



6 .  
 7 . estat ovtest, rhs  
 (note: CVT^2 dropped because of collinearity)  
 (note: CVT^4 dropped because of collinearity)  
 (note: CVT2^3 dropped because of collinearity)

Ramsey RESET test using powers of the independent variables  
 Ho: model has no omitted variables  
 F(30, 7698) = 6.42  
 Prob > F = 0.0000

8 .  
 9 . pwcorr ET iPas CVT CVT2 DLAT PFNAE ROI FCF AGE TAN RISVT F\_RISVT BCCO, sig star(.05)

	ET	iPas	CVT	CVT2	DLAT	PFNAE	ROI
ET	1.0000						
iPas	0.0407* 0.0003	1.0000					
CVT	0.0240* 0.0321	0.0080 0.4741	1.0000				
CVT2	0.0107 0.3388	0.0169 0.1304	0.7078* 0.0000	1.0000			
DLAT	0.1123* 0.0000	-0.2379* 0.0000	0.0325* 0.0037	0.0015 0.8961	1.0000		
PFNAE	0.0051 0.6527	0.0996* 0.0000	0.0215 0.0589	-0.0131 0.2506	-0.3481* 0.0000	1.0000	
ROI	-0.0928* 0.0000	0.0309* 0.0058	0.1666* 0.0000	-0.0149 0.1818	0.0674* 0.0000	-0.0552* 0.0000	1.0000
FCF	-0.0429* 0.0001	0.0071 0.5283	0.1269* 0.0000	-0.0210 0.0607	0.0770* 0.0000	0.0542* 0.0000	0.2378* 0.0000
AGE	-0.2495* 0.0000	0.1059* 0.0000	0.0134 0.2304	0.0078 0.4838	0.0959* 0.0000	-0.0098 0.3898	0.0264* 0.0186
TAN	0.2526* 0.0000	-0.1546* 0.0000	-0.0139 0.2128	-0.0134 0.2307	0.1728* 0.0000	0.1266* 0.0000	-0.1002* 0.0000
RISVT	0.1186* 0.0000	0.1333* 0.0000	0.0447* 0.0001	0.1138* 0.0000	-0.0662* 0.0000	-0.0862* 0.0000	-0.1805* 0.0000
F_RISVT	-0.0125 0.2625	-0.0179 0.1107	0.1015* 0.0000	-0.0206 0.0657	0.0141 0.2085	0.0280* 0.0139	0.0838* 0.0000
BCCO	-0.0614* 0.0000	-0.1449* 0.0000	0.1122* 0.0000	-0.0227* 0.0430	0.0625* 0.0000	-0.0120 0.2929	0.4365* 0.0000
		FCF	AGE	TAN	RISVT	F_RISVT	BCCO
FCF	1.0000						
AGE	-0.0141 0.2065	1.0000					
TAN	0.0188 0.0935	-0.1797* 0.0000	1.0000				
RISVT	-0.2236* 0.0000	-0.0523* 0.0000	-0.0326* 0.0036	1.0000			
F_RISVT	0.9262* 0.0000	-0.0216 0.0541	0.0016 0.8840	-0.1670* 0.0000	1.0000		

BCCO	0.1779*	0.0067	-0.3347*	-0.2025*	0.0973*	1.0000
	0.0000	0.5497	0.0000	0.0000	0.0000	

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

Variable	VIF	1/VIF
FCF	9.63	0.103868
F_RISVT	8.97	0.111470
CVT	2.25	0.443700
CVT2	2.17	0.460683
BCCO	1.54	0.647358
ROI	1.52	0.656772
TAN	1.36	0.734398
DLAT	1.35	0.740197
PFNAE	1.26	0.796731
iPas	1.18	0.850966
RISVT	1.15	0.871851
AGE	1.08	0.923373
Mean VIF	2.79	

```
12 .
13 . estat hettest
```

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

chi2(1) = 0.04  
 Prob > chi2 = 0.8404

```
14 .
15 . estat imtest, white
```

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

chi2(87) = 1013.68  
 Prob > chi2 = 0.0000

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	1013.68	87	0.0000
Skewness	1147.61	12	0.0000
Kurtosis	121.25	1	0.0000
Total	2282.54	100	0.0000

```
16 .
17 . regress ET iPas CVT CVT2 DLAT PFNAE ROI FCF AGE TAN RISVT F_RISVT BCCO, vce(cluster id)
```

Linear regression

Number of obs = 7741  
 F( 12, 1584) = 47.46  
 Prob > F = 0.0000  
 R-squared = 0.1628  
 Root MSE = .24558





```
26 .
27 . xtreg ET iPas CVT CVT2 DLAT PFNAE ROI FCF AGE TAN RISVT F_RISVT BCCO, re vce(cluster id)
```

```
Random-effects GLS regression           Number of obs   =    7741
Group variable: id                     Number of groups =    1585

R-sq:  within = 0.1162                  Obs per group:  min =     1
        between = 0.1272                  avg   =     4.9
        overall = 0.1246                  max   =     5

corr(u_i, X) = 0 (assumed)              Wald chi2(12)   =   631.85
                                                Prob > chi2     =    0.0000
```

(Std. Err. adjusted for 1585 clusters in id)

