APPENDIX A

Unit root test results

1. Levin, Lin and Chu test result with individual intercept.

Null Hypothesis: Unit root (common unit root process)
Series: GRP
Date: 08/24/15 Time: 00:02
Sample: 1996 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 85
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-7.95913	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on GRP

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.74753	21.409	3.1948	0	3	14.0	17
222	-1.13338	19.797	5.7507	0	3	10.0	17
333	-1.01848	12.070	3.7089	0	3	16.0	17
444	-0.94739	19.903	3.3690	0	3	16.0	17
555	-1.09377	6.3448	1.1351	0	3	15.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.99166	-9.536	1.010	-0.554	0.919		85

Null Hypothesis: Unit root (common unit root process)
Series: EDU
Date: 08/24/15 Time: 00:04
Sample: 1996 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 77
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.49573	0.0674

** Probabilities are computed assuming asympotic normality

Intermediate results on EDU

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	0.02689	0.0056	0.0020	0	3	4.0	17
222	-0.04348	0.0004	0.0015	3	3	7.0	14
333	-0.09814	0.0081	0.0099	0	3	1.0	17
444	0.24274	0.0025	0.0311	3	3	1.0	14
555	-0.04369	0.0007	0.0018	2	3	16.0	15

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-0.03066	-2.213	1.095	-0.554	0.919	77

Null Hypothesis: Unit root (common unit root process)
Series: EM
Date: 08/24/15 Time: 00:05
Sample: 1996 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 85
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.24557	0.1065

** Probabilities are computed assuming asympotic normality

Intermediate results on EM

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.97624	6.E+09	7.E+08	0	3	16.0	17
222	-0.66876	3.E+10	5.E+09	0	3	14.0	17
333	-0.15851	2.E+10	3.E+10	0	3	1.0	17
444	-0.20375	1.E+11	1.E+11	0	3	0.0	17
555	-0.25056	3.E+10	2.E+10	0	3	2.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-0.33623	-3.925	1.064	-0.554	0.919	85

Null Hypothesis: Unit root (common unit root process)
Series: TAX
Date: 08/24/15 Time: 00:06
Sample: 1996 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 2
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 81
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	8.03791	1.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on TAX

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	0.17253	1.E+09	1.E+09	2	3	4.0	15
222	0.07723	9.E+08	7.E+08	0	3	3.0	17
333	0.08469	726844	1.E+06	0	3	1.0	17
444	0.15324	801919	4.E+06	0	3	2.0	17
555	0.14713	2.E+06	2.E+06	2	3	5.0	15

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	0.12979	6.256	1.019	-0.554	0.919	81

Null Hypothesis: Unit root (common unit root process)
Series: GINI
Date: 08/24/15 Time: 00:07
Sample: 1996 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 2
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 83
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.33816	0.0904

** Probabilities are computed assuming asympotic normality

Intermediate results on GINI

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.53238	0.0003	0.0001	0	3	8.0	17
222	-0.34145	8.E-05	1.E-05	0	3	16.0	17
333	-0.45410	0.0001	0.0002	2	3	2.0	15
444	-0.29077	0.0002	0.0002	0	3	1.0	17
555	-0.51291	0.0001	2.E-05	0	3	16.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.41070	-4.325	1.006	-0.554	0.919		83

Null Hypothesis: Unit root (common unit root process)
Series: POV
Date: 08/24/15 Time: 00:08
Sample: 1996 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 85
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	1.79667	0.9638

** Probabilities are computed assuming asympotic normality

Intermediate results on POV

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.64054	3.0072	0.7080	0	3	8.0	17
222	0.03341	2.0855	3.4865	0	3	2.0	17
333	-0.00709	11.378	13.139	0	3	1.0	17
444	0.02753	12.906	16.180	0	3	1.0	17
555	-0.00718	7.5266	9.5464	0	3	1.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	0.00735	0.229	1.040	-0.554	0.919	85

Null Hypothesis: Unit root (common unit root process)
Series: H
Date: 08/24/15 Time: 00:09
Sample: 1996 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 2
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 81
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-2.12188	0.0169

