

1-es melléklet

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```
rm(list=ls())
graphics.off()

library(tidyverse)

## — Attaching core tidyverse packages ————— tidyverse
2.0.0 —
## ✓ dplyr      1.1.3      ✓ readr      2.1.4
## ✓ forcats   1.0.0      ✓ stringr   1.5.0
## ✓ ggplot2    3.4.4      ✓ tibble    3.2.1
## ✓ lubridate  1.9.3      ✓ tidyr     1.3.0
## ✓ purrr     1.0.2
## — Conflicts —————
tidyverse_conflicts() —
## ✗ dplyr::filter() masks stats::filter()
## ✗ dplyr::lag()     masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force
all conflicts to become errors

library(tsibble)

##
## Attaching package: 'tsibble'
##
## The following object is masked from 'package:lubridate':
##
##     interval
##
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, union

library(plm)

## Warning: package 'plm' was built under R version 4.3.3
##
## Attaching package: 'plm'
##
## The following object is masked from 'package:tsibble':
##
##     index
##
## The following objects are masked from 'package:dplyr':
##
##     between, lag, lead
```

```
library(lmtest)

## Loading required package: zoo
##
## Attaching package: 'zoo'
##
## The following object is masked from 'package:tsibble':
##
##     index
##
## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric

library(Hmisc)

##
## Attaching package: 'Hmisc'
##
## The following objects are masked from 'package:dplyr':
##
##     src, summarize
##
## The following objects are masked from 'package:base':
##
##     format.pval, units

library(modelsummary)

## Warning: package 'modelsummary' was built under R version 4.3.3
##
## `modelsummary` 2.0.0 now uses `tinytable` as its default table-drawing
## backend. Learn more at:
## https://vincentarelbundock.github.io/tinytable/
##
## Revert to `kableExtra` for one session:
##
##     options(modelsummary_factory_default = 'kableExtra')
##
## Change the default backend persistently:
##
##     config_modelsummary(factory_default = 'gt')
##
## Silence this message forever:
##
##     config_modelsummary(startup_message = FALSE)
##
## Attaching package: 'modelsummary'
##
## The following object is masked from 'package:Hmisc':
##
##     Mean

library(aTSA)
```

```

##
## Attaching package: 'aTSA'
##
## The following object is masked from 'package:graphics':
##
##     identify

library(sandwich)

## Warning: package 'sandwich' was built under R version 4.3.3

library(flextable)

##
## Attaching package: 'flextable'
##
## The following object is masked from 'package:purrr':
##
##     compose

library(broom)
library(car)

## Loading required package: carData
##
## Attaching package: 'car'
##
## The following object is masked from 'package:dplyr':
##
##     recode
##
## The following object is masked from 'package:purrr':
##
##     some

adatok <- read.csv("adatok.csv")
attach(adatok)
adatok <- pdata.frame(adatok)

adf.test(adatok$ggpb) A modell függő változó idősorainak kiterjesztett Dickey- Fuller-
egységgyöktesztje.

## Augmented Dickey-Fuller Test
## alternative: stationary
##
## Type 1: no drift no trend
##      lag    ADF p.value
## [1,]   0 -8.28   0.01
## [2,]   1 -8.19   0.01
## [3,]   2 -7.74   0.01
## [4,]   3 -7.46   0.01
## [5,]   4 -7.01   0.01
## [6,]   5 -6.60   0.01
## Type 2: with drift no trend
##      lag    ADF p.value
## [1,]   0 -8.65   0.01

```