ET	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
iPas	.0850162	.0129322	6.57	0.000	.0596695	.110363
CVT	.0524934	.0065729	7.99	0.000	.0396107	.0653762
CVT2	-.0021946	.0004058	-5.41	0.000	-.00299	-.0013992
DLAT	.1015738	.0124964	8.13	0.000	.0770814	.1260662
PFNAE	-.2169757	.1183995	-1.83	0.067	-.4490345	.0150831
ROI	-.3291176	.0307246	-10.71	0.000	-.3893368	-.2688983
FCF	-.0363275	.0138061	-2.63	0.009	-.063387	-.0092679
AGE	-.0052343	.0004591	-11.40	0.000	-.006134	-.0043345
TAN	.1023913	.0240244	4.26	0.000	.0553044	.1494783
RISVT	.0296223	.0155993	1.90	0.058	-.0009518	.0601963
F_RISVT	.030854	.019734	1.56	0.118	-.007824	.069532
BCCO	.0011425	.0165486	0.07	0.945	-.0312922	.0335772
_cons	.1780744	.0500334	3.56	0.000	.0800107	.2761382
sigma_u	.2279594					
sigma_e	.08228497					
rho	.8847252	(fraction of variance due to u_i)				

```
28 .
29 . quietly regress ET iPas CVT CVT2 DLAT PFNAE ROI FCF AGE TAN RISVT F_RISVT BCCO, vce(cluster id)
30 .
31 . estimates store POLS_rob

32 .
33 . quietly xtreg ET iPas CVT CVT2 DLAT PFNAE ROI FCF AGE TAN RISVT F_RISVT BCCO, fe
34 .
35 . estimates store FE

36 .
37 . quietly xtreg ET iPas CVT CVT2 DLAT PFNAE ROI FCF AGE TAN RISVT F_RISVT BCCO, fe vce(cluster id)
38 .
39 . estimates store FE_rob

40 .
41 . quietly xtreg ET iPas CVT CVT2 DLAT PFNAE ROI FCF AGE TAN RISVT F_RISVT BCCO, re
42 .
```

```

43 . estimates store RE
44 .
45 . quietly xtreg ET iPas CVT CVT2 DLAT PFNAE ROI FCF AGE TAN RISVT F_RISVT BCCO, re vce(cluster
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_rob	FE	FE_rob	RE	RE_rob
iPas	0.08244 0.01228	(omitted)	(omitted)	0.08502 0.01227	0.08502 0.01293
CVT	0.05734 0.01420	0.04605 0.00573	0.04605 0.00659	0.05249 0.00572	0.05249 0.00657
CVT2	-0.00328 0.00086	-0.00168 0.00049	-0.00168 0.00041	-0.00219 0.00049	-0.00219 0.00041
DLAT	0.06125 0.00892	0.25032 0.01526	0.25032 0.04750	0.10157 0.00765	0.10157 0.01250
PFNAE	0.19748 0.15635	-0.06607 0.06510	-0.06607 0.13182	-0.21698 0.06010	-0.21698 0.11840
ROI	-0.20752 0.05882	-0.34605 0.01840	-0.34605 0.03297	-0.32912 0.01838	-0.32912 0.03072
FCF	-0.18585 0.06078	-0.03263 0.00985	-0.03263 0.01233	-0.03633 0.00987	-0.03633 0.01381
AGE	-0.00472 0.00045	-0.00321 0.00071	-0.00321 0.00126	-0.00523 0.00039	-0.00523 0.00046
TAN	0.22588 0.02406	0.06651 0.01410	0.06651 0.03209	0.10239 0.01222	0.10239 0.02402
RISVT	0.23941 0.04195	0.02046 0.01263	0.02046 0.01576	0.02962 0.01263	0.02962 0.01560
F_RISVT	0.22906 0.07233	0.02743 0.01278	0.02743 0.01825	0.03085 0.01282	0.03085 0.01973
BCCO	0.17325 0.04123	0.00140 0.01362	0.00140 0.01673	0.00114 0.01329	0.00114 0.01655
_cons	0.06716 0.04740	-0.29227 0.05824	-0.29227 0.17823	0.17807 0.03092	0.17807 0.05003
N	7741	7741	7741	7741	7741
r2	0.16280	0.13064	0.13064		
r2_o		0.04519	0.04519	0.12462	0.12462
r2_b		0.04339	0.04339	0.12718	0.12718
r2_w		0.13064	0.13064	0.11622	0.11622
F	47.46048	83.94940	39.62455		
chi2				1.0e+03	6.3e+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	.0719229	.2681845
e	.0067708	.082285
u	.0519655	.2279594

Test: Var(u) = 0

chibar2(01) = 11480.28  
 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 **200.623** Chi-sq(11) P-value = **0.0000**

54 .  
 55 . hausman FE RE, sigmamore

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) FE	(B) RE		
CVT	.0460453	.0524934	-.0064482	.0010545
CVT2	-.0016802	-.0021946	.0005145	.0000714
DLAT	.2503175	.1015738	.1487437	.0134702
PFNAE	-.0660711	-.2169757	.1509046	.0274601
ROI	-.3460502	-.3291176	-.0169326	.0033255
FCF	-.0326344	-.0363275	.0036931	.001618
AGE	-.0032081	-.0052343	.0020261	.0006104
TAN	.0665121	.1023913	-.0358792	.0074394
RISVT	.0204603	.0296223	-.009162	.0021963
F_RISVT	.027426	.030854	-.003428	.0020042
BCCO	.0014012	.0011425	.0002587	.0037986

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(11) = (b-B)'[(V\_b-V\_B)^(-1)](b-B)  
 = **236.85**  
 Prob>chi2 = **0.0000**

56 .  
 57 . log close  
     name: <unnamed>  
     log: F:\Tese\Tratamento dos dados\Dados\Portugal\Resultados\Dados em painel\Output ET T  
     log type: smcl  
     closed on: 20 Jul 2016, 11:33:05

58 .