** Probabilities are computed assuming asympotic normality

Intermediate results on H

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.19678	7861.9	5870.9	0	3	4.0	17
222	-0.00345	21773.	3981.8	2	3	8.0	15
333	-0.09206	132909	17483.	0	3	16.0	17
444	-0.05777	66724.	93031.	0	3	1.0	17
555	0.04053	34161.	8787.6	2	3	8.0	15

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.05876	-2.595	1.020	-0.554	0.919		81

Null Hypothesis: Unit root (common unit root process)
Series: HE
Date: 08/24/15 Time: 00:10
Sample: 1996 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 2
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 82
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	4.74295	1.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on HE

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.10794	56397.	5354.6	0	3	16.0	17
222	0.06774	7590.4	9953.5	0	3	2.0	17
333	0.20946	20191.	10776.	2	3	7.0	15
444	0.15884	5901.0	12525.	1	3	2.0	16
555	0.00432	2619.5	2990.6	0	3	1.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	0.08265	3.472	1.059	-0.554	0.919	82

Null Hypothesis: Unit root (common unit root process)
Series: TG
Date: 08/24/15 Time: 13:31
Sample: 1996 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 75
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.08658	0.1386

** Probabilities are computed assuming asympotic normality

Intermediate results on TG

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-4.96153	11.650	5.9948	3	3	7.0	14
222	-15.5696	10.656	13.166	3	3	10.0	14
333	-0.92258	14.694	2.1870	0	3	14.0	17
444	-80.1736	3.6346	5.7572	3	3	4.0	14
555	-1.60067	25.802	6.9395	1	3	10.0	16

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-1.49092	-4.743	1.669	-0.554	0.919		75

Null Hypothesis: Unit root (common unit root process)
Series: HEG
Date: 08/24/15 Time: 13:38
Sample: 1996 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 84
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-10.0296	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on HEG

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-1.67808	201.28	55.951	1	3	8.0	16
222	-1.36583	12.486	39.341	0	3	0.0	17
333	-1.54429	87.484	15.262	0	3	16.0	17
444	-1.44404	16.108	6.7285	0	3	4.0	17
555	-0.86973	26.232	4.3371	0	3	12.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-1.36851	-12.606	1.035	-0.554	0.919	84

Panel unit root test: Summary
Series: GIGRE
Date: 11/19/15 Time: 10:01
Sample: 1996 2013
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.20931	0.1133	5	80
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.91553	0.0000	5	80
ADF - Fisher Chi-square	42.9698	0.0000	5	80
PP - Fisher Chi-square	102.955	0.0000	5	85

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

2. Levin, Lin and Chu test result with individual intercept and trend.

Null Hypothesis: Unit root (common unit root process)
Series: GRP
Date: 08/24/15 Time: 00:22
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 85
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-7.14551	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on GRP

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.87321	19.047	3.3443	0	3	13.0	17
222	-1.13019	19.751	8.7790	0	3	8.0	17
333	-1.05393	10.675	2.5995	0	3	16.0	17
444	-0.97416	19.066	3.3382	0	3	16.0	17
555	-1.09747	6.2938	1.0752	0	3	16.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-1.02961	-10.082	1.005	-0.703	1.003	85

Null Hypothesis: Unit root (common unit root process)
Series: EDU
Date: 08/24/15 Time: 00:23
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 73
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	10.5362	1.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on EDU

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.92321	0.0034	0.0012	0	3	5.0	17
222	-2.45015	0.0002	0.0008	3	3	10.0	14
333	-3.27694	0.0015	0.0079	3	3	1.0	14
444	8.11187	0.0021	0.0215	3	3	2.0	14
555	1.10218	0.0006	0.0006	3	3	16.0	14

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-1.63584	-6.188	1.183	-0.703	1.003		73

Null Hypothesis: Unit root (common unit root process)
Series: EM
Date: 08/24/15 Time: 00:23
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 83
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-2.12205	0.0169

