

APPENDIX

APPENDIX 1

Table. Log of GRDP, Log of Local Original Revenue, Log of Government's Expenditure, Log of Population and Fiscal Decentralization

District	Years	Y	X1	X2	X3	X4
Kulonprogo	1996	6.285223	6.485732	7.354439	5.548512	13.12659
	1997	6.286525	6.625399	7.530432	5.544006	12.06712
	1998	6.167338	6.750926	7.809957	5.552689	8.359667
	1999	6.075824	6.77537	7.889354	5.569565	7.410085
	2000	6.083145	6.827788	7.852534	5.569333	9.16988
	2001	6.091319	7.005736	8.31282	5.569055	4.275108
	2002	6.108838	7.210198	8.396638	5.568758	6.798884
	2003	6.126683	7.261284	8.529028	5.568439	5.398292
	2004	6.145738	7.243406	8.499064	5.572002	6.129355
	2005	6.165979	7.352422	8.478249	5.572604	7.589485
	2006	6.183227	7.460771	8.677162	5.573036	6.693303
	2007	6.200749	7.520214	8.718802	5.573388	6.643928
	2008	6.220728	7.558571	8.752458	5.57378	6.768674
	2009	6.23762	7.622604	8.774082	5.588264	7.29204
	2010	6.250719	7.647546	8.775459	5.589803	7.85882
	2011	6.271688	7.695381	8.83397	5.591295	7.573349
	2012	6.292926	7.734745	8.921228	5.594637	6.779202
2013	6.314327	7.811242	8.970983	5.605498	7.047406	
2014	6.333443	7.967619	9.019347	5.61035	9.001358	
2015	6.352975	8.273702	9.116102	5.615106	15.12092	
Bantul	1996	6.421439	6.7112	7.509997	5.849389	15.27884
	1997	6.434276	6.779172	7.66598	5.84988	12.72892
	1998	6.391404	6.816633	7.901904	5.863644	7.959049
	1999	6.397442	6.90373	8.003138	5.886915	7.62523
	2000	6.412383	6.849691	7.974525	5.892684	7.107197
	2001	6.42835	7.14839	8.438026	5.89769	4.854486
	2002	6.447306	7.350735	8.527745	5.902675	6.248279
	2003	6.46722	7.516963	8.624995	5.907639	7.541543
	2004	6.488595	7.507606	8.606235	5.927382	7.915794
	2005	6.509763	7.52765	8.628674	5.935991	7.931362
	2006	6.518467	7.594725	8.782643	5.946495	6.57927
	2007	6.537687	7.633741	8.854669	5.95279	6.230627
	2008	6.558476	7.685106	8.01742	5.958952	5.052426
	2009	6.577486	7.819488	8.948813	5.95391	7.95582
2010	6.598564	7.955394	8.961464	5.959758	10.29884	