```

## [2,] 1 -8.66 0.01
## [3,] 2 -8.31 0.01
## [4,] 3 -8.13 0.01
## [5,] 4 -7.78 0.01
## [6,] 5 -7.46 0.01
## Type 3: with drift and trend
##      lag    ADF p.value
## [1,] 0 -8.71 0.01
## [2,] 1 -8.74 0.01
## [3,] 2 -8.39 0.01
## [4,] 3 -8.24 0.01
## [5,] 4 -7.90 0.01
## [6,] 5 -7.62 0.01
## ----
## Note: in fact, p.value = 0.01 means p.value <= 0.01

ossz_legkisebb_negyzetek <- plm(ggpb~c_frsi+ gen_el+ ifi+ lag_debt+ inf+
unemp+ lag_ggpb, data = adatok, model = "pooling")
rogzitetthatas <- plm(ggpb~c_frsi+ gen_el+ ifi+ lag_debt+ inf+ unemp+
lag_ggpb, data = adatok, model = "within")
veletlenhatas <- plm(ggpb~c_frsi+ gen_el+ ifi+ lag_debt+ inf+ unemp+
lag_ggpb, data = adatok, model = "random")

pFtest(rogzitetthatas, ossz_legkisebb_negyzetek) F-teszt a rögzítetthatás és
összesített legkisebb négyzetek módszere között.

##
## F test for individual effects
##
## data: ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## F = 4.7419, df1 = 26, df2 = 263, p-value = 1.517e-11
## alternative hypothesis: significant effects

plmtest(ossz_legkisebb_negyzetek, type = c("bp")) Breusch- Pagan-féle Lagrange
Multiplikátor-teszt az összesített legkisebb négyzetek módszerének tesztelésére.

##
## Lagrange Multiplier Test - (Breusch-Pagan)
##
## data: ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## chisq = 1.0272, df = 1, p-value = 0.3108
## alternative hypothesis: significant effects

phtest(veletlenhatas, rogzitetthatas) Hausmann- teszt a véletlen- és rögzítetthatás
modellek között.

##
## Hausman Test
##
## data: ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## chisq = 169.7, df = 7, p-value < 2.2e-16
## alternative hypothesis: one model is inconsistent

pcdtest(rogzitetthatas, test=c("lm")) Pearson- féle keresztmetszeti függőségi teszt a
rögzítetthatás modellen.

```

```
##
## Breusch-Pagan LM test for cross-sectional dependence in panels
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## chisq = 521.63, df = 351, p-value = 8.338e-09
## alternative hypothesis: cross-sectional dependence

pbgtest(rogzitetthatas) Breusch- Godfrey/Wooldridge- teszt az autokorreláció ellenőrzésére.

##
## Breusch-Godfrey/Wooldridge test for serial correlation in panel models
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## chisq = 35.917, df = 11, p-value = 0.0001747
## alternative hypothesis: serial correlation in idiosyncratic errors

bptest(ggpb~ c_frsi+ gen_el+ ifi+lag_debt+ inf+ unemp+ lag_ggpb,
data=adatok, studentize =F) Breusch- Pagan- teszt a heteroszkedaszticitás ellenőrzésére.

##
## Breusch-Pagan test
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## BP = 485.72, df = 7, p-value < 2.2e-16

rogzitetthatas$vcov <- plm::vcovHC(rogzitetthatas, method = "arellano")

modelsummary::msummary(list(`rogzitetthatas modell`= rogzitetthatas),
                        coef_map = c(c_frsi= "C-FRSI", gen_el= "Parlamenti
valasztas eve", ifi= "FKI", lag_debt= "Kesleltetett brutto allamadossag",
                        inf= "Inflacio", unemp=
"Unkanelkuliseg", lag_ggpb= "AHT kesleltetett elsodleges egyenlege"),
                        stars = TRUE, statistic = c("p.value", "conf.int",
"std.error"))
```

	rogzitetthatas modell
C-FRSI	0.079+ (0.095) [-0.014, 0.173] (0.047)
Parlamenti valasztas eve	0.328 (0.214) [-0.191, 0.848] (0.264)
FKI	0.356 (0.524) [-0.743, 1.454] (0.558)
Kesleltetett brutto allamadossag	0.109*** (<0.001)

	rogzitetthatas modell
	[0.088, 0.130]
	(0.011)
Inflacio	0.240+
	(0.088)
	[-0.036, 0.516]
	(0.140)
Munkanelkuliseg	-0.162*
	(0.016)
	[-0.294, -0.030]
	(0.067)
AHT kesleltetett elsodleges egyenlege	0.399***
	(<0.001)
	[0.250, 0.548]
	(0.076)
Num.Obs.	297
R2	0.621
R2 Adj.	0.574
AIC	1206.7
BIC	1236.2
RMSE	1.80

- $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