** Probabilities are computed assuming asympotic normality

Intermediate results on EM

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-1.13145	5.E+09	6.E+08	0	3	16.0	17
222	-1.10753	2.E+10	4.E+09	1	3	12.0	16
333	-0.40135	2.E+10	3.E+10	1	3	1.0	16
444	-0.33557	9.E+10	1.E+11	0	3	0.0	17
555	-0.41655	2.E+10	2.E+10	0	3	3.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-0.54168	-5.848	1.072	-0.703	1.003	83

Null Hypothesis: Unit root (common unit root process)
Series: TAX
Date: 08/24/15 Time: 00:24
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 79
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	2.43494	0.9926

** Probabilities are computed assuming asympotic normality

Intermediate results on TAX

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.33614	1.E+09	2.E+08	0	3	11.0	17
222	-0.42508	7.E+08	7.E+07	0	3	16.0	17
333	-2.88381	474532	714925	3	3	0.0	14
444	1.34626	462863	1.E+06	3	3	1.0	14
555	-0.34116	2.E+06	239333	0	3	16.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.27144	-1.949	1.136	-0.703	1.003		79

Null Hypothesis: Unit root (common unit root process)
Series: GINI
Date: 08/24/15 Time: 00:25
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 81
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-0.14768	0.4413

** Probabilities are computed assuming asympotic normality

Intermediate results on GINI

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-1.65991	0.0001	8.E-05	3	3	8.0	14
222	-0.49434	7.E-05	1.E-05	0	3	16.0	17
333	-0.13910	0.0002	0.0002	1	3	2.0	16
444	-0.28747	0.0002	0.0002	0	3	1.0	17
555	-0.66367	0.0001	1.E-05	0	3	16.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.43921	-3.990	1.066	-0.703	1.003		81

Null Hypothesis: Unit root (common unit root process)
Series: POV
Date: 08/24/15 Time: 00:26
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 77
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-2.20533	0.0137

** Probabilities are computed assuming asympotic normality

Intermediate results on POV

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.93648	2.1314	0.7202	0	3	7.0	17
222	-0.95313	0.4395	3.0550	3	3	2.0	14
333	-0.95020	3.8195	10.830	2	3	0.0	15
444	-1.79383	2.4477	13.634	3	3	1.0	14
555	-0.43521	5.2033	9.3867	0	3	1.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.87431	-9.261	1.102	-0.703	1.003		77

Null Hypothesis: Unit root (common unit root process)
Series: H
Date: 08/24/15 Time: 00:27
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 83
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-2.44426	0.0073

** Probabilities are computed assuming asympotic normality

Intermediate results on H

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.36058	7564.2	1031.2	0	3	15.0	17
222	-1.44459	13062.	3974.6	1	3	8.0	16
333	-0.62661	98004.	11872.	0	3	16.0	17
444	-0.16448	65181.	53230.	0	3	2.0	17
555	-1.55261	20227.	8329.9	1	3	8.0	16

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-0.61454	-5.259	1.148	-0.703	1.003	83

Null Hypothesis: Unit root (common unit root process)
Series: HE
Date: 08/24/15 Time: 00:28
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 83
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-0.23649	0.4065

** Probabilities are computed assuming asympotic normality

Intermediate results on HE

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-1.02038	32512.	5234.4	1	3	16.0	16
222	-0.14410	6818.5	2858.2	0	3	3.0	17
333	-0.66815	19991.	1507.2	0	3	16.0	17
444	0.11275	5866.8	3534.9	1	3	2.0	16
555	-0.33258	2078.6	2651.1	0	3	2.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.26425	-2.936	1.100	-0.703	1.003		83

Null Hypothesis: Unit root (common unit root process)
Series: \
Date: 08/24/15 Time: 13:33
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 3
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 70
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	11.5117	1.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on \

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-6.96552	8.8203	5.9005	3	3	7.0	14
222	-15.2814	10.440	13.046	3	3	10.0	14
333	-4.37498	8.0638	1.6423	3	3	16.0	14
444	-78.3066	0.9237	5.7524	3	3	4.0	14
555	-7.30482	14.918	7.0475	3	3	10.0	14

