Lampiran 1

1. Uji Statistik Deskriptif

```
. summarize Y X1 X2 X3 X4
```

Variable	Obs	Mean	Std. Dev.	Min	Max
Y	74	3.93027	3.652147	.28	15.33
X1	74	-1.763649	36.57038	-78.36	236.81
X2	74	18.14757	10.50497	6.27	63.88
X3	74	106.5754	30.32165	50.02	218.76
X4	74	98.14365	6.545654	79.28	127.26

Sumber: *output* Stata 16

Lampiran 2

1. Uji Pemilihan Model Estimasi

a. CEM

```
. *Common Effect Model (CEM)

.
. reg Y X1 X2 X3 X4
```

Source	SS	df	MS	Number of obs	=	74
				F(4, 69)	=	1.83
Model	93.1858038	4	23.296451	Prob > F	=	0.1338
Residual	880.500991	69	12.7608839	R-squared	=	0.0957
				Adj R-squared	=	0.0433
Total	973.686795	73	13.3381753	Root MSE	=	3.5722

Y	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X1	.0098758	.0117134	0.84	0.402	-.0134919	.0332435
X2	.0648701	.0425604	1.52	0.132	-.0200356	.1497757
X3	.0008748	.0145103	0.06	0.952	-.0280726	.0298221
X4	.090014	.0680636	1.32	0.190	-.0457691	.2257972
_cons	-6.15708	7.133902	-0.86	0.391	-20.38883	8.074665

```
.
. estimates store CEM
```

b. FEM

```
Fixed-effects (within) regression               Number of obs     =         74
Group variable: KABKOTA                         Number of groups  =         37

R-sq:                                           Obs per group:
     within  = 0.3053                                         min =          2
     between = 0.0287                                         avg =        2.0
     overall = 0.0022                                         max =          2

                                                F(4,33)           =       3.63
corr(u_i, Xb)  = -0.3480                        Prob > F          =     0.0148
```

Y	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X1	.024279	.0092031	2.64	0.013	.0055551	.0430029
X2	-.0997873	.1057669	-0.94	0.352	-.3149718	.1153971
X3	.0059222	.0144438	0.41	0.684	-.0234639	.0353084
X4	.1457038	.0616399	2.36	0.024	.0202964	.2711113
_cons	-9.147084	7.109417	-1.29	0.207	-23.6113	5.317134
sigma_u	3.6242726					
sigma_e	2.0622327					
rho	.75541951	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(36, 33) = 4.83                     Prob > F = 0.0000
```

c. REM

```
. *Random Effect Model (REM)

.
. xtreg Y X1 X2 X3 X4

Random-effects GLS regression                   Number of obs     =         74
Group variable: KABKOTA                         Number of groups  =         37

R-sq:                                           Obs per group:
     within  = 0.2695                                         min =          2
     between = 0.0381                                         avg =        2.0
     overall = 0.0826                                         max =          2

                                                Wald chi2(4)      =      13.93
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0075

------------------------------------------------------------------------------
           Y |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          X1 |   .0179043   .0082892     2.16   0.031     .0016577     .034151
          X2 |    .031248   .0494657     0.63   0.528     -.065703     .128199
          X3 |   .0044752   .0121228     0.37   0.712     -.019285    .0282353
          X4 |    .124383   .0538982     2.31   0.021     .0187444    .2300216
       _cons |  -9.289571   5.910996    -1.57   0.116    -20.87491    2.295769
-------------+----------------------------------------------------------------
     sigma_u |  2.9849455
     sigma_e |  2.0622327
         rho |    .676905   (fraction of variance due to u_i)
------------------------------------------------------------------------------

.
. estimates store REM
```

Lampiran 3

1. Penentuan Model Terbaik
   a. Uji *Chow*

```
. *Uji Chow (CEM vs FEM)