```
robteszt <- read.csv("robteszt.csv")
attach(robteszt)

## The following objects are masked from adatok:
##
##      c_frsi, capb, country, cycle, debt_eurostat, diff_ggpb, gdp_cp,
##      gdp_growth, gdp_ppp_pc, gen_el, ggpb, ginfa, ifi, inf, lag_capb,
##      lag_debt, lag_ggpb, og_percent, trend, unemp, year

robteszt <- pdata.frame(robteszt)

adf.test(robteszt$ggpb)

## Augmented Dickey-Fuller Test
## alternative: stationary
##
## Type 1: no drift no trend
##      lag   ADF p.value
## [1,]    0 -8.41    0.01
## [2,]    1 -7.49    0.01
## [3,]    2 -7.57    0.01
## [4,]    3 -6.89    0.01
## [5,]    4 -5.87    0.01
## Type 2: with drift no trend
```

```
##      lag    ADF p.value
## [1,]    0 -8.51    0.01
## [2,]    1 -7.61    0.01
## [3,]    2 -7.73    0.01
## [4,]    3 -7.07    0.01
## [5,]    4 -6.07    0.01
## Type 3: with drift and trend
##      lag    ADF p.value
## [1,]    0 -8.57    0.01
## [2,]    1 -7.68    0.01
## [3,]    2 -7.84    0.01
## [4,]    3 -7.21    0.01
## [5,]    4 -6.19    0.01
## ----
## Note: in fact, p.value = 0.01 means p.value <= 0.01

robteszt1 <- plm(ggpb~c_frsi+ gen_el+ ifi+ lag_debt+ inf+ unemp+ lag_ggpb,
data = robteszt, model = "within")

pcdtest(robteszt1, test=c("lm"))

##
## Breusch-Pagan LM test for cross-sectional dependence in panels
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## chisq = 511.5, df = 351, p-value = 4.481e-08
## alternative hypothesis: cross-sectional dependence

pbgtest(robteszt1) Breusch- Godfrey/Wooldridge- teszt az autokorreláció ellenőrzésére a
rövidebb időperiódust lefedő robusztussági teszt esetében.

##
## Breusch-Godfrey/Wooldridge test for serial correlation in panel models
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## chisq = 17.244, df = 8, p-value = 0.02766
## alternative hypothesis: serial correlation in idiosyncratic errors

bptest(ggpb~ c_frsi+ gen_el+ ifi+lag_debt+ inf+ unemp+ lag_ggpb,
data=robteszt, studentize =F) Breusch- Pagan- teszt a heteroszkedaszticitás ellenőrzésére a
rövidebb időperiódust lefedő robusztussági teszt esetében.

##
## Breusch-Pagan test
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## BP = 85.175, df = 7, p-value = 1.207e-15

robteszt1$vcov <- plm::vcovHC(robteszt1, method = "arellano")

adf.test(adatok$capb)

## Augmented Dickey-Fuller Test
## alternative: stationary
##
## Type 1: no drift no trend
```

```

##      lag    ADF p.value
## [1,]    0 -7.64    0.01
## [2,]    1 -7.54    0.01
## [3,]    2 -7.89    0.01
## [4,]    3 -7.26    0.01
## [5,]    4 -6.67    0.01
## [6,]    5 -6.11    0.01
## Type 2: with drift no trend
##      lag    ADF p.value
## [1,]    0 -7.63    0.01
## [2,]    1 -7.54    0.01
## [3,]    2 -7.88    0.01
## [4,]    3 -7.25    0.01
## [5,]    4 -6.67    0.01
## [6,]    5 -6.11    0.01
## Type 3: with drift and trend
##      lag    ADF p.value
## [1,]    0 -7.64    0.01
## [2,]    1 -7.56    0.01
## [3,]    2 -7.91    0.01
## [4,]    3 -7.29    0.01
## [5,]    4 -6.71    0.01
## [6,]    5 -6.15    0.01
## ----
## Note: in fact, p.value = 0.01 means p.value <= 0.01

robteszt2 <- plm(capb~c_frsi+ gen_el+ ifi+ lag_debt+ inf+ unemp+ lag_capb,
data = adatok, model = "within")

pcdtest(robteszt2, test=c("lm"))

