

Model Common Effect (PLS)

```
. reg lr cofl ldr npl bepl size ovcta pdb inflasi
```

Source	SS	df	MS	Number of obs	=	552
Model	3197.12513	8	399.640641	F(8, 543)	=	27.34
Residual	7938.27297	543	14.6192872	Prob > F	=	0.0000
				R-squared	=	0.2871
				Adj R-squared	=	0.2766
Total	11135.3981	551	20.2094339	Root MSE	=	3.8235

lrlendingr-e	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
cofl	.4467298	.1029344	4.34	0.000	.2445314 .6489282
ldr	-.0700502	.0123586	-5.67	0.000	-.0943267 -.0457737
npl	-.2478276	.0961529	-2.58	0.010	-.4367047 -.0589504
bepl	-.5224197	.0535814	-9.75	0.000	-.627672 -.4171674
size	.0452302	.1119792	0.40	0.686	-.1747353 .2651957
ovcta	-.1357024	.1168993	-1.16	0.246	-.3653326 .0939278
pdb	-1.364689	.2707874	-5.04	0.000	-1.896608 -.8327703
inflasi	-.3402722	.1020692	-3.33	0.001	-.540771 -.1397734
_cons	23.68321	3.279325	7.22	0.000	17.24149 30.12492

Model Fixed Effect (FE)

```
. xtreg lr cofl ldr npl bepl size ovcta pdb inflasi, fe
```

```
Fixed-effects (within) regression      Number of obs   =    552
Group variable: Firm                  Number of groups =    23
R-sq:                                 Obs per group:
    within = 0.3113                    min           =    24
    between = 0.0257                    avg           =   24.0
    overall = 0.1226                    max           =    24

F(8,521) = 29.43
corr(u_i, Xb) = -0.6585                Prob > F        = 0.0000
```

lrlendingr-e	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
cofl	.2423055	.1276113	1.90	0.058	-.0083905	.4930016
ldr	-.0011067	.0237636	-0.05	0.963	-.0477908	.0455775
npl	-.3346094	.1042915	-3.21	0.001	-.5394929	-.1297259
bepl	-.6291031	.0553217	-11.37	0.000	-.7377842	-.520422
size	-1.726328	.6688064	-2.58	0.010	-3.040217	-.4124396
ovcta	-.0540006	.1344183	-0.40	0.688	-.3180692	.2100679
pdb	-1.829499	.344053	-5.32	0.000	-2.5054	-1.153597
inflasi	-.3795717	.0933831	-4.06	0.000	-.5630253	-.196118
_cons	50.99593	12.10149	4.21	0.000	27.22221	74.76964
sigma_u	3.4937683					
sigma_e	3.427313					
rho	.50960099	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(22, 521) = 7.04                Prob > F = 0.0000
```

Model Random Effect (Re)

```
. xtreg lrlendingr>e cof1 ldr npl bep1 size ovcta pdb inflasi
```

```
Random-effects GLS regression      Number of obs   =    552
Group variable: Firm              Number of groups =    23
R-sq:                             Obs per group:
    within = 0.2848                min =          24
    between = 0.3062                avg  =         24.0
    overall = 0.2869                max  =          24

                                Wald chi2(8)      =    218.06
corr(u_i, X) = 0 (assumed)        Prob > chi2     =    0.0000
```

lrlendingr>e	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
cof1	.4228275	.1049112	4.03	0.000	.2172052	.6284497
ldr	-.0683305	.012897	-5.30	0.000	-.0936082	-.0430528
npl	-.2593663	.0968875	-2.68	0.007	-.4492624	-.0694703
bep1	-.5364354	.0536757	-9.99	0.000	-.6416378	-.4312331
size	.0396064	.1186627	0.33	0.739	-.1929683	.272181
ovcta	-.1267593	.1180803	-1.07	0.283	-.3581925	.1046739
pdb	-1.362244	.2693229	-5.06	0.000	-1.890107	-.8343812
inflasi	-.3395371	.1006883	-3.37	0.001	-.5368826	-.1421917
_cons	23.72647	3.383291	7.01	0.000	17.09534	30.35759
sigma_u	.28939312					
sigma_e	3.427313					
rho	.00707919	(fraction of variance due to u_i)				

```
. estimates table fe re ols gls, star stats (Nr2r2_a)
```

Variable	fe	re	ols	gls
cof1	.42282746***	.42282746***	.42282746***	.42282746***
ldr	-.06833054***	-.06833054***	-.06833054***	-.06833054***
npl	-.25936635**	-.25936635**	-.25936635**	-.25936635**
bep1	-.53643543***	-.53643543***	-.53643543***	-.53643543***
size	.03960636	.03960636	.03960636	.03960636
ovcta	-.12675928	-.12675928	-.12675928	-.12675928
pdb	-1.3622443***	-1.3622443***	-1.3622443***	-1.3622443***
inflasi	-.33953711***	-.33953711***	-.33953711***	-.33953711***
_cons	23.726466***	23.726466***	23.726466***	23.726466***
Nr2r2_a				

legend: * p<0.05; ** p<0.01; *** p<0.001

UJi Hausman

