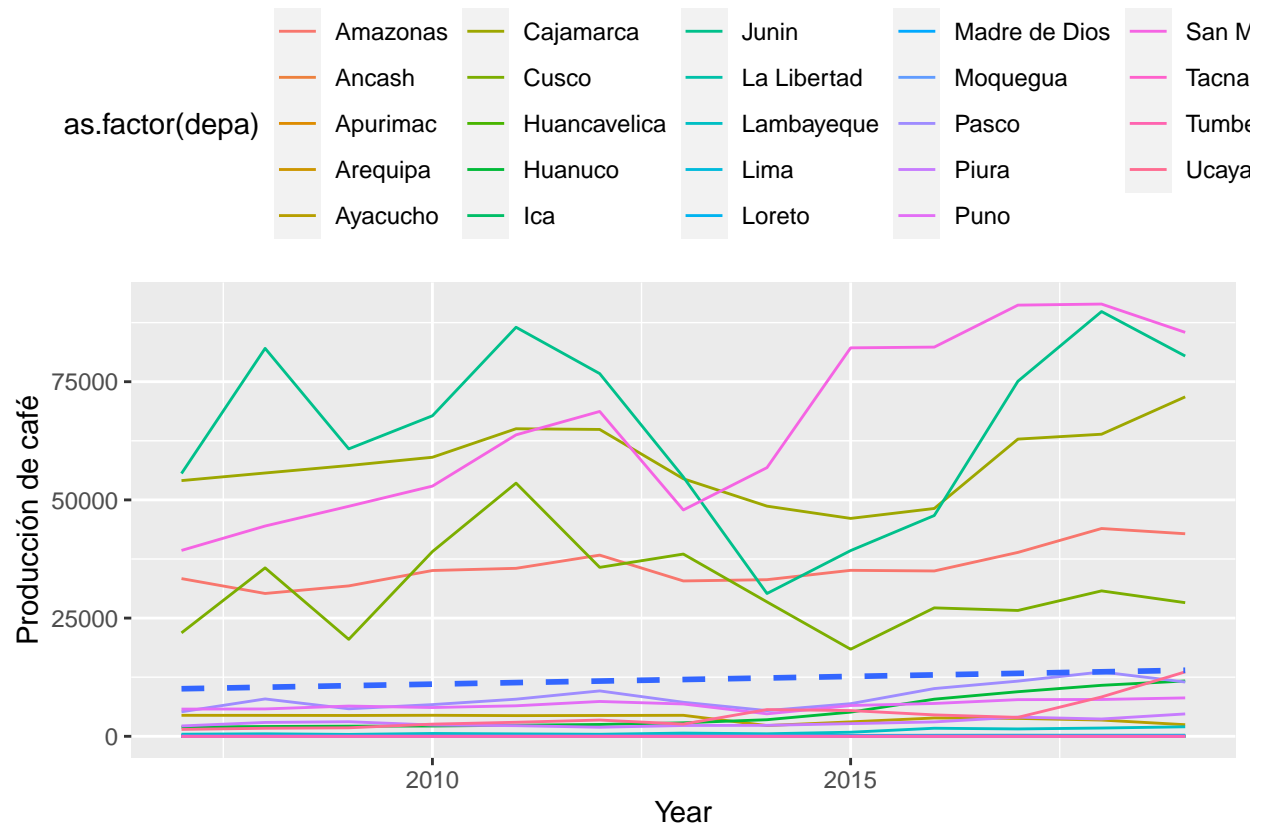


por años



separated lineplot

```
## 'geom_smooth()' using formula 'y ~ x'
```



heterogeneidad mediante boxplots por departamento

```
## Joining, by = "depa"
```

```
## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA
```

```
## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA
```

```
## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA
```

```
## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA
```

```
## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA
```

```
## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA
```

```
## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA
```