##
## Breusch-Pagan LM test for cross-sectional dependence in panels
##
## data:  capb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_capb
## chisq = 483.75, df = 351, p-value = 3.182e-06
## alternative hypothesis: cross-sectional dependence

pbgtest(robteszt2) Breusch- Godfrey/Wooldridge - teszt az autokorreláció ellenőrzésére a
ciklikusan kiigazított elsődleges egyenleg modelljében.

##
## Breusch-Godfrey/Wooldridge test for serial correlation in panel models
##
## data:  capb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_capb
## chisq = 22.537, df = 11, p-value = 0.02052
## alternative hypothesis: serial correlation in idiosyncratic errors

bptest(capb~ c_frsi+ gen_el+ ifi+lag_debt+ inf+ unemp+ lag_capb,
data=adatok, studentize =F) Breusch- Pagan- teszt a heteroszkedaszticitás ellenőrzésére a
ciklikusan kiigazított elsődleges egyenleg modelljében.

##
## Breusch-Pagan test
##

```

```
## data: capb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_capb
## BP = 96.151, df = 7, p-value < 2.2e-16

robteszt2$vcov <- plm::vcovHC(robteszt2, method = "arellano")

modelsummary::msummary(list(`Rogzitetthatas modell 2011- 2018` = robteszt1,
`Ciklikusan kiigazitott` = robteszt2),
      coef_map = c(c_frsi= "C-FRSI", gen_el= "Parlamenti
valasztas eve", ifi= "FKI", lag_debt= "Kesleltetett brutto allamadossag",
      inf= "Inflacio", unemp=
"Munkanelkuliseg", lag_ggpb= "AHT kesleltetett elsodleges egyenlege",
lag_capb= "AHT kesleltetett ciklikusan kiigazitott elsodleges egyenlege"),
      stars = TRUE, statistic = c("p.value", "conf.int",
"std.error"))
```

	Rogzitetthatas modell 2011- 2018	Ciklikusan kiigazitott
C-FRSI	0.024 (0.559) [-0.057, 0.105] (0.041)	0.035 (0.488) [-0.065, 0.135] (0.051)
Parlamenti valasztas eve	0.108 (0.560) [-0.257, 0.474] (0.185)	-0.017 (0.918) [-0.338, 0.305] (0.163)
FKI	0.161 (0.681) [-0.610, 0.931] (0.390)	0.535 (0.211) [-0.306, 1.375] (0.427)
Kesleltetett brutto allamadossag	0.062* (0.020) [0.010, 0.114] (0.027)	0.059*** (<0.001) [0.027, 0.092] (0.016)
Inflacio	-0.021 (0.775) [-0.169, 0.126] (0.075)	0.093 (0.305) [-0.085, 0.271] (0.090)
Munkanelkuliseg	-0.184* (0.025) [-0.344, -0.023] (0.081)	0.085 (0.187) [-0.041, 0.211] (0.064)
AHT kesleltetett elsodleges egyenlege	0.362*** (<0.001) [0.249, 0.474]	

	Rogzitetthatas modell 2011- 2018 (0.057)	Ciklikusan kiigazitott
AHT kesleltetett ciklikusan kiigazitott elsodleges egyenlege		0.479*** (<0.001) [0.292, 0.667] (0.095)
Num.Obs.	216	297
R2	0.586	0.665
R2 Adj.	0.511	0.623
AIC	736.9	1044.8
BIC	763.9	1074.3
RMSE	1.28	1.37

- p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

