```
                                                      ___  ____  ____  ____  ____(R)
                                                     /__    /   ____/   /   ____/
                                                    ___/   /   /___/   /   /___/
                                                      Statistics/Data Analysis

                                                         User: PT

  ___  ____  ____  ____  ____ (R)
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Notes:
      1.  (/v# option or -set maxvar-) 5000 maximum variables

1 . use "F:\Tese\Tratamento dos dados\Dados\Portugal\BD\BD PT regressão B3.dta"

2 . log using "F:\Tese\Tratamento dos dados\Dados\Portugal\Resultados\Dados em painel\Output ET P
> l"
-------------------------------------------------------------------------------
      name:  <unnamed>
       log:  F:\Tese\Tratamento dos dados\Dados\Portugal\Resultados\Dados em painel\Output ET P
> l
  log type:  smcl
 opened on:  20 Jul 2016, 11:43:53

3 . regress ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT

      Source |       SS       df       MS              Number of obs =    3427
-------------+------------------------------           F( 10,  3416) =   78.61
       Model |  43.6188637    10  4.36188637           Prob > F      =  0.0000
    Residual |  189.557817  3416  .055491164           R-squared     =  0.1871
-------------+------------------------------           Adj R-squared =  0.1847
       Total |   233.17668  3426  .068060911           Root MSE      =  .23557

------------------------------------------------------------------------------
          ET |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         CVT |   .1372751   .0303488     4.52   0.000     .0777716    .1967787
        DLAT |    .060905   .0055759    10.92   0.000     .0499727    .0718374
         ROI |  -.2783725   .0429123    -6.49   0.000    -.3625088   -.1942362
         FCF |  -.0317533   .0103051    -3.08   0.002    -.0519581   -.0115485
       R_FCF |  -.2434898   .0802094    -3.04   0.002    -.4007531   -.0862265
         AGE |  -.0038957   .0002829   -13.77   0.000    -.0044503    -.003341
         TAN |   .2357126   .0223959    10.52   0.000     .1918019    .2796233
       RISVT |   .4274395   .0720116     5.94   0.000     .2862493    .5686297
     C_RISVT |  -.1562511   .0396868    -3.94   0.000    -.2340635   -.0784388
     T_RISVT |  -.4968371   .1140152    -4.36   0.000     -.720382   -.2732922
       _cons |   .2512952   .0203139    12.37   0.000     .2114666    .2911238
------------------------------------------------------------------------------

4 .
5 . estat ovtest

Ramsey RESET test using powers of the fitted values of ET
       Ho:  model has no omitted variables
                F(3, 3413) =      7.00
                  Prob > F =      0.0001
```

```
6 .
7 . estat ovtest, rhs

  Ramsey RESET test using powers of the independent variables
         Ho:  model has no omitted variables
                 F(30, 3386) =      3.36
                    Prob > F =      0.0000

8 .
9 . pwcorr ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, sig star(.05)
```

	ET	CVT	DLAT	ROI	FCF	R_FCF	AGE
ET	1.0000						
CVT	0.0297 0.0820	1.0000					
DLAT	0.2454* 0.0000	0.0114 0.5035	1.0000				
ROI	-0.1231* 0.0000	0.1465* 0.0000	0.0122 0.4739	1.0000			
FCF	-0.0255 0.1356	0.1192* 0.0000	0.0621* 0.0003	0.1968* 0.0000	1.0000		
R_FCF	-0.0129 0.4507	-0.0705* 0.0000	-0.0834* 0.0000	-0.1725* 0.0000	-0.7384* 0.0000	1.0000	
AGE	-0.2469* 0.0000	0.0014 0.9332	0.0347* 0.0419	-0.0251 0.1419	-0.0313 0.0670	0.0372* 0.0293	1.0000
TAN	0.3050* 0.0000	-0.0124 0.4694	0.3519* 0.0000	-0.1307* 0.0000	0.0268 0.1170	-0.0422* 0.0135	-0.1803* 0.0000
RISVT	0.0855* 0.0000	0.0993* 0.0000	-0.0043 0.8026	-0.1708* 0.0000	-0.2425* 0.0000	0.2223* 0.0000	-0.0210 0.2189
C_RISVT	0.0178 0.2984	0.9287* 0.0000	0.0142 0.4054	0.0506* 0.0030	0.1048* 0.0000	-0.0814* 0.0000	0.0061 0.7215
T_RISVT	0.1872* 0.0000	0.0488* 0.0043	0.1506* 0.0000	-0.1801* 0.0000	-0.2048* 0.0000	0.1470* 0.0000	-0.1017* 0.0000