.
. regress Y X1 X2 X3 X4 i.KABKOTA
```

Source	SS	df	MS	Number of obs	=	74
				F(40, 33)	=	4.90
Model	833.344279	40	20.833607	Prob > F	=	0.0000
Residual	140.342516	33	4.25280351	R-squared	=	0.8559
				Adj R-squared	=	0.6812
Total	973.686795	73	13.3381753	Root MSE	=	2.0622

Y	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X1	.024279	.0092031	2.64	0.013	.0055551	.0430029
X2	-.0997873	.1057669	-0.94	0.352	-.3149718	.1153971
X3	.0059222	.0144438	0.41	0.684	-.0234639	.0353084
X4	.1457038	.0616399	2.36	0.024	.0202964	.2711113
KABKOTA						
2	7.397308	2.153478	3.44	0.002	3.016025	11.77859
3	-3.639634	2.244126	-1.62	0.114	-8.205342	.9260738
4	7.730646	2.345436	3.30	0.002	2.958821	12.50247
5	-3.760578	2.159729	-1.74	0.091	-8.154579	.6334239
6	-1.663678	3.396733	-0.49	0.628	-8.574383	5.247026
7	-3.941999	2.514627	-1.57	0.127	-9.058045	1.174048
8	-3.726859	2.299908	-1.62	0.115	-8.406058	.9523389
9	1.366017	2.330421	0.59	0.562	-3.375261	6.107295
10	-3.717676	2.196607	-1.69	0.100	-8.186706	.7513542
11	-2.420787	2.247981	-1.08	0.289	-6.994339	2.152764
12	-2.896971	2.144244	-1.35	0.186	-7.259467	1.465526
13	-3.287559	2.157518	-1.52	0.137	-7.677062	1.101944
14	-2.205415	2.48275	-0.89	0.381	-7.256607	2.845777
15	-3.931287	2.211846	-1.78	0.085	-8.431321	.5687467
16	1.39172	2.240592	0.62	0.539	-3.166798	5.950238
17	-2.602537	2.117547	-1.23	0.228	-6.910718	1.705644
18	1.134383	2.884686	0.39	0.697	-4.734554	7.003319
19	-2.538712	2.367922	-1.07	0.291	-7.356287	2.278862
20	-4.12034	2.183651	-1.89	0.068	-8.56301	.3223305
21	-.0669967	2.150911	-0.03	0.975	-4.443057	4.309064
22	.3397907	2.118945	0.16	0.874	-3.971235	4.650817
23	-1.253902	4.240641	-0.30	0.769	-9.88155	7.373747
24	-2.215764	2.18865	-1.01	0.319	-6.668606	2.237079
25	-.6309556	2.299043	-0.27	0.785	-5.308394	4.046483
26	-3.881439	2.151496	-1.80	0.080	-8.25869	.495812
27	-2.136515	2.547671	-0.84	0.408	-7.319791	3.046762
28	-2.880859	2.589739	-1.11	0.274	-8.149722	2.388004
29	-.7349927	2.295302	-0.32	0.751	-5.40482	3.934835
30	-3.033649	2.402628	-1.26	0.216	-7.921832	1.854535
31	4.459654	2.332917	1.91	0.065	-.2867018	9.206011
32	.8262703	2.715017	0.30	0.763	-4.697473	6.350013
33	-3.758248	2.771962	-1.36	0.184	-9.397847	1.881351
34	-3.288499	2.390657	-1.38	0.178	-8.152327	1.57533
35	-3.200298	2.197881	-1.46	0.155	-7.671921	1.271325
36	11.36458	5.801171	1.96	0.059	-.4379885	23.16715
37	-4.160132	2.226553	-1.87	0.071	-8.690088	.3698238
_cons	-8.074492	6.48516	-1.25	0.222	-21.26865	5.119665