```
fejletlen9 <- read.csv("fejletlen9.csv")
fejlett9 <- read.csv("fejlett9.csv")
attach(fejletlen9)

## The following objects are masked from robteszt:
##
##   c_frsi, capb, country, cycle, debt_eurostat, diff_ggpb, gdp_cp,
##   gdp_growth, gen_el, ggpb, ginf, ifi, inf, lag_capb, lag_debt,
##   lag_ggpb, og_percent, trend, unemp, year
##
## The following objects are masked from adatok:
##
##   c_frsi, capb, country, cycle, debt_eurostat, diff_ggpb, gdp_cp,
##   gdp_growth, gen_el, ggpb, ginf, ifi, inf, lag_capb, lag_debt,
##   lag_ggpb, og_percent, trend, unemp, year
##
attach(fejlett9)

## The following objects are masked from fejletlen9:
##
##   c_frsi, capb, country, cycle, debt_eurostat, diff, diff_ggpb,
##   gdp_cp, gdp_growth, gen_el, ggpb, ginf, ifi, inf, lag_capb,
##   lag_debt, lag_ggpb, ltir_oecd, og_percent, trend, unemp, year
##
## The following objects are masked from robteszt:
##
##   c_frsi, capb, country, cycle, debt_eurostat, diff_ggpb, gdp_cp,
##   gdp_growth, gen_el, ggpb, ginf, ifi, inf, lag_capb, lag_debt,
##   lag_ggpb, og_percent, trend, unemp, year
##
## The following objects are masked from adatok:
##
##   c_frsi, capb, country, cycle, debt_eurostat, diff_ggpb, gdp_cp,
##   gdp_growth, gen_el, ggpb, ginf, ifi, inf, lag_capb, lag_debt,
##   lag_ggpb, og_percent, trend, unemp, year
```

```

fejletlen9 <- pdata.frame(fejletlen9)
fejlett9 <- pdata.frame(fejlett9)
A homogén országsoportokon becsült modellek függő változói idősorainak Maddala- Wu- féle
egységgyöktesztei:
purtest(fejletlen9$ggpb, test = "madwu", lags = 2, exo = "trend")

##
## Maddala-Wu Unit-Root Test (ex. var.: Individual Intercepts and Trend)
##
## data: fejletlen9$ggpb
## chisq = 627.62, df = 18, p-value < 2.2e-16
## alternative hypothesis: stationarity

purtest(fejletlen9$capb, test = "madwu", lags = 2, exo = "trend")

##
## Maddala-Wu Unit-Root Test (ex. var.: Individual Intercepts and Trend)
##
## data: fejletlen9$capb
## chisq = 287.88, df = 18, p-value < 2.2e-16
## alternative hypothesis: stationarity

purtest(fejlett9$ggpb, test = "madwu", lags = 2, exo = "trend")

##
## Maddala-Wu Unit-Root Test (ex. var.: Individual Intercepts and Trend)
##
## data: fejlett9$ggpb
## chisq = 327.98, df = 18, p-value < 2.2e-16
## alternative hypothesis: stationarity

purtest(fejlett9$capb, test = "madwu", lags = 2, exo = "trend")

##
## Maddala-Wu Unit-Root Test (ex. var.: Individual Intercepts and Trend)
##
## data: fejlett9$capb
## chisq = 31.941, df = 18, p-value = 0.02235
## alternative hypothesis: stationarity

fejletlen9_nom <- plm(ggpb~c_frsi+ gen_el+ ifi+ lag_debt+ inf+ unemp+
lag_ggpb, data = fejletlen9, model = "within")
fejlett9_nom <- plm(ggpb~c_frsi+ gen_el+ ifi+ lag_debt+ inf+ unemp+
lag_ggpb, data = fejlett9, model = "within")
fejletlen9_ck <- plm(capb~c_frsi+ gen_el+ ifi+ lag_debt+ inf+ unemp+
lag_capb, data = fejletlen9, model = "within")
fejlett9_ck <- plm(capb~c_frsi+ gen_el+ ifi+ lag_debt+ inf+ unemp+
lag_capb, data = fejlett9, model = "within")

pcdtest(fejletlen9_nom, test=c("lm"))