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-7.60029	-6.508	1.883	-0.703	1.003		70

Null Hypothesis: Unit root (common unit root process)
Series: HEG
Date: 08/24/15 Time: 13:40
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 83
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-6.58718	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on HEG

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-1.67857	200.82	56.081	1	3	8.0	16
222	-1.38336	12.166	39.339	0	3	0.0	17
333	-2.22274	75.957	15.030	1	3	16.0	16
444	-1.47874	15.154	6.7800	0	3	4.0	17
555	-0.86946	26.231	3.9890	0	3	12.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-1.39561	-11.352	1.056	-0.703	1.003		83

Panel unit root test: Summary
Series: GIGRE
Date: 11/19/15 Time: 10:02
Sample: 1996 2013
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.88193	0.1889	5	80
Breitung t-stat	-1.85602	0.0317	5	75
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.92841	0.0000	5	80
ADF - Fisher Chi-square	33.7822	0.0002	5	80
PP - Fisher Chi-square	64.4698	0.0000	5	85

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

3. Levin, Lin and Chu test result with no individual intercept and trend.

Null Hypothesis: Unit root (common unit root process)
Series: GRP
Date: 08/24/15 Time: 00:33
Sample: 1996 2013
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 84
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-5.56193	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on GRP

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.54205	25.050	3.4327	0	3	13.0	17
222	-0.56236	28.111	6.3731	1	3	11.0	16
333	-0.62636	17.276	4.0423	0	3	16.0	17
444	-0.48387	28.463	3.7465	0	3	16.0	17
555	-0.58214	9.7349	1.4609	0	3	15.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-0.55822	-5.822	1.002	0.004	1.049	84

Null Hypothesis: Unit root (common unit root process)
Series: EDU
Date: 08/24/15 Time: 00:34
Sample: 1996 2013
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 78
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	8.44527	1.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on EDU

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	0.01111	0.0057	0.0365	0	3	2.0	17
222	-0.00874	0.0006	0.0195	3	3	3.0	14
333	0.00689	0.0095	0.0188	0	3	2.0	17
444	0.05541	0.0033	0.0282	2	3	0.0	15
555	0.02338	0.0011	0.0150	2	3	2.0	15

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	0.01645	8.860	1.475	0.004	1.049		78

Null Hypothesis: Unit root (common unit root process)
Series: EM
Date: 08/24/15 Time: 00:35
Sample: 1996 2013
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 84
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	0.40151	0.6560

** Probabilities are computed assuming asympotic normality

Intermediate results on EM

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.00100	8.E+09	8.E+08	1	3	16.0	16
222	0.00102	5.E+10	7.E+09	0	3	15.0	17
333	0.00192	2.E+10	3.E+10	0	3	1.0	17
444	0.00199	1.E+11	1.E+11	0	3	0.0	17
555	0.00260	3.E+10	2.E+10	0	3	2.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	0.00116	0.422	1.001	0.004	1.049	84

Null Hypothesis: Unit root (common unit root process)
Series: TAX
Date: 08/24/15 Time: 00:36
Sample: 1996 2013
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 2
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 81
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	11.4256	1.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on TAX

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	0.14732	1.E+09	8.E+09	2	3	2.0	15
222	0.08378	9.E+08	2.E+09	0	3	2.0	17
333	0.07342	730981	6.E+06	0	3	2.0	17
444	0.10296	950288	1.E+07	0	3	3.0	17
555	0.12384	2.E+06	1.E+07	2	3	2.0	15

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	0.09239	11.991	1.049	0.004	1.049		81

Null Hypothesis: Unit root (common unit root process)
Series: GINI
Date: 08/24/15 Time: 00:39
Sample: 1996 2013
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 84
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.34706	0.0890