	TAN	RISVT	C_RISVT	T_RISVT
TAN	1.0000			
RISVT	-0.0521* 0.0023	1.0000		
C_RISVT	-0.0116 0.4954	0.1211* 0.0000	1.0000	
T_RISVT	0.4644* 0.0000	0.7546* 0.0000	0.0611* 0.0003	1.0000

```
10 .
11 . estat vif
```

Variable	VIF	1/VIF
CVT	**7.93**	**0.126100**
C_RISVT	**7.80**	**0.128133**
T_RISVT	**5.82**	**0.171729**
RISVT	**4.71**	**0.212341**
TAN	**2.81**	**0.355833**
FCF	**2.31**	**0.433133**
R_FCF	**2.26**	**0.441855**
ROI	**1.18**	**0.846537**
DLAT	**1.17**	**0.852625**
AGE	**1.05**	**0.949343**
Mean VIF	**3.71**	

```
12 .
13 . estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of ET

         chi2(1)      =     0.83
         Prob > chi2  =   0.3622

14 .
15 . estat imtest, white

White's test for Ho: homoskedasticity
         against Ha: unrestricted heteroskedasticity

         chi2(61)     =    262.37
         Prob > chi2  =    0.0000

Cameron & Trivedi's decomposition of IM-test
```

Source	chi2	df	p
Heteroskedasticity	**262.37**	**61**	**0.0000**
Skewness	**87.47**	**10**	**0.0000**
Kurtosis	**275.39**	**1**	**0.0000**
Total	**625.22**	**72**	**0.0000**

```
16 .
17 . regress ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, vce(cluster id)

Linear regression                               Number of obs =    3427
                                                F( 10,   685) =   31.32
                                                Prob > F      =  0.0000
                                                R-squared     =  0.1871
                                                Root MSE      =  .23557

                                   (Std. Err. adjusted for 686 clusters in id)
```

ET	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
CVT	**.1372751**	**.027166**	**5.05**	**0.000**	**.0839364**	**.1906138**
DLAT	**.060905**	**.0106521**	**5.72**	**0.000**	**.0399903**	**.0818197**
ROI	**-.2783725**	**.0559317**	**-4.98**	**0.000**	**-.3881906**	**-.1685544**
FCF	**-.0317533**	**.0147717**	**-2.15**	**0.032**	**-.0607566**	**-.00275**
R_FCF	**-.2434898**	**.1111073**	**-2.19**	**0.029**	**-.4616416**	**-.0253381**
AGE	**-.0038957**	**.0005804**	**-6.71**	**0.000**	**-.0050353**	**-.002756**
TAN	**.2357126**	**.0357197**	**6.60**	**0.000**	**.1655794**	**.3058458**
RISVT	**.4274395**	**.1045579**	**4.09**	**0.000**	**.2221471**	**.632732**
C_RISVT	**-.1562511**	**.03129**	**-4.99**	**0.000**	**-.2176869**	**-.0948154**

T_RISVT	**-.4968371**	**.1569288**	**-3.17**	**0.002**	**-.8049563**	**-.1887179**
_cons	**.2512952**	**.0401298**	**6.26**	**0.000**	**.1725031**	**.3300874**

```
18 .
19 . xtreg ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, fe

Fixed-effects (within) regression               Number of obs      =      3427
Group variable: id                              Number of groups   =       686

R-sq:  within  = 0.1708                         Obs per group: min =         4
       between = 0.1312                                        avg =       5.0
       overall = 0.1292                                        max =         5

                                                F(10,2731)         =     56.26
corr(u_i, Xb)  = -0.4523                        Prob > F           =    0.0000
```

