


```
6 .
7 . estat ovtest, rhs
   (note: ROI dropped because of collinearity)
   (note: ROI^3 dropped because of collinearity)
```

```
Ramsey RESET test using powers of the independent variables
Ho: model has no omitted variables
    F(29, 4385) =      7.48
    Prob > F =      0.0000
```

```
8 .
9 . pwcorr ET CVT DLAT PFNAE ROI ROI2 FCF AGE TAN R_TAN RISVT, sig star(.05)
```

	ET	CVT	DLAT	PFNAE	ROI	ROI2	FCF				
ET	1.0000										
CVT	0.0193 0.1939	1.0000									
DLAT	0.0200 0.1780	0.0878*	1.0000								
PFNAE	0.0161 0.2851	0.0300*	-0.3536*	1.0000							
ROI	-0.0690* 0.0000	0.2225* 0.0000	0.1599* 0.0000	-0.1100* 0.0000	1.0000						
ROI2	-0.0591* 0.0001	-0.0053 0.7217	-0.1622* 0.0000	0.1699* 0.0000	-0.0915* 0.0000	1.0000					
FCF	-0.1316* 0.0000	0.2004* 0.0000	0.2010* 0.0000	0.0537* 0.0004	0.5305* 0.0000	-0.0871* 0.0000	1.0000				
AGE	-0.2684* 0.0000	0.0369* 0.0129	0.2347* 0.0000	0.0397* 0.0082	0.0854* 0.0000	0.0790* 0.0000	0.0401* 0.0069				
TAN	0.2293* 0.0000	-0.0154 0.2979	-0.0885* 0.0000	0.1660* 0.0000	-0.0574* 0.0001	-0.1402* 0.0000	0.0098 0.5082				
R_TAN	-0.0231 0.1194	0.2204* 0.0000	0.1343* 0.0000	-0.1065* 0.0000	0.9024* 0.0000	-0.0913* 0.0000	0.5197* 0.0000				
RISVT	0.1452* 0.0000	-0.0724* 0.0000	-0.0761* 0.0000	-0.0811* 0.0000	-0.2075* 0.0000	0.0446* 0.0026	-0.2803* 0.0000				
		AGE	TAN	R_TAN	RISVT						
AGE		1.0000									
TAN		-0.1511* 0.0000	1.0000								
R_TAN		0.0687* 0.0000	0.0077 0.6041	1.0000							
RISVT		-0.1268* 0.0000	0.0340* 0.0217	-0.1998* 0.0000	1.0000						

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

Variable	VIF	1/VIF
ROI	5.62	0.177856
R_TAN	5.51	0.181611
FCF	1.58	0.632412
DLAT	1.33	0.749134
PFNAE	1.30	0.769402
AGE	1.14	0.878118
RISVT	1.11	0.899646
TAN	1.11	0.900425
ROI2	1.10	0.910582
CVT	1.07	0.935295
Mean VIF	2.09	

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

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

chi2(1) = 23.47
 Prob > chi2 = 0.0000

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

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

chi2(62) = 730.95
 Prob > chi2 = 0.0000

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	730.95	62	0.0000
Skewness	618.83	10	0.0000
Kurtosis	50.36	1	0.0000
Total	1400.14	73	0.0000

```
16 .
17 . regress ET CVT DLAT PFNAE ROI ROI2 FCF AGE TAN R_TAN RISVT, vce(cluster id)
```

Linear regression

Number of obs = 4424
 F(10, 902) = 27.59
 Prob > F = 0.0000
 R-squared = 0.1525
 Root MSE = .2518

(Std. Err. adjusted for 903 clusters in id)

ET	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
CVT	.073266	.0198987	3.68	0.000	.034213	.1123191
DLAT	.0684591	.0146028	4.69	0.000	.0397997	.0971184
PFNAE	.6452866	.2383311	2.71	0.007	.1775385	1.113035
ROI	-.4608738	.1702245	-2.71	0.007	-.794956	-.1267916
ROI2	-.4035049	.3111909	-1.30	0.195	-1.014247	.2072377
FCF	-.311538	.0942295	-3.31	0.001	-.4964727	-.1266034
AGE	-.0062984	.0006711	-9.38	0.000	-.0076156	-.0049812
TAN	.1806949	.0316184	5.71	0.000	.1186407	.2427491
R_TAN	1.144964	.2939912	3.89	0.000	.5679774	1.72195