	2011	6.620885	8.028917	8.958272	5.964384	11.86469
	2012	6.643484	8.084912	9.078468	5.967527	10.17228
	2013	6.66703	8.230465	9.131995	5.976383	12.70854
	2014	6.689046	8.423456	9.239131	5.98202	15.70679
	2015	6.710235	8.494739	9.296472	5.987448	16.82301
	1996	6.314844	6.470823	7.398321	5.793546	9.879281
	1997	6.331459	6.553649	7.591688	5.79134	9.103308
	1998	6.299007	6.650645	7.898227	5.86705	5.455864
	1999	6.348225	6.733158	7.96723	5.825103	5.627534
	2000	6.359796	6.757349	7.993071	5.826427	5.565432
	2001	6.374217	6.947055	8.346548	5.827642	3.942226
	2002	6.388156	7.129911	8.397937	5.828836	5.008385
	2003	6.402522	7.242583	8.505809	5.830008	4.838348
	2004	6.417179	7.316565	8.577362	5.832138	6.719448
	2005	6.435588	7.369665	8.559171	5.8335	6.989998
	2006	6.451876	7.4063	8.715104	5.834702	4.923656
	2007	6.468538	7.346911	8.797134	5.835824	3.852869
	2008	6.487181	7.402082	8.837878	5.836813	3.879096
	2009	6.504792	7.504479	8.869249	5.829609	4.503249
	2010	6.522455	7.599406	8.890399	5.829549	5.449669
	2011	6.540866	7.623098	8.968366	5.831228	4.97841
	2012	6.561407	7.745078	9.031666	5.835526	5.504441
	2013	6.582671	7.824197	9.092243	5.845217	5.688546
	2014	6.601787	7.955847	9.128842	5.849907	6.974418
	2015	6.616682	8.163925	9.218215	5.854477	9.450274
GunungKidul	1996	6.601386	7.024249	7.888522	5.91287	13.29033
	1997	6.616326	7.129203	8.003494	5.912753	13.29475
	1998	6.580114	7.169863	8.049141	5.916067	12.70926
	1999	6.588714	7.233642	8.138216	5.94818	11.94598
	2000	6.603235	7.252608	8.18669	5.955079	11.63906
	2001	6.620268	7.470868	8.496108	5.96146	8.87416
	2002	6.640881	7.590041	8.568964	5.967819	9.360625
	2003	6.662408	7.628619	8.633312	5.974157	9.892503
	2004	6.68461	7.739678	8.705535	5.987621	12.31613
	2005	6.705912	7.80639	8.735529	5.995692	13.55161
	2006	6.725018	7.936876	8.847705	6.005686	12.90283
	2007	6.744573	7.964663	8.89736	6.011472	12.26005
	2008	6.766282	7.990814	8.944988	6.017125	11.71255
	2009	6.785298	8.069355	8.972961	6.031276	12.90086
	2010	6.804358	8.167532	9.012237	6.038664	14.9251
	2011	6.82634	8.308387	9.138889	6.044267	15.98454
	2012	6.849372	8.343147	9.158346	6.04721	15.93386
	2013	6.873431	8.474809	9.238855	6.057565	17.86687
Sleman						

	2014	6.896272	8.583763	9.296374	6.062394	20.51018
	2015	6.9187	8.761616	9.442587	6.06725	25.53087
Yogyakarta	1996	6.581911	7.249711	7.666626	5.637576	36.36042
	1997	6.576232	7.282274	7.742571	5.632963	32.86728
	1998	6.525618	7.300441	7.866777	5.682104	24.77221
	1999	6.529939	7.394279	7.97029	5.600298	23.53643
	2000	6.545299	7.351273	7.949609	5.599226	20.74589
	2001	6.56213	7.605871	8.386979	5.597448	16.5536
	2002	6.581201	7.751106	8.504207	5.595651	17.65626
	2003	6.60139	7.836461	8.609441	5.593831	16.86628
	2004	6.622773	7.847647	8.618265	5.630877	20.63996
	2005	6.643443	7.899899	8.603	5.638725	22.18665
	2006	6.660154	7.962021	8.756816	5.648612	17.8302
	2007	6.679101	8.001623	8.796732	5.65429	17.55559
	2008	6.700803	8.076643	8.875606	5.659835	17.55394
	2009	6.719733	8.130677	8.915947	5.590714	19.19221
	2010	6.740832	8.252273	8.927954	5.589533	23.70343
	2011	6.764667	8.305912	8.949279	5.59168	25.44135
	2012	6.788994	8.382361	8.955349	5.595509	26.81011
	2013	6.81284	8.484011	9.054982	5.604959	28.44514
2014	6.835268	8.606674	9.152928	5.610306	33.40814	
2015	6.857284	8.653067	9.240874	5.615639	31.60003	

APPENDIX II

Estimation of Regression Model

A. Common Effect Model Regression

Dependent Variable: Y?
Method: Pooled Least Squares
Date: 04/10/17 Time: 22:46
Sample: 1996 2015
Included observations: 20
Cross-sections included: 5
Total pool (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1?	0.011850	0.067108	0.176574	0.8602
X2?	0.133536	0.062441	2.138590	0.0350
X3?	0.870199	0.024240	35.89939	0.0000
X4?	0.019810	0.002251	8.802391	0.0000
R-squared	0.856363	Mean dependent var		6.515469
Adjusted R-squared	0.851874	S.D. dependent var		0.207554
S.E. of regression	0.079882	Akaike info criterion		-2.177364
Sum squared resid	0.612583	Schwarz criterion		-2.073157
Log likelihood	112.8682	Hannan-Quinn criter.		-2.135189
Durbin-Watson stat	0.328548			