ET	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
CVT	**.0726531**	**.0130687**	**5.56**	**0.000**	**.0470276**	**.0982785**
DLAT	**.2320203**	**.0195843**	**11.85**	**0.000**	**.1936187**	**.2704218**
ROI	**-.3707595**	**.0221184**	**-16.76**	**0.000**	**-.4141299**	**-.327389**
FCF	**-.0072668**	**.00503**	**-1.44**	**0.149**	**-.0171298**	**.0025961**
R_FCF	**.0129217**	**.0387175**	**0.33**	**0.739**	**-.062997**	**.0888403**
AGE	**-.0035279**	**.0011324**	**-3.12**	**0.002**	**-.0057485**	**-.0013074**
TAN	**.1406541**	**.0221414**	**6.35**	**0.000**	**.0972384**	**.1840697**
RISVT	**.0711126**	**.0373818**	**1.90**	**0.057**	**-.0021868**	**.144412**
C_RISVT	**-.063356**	**.0171023**	**-3.70**	**0.000**	**-.0968906**	**-.0298213**
T_RISVT	**-.0375228**	**.0580691**	**-0.65**	**0.518**	**-.1513866**	**.0763409**
_cons	**-.2043027**	**.0680382**	**-3.00**	**0.003**	**-.3377142**	**-.0708912**
sigma_u	**.25715197**					
sigma_e	**.09179983**					
rho	**.88696556**	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(685, 2731) =    30.67           Prob > F = 0.0000

20 .
21 . xttest3

Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (686)  =   1.1e+08
Prob>chi2 =      0.0000


22 .
23 . xtreg ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, fe vce(cluster id)

Fixed-effects (within) regression               Number of obs      =      3427
Group variable: id                              Number of groups   =       686

R-sq:  within  = 0.1708                         Obs per group: min =         4
       between = 0.1312                                        avg =       5.0
       overall = 0.1292                                        max =         5