(Std. Err. adjusted for 903 clusters in id)

ET	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
CVT	.038392	.0101231	3.79	0.000	.0185244	.0582595
DLAT	.2966727	.0732669	4.05	0.000	.1528792	.4404661
PFNAE	-.1404325	.1422641	-0.99	0.324	-.4196398	.1387747
ROI	-.3784806	.1082922	-3.49	0.000	-.5910147	-.1659466
ROI2	.595118	.185537	3.21	0.001	.2309837	.9592524
FCF	-.0508128	.0255307	-1.99	0.047	-.1009193	-.0007064
AGE	-.0028662	.001692	-1.69	0.091	-.0061869	.0004544
TAN	-.0099197	.0560286	-0.18	0.860	-.1198812	.1000419
R_TAN	.1997417	.1600752	1.25	0.212	-.1144215	.5139049
RISVT	-.0209197	.0213105	-0.98	0.327	-.0627437	.0209043
_cons	-.4505495	.2908972	-1.55	0.122	-1.021464	.1203646
sigma_u	.3072181					
sigma_e	.07428555					
rho	.94476205	(fraction of variance due to u_i)				

24 .

25 . xtreg ET CVT DLAT PFNAE ROI ROI2 FCF AGE TAN R_TAN RISVT, re

```

Random-effects GLS regression           Number of obs   =       4424
Group variable: id                     Number of groups =        903

R-sq:  within = 0.0786                  Obs per group:  min =         1
        between = 0.0815                  avg =         4.9
        overall = 0.0801                  max =         5

corr(u_i, X) = 0 (assumed)              Wald chi2(10)   =       377.08
                                           Prob > chi2     =        0.0000
    
```

ET	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CVT	.0499102	.0076706	6.51	0.000	.034876	.0649443
DLAT	.1026194	.0116598	8.80	0.000	.0797666	.1254721
PFNAE	-.2631285	.0879244	-2.99	0.003	-.435457	-.0907999
ROI	-.3805106	.0610559	-6.23	0.000	-.5001779	-.2608433
ROI2	.4208099	.1007006	4.18	0.000	.2234403	.6181794
FCF	-.0653389	.01656	-3.95	0.000	-.0977959	-.0328818
AGE	-.0061263	.0005516	-11.11	0.000	-.0072074	-.0050452
TAN	.0428529	.016911	2.53	0.011	.009708	.0759977
R_TAN	.2173132	.0966632	2.25	0.025	.0278568	.4067696
RISVT	-.0167087	.0174294	-0.96	0.338	-.0508697	.0174524
_cons	.2413055	.0432522	5.58	0.000	.1565327	.3260784
sigma_u	.23667891					
sigma_e	.07428555					
rho	.91032225	(fraction of variance due to u_i)				

26 .

27 . xtreg ET CVT DLAT PFNAE ROI ROI2 FCF AGE TAN R_TAN RISVT, re vce(cluster id)

```

Random-effects GLS regression           Number of obs   =       4424
Group variable: id                     Number of groups =        903

R-sq:  within = 0.0786                  Obs per group:  min =         1
        between = 0.0815                  avg =         4.9
        overall = 0.0801                  max =         5

corr(u_i, X) = 0 (assumed)              Wald chi2(10)   =       172.30
                                           Prob > chi2     =        0.0000
    
```

(Std. Err. adjusted for 903 clusters in id)