B. Fixed Effect Model Regression

Dependent Variable: Y?
 Method: Pooled Least Squares
 Date: 04/10/17 Time: 22:47
 Sample: 1996 2015
 Included observations: 20
 Cross-sections included: 5
 Total pool (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.198893	0.867568	7.145134	0.0000
X1?	0.248722	0.041411	6.006218	0.0000
X2?	-0.066626	0.038028	-1.752010	0.0831
X3?	-0.181811	0.158250	-1.148885	0.2536
X4?	0.004380	0.001420	3.085424	0.0027
Fixed Effects (Cross)				
_1--C	-0.272676			
_2--C	0.055115			
_3--C	0.042425			
_4--C	0.187885			
_5--C	-0.012749			

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.968722	Mean dependent var	6.515469
Adjusted R-squared	0.965972	S.D. dependent var	0.207554
S.E. of regression	0.038287	Akaike info criterion	-3.601735
Sum squared resid	0.133395	Schwarz criterion	-3.367269
Log likelihood	189.0867	Hannan-Quinn criter.	-3.506842
F-statistic	352.2970	Durbin-Watson stat	0.454372
Prob(F-statistic)	0.000000		

C. Random Effect Model Regression

Dependent Variable: Y?

Method: Pooled EGLS (Cross-section random effects)

Date: 04/10/17 Time: 22:47

Sample: 1996 2015

Included observations: 20

Cross-sections included: 5

Total pool (balanced) observations: 100

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.326093	0.153841	8.619879	0.0000
X1?	0.145219	0.035692	4.068609	0.0001
X2?	-0.003358	0.033880	-0.099127	0.9212
X3?	0.679669	0.024971	27.21837	0.0000
X4?	0.014840	0.001223	12.13287	0.0000
Random Effects (Cross)				
_1--C	0.000000			
_2--C	0.000000			
_3--C	0.000000			
_4--C	0.000000			
_5--C	0.000000			
Effects Specification				
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.038287	1.0000
Weighted Statistics				
R-squared	0.881902	Mean dependent var		6.515469
Adjusted R-squared	0.876929	S.D. dependent var		0.207554
S.E. of regression	0.072813	Sum squared resid		0.503665
F-statistic	177.3535	Durbin-Watson stat		0.251755
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.881902	Mean dependent var		6.515469
Sum squared resid	0.503665	Durbin-Watson stat		0.251755

APPENDIX III

The Selection of Panel Data Model

A. Chow Test

Redundant Fixed Effects Tests
Pool: PANEL
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	63.148170	(4,91)	0.0000
Cross-section Chi-square	132.859737	4	0.0000

Cross-section fixed effects test equation:

Dependent Variable: Y?

Method: Panel Least Squares

Date: 04/23/17 Time: 21:37

Sample: 1996 2015

Included observations: 20

Cross-sections included: 5

Total pool (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.326093	0.292572	4.532533	0.0000
X1?	0.145219	0.067879	2.139369	0.0350
X2?	-0.003358	0.064433	-0.052123	0.9585
X3?	0.679669	0.047489	14.31205	0.0000
X4?	0.014840	0.002326	6.379745	0.0000
R-squared	0.881902	Mean dependent var	6.515469	
Adjusted R-squared	0.876929	S.D. dependent var	0.207554	
S.E. of regression	0.072813	Akaike info criterion	-2.353137	
Sum squared resid	0.503665	Schwarz criterion	-2.222879	
Log likelihood	122.6569	Hannan-Quinn criter.	-2.300419	
F-statistic	177.3535	Durbin-Watson stat	0.251755	
Prob(F-statistic)	0.000000			

B. Hausman Test

Correlated Random Effects - Hausman Test

Pool: PANEL

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	252.592678	4	0.0000

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
X1?	0.248722	0.145219	0.000441	0.0000
X2?	-0.066626	-0.003358	0.000298	0.0002
X3?	-0.181811	0.679669	0.024420	0.0000
X4?	0.004380	0.014840	0.000001	0.0000

Cross-section random effects test equation:

Dependent Variable: Y?