** Probabilities are computed assuming asympotic normality

Intermediate results on GINI

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.00379	0.0003	0.0001	0	3	9.0	17
222	-0.00505	0.0001	4.E-05	0	3	13.0	17
333	-0.00685	0.0002	0.0002	0	3	2.0	17
444	-0.00664	0.0002	0.0002	0	3	1.0	17
555	-0.00442	0.0001	5.E-05	1	3	13.0	16

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.00536	-1.412	1.000	0.004	1.049		84

Null Hypothesis: Unit root (common unit root process)
Series: POV
Date: 08/24/15 Time: 00:40
Sample: 1996 2013
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 84
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-3.59386	0.0002

** Probabilities are computed assuming asympotic normality

Intermediate results on POV

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.11807	3.8686	1.0922	0	3	7.0	17
222	-0.03605	1.6632	7.9764	1	3	2.0	16
333	-0.03927	11.483	19.545	0	3	2.0	17
444	-0.03843	13.670	28.816	0	3	2.0	17
555	-0.04888	7.7482	17.539	0	3	2.0	17
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.04079	-3.765	1.005	0.004	1.049		84

Null Hypothesis: Unit root (common unit root process)
Series: H
Date: 08/24/15 Time: 00:40
Sample: 1996 2013
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 2
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 81
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-8.66322	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on H

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	0.01797	9921.2	10190.	0	3	2.0	17
222	-0.06080	22318.	40776.	2	3	2.0	15
333	-0.04798	135347	182980	0	3	0.0	17
444	-0.06231	66865.	925921	0	3	3.0	17
555	-0.05837	36417.	71533.	2	3	3.0	15

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-0.05683	-9.085	1.043	0.004	1.049	81

Null Hypothesis: Unit root (common unit root process)
Series: HE
Date: 08/24/15 Time: 00:41
Sample: 1996 2013
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 2
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 82
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	8.17225	1.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on HE

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	0.04834	62628.	60306.	0	3	4.0	17
222	0.06334	7598.6	75986.	0	3	3.0	17
333	0.19305	20237.	47262.	2	3	2.0	15
444	0.11563	6394.2	79843.	1	3	3.0	16
555	0.04142	2704.2	8222.1	0	3	2.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	0.06517	8.577	1.103	0.004	1.049		82

Null Hypothesis: Unit root (common unit root process)
Series: TG
Date: 08/24/15 Time: 13:35
Sample: 1996 2013
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 80
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.78071	0.0375

** Probabilities are computed assuming asympotic normality

Intermediate results on TG

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	0.01807	26.200	6.0183	2	3	7.0	15
222	0.17562	81.258	13.431	3	3	10.0	14
333	-0.19497	24.598	2.2369	0	3	14.0	17
444	-0.11602	22.323	6.7685	0	3	3.0	17
555	-0.38887	55.197	6.9720	0	3	10.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.14074	-1.858	1.022	0.004	1.049		80

Null Hypothesis: Unit root (common unit root process)
Series: HEG
Date: 08/24/15 Time: 13:42
Sample: 1996 2013
Exogenous variables: None
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 79
Cross-sections included: 5

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-2.65206	0.0040

** Probabilities are computed assuming asympotic normality

Intermediate results on HEG

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
111	-0.88419	313.87	56.214	0	3	8.0	17
222	-0.15398	20.937	39.342	1	3	0.0	16
333	0.20259	103.72	15.351	3	3	16.0	14
444	-0.04599	23.862	6.7085	2	3	4.0	15
555	-0.49030	34.780	4.3380	0	3	12.0	17

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.27470	-2.766	1.071	0.004	1.049		79

Panel unit root test: Summary
Series: GIGRE
Date: 11/19/15 Time: 10:03
Sample: 1996 2013
Exogenous variables: None
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.82700	0.0000	5	80
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	51.7571	0.0000	5	80
PP - Fisher Chi-square	85.4937	0.0000	5	85