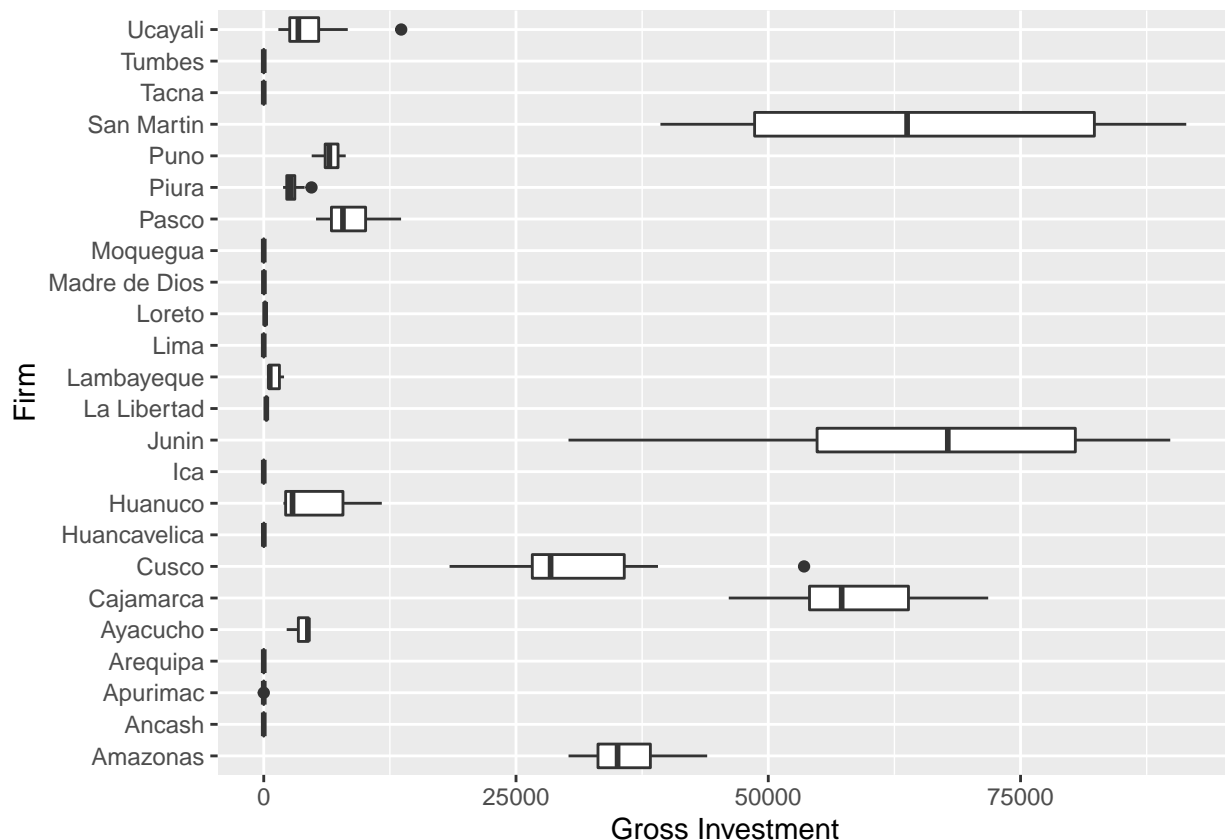
```
## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA

## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA

## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA

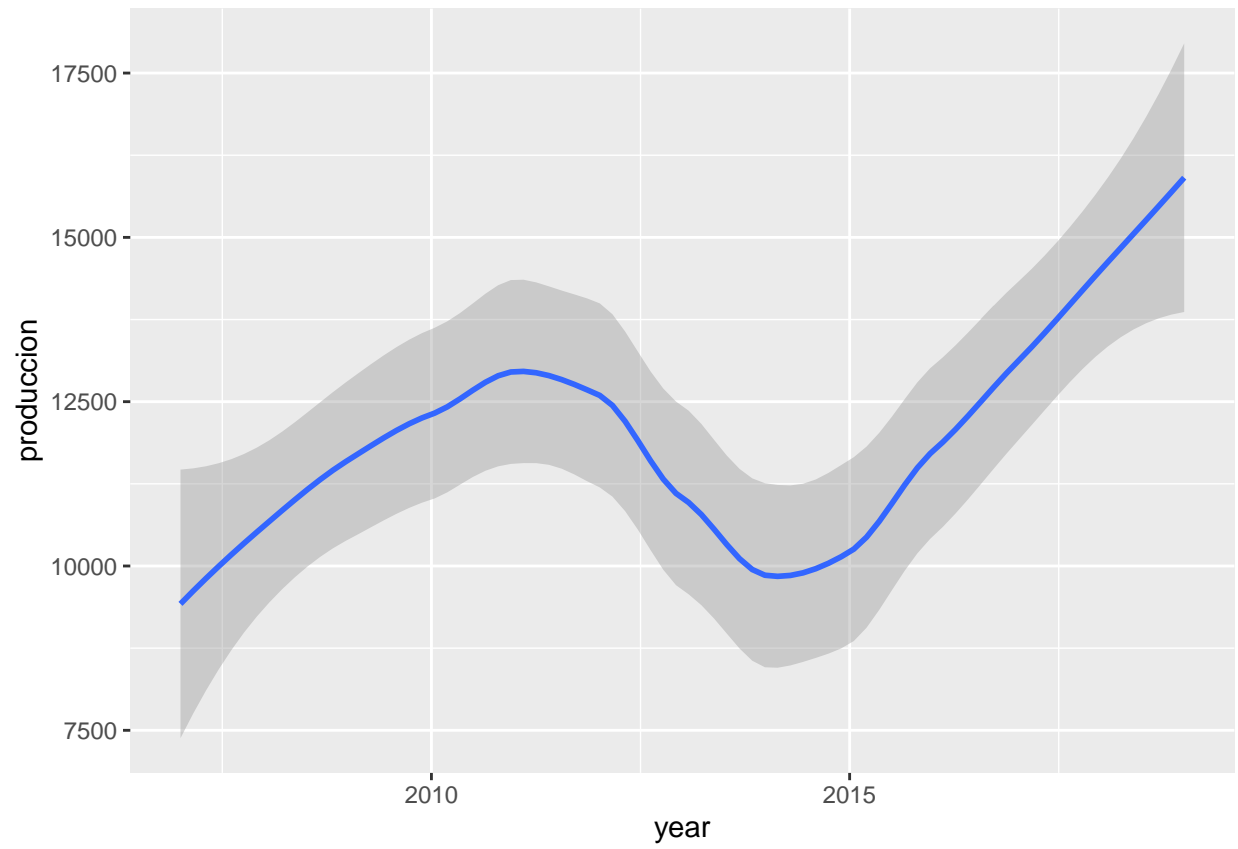
## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA

## Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
## returning NA
```