Method: Panel Least Squares

Date: 04/23/17 Time: 21:39

Sample: 1996 2015

Included observations: 20

Cross-sections included: 5

Total pool (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.198893	0.867568	7.145134	0.0000
X1?	0.248722	0.041411	6.006218	0.0000
X2?	-0.066626	0.038028	-1.752010	0.0831
X3?	-0.181811	0.158250	-1.148885	0.2536
X4?	0.004380	0.001420	3.085424	0.0027

Effects Specification

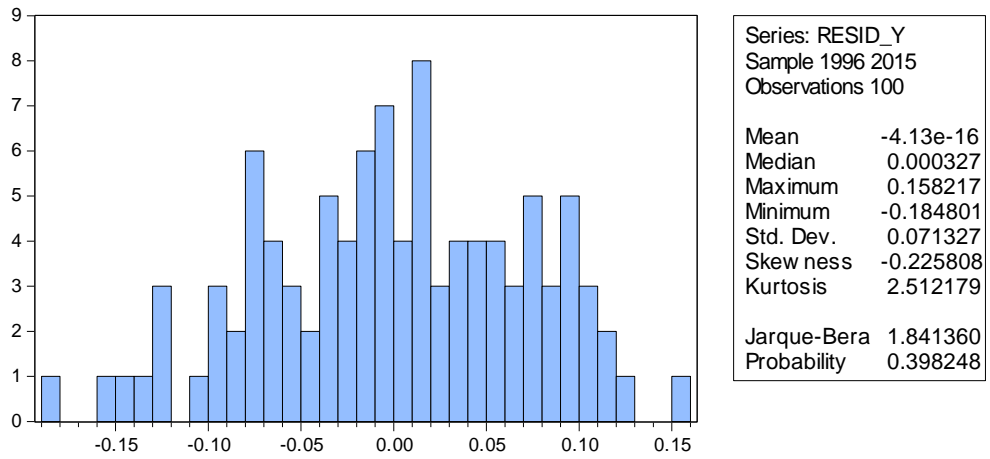
Cross-section fixed (dummy variables)

R-squared	0.968722	Mean dependent var	6.515469
Adjusted R-squared	0.965972	S.D. dependent var	0.207554
S.E. of regression	0.038287	Akaike info criterion	-3.601735
Sum squared resid	0.133395	Schwarz criterion	-3.367269
Log likelihood	189.0867	Hannan-Quinn criter.	-3.506842
F-statistic	352.2970	Durbin-Watson stat	0.454372
Prob(F-statistic)	0.000000		

APPENDIX IV

Classical Assumption Test

A. Normslity Test



B. Multicollinearity Test

	X1	X2	X3	X4
X1	1.00000	0.89326	0.18171	0.4702
X2	0.89326	1.00000	0.23913	0.07987
X3	0.18171	0.23913	1.00000	-0.1999
X4	0.4702	0.07987	-0.1999	1.00000

C. Heteroscedasticity Test

Dependent Variable: RESID?
 Method: Pooled Least Squares
 Date: 05/01/17 Time: 04:56
 Sample: 1996 2015
 Included observations: 20
 Cross-sections included: 5
 Total pool (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.256348	0.526354	-0.487026	0.6274
X1?	0.011022	0.025124	0.438713	0.6619
X2?	-0.025768	0.023072	-1.116872	0.2670
X3?	0.071132	0.096010	0.740879	0.4607
X4?	0.000584	0.000861	0.678631	0.4991
Fixed Effects (Cross)				
_1--C	0.039812			
_2--C	-0.018862			
_3--C	0.003527			
_4--C	-0.023319			
_5--C	-0.001158			

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.285450	Mean dependent var	0.025432
Adjusted R-squared	0.222633	S.D. dependent var	0.026346
S.E. of regression	0.023229	Akaike info criterion	-4.601176
Sum squared resid	0.049101	Schwarz criterion	-4.366710
Log likelihood	239.0588	Hannan-Quinn criter.	-4.506283
F-statistic	4.544113	Durbin-Watson stat	0.813644
Prob(F-statistic)	0.000112		

