An empirical example

Question: Does income inequality improve as income increases?

1. Data: Gini coefficient and real GDP (Annual data from S. Korea)

Dependent Variable: LOG(GINI)
Method: Least Squares
Date: 10/26/15 Time: 18:20
Sample: 1990 2014
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.363602	0.013466	-101.2663	0.0000
@TREND	0.009866	0.000962	10.25712	0.0000

R-squared	0.820605	Mean dependent var	-1.245216
Adjusted R-squared	0.812805	S.D. dependent var	0.080153
S.E. of regression	0.034679	Akaike info criterion	-3.808748
Sum squared resid	0.027661	Schwarz criterion	-3.711238
Log likelihood	49.60935	F-statistic	105.2084
Durbin-Watson stat	0.860078	Prob(F-statistic)	0.000000

Dependent Variable: LOG(RGDP)
Method: Least Squares
Date: 10/26/15 Time: 18:39
Sample: 1990 2014
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.458894	0.021865	386.8687	0.0000
@TREND	0.049861	0.001562	31.92563	0.0000

R-squared	0.977932	Mean dependent var	9.057227
Adjusted R-squared	0.976973	S.D. dependent var	0.371085
S.E. of regression	0.056311	Akaike info criterion	-2.839233
Sum squared resid	0.072931	Schwarz criterion	-2.741723
Log likelihood	37.49042	F-statistic	1019.246
Durbin-Watson stat	0.377332	Prob(F-statistic)	0.000000

Dependent Variable: GINI
Method: Least Squares
Date: 10/26/15 Time: 18:14
Sample: 1990 2014
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.213349	0.050568	-4.219088	0.0003
LOG(RGDP)	0.055437	0.005579	9.937452	0.0000

R-squared	0.811093	Mean dependent var	0.288760
Adjusted R-squared	0.802880	S.D. dependent var	0.022842
S.E. of regression	0.010142	Akaike info criterion	-6.267722
Sum squared resid	0.002366	Schwarz criterion	-6.170212
Log likelihood	80.34653	F-statistic	98.75296
Durbin-Watson stat	1.004660	Prob(F-statistic)	0.000000

2. Data: Ratio of incomes (fifth quintile/first quintile) and real GDP (Annual data from S. Korea)

Dependent Variable: LOG(FIFTH_FIRST)
Method: Least Squares
Date: 10/26/15 Time: 19:58
Sample: 1990 2014
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.294788	0.023356	55.43672	0.0000
@TREND	0.022606	0.001668	13.55064	0.0000

R-squared	0.888685	Mean dependent var	1.566066
Adjusted R-squared	0.883845	S.D. dependent var	0.176492
S.E. of regression	0.060151	Akaike info criterion	-2.707290
Sum squared resid	0.083218	Schwarz criterion	-2.609780
Log likelihood	35.84113	F-statistic	183.6200
Durbin-Watson stat	0.838758	Prob(F-statistic)	0.000000

Dependent Variable: FIFTH_FIRST
Method: Least Squares
Date: 10/26/15 Time: 19:43
Sample: 1990 2014
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-14.18919	1.655925	-8.568739	0.0000
LOG(RGDP)	2.103115	0.182682	11.51244	0.0000

R-squared	0.852124	Mean dependent var	4.859200
Adjusted R-squared	0.845695	S.D. dependent var	0.845443
S.E. of regression	0.332104	Akaike info criterion	0.709882
Sum squared resid	2.536743	Schwarz criterion	0.807392
Log likelihood	-6.873529	F-statistic	132.5362
Durbin-Watson stat	0.805033	Prob(F-statistic)	0.000000

Dependent Variable: FIFTH_FIRST
Method: Least Squares
Date: 10/26/15 Time: 19:44
Sample: 1990 2014
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	75.44470	41.78736	1.805443	0.0847
LOG(RGDP)	-17.87092	9.307133	-1.920132	0.0679
LOG(RGDP)*LOG(RGDP)	1.110873	0.517538	2.146457	0.0431

R-squared	0.877730	Mean dependent var	4.859200
Adjusted R-squared	0.866615	S.D. dependent var	0.845443
S.E. of regression	0.308772	Akaike info criterion	0.599740
Sum squared resid	2.097484	Schwarz criterion	0.746005
Log likelihood	-4.496750	F-statistic	78.96511
Durbin-Watson stat	0.900880	Prob(F-statistic)	0.000000