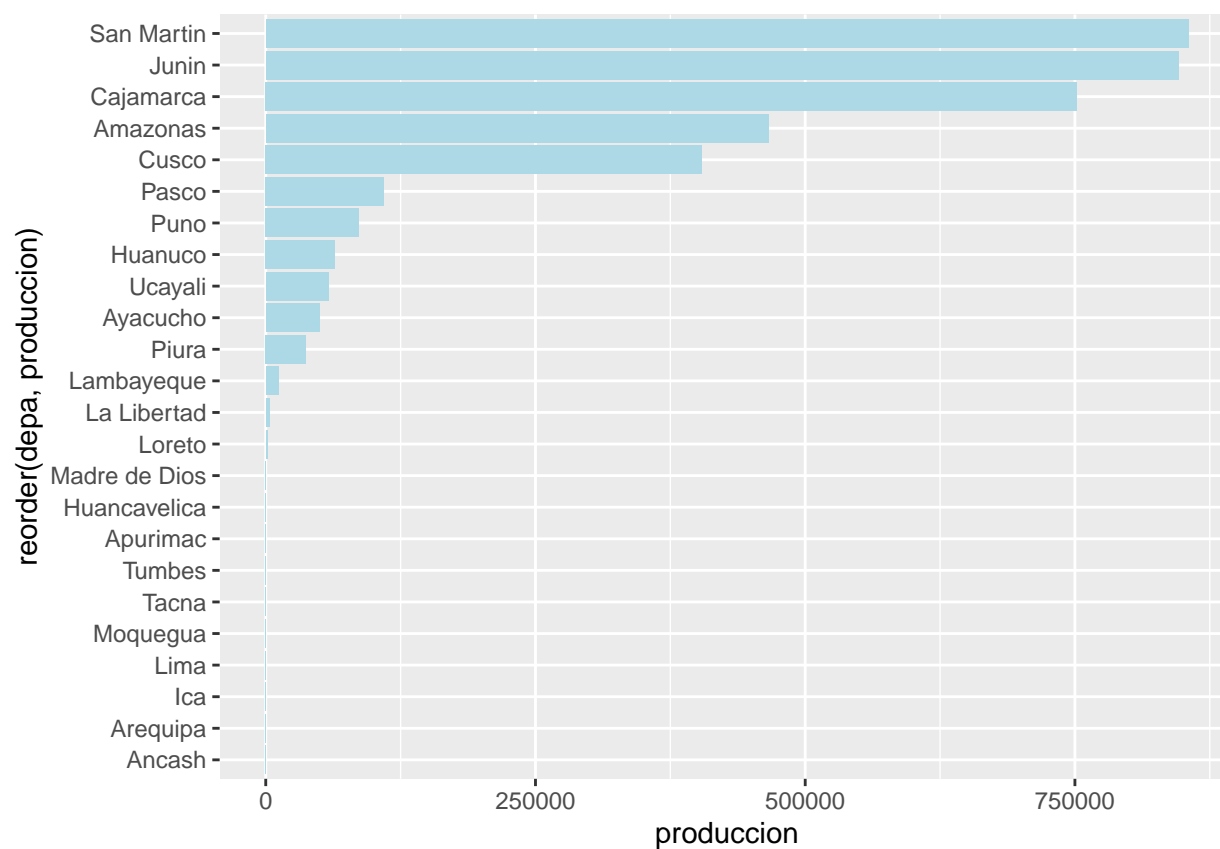


tendencia de la produccion de cafe en el país a través de los años de estudio

```
## 'geom_smooth()' using method = 'loess' and formula 'y ~ x'
```