```
. quietly xtreg lr cof1 ldr npl bep1 size ovcta pdb inflasi, fe
. estimates store fe
. quietly xtreg lr cof1 ldr npl bep1 size ovcta pdb inflasi, re
. estimates store re
. hausman fe re
```

	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
cof1	.2423055	.4228275	-.1805219	.0726518
ldr	-.0011067	-.0683305	.0672239	.0199593
npl	-.3346094	-.2593663	-.075243	.0385943
bep1	-.6291031	-.5364354	-.0926676	.0133947
size	-1.726328	.0396064	-1.765935	.6581954
ovcta	-.0540006	-.1267593	.0727586	.0642287
pdb	-1.829499	-1.362244	-.4672544	.2140972
inflasi	-.3795717	-.3395371	-.0400346	.

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(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= -35.25 chi2<0 ==> model fitted on these
data fails to meet the asymptotic
assumptions of the Hausman test;
see suest for a generalized test
```

Uji Lagrange Multiplier (LM Test)

. estimates store re

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

lrlendingrate[Firm,t] = Xb + u[Firm] + e[Firm,t]

Estimated results:

	Var	sd = sqrt(Var)
lrlendi~e	20.20943	4.49549
e	11.74647	3.427313
u	.0837484	.2893931

Test: Var(u) = 0

chibar2(01) = 160.34
 Prob > chibar2 = 0.0000

Uji Multikolinearitas

. vif, uncentered

Variable	VIF	1/VIF
size	62.50	0.016001
pdb	39.91	0.025058
ldr	33.94	0.029461
inflasi	12.11	0.082585
cof1	5.85	0.170899
ovcta	5.30	0.188600
npl	2.78	0.359170
bep1	1.76	0.567730
Mean VIF	20.52	

Metode Robus

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. xtreg lr cofl ldr npl bepl size ovcta pdb inflasi, fe ro
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```
Fixed-effects (within) regression      Number of obs   =    552
Group variable: Firm                  Number of groups =    23
R-sq:                                 Obs per group:
    within = 0.3113                    min           =    24
    between = 0.0257                   avg           =   24.0
    overall = 0.1226                   max           =    24
```

```
corr(u_i, Xb) = -0.6585                F(8,22)         =    14.47
                                                Prob > F        =    0.0000
```

(Std. Err. adjusted for 23 clusters in Firm)

lrlendingr-e	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
cofl	.2423055	.1255114	1.93	0.067	-.0179892	.5026002
ldr	-.0011067	.0270267	-0.04	0.968	-.0571567	.0549434
npl	-.3346094	.2018044	-1.66	0.111	-.7531261	.0839073
bepl	-.6291031	.1450267	-4.34	0.000	-.92987	-.3283361
size	-1.726328	.6558501	-2.63	0.015	-3.086478	-.3661785
ovcta	-.0540006	.1361021	-0.40	0.695	-.3362592	.2282579
pdb	-1.829499	.2917356	-6.27	0.000	-2.434521	-1.224476
inflasi	-.3795717	.051335	-7.39	0.000	-.486034	-.2731093
_cons	50.99593	10.75198	4.74	0.000	28.69769	73.29417
sigma_u	3.4937683					
sigma_e	3.427313					
rho	.50960099	(fraction of variance due to u_i)				

Model Generalized Least Square (GLS)

```
. xtgls lr cof1 ldr npl bep1 size ovcta pdb inflasi
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares

Panels: homoskedastic

Correlation: no autocorrelation

```
Estimated covariances      =      1      Number of obs      =      552
Estimated autocorrelations =      0      Number of groups   =      23
Estimated coefficients     =      9      Time periods       =      24
                               Wald chi2(8)       =      222.32
Log likelihood             = -1519.043   Prob > chi2        =      0.0000
```

lrlendingr-e	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
cof1	.4467298	.1020918	4.38	0.000	.2466335	.646826
ldr	-.0700502	.0122574	-5.71	0.000	-.0940743	-.0460261
npl	-.2478276	.0953658	-2.60	0.009	-.4347411	-.0609141
bep1	-.5224197	.0531428	-9.83	0.000	-.6265777	-.4182616
size	.0452302	.1110626	0.41	0.684	-.1724485	.2629089
ovcta	-.1357024	.1159424	-1.17	0.242	-.3629453	.0915405
pdb	-1.364689	.2685708	-5.08	0.000	-1.891078	-.8383003
inflasi	-.3402722	.1012337	-3.36	0.001	-.5386865	-.1418579
_cons	23.68321	3.252482	7.28	0.000	17.30846	30.05795