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

4. The Persaran test

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
grp	0	-4.725	0.000	.
grp	1	-2.574	0.005	.
grp	2	-2.047	0.020	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
grp	0	-3.514	0.000	.
grp	1	-1.470	0.071	.
grp	2	-1.610	0.054	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
edu	0	-1.463	0.072	.
edu	1	-2.778	0.003	.
edu	2	0.197	0.578	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
edu	0	-3.397	0.000	.
edu	1	-3.029	0.001	.
edu	2	-1.003	0.158	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
em	0	-5.420	0.000	.
em	1	-7.855	0.000	.
em	2	-4.917	0.000	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
em	0	-4.187	0.000	.
em	1	-6.482	0.000	.
em	2	-3.139	0.001	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

-multipurt- uses Scott Merryman's -xtfisher- and
Piotr Lewandowski's -pescadf-.

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
tax	0	-0.593	0.277	.
tax	1	4.123	1.000	.
tax	2	-3.304	0.000	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
tax	0	-2.535	0.006	.
tax	1	2.363	0.991	.
tax	2	-3.786	0.000	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

-multipurt- uses Scott Merryman's -xtfisher- and
Piotr Lewandowski's -pescadf-.

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
gini	0	-1.472	0.070	.
gini	1	-0.710	0.239	.
gini	2	3.388	1.000	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
gini	0	-1.536	0.062	.
gini	1	-2.063	0.020	.
gini	2	3.335	1.000	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

-multipurt- uses Scott Merryman's -xtfisher- and
Piotr Lewandowski's -pescadf-.

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
pov	0	-2.092	0.018	.
pov	1	-1.670	0.047	.
pov	2	-1.609	0.054	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
pov	0	-0.372	0.355	.
pov	1	0.332	0.630	.
pov	2	0.509	0.695	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

-multipurt- uses Scott Merryman's -xtfisher- and
Piotr Lewandowski's -pescadf-.

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
h	0	-1.487	0.069	.
h	1	0.740	0.770	.
h	2	1.511	0.935	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
h	0	0.290	0.614	.
h	1	2.052	0.980	.
h	2	2.295	0.989	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

-multipurt- uses Scott Merryman's -xtfisher- and
Piotr Lewandowski's -pescadf-.

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
he	0	-2.747	0.003	.
he	1	0.882	0.811	.
he	2	1.643	0.950	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
he	0	-1.881	0.030	.
he	1	2.033	0.979	.
he	2	2.599	0.995	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

-multipurt- uses Scott Merryman's -xtfisher- and
Piotr Lewandowski's -pescadf-.

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
tg	0	-4.069	0.000	.
tg	1	5.332	1.000	.
tg	2	9.422	1.000	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
tg	0	-3.577	0.000	.
tg	1	5.667	1.000	.
tg	2	8.811	1.000	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

-multipurt- uses Scott Merryman's -xtfisher- and
Piotr Lewandowski's -pescadf-.

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
heg	0	-7.557	0.000	.
heg	1	-2.336	0.010	.
heg	2	0.193	0.577	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
heg	0	-6.380	0.000	.
heg	1	-1.007	0.157	.
heg	2	1.526	0.936	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

-multipurt- uses Scott Merryman's -xtfisher- and
Piotr Lewandowski's -pescadf-.

(B) Pesaran (2007) Panel Unit Root test (CIPS)

	Specification without trend			
Variable	lags	Zt-bar	p-value	t-bar
gigre	0	-3.905	0.000	.
gigre	1	-3.423	0.000	.
gigre	2	0.157	0.562	.

	Specification with trend			
Variable	lags	Zt-bar	p-value	t-bar
gigre	0	-2.799	0.003	.
gigre	1	-3.087	0.001	.
gigre	2	0.070	0.528	.

Null for MW and CIPS tests: series is I(1).
MW test assumes cross-section independence.
CIPS test assumes cross-section dependence is in
form of a single unobserved common factor.

-multipurt- uses Scott Merryman's -xtfisher- and
Piotr Lewandowski's -pescadf-.