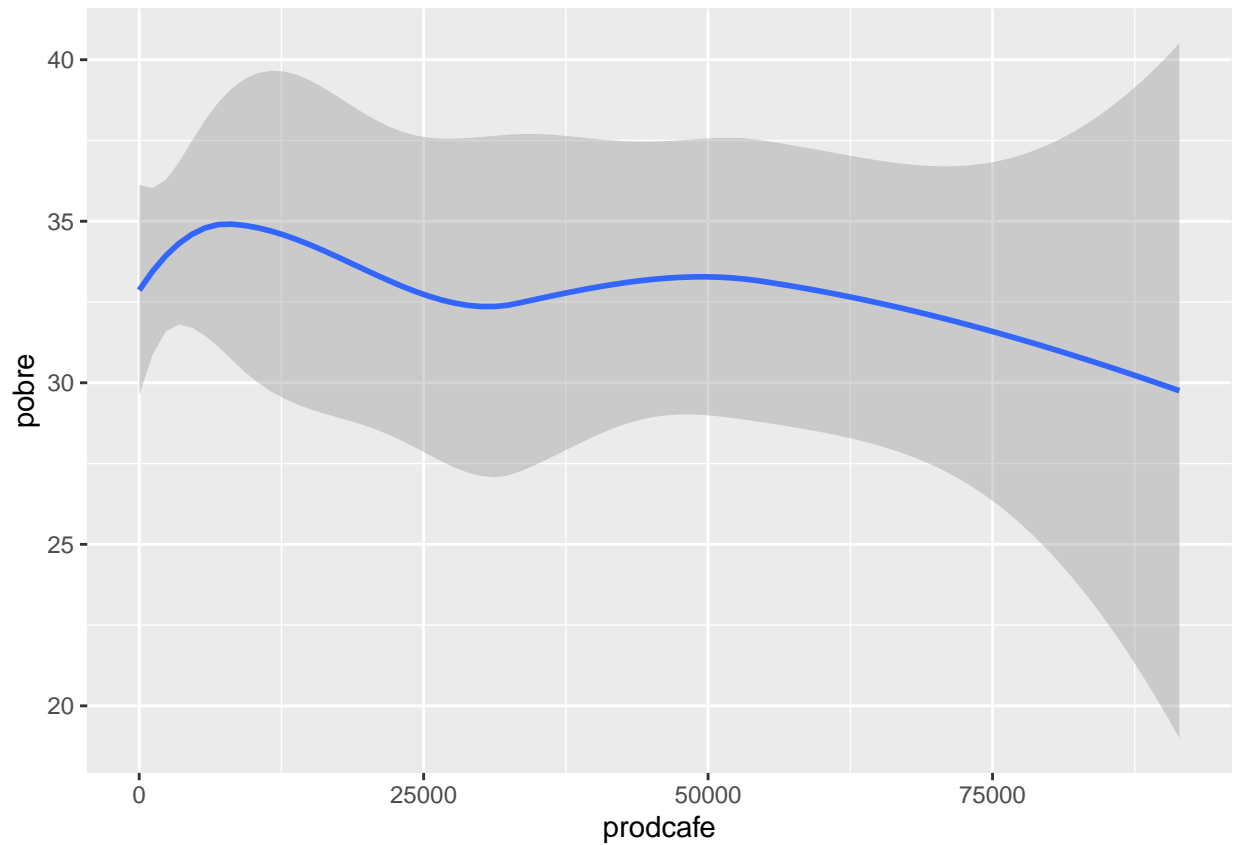


producción de café por departamento ordenado de mayor a menos



#correlaciones ## correlacion entre produccion de cafe y pobreza se encontro una correlación pequeña se observa que debilmente a medida que se incrementa la producción de café disminuye la pobreza

'geom_smooth()' using method = 'loess' and formula 'y ~ x'

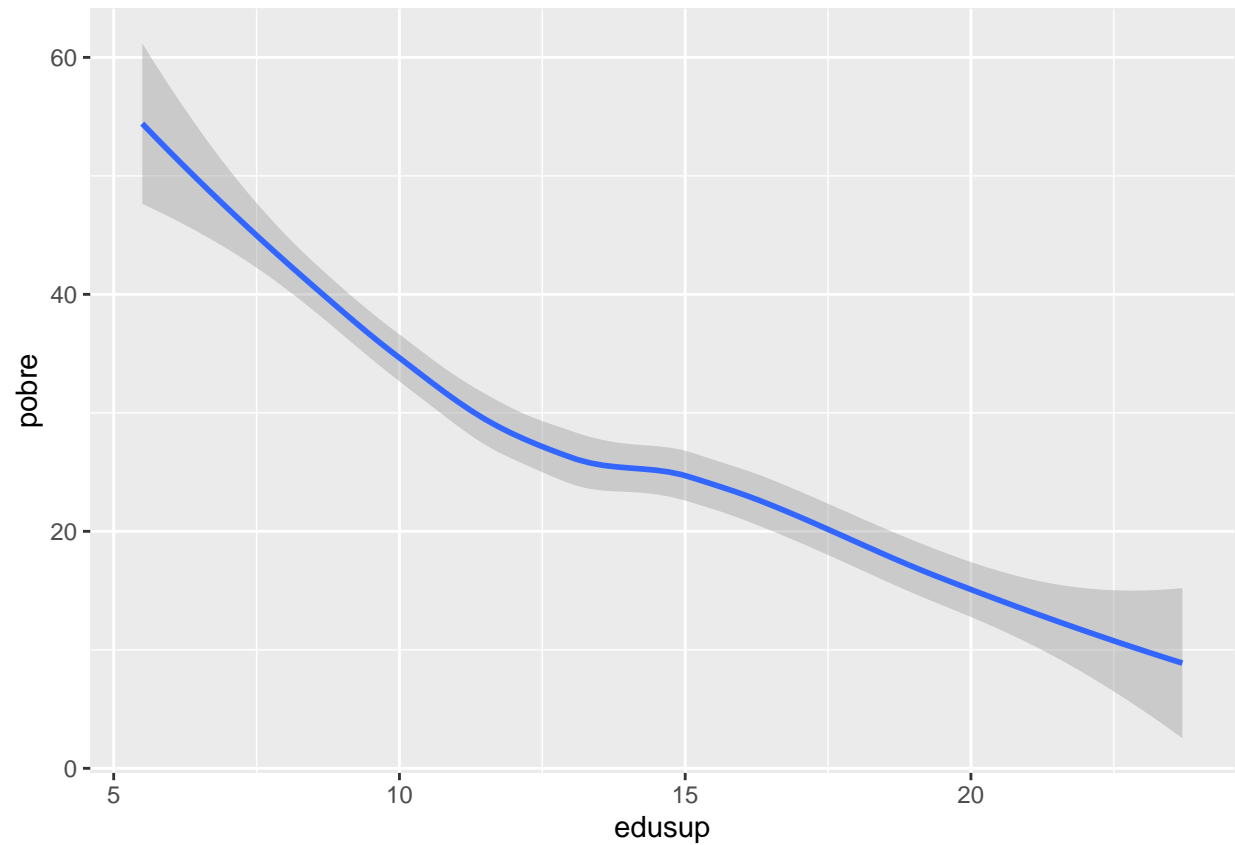


```
## [1] 0.1683996
```

correlacion entre educacion superior y pobreza

se observa una correlación elevada a medida que se incrementa la educación superior, la pobreza en los individuos disminuye

```
## 'geom_smooth()' using method = 'loess' and formula 'y ~ x'
```

```
## [1] -0.6771396
```

grafico de estimación por variable pobre vs prodcafe

```
## 'geom_smooth()' using formula 'y ~ x'
```

```
## Warning: Removed 208 rows containing missing values (geom_point).
```