                                                F(10,685)          =     34.23
corr(u_i, Xb)  = -0.4523                        Prob > F           =    0.0000
```

(Std. Err. adjusted for **686** clusters in id)

ET	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
CVT	**.0726531**	**.0127338**	**5.71**	**0.000**	**.047651**	**.0976551**
DLAT	**.2320203**	**.057176**	**4.06**	**0.000**	**.119759**	**.3442816**
ROI	**-.3707595**	**.0311707**	**-11.89**	**0.000**	**-.431961**	**-.3095579**
FCF	**-.0072668**	**.0065739**	**-1.11**	**0.269**	**-.0201744**	**.0056407**
R_FCF	**.0129217**	**.0988327**	**0.13**	**0.896**	**-.1811297**	**.206973**
AGE	**-.0035279**	**.0018868**	**-1.87**	**0.062**	**-.0072325**	**.0001766**
TAN	**.1406541**	**.0381788**	**3.68**	**0.000**	**.0656926**	**.2156155**
RISVT	**.0711126**	**.0444431**	**1.60**	**0.110**	**-.0161485**	**.1583736**
C_RISVT	**-.063356**	**.0144735**	**-4.38**	**0.000**	**-.0917737**	**-.0349382**
T_RISVT	**-.0375228**	**.069973**	**-0.54**	**0.592**	**-.1749101**	**.0998644**
_cons	**-.2043027**	**.2028459**	**-1.01**	**0.314**	**-.602577**	**.1939716**
sigma_u	**.25715197**					
sigma_e	**.09179983**					
rho	**.88696556**	(fraction of variance due to u_i)				

24 .
25 . xtreg ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, re

Random-effects GLS regression — Number of obs = **3427**
Group variable: **id** — Number of groups = **686**

R-sq: within = **0.1587** — Obs per group: min = **4**
between = **0.1759** — avg = **5.0**
overall = **0.1724** — max = **5**

Wald chi2(**10**) = **650.12**
corr(u_i, X) = **0** (assumed) — Prob > chi2 = **0.0000**

ET	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
CVT	**.0798848**	**.0131166**	**6.09**	**0.000**	**.0541767**	**.1055929**
DLAT	**.1041318**	**.0097374**	**10.69**	**0.000**	**.0850468**	**.1232168**
ROI	**-.349845**	**.0218497**	**-16.01**	**0.000**	**-.3926697**	**-.3070203**
FCF	**-.0104052**	**.0050073**	**-2.08**	**0.038**	**-.0202192**	**-.0005912**
R_FCF	**-.0114172**	**.0386692**	**-0.30**	**0.768**	**-.0872073**	**.064373**
AGE	**-.0042068**	**.0005218**	**-8.06**	**0.000**	**-.0052295**	**-.0031841**
TAN	**.1439269**	**.0193334**	**7.44**	**0.000**	**.1060342**	**.1818196**
RISVT	**.1003588**	**.0372381**	**2.70**	**0.007**	**.0273734**	**.1733441**
C_RISVT	**-.0734474**	**.0171698**	**-4.28**	**0.000**	**-.1070996**	**-.0397952**
T_RISVT	**-.0691311**	**.0579302**	**-1.19**	**0.233**	**-.1826722**	**.04441**
_cons	**.1897585**	**.0329586**	**5.76**	**0.000**	**.1251609**	**.254356**
sigma_u	**.2155145**					
sigma_e	**.09179983**					
rho	**.84642538**	(fraction of variance due to u_i)				

26 .
27 . xtreg ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, re vce(cluster id)

Random-effects GLS regression — Number of obs = **3427**
Group variable: **id** — Number of groups = **686**

R-sq: within = **0.1587** — Obs per group: min = **4**
between = **0.1759** — avg = **5.0**
overall = **0.1724** — max = **5**

Wald chi2(**10**) = **489.11**
corr(u_i, X) = **0** (assumed) — Prob > chi2 = **0.0000**

(Std. Err. adjusted for **686** clusters in id)

ET	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
CVT	**.0798848**	**.0126154**	**6.33**	**0.000**	**.0551592**	**.1046105**
DLAT	**.1041318**	**.0149785**	**6.95**	**0.000**	**.0747745**	**.1334892**
ROI	**-.349845**	**.0304736**	**-11.48**	**0.000**	**-.4095721**	**-.2901179**
FCF	**-.0104052**	**.0064948**	**-1.60**	**0.109**	**-.0231347**	**.0023243**
R_FCF	**-.0114172**	**.094076**	**-0.12**	**0.903**	**-.1958028**	**.1729685**
AGE	**-.0042068**	**.0006144**	**-6.85**	**0.000**	**-.005411**	**-.0030025**
TAN	**.1439269**	**.0296031**	**4.86**	**0.000**	**.0859059**	**.201948**
RISVT	**.1003588**	**.0445716**	**2.25**	**0.024**	**.0129999**	**.1877176**
C_RISVT	**-.0734474**	**.0143358**	**-5.12**	**0.000**	**-.1015451**	**-.0453497**
T_RISVT	**-.0691311**	**.0688865**	**-1.00**	**0.316**	**-.2041462**	**.065884**
_cons	**.1897585**	**.0544464**	**3.49**	**0.000**	**.0830456**	**.2964713**
sigma_u	**.2155145**					
sigma_e	**.09179983**					
rho	**.84642538**	(fraction of variance due to u_i)				

```
28 .
29 . quietly regress ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, vce(cluster id)

30 .
31 . estimates store POLS_rob

32 .
33 . quietly xtreg ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, fe

34 .
35 . estimates store FE

36 .
37 . quietly xtreg ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, fe vce(cluster id)

38 .
39 . estimates store FE_rob

40 .
41 . quietly xtreg ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, re

42 .
43 . estimates store RE

44 .
45 . quietly xtreg ET CVT DLAT ROI FCF R_FCF AGE TAN RISVT C_RISVT T_RISVT, re vce(cluster id)