APPENDIX B

2SLS test results

1. First Group

$$GRP_{it} = \alpha_0 + \alpha_1 Em_{it} + \alpha_2 Pov_{it} + \alpha_3 Ginire_{it} + \alpha_4 Gini + \varepsilon_{1it} \quad (4.1)$$

While, $$Em_{it} = \alpha_5 + \alpha_6 Edu_{it} + \alpha_7 H_{it} + \alpha_8 Heg_{it} + \varepsilon_{2it} \quad (4.2)$$

While, $$Pov_{it} = \alpha_9 + \alpha_{10} Tg_{it} + \alpha_{11} H_{it} + \alpha_{12} Heg_{it} + \varepsilon_{3it} \quad (4.3)$$

While, $$Ginire_{it} = \alpha_{13} + \alpha_{14} Tg_{it} + \alpha_{15} H_{it} + \alpha_{16} Heg_{it} + \varepsilon_{4it} \quad (4.4)$$

2SLS results

```
. xtivreg grp (em= edu h heg) gig i.r

G2SLS random-effects IV regression              Number of obs      =        90
Group variable: r                               Number of groups   =         5

R-sq:  within  = 0.0913                         Obs per group: min =        18
       between = 1.0000                                        avg =      18.0
       overall = 0.1209                                        max =        18

                                                Wald chi2(6)       =      8.57
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.1992
```

grp	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
em	1.47e-06	1.75e-06	0.84	0.399	-1.95e-06	4.90e-06
gig	.2548396	.1147318	2.22	0.026	.0299695	.4797097
r						
222	-7.320306	9.665402	-0.76	0.449	-26.26415	11.62353
333	-4.165685	5.674971	-0.73	0.463	-15.28842	6.957055
444	-10.23244	14.49507	-0.71	0.480	-38.64227	18.17738
555	-2.31491	2.754777	-0.84	0.401	-7.714173	3.084353
_cons	-2.645104	6.758339	-0.39	0.696	-15.89121	10.601

```
. xtivreg grp (pov= tg h heg) gig i.r

G2SLS random-effects IV regression              Number of obs      =        90
Group variable: r                               Number of groups   =         5

R-sq:  within  = 0.0649                         Obs per group: min =        18
       between = 1.0000                                        avg =      18.0
       overall = 0.0957                                        max =        18

                                                Wald chi2(6)       =      7.95
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.2417
```

grp	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
pov	-.0310283	.0562771	-0.55	0.581	-.1413294	.0792727
gig	.2650981	.1195648	2.22	0.027	.0307553	.4994409
r						
222	1.185891	1.585679	0.75	0.455	-1.921982	4.293764
333	1.349056	2.089832	0.65	0.519	-2.746939	5.445051
444	3.00439	2.371466	1.27	0.205	-1.643598	7.652379
555	.3648901	1.821155	0.20	0.841	-3.204507	3.934288
_cons	3.130958	1.002649	3.12	0.002	1.165801	5.096114

```
. xtivreg grp (gigre= tg h heg) gig i.r

G2SLS random-effects IV regression              Number of obs      =        90
Group variable: r                               Number of groups   =         5

R-sq:  within  = 0.0325                         Obs per group: min =        18
       between = 1.0000                                        avg =      18.0
       overall = 0.0628                                        max =        18

                                                Wald chi2(6)       =      7.51
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.2762
```

grp	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
gigre	-.150882	.382421	-0.39	0.693	-.9004134	.5986495
gig	.2827958	.145553	1.94	0.052	-.0024828	.5680745
r						
222	.5348863	1.506015	0.36	0.722	-2.416848	3.486621
333	.4564717	1.404627	0.32	0.745	-2.296546	3.209489
444	1.856947	1.418648	1.31	0.191	-.923552	4.637445
555	-.3967857	1.427407	-0.28	0.781	-3.194452	2.400881
_cons	3.126594	1.044776	2.99	0.003	1.078871	5.174317