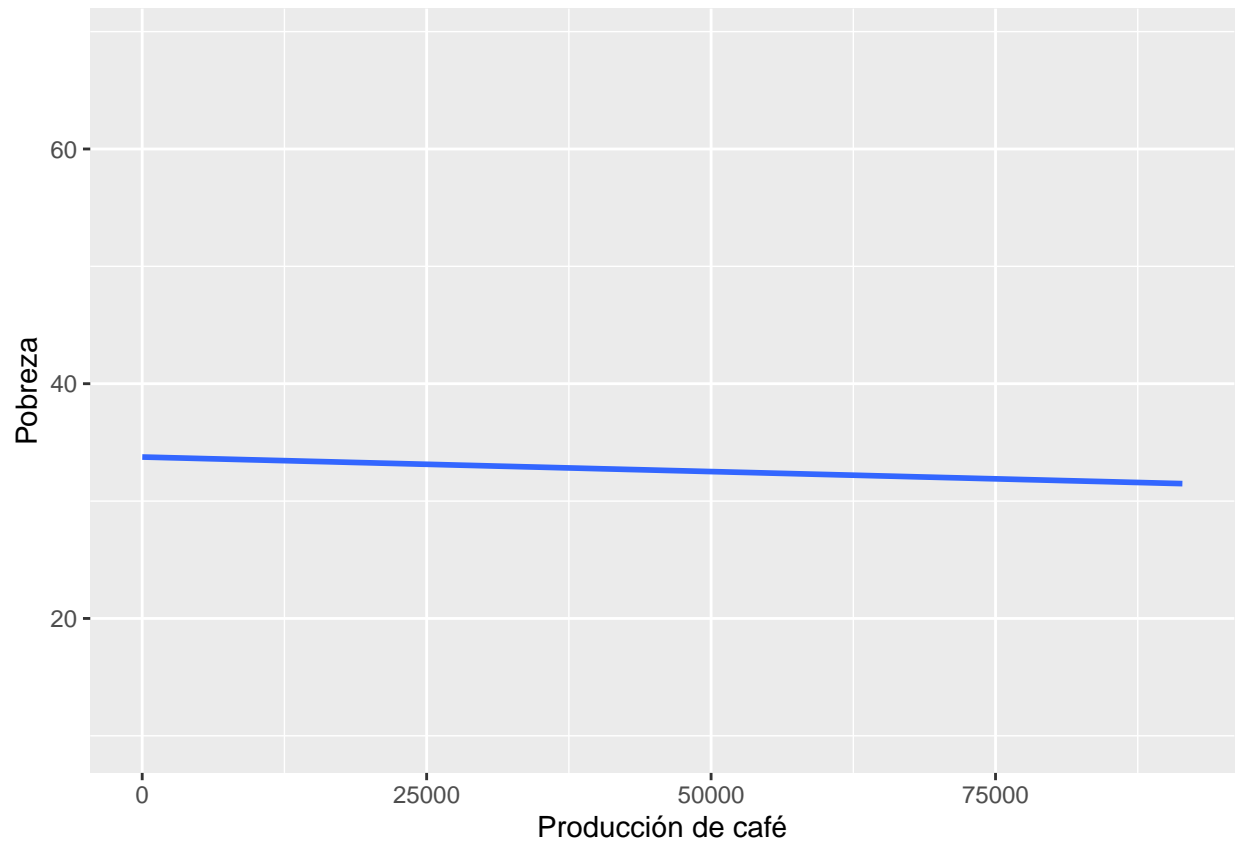


grafico de estimación por variable pobre vs edusup

```
## 'geom_smooth()' using formula 'y ~ x'
```

```
## Warning: Removed 312 rows containing missing values (geom_point).
```