ET	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
CVT	.0499102	.010186	4.90	0.000	.029946	.0698743
DLAT	.1026194	.0201426	5.09	0.000	.0631406	.1420982
PFNAE	-.2631285	.1375505	-1.91	0.056	-.5327225	.0064655
ROI	-.3805106	.1030391	-3.69	0.000	-.5824636	-.1785577
ROI2	.4208099	.1705108	2.47	0.014	.0866148	.7550049
FCF	-.0653389	.0287152	-2.28	0.023	-.1216197	-.009058
AGE	-.0061263	.0006922	-8.85	0.000	-.0074829	-.0047697
TAN	.0428529	.0396772	1.08	0.280	-.034913	.1206187
R_TAN	.2173132	.156731	1.39	0.166	-.089874	.5245004
RISVT	-.0167087	.0208469	-0.80	0.423	-.0575678	.0241505
_cons	.2413055	.0831904	2.90	0.004	.0782554	.4043557
sigma_u	.23667891					
sigma_e	.07428555					
rho	.91032225	(fraction of variance due to u_i)				

```

28 .
29 . quietly regress ET CVT DLAT PFNAE ROI ROI2 FCF AGE TAN R_TAN RISVT, vce(cluster id)
30 .
31 . estimates store POLS_rob
32 .
33 . quietly xtreg ET CVT DLAT PFNAE ROI ROI2 FCF AGE TAN R_TAN RISVT, fe
34 .
35 . estimates store FE
36 .
37 . quietly xtreg ET CVT DLAT PFNAE ROI ROI2 FCF AGE TAN R_TAN RISVT, fe vce(cluster id)
38 .
39 . estimates store FE_rob
40 .
41 . quietly xtreg ET CVT DLAT PFNAE ROI ROI2 FCF AGE TAN R_TAN RISVT, re
42 .
43 . estimates store RE
44 .
45 . quietly xtreg ET CVT DLAT PFNAE ROI ROI2 FCF AGE TAN R_TAN 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	0.07327	0.03839	0.03839	0.04991	0.04991
	0.01990	0.00766	0.01012	0.00767	0.01019
DLAT	0.06846	0.29667	0.29667	0.10262	0.10262
	0.01460	0.02273	0.07327	0.01166	0.02014
PFNAE	0.64529	-0.14043	-0.14043	-0.26313	-0.26313
	0.23833	0.09179	0.14226	0.08792	0.13755
ROI	-0.46087	-0.37848	-0.37848	-0.38051	-0.38051
	0.17022	0.06084	0.10829	0.06106	0.10304
ROI2	-0.40350	0.59512	0.59512	0.42081	0.42081
	0.31119	0.10059	0.18554	0.10070	0.17051
FCF	-0.31154	-0.05081	-0.05081	-0.06534	-0.06534
	0.09423	0.01649	0.02553	0.01656	0.02872
AGE	-0.00630	-0.00287	-0.00287	-0.00613	-0.00613
	0.00067	0.00086	0.00169	0.00055	0.00069

TAN	0.18069	-0.00992	-0.00992	0.04285	0.04285
	0.03162	0.01928	0.05603	0.01691	0.03968
R_TAN	1.14496	0.19974	0.19974	0.21731	0.21731
	0.29399	0.09620	0.16008	0.09666	0.15673
RISVT	0.27316	-0.02092	-0.02092	-0.01671	-0.01671
	0.06018	0.01733	0.02131	0.01743	0.02085
_cons	0.21221	-0.45055	-0.45055	0.24131	0.24131
	0.05457	0.08515	0.29090	0.04325	0.08319
<hr/>					
N	4424	4424	4424	4424	4424
r2	0.15246	0.10188	0.10188		
r2_o		0.00635	0.00635	0.08006	0.08006
r2_b		0.00521	0.00521	0.08145	0.08145
r2_w		0.10188	0.10188	0.07862	0.07862
F	27.59429	39.82780	9.82665		
chi2				3.8e+02	1.7e+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	.0746377	.273199
e	.0055183	.0742855
u	.0560169	.2366789

Test: Var(u) = 0

chibar2(01) = 6799.72
 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 128.977 Chi-sq(10) 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	.038392	.0499102	-.0115182	.0016139
DLAT	.2966727	.1026194	.1940533	.0201274
PFNAE	-.1404325	-.2631285	.1226959	.0330401
ROI	-.3784806	-.3805106	.00203	.0121704
ROI2	.595118	.4208099	.1743082	.0213178
FCF	-.0508128	-.0653389	.014526	.0032584
AGE	-.0028662	-.0061263	.0032601	.000688
TAN	-.0099197	.0428529	-.0527725	.0101673
R_TAN	.1997417	.2173132	-.0175715	.0186431
RISVT	-.0209197	-.0167087	-.004211	.0032927

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)
 = 208.36
 Prob>chi2 = 0.0000

56 .

57 . log close

 name: <unnamed>

 log: F:\Tese\Tratamento dos dados\Dados\Portugal\Resultados\Dados em painel\Output ET E

 log type: smcl

 closed on: 20 Jul 2016, 12:22:12

58 .