##
## Breusch-Pagan LM test for cross-sectional dependence in panels
##
## data: ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb

```

```

## chisq = 41.557, df = 36, p-value = 0.2414
## alternative hypothesis: cross-sectional dependence

pbgtest(fejletlen9_nom)

##
## Breusch-Godfrey/Wooldridge test for serial correlation in panel models
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## chisq = 12.274, df = 11, p-value = 0.3434
## alternative hypothesis: serial correlation in idiosyncratic errors

bptest(ggpb~ c_frsi+ gen_el+ ifi+lag_debt+ inf+ unemp+ lag_ggpb,
data=fejletlen9, studentize =F)

##
## Breusch-Pagan test
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## BP = 40.499, df = 7, p-value = 1.01e-06

pcdtest(fejlett9_nom, test=c("lm"))

##
## Breusch-Pagan LM test for cross-sectional dependence in panels
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## chisq = 96.366, df = 36, p-value = 2.064e-07
## alternative hypothesis: cross-sectional dependence

pbgtest(fejlett9_nom)

##
## Breusch-Godfrey/Wooldridge test for serial correlation in panel models
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## chisq = 9.8855, df = 11, p-value = 0.5407
## alternative hypothesis: serial correlation in idiosyncratic errors

bptest(ggpb~ c_frsi+ gen_el+ ifi+lag_debt+ inf+ unemp+ lag_ggpb,
data=fejlett9, studentize =F)

##
## Breusch-Pagan test
##
## data:  ggpb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_ggpb
## BP = 320.61, df = 7, p-value < 2.2e-16

pcdtest(fejletlen9_ck, test=c("lm"))

##
## Breusch-Pagan LM test for cross-sectional dependence in panels
##
## data:  capb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_capb
## chisq = 44.315, df = 36, p-value = 0.161
## alternative hypothesis: cross-sectional dependence

```

```

pbgttest(fejletlen9_ck)

##
## Breusch-Godfrey/Wooldridge test for serial correlation in panel models
##
## data: capb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_capb
## chisq = 11.437, df = 11, p-value = 0.4074
## alternative hypothesis: serial correlation in idiosyncratic errors

bptest(capb~ c_frsi+ gen_el+ ifi+lag_debt+ inf+ unemp+ lag_capb,
data=fejletlen9, studentize =F)

##
## Breusch-Pagan test
##
## data: capb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_capb
## BP = 22.219, df = 7, p-value = 0.002329

pcdtest(fejlett9_ck, test=c("lm"))

##
## Breusch-Pagan LM test for cross-sectional dependence in panels
##
## data: capb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_capb
## chisq = 40.579, df = 36, p-value = 0.2755
## alternative hypothesis: cross-sectional dependence

pbgttest(fejlett9_ck)

##
## Breusch-Godfrey/Wooldridge test for serial correlation in panel models
##
## data: capb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_capb
## chisq = 12.522, df = 11, p-value = 0.3257
## alternative hypothesis: serial correlation in idiosyncratic errors

bptest(capb~ c_frsi+ gen_el+ ifi+lag_debt+ inf+ unemp+ lag_capb,
data=fejlett9, studentize =F)

##
## Breusch-Pagan test
##
## data: capb ~ c_frsi + gen_el + ifi + lag_debt + inf + unemp + lag_capb
## BP = 15.398, df = 7, p-value = 0.03122

fejletlen9_nom$vcov <- plm::vcovHC(fejletlen9_nom, type = "HC1")
fejlett9_nom$vcov <- plm::vcovHC(fejlett9_nom, type = "HC1")
fejletlen9_ck$vcov <- plm::vcovHC(fejletlen9_ck, type = "HC1")
fejlett9_ck$vcov <- plm::vcovHC(fejlett9_ck, type = "HC1")

modelsummary::msummary(list(`Legkevésbé fejlett 9 (1)`= fejletlen9_nom,
`Legfejlettebb 9 (2)`= fejlett9_nom,
`Legkevésbé fejlett 9- ciklikusan kiigazított
(3)`= fejletlen9_ck, `Legfejlettebb 9- ciklikusan kiigazított (4)`=
fejlett9_ck),
coef_map = c(c_frsi= "C-FRSI", gen_el= "Parlamenti

```