2. Second Group

$$Em_{it} = \alpha_{17} + \alpha_{18}GRP_{it} + \alpha_{19}Edu_{it} + \alpha_{20}H_{it} + \alpha_{21}Heg_{it} + \varepsilon_{5it} \quad (4.5)$$

$$Pov_{it} = \alpha_{22} + \alpha_{23}GRP_{it} + \alpha_{24}Tg_{it} + \alpha_{25}H_{it} + \alpha_{26}Heg_{it} + \varepsilon_{6it} \quad (4.6)$$

$$Gini_{it} = \alpha_{22} + \alpha_{23}GRP_{it} + \alpha_{24}Tg_{it} + \alpha_{25}H_{it} + \alpha_{26}Heg_{it} + \varepsilon_{6it} \quad (4.7)$$

2SLS result

```
. xtivreg em (grp=gig) edu h heg i.r

G2SLS random-effects IV regression              Number of obs      =        90
Group variable: r                               Number of groups   =         5

R-sq:  within  = 0.4567                         Obs per group: min =        18
       between = 1.0000                                        avg =      18.0
       overall = 0.9916                                        max =        18

                                                Wald chi2(8)       =   9565.32
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000
```

em	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
grp	4276.316	31097.81	0.14	0.891	-56674.27	65226.91
edu	95842.28	64866.1	1.48	0.140	-31292.94	222977.5
h	-167.6757	25.17172	-6.66	0.000	-217.0114	-118.3401
heg	437.0956	3477.324	0.13	0.900	-6378.334	7252.525
r						
222	6034468	156562.7	38.54	0.000	5727610	6341325
333	3981956	186090.4	21.40	0.000	3617225	4346686
444	9531837	218570.4	43.61	0.000	9103447	9960228
555	2078532	145970.7	14.24	0.000	1792435	2364630
_cons	3033691	596441.3	5.09	0.000	1864688	4202695

```
. xtivreg pov (grp=gig) tg h heg i.r

G2SLS random-effects IV regression              Number of obs      =        90
Group variable: r                               Number of groups   =         5

R-sq:  within  = 0.3688                         Obs per group: min =        18
       between = 1.0000                                        avg =      18.0
       overall = 0.7037                                        max =        18

                                                Wald chi2(8)       =    215.48
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000
```

pov	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
grp	1.581042	1.08335	1.46	0.144	-.5422853	3.704369
tg	-.1831085	.2233848	-0.82	0.412	-.6209348	.2547177
h	.0061032	.0007582	8.05	0.000	.0046172	.0075891
heg	-.0007127	.1092915	-0.01	0.995	-.2149201	.2134946
r						
222	-1.158121	3.634345	-0.32	0.750	-8.281307	5.965064
333	5.556871	4.110486	1.35	0.176	-2.499534	13.61328
444	-8.105644	6.208783	-1.31	0.192	-20.27463	4.063347
555	2.121823	3.922218	0.54	0.589	-5.565582	9.809228
_cons	-3.955512	3.474555	-1.14	0.255	-10.76551	2.85449

```
. xtivreg gigre (grp=gig) tg h heg i.r

G2SLS random-effects IV regression              Number of obs      =        90
Group variable: r                               Number of groups   =         5

R-sq:  within  = 0.0691                         Obs per group: min =        18
       between = 1.0000                                        avg =      18.0
       overall = 0.0786                                        max =        18

                                                Wald chi2(8)       =     11.68
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.1659
```

gigre	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
grp	.8152873	.494817	1.65	0.099	-.1545362	1.785111
tg	-.102142	.1020304	-1.00	0.317	-.3021178	.0978339
h	.0008961	.0003463	2.59	0.010	.0002174	.0015748
heg	.0510206	.0499186	1.02	0.307	-.046818	.1488592
r						
222	-3.925821	1.659976	-2.36	0.018	-7.179315	-.6723269
333	-3.782432	1.877453	-2.01	0.044	-7.462172	-.1026927
444	-7.762932	2.835843	-2.74	0.006	-13.32108	-2.204781
555	-3.124199	1.791461	-1.74	0.081	-6.635399	.3870011
_cons	-1.966131	1.586993	-1.24	0.215	-5.076579	1.144317

CURRICULUM VITAE

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