46 .
47 . estimates store RE_rob

48 .
49 . estimates table POLS_rob FE FE_rob RE RE_rob, b se stats(N r2 r2_o r2_b r2_w F chi2) b(%7.5f)
```

Variable	POLS_~b	FE	FE_rob	RE	RE_rob
CVT	**0.13728**	**0.07265**	**0.07265**	**0.07988**	**0.07988**
	0.02717	**0.01307**	**0.01273**	**0.01312**	**0.01262**
DLAT	**0.06091**	**0.23202**	**0.23202**	**0.10413**	**0.10413**
	0.01065	**0.01958**	**0.05718**	**0.00974**	**0.01498**
ROI	**-0.27837**	**-0.37076**	**-0.37076**	**-0.34985**	**-0.34985**
	0.05593	**0.02212**	**0.03117**	**0.02185**	**0.03047**
FCF	**-0.03175**	**-0.00727**	**-0.00727**	**-0.01041**	**-0.01041**
	0.01477	**0.00503**	**0.00657**	**0.00501**	**0.00649**
R_FCF	**-0.24349**	**0.01292**	**0.01292**	**-0.01142**	**-0.01142**
	0.11111	**0.03872**	**0.09883**	**0.03867**	**0.09408**
AGE	**-0.00390**	**-0.00353**	**-0.00353**	**-0.00421**	**-0.00421**
	0.00058	**0.00113**	**0.00189**	**0.00052**	**0.00061**
TAN	**0.23571**	**0.14065**	**0.14065**	**0.14393**	**0.14393**
	0.03572	**0.02214**	**0.03818**	**0.01933**	**0.02960**

RISVT	**0.42744**	**0.07111**	**0.07111**	**0.10036**	**0.10036**
	0.10456	**0.03738**	**0.04444**	**0.03724**	**0.04457**
C_RISVT	**-0.15625**	**-0.06336**	**-0.06336**	**-0.07345**	**-0.07345**
	0.03129	**0.01710**	**0.01447**	**0.01717**	**0.01434**
T_RISVT	**-0.49684**	**-0.03752**	**-0.03752**	**-0.06913**	**-0.06913**
	0.15693	**0.05807**	**0.06997**	**0.05793**	**0.06889**
_cons	**0.25130**	**-0.20430**	**-0.20430**	**0.18976**	**0.18976**
	0.04013	**0.06804**	**0.20285**	**0.03296**	**0.05445**
N	**3427**	**3427**	**3427**	**3427**	**3427**
r2	**0.18706**	**0.17081**	**0.17081**		
r2_o		**0.12916**	**0.12916**	**0.17242**	**0.17242**
r2_b		**0.13124**	**0.13124**	**0.17594**	**0.17594**
r2_w		**0.17081**	**0.17081**	**0.15868**	**0.15868**
F	**31.31981**	**56.25933**	**34.22537**		
chi2				**6.5e+02**	**4.9e+02**

legend: b/se

```
50 .
51 . xttest0
```

Breusch and Pagan Lagrangian multiplier test for random effects

ET[id,t] = Xb + u[id] + e[id,t]

Estimated results:

	Var	sd = sqrt(Var)
ET	**.0680609**	**.2608849**
e	**.0084272**	**.0917998**
u	**.0464465**	**.2155145**

Test: Var(u) = 0

chibar2(01) = **4783.59**

Prob > chibar2 = **0.0000**

```
52 .
53 . xtoverid
```

Test of overidentifying restrictions: fixed vs random effects
Cross-section time-series model: xtreg re robust cluster(id)
Sargan-Hansen statistic **41.836** Chi-sq(**10**) P-value = **0.0000**

```
54 .
55 . hausman FE RE, sigmamore
```

	Coefficients (b) FE	(B) RE	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CVT	**.0726531**	**.0798848**	**-.0072318**	**.0014894**
DLAT	**.2320203**	**.1041318**	**.1278884**	**.0172201**
ROI	**-.3707595**	**-.349845**	**-.0209144**	**.0046653**
FCF	**-.0072668**	**-.0104052**	**.0031384**	**.0008617**
R_FCF	**.0129217**	**-.0114172**	**.0243388**	**.0058513**
AGE	**-.0035279**	**-.0042068**	**.0006788**	**.001018**
TAN	**.1406541**	**.1439269**	**-.0032729**	**.0112444**
RISVT	**.0711126**	**.1003588**	**-.0292462**	**.0062567**
C_RISVT	**-.063356**	**-.0734474**	**.0100914**	**.0019066**
T_RISVT	**-.0375228**	**-.0691311**	**.0316083**	**.0092035**

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(**10**) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= **77.92**
Prob>chi2 = **0.0000**

```
56 .
57 . log close
          name:  <unnamed>
           log:  F:\Tese\Tratamento dos dados\Dados\Portugal\Resultados\Dados em painel\Output ET P
> l
      log type:  smcl
     closed on:  20 Jul 2016, 11:46:07
-------------------------------------------------------------------------------

58 .
```