```
választás éve", ifi= "FKI", lag_debt= "Késleltetett bruttó államadósság",
inf= "Infláció", unemp=
"Munkanélküliség", lag_ggpb= "ÁHT késleltetett elsődleges egyenlege",
lag_capb= "ÁHT késleltetett ciklikusan kiigazított elsődleges egyenlege"),
stars = TRUE, statistic = c("p.value", "conf.int",
"std.error"))
```

	Legkevé bé fejlett 9 (1)	Legfejl ettebb 9 (2)	Legkevésbé fejlett 9- ciklikusan kiigazított (3)	Legfejlettebb 9- ciklikusan kiigazított (4)
C-FRSI	-0.078+ (0.054)	0.150 (0.196)	-0.135*** (<0.001)	0.151*** (<0.001)
	[-0.158, 0.001]	[- 0.079, 0.379]	[-0.172, -0.097]	[0.065, 0.237]
	(0.040)	(0.115)	(0.019)	(0.043)
Parlamenti választás éve	-0.453 (0.241)	0.569 (0.125)	-0.475 (0.115)	0.160 (0.165)
	[-1.216, 0.309]	[- 0.160, 1.299]	[-1.068, 0.119]	[-0.068, 0.388]
	(0.384)	(0.367)	(0.298)	(0.115)
FKI	0.397 (0.558)	0.668 (0.647)	1.636* (0.049)	-0.177 (0.569)
	[-0.946, 1.740]	[- 2.226, 3.563]	[0.009, 3.264]	[-0.793, 0.439]
	(0.675)	(1.455)	(0.818)	(0.310)
Késleltetett bruttó államadósság	0.176*** (<0.001)	0.143* ** (<0.00 1)	0.097*** (<0.001)	0.034** (0.001)
	[0.142, 0.211]	[0.073, 0.214]	[0.062, 0.132]	[0.014, 0.054]
	(0.017)	(0.036)	(0.018)	(0.010)
Infláció	-0.066 (0.346)	0.332 (0.161)	-0.064 (0.465)	0.179+ (0.067)

	Legkevé- bé fejlett 9 (1)	Legfej- lettebb 9 (2)	Legkevésbé fejlett 9- ciklikusan kiigazított (3)	Legfejlettebb 9- ciklikusan kiigazított (4)
	[-0.205, 0.073] (0.070)	[- 0.134, 0.797] (0.234)	[-0.237, 0.109] (0.087)	[-0.013, 0.372] (0.097)
Munkanélküliség	- 0.269*** (<0.001)	- 1.013* (0.033)	-0.010 (0.911)	-0.111 (0.349)
	[-0.413, - 0.125] (0.072)	[- 1.943, -0.083] (0.467)	[-0.184, 0.165] (0.088)	[-0.344, 0.123] (0.118)
ÁHT késleltetett elsődleges egyenlege	0.258*** (<0.001)	0.272* (0.021)		
	[0.161, 0.355] (0.049)	[0.043, 0.501] (0.115)		
ÁHT késleltetett ciklikusan kiigazított elsődleges egyenlege			0.446*** (<0.001) [0.351, 0.541] (0.048)	0.474** (0.002) [0.180, 0.769] (0.148)
Num.Obs.	99	99	99	99
R2	0.795	0.670	0.778	0.724
R2 Adj.	0.758	0.610	0.738	0.675
AIC	334.1	428.4	347.8	260.6
BIC	354.9	449.1	368.6	281.4
RMSE	1.21	1.94	1.29	0.83

- p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001