```
.
```

```
.
. testparm i.KABKOTA

 ( 1)  2.KABKOTA = 0
 ( 2)  3.KABKOTA = 0
 ( 3)  4.KABKOTA = 0
 ( 4)  5.KABKOTA = 0
 ( 5)  6.KABKOTA = 0
 ( 6)  7.KABKOTA = 0
 ( 7)  8.KABKOTA = 0
 ( 8)  9.KABKOTA = 0
 ( 9)  10.KABKOTA = 0
 (10)  11.KABKOTA = 0
 (11)  12.KABKOTA = 0
 (12)  13.KABKOTA = 0
 (13)  14.KABKOTA = 0
 (14)  15.KABKOTA = 0
 (15)  16.KABKOTA = 0
 (16)  17.KABKOTA = 0
 (17)  18.KABKOTA = 0
 (18)  19.KABKOTA = 0
 (19)  20.KABKOTA = 0
 (20)  21.KABKOTA = 0
 (21)  22.KABKOTA = 0
 (22)  23.KABKOTA = 0
 (23)  24.KABKOTA = 0
 (24)  25.KABKOTA = 0
 (25)  26.KABKOTA = 0
 (26)  27.KABKOTA = 0
 (27)  28.KABKOTA = 0
 (28)  29.KABKOTA = 0
 (29)  30.KABKOTA = 0
 (30)  31.KABKOTA = 0
 (31)  32.KABKOTA = 0
 (32)  33.KABKOTA = 0
 (33)  34.KABKOTA = 0
 (34)  35.KABKOTA = 0
 (35)  36.KABKOTA = 0
 (36)  37.KABKOTA = 0

       F( 36,    33) =    4.83
            Prob > F =    0.0000
```

b. Uji Hausman

```
                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |       FEM          REM         Difference          S.E.
-------------+----------------------------------------------------------------
          X1 |    .0179043     .0179043               0               0
          X2 |     .031248      .031248               0               0
          X3 |    .0044752     .0044752               0               0
          X4 |     .124383      .124383               0               0
------------------------------------------------------------------------------
                           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(0) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        0.00
                Prob>chi2 =           .
                (V_b-V_B is not positive definite)
```

Lampiran 4

1. Uji Asumsi Klasik
   a. Multikolinearitas

```
. *2. Melakukan uji multikolinearitas dengan pendekatan VIF

.
. vif
```

Variable	VIF	1/VIF
X2	1.14	0.874496
X4	1.14	0.880688
X3	1.11	0.903020
X1	1.05	0.952643
Mean VIF	1.11	

   b. Heteroskedastisitas

```
. *4. Melakukan uji heteroskedastisitas dengan uji Glejser

.
. gen abs_residual = abs(simpan_data_residual)

.
. regress abs_residual X1 X2 X3 X4
```

Source	SS	df	MS		
Model	32.3545914	4	8.08864786	Number of obs	= 74
Residual	310.238976	69	4.49621704	F(4, 69)	= 1.80
				Prob > F	= 0.1390
Total	342.593567	73	4.69306257	R-squared	= 0.0944
				Adj R-squared	= 0.0419
				Root MSE	= 2.1204

abs_residual	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X1	.0042011	.0069529	0.60	0.548	-.0096696	.0180718
X2	.0414337	.0252632	1.64	0.106	-.008965	.0918324
X3	.0002032	.0086131	0.02	0.981	-.0169795	.0173859
X4	.0523224	.0404016	1.30	0.200	-.0282765	.1329213
_cons	-3.205168	4.234581	-0.76	0.452	-11.65292	5.242589

Lampiran 5

1. Uji Hipotesis

```
.  xtreg Y X1 X2 X3 X4, fe

Fixed-effects (within) regression               Number of obs     =         74
Group variable: KABKOTA                         Number of groups  =         37

R-sq:                                           Obs per group:
     within  = 0.3053                                         min =          2
     between = 0.0287                                         avg =        2.0
     overall = 0.0022                                         max =          2

                                                F(4,33)           =       3.63
corr(u_i, Xb)  = -0.3480                        Prob > F          =     0.0148

------------------------------------------------------------------------------
           Y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          X1 |    .024279   .0092031     2.64   0.013     .0055551    .0430029
          X2 |  -.0997873   .1057669    -0.94   0.352    -.3149718    .1153971
          X3 |   .0059222   .0144438     0.41   0.684    -.0234639    .0353084
          X4 |   .1457038   .0616399     2.36   0.024     .0202964    .2711113
       _cons |  -9.147084   7.109417    -1.29   0.207     -23.6113    5.317134
-------------+----------------------------------------------------------------
     sigma_u |  3.6242726
     sigma_e |  2.0622327
         rho |  .75541951   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(36, 33) = 4.83                     Prob > F = 0.0000

.
```