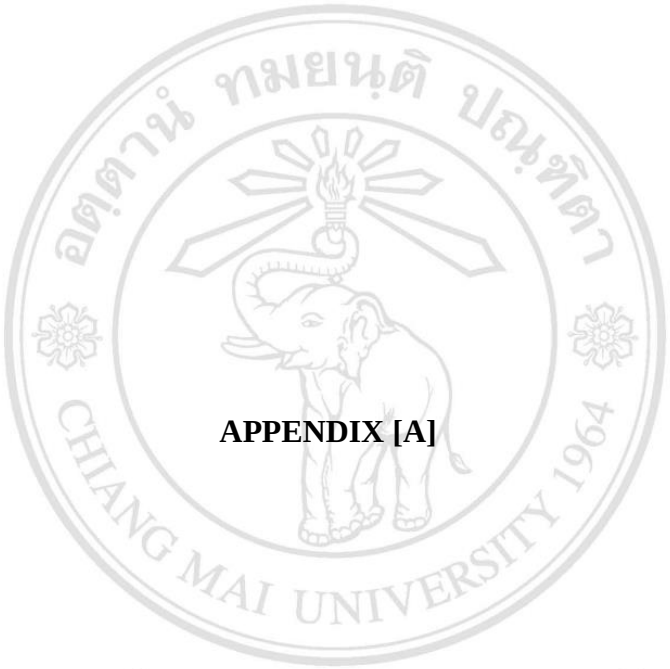
APPENDICES



APPENDIX [A]

Summary for the statistics for variables used in this study

Xtsum

Variables	Mean	Std. Dev.	Min	Max	Observations
ID	7	3.748874	1	13	N = 260
overall					
		3.89444	1	13	n = 13
between					
		0	7	7	T = 20
within					
T	2004.5	5.777402	5.777402	2014	N = 260
overall					
		0	2004.5	2004.5	n = 13
between					
		5.777402	1995	2014	T = 20
within					
GDPGR	5.467542	3.968387	-13.12672	15.24038	N = 260
overall					
		2.768891	.8418843	10.23473	n = 13
between					
		2.940028	-12.08236	15.07987	T = 20
within					
EXP	2.15e+11	3.66e+11	746.341	2.48e+12	N = 260
overall					
		2.88e+11	4683.265	9.48e+11	n = 13
between					
		2.39e+11	-5.84e+11	1.74e+12	T = 20
within					
IMP	1.97e+11	3.30e+11	1334.59	2.19e+12	N = 260
overall					
		2.58e+11	4327.118	8.24e+11	n = 13
between					
		2.17e+11	-4.96e+11	1.56e+12	T = 20
within					
OPN	98.58132	94.78122	.2281228	439.6567	N = 260
overall					
		96.84342	.6855849	370.4908	n = 13
between					
		17.11259	41.97537	167.7472	T = 20
within					
INF	1236.629	4350.692	-2.314972	21148	N = 260
overall					
		4432.107	.080999	15987.55	n = 13
between					
		852.0493	-3718.339	6397.077	T = 20
within					
EXC	1625.577	3110.446	-1.710337	11865.21	N = 260
overall					

	3001.326	1.521929	8427.338	n = 13
between				
	1152.274	-5035.895	5063.451	T = 20
within				

Correlation Matrix of the variables used in this study

```
pwcorr GDPGR EXP IMP OPN INF EXC , sig star(.05)
         |   GDPGR     EXP     IMP     OPN     INF     EXC
---------+------------------------------------------------------------------------------
GDPGR|   1.0000

    EXP |  -0.0239   1.0000
        |   0.7010
        |
    IMP |  -0.0421   0.9953*  1.0000
        |   0.4988   0.0000
        |
    OPN |  -0.1189   0.0127   0.0036   1.0000
        |   0.0555   0.8391   0.9543
        |
    INF |   0.0754  -0.1201  -0.1147   0.0984   1.0000
        |   0.2256   0.0531   0.0648   0.1134
        |
    EXC |   0.0497  -0.2021* -0.2027* -0.2392* -0.1468*  1.0000
        |   0.4246   0.0011   0.0010   0.0001   0.0179
        |
```

APPENDIX [B]

Results for PMG Estimations for Panel Level

For Overall Country

```
. xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC ) ec(ECT) replace
pmg
Iteration 0:   log likelihood = -517.77386  (not concave)
Iteration 1:   log likelihood = -500.92933  (not concave)
Iteration 2:   log likelihood = -496.94513
Iteration 3:   log likelihood = -493.14662  (backed up)
Iteration 4:   log likelihood = -492.70854
Iteration 5:   log likelihood = -490.02883  (not concave)
Iteration 6:   log likelihood = -488.24663
Iteration 7:   log likelihood = -487.98259
Iteration 8:   log likelihood = -487.97659
Iteration 9:   log likelihood = -487.97658

Pooled Mean Group Regression
(Estimate results saved as pmg)

Panel Variable (i): ID                          Number of obs      =       234
Time Variable (t): T                            Number of groups   =        13
                                                Obs per group: min =        18
                                                              avg =      18.0
                                                              max =        18

                                                Log Likelihood     = -487.9766
------------------------------------------------------------------------------
   D2.GDPGR |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+-----------------------------------------------------------------
--
ECT         |
        EXP |  -1.91e-12   4.64e-12    -0.41   0.681    -1.10e-11    7.19e-12
        IMP |   1.50e-12   4.76e-12     0.31   0.753    -7.83e-12    1.08e-11
        OPN |   .0005543   .0084886     0.07   0.948     -.016083    .0171915
        INF |  -.0003663   .0001442    -2.54   0.011    -.0006489   -.0000838
        EXC |  -.0000712   .0000358    -1.99   0.047    -.0001414   -1.04e-06
------------+-----------------------------------------------------------------
---
SR          |
        ECT |    -1.5202   .1836653    -8.28   0.000    -1.880177   -1.160223
            |
        EXP |
         D1.|  -.0000309   .0000309    -1.00   0.317    -.0000916    .0000297
            |
        IMP |
         D1.|  -.0000668   .0000668    -1.00   0.317    -.0001978    .0000641
            |
        OPN |
         D1.|   .5575331   .8810276     0.63   0.527    -1.169249    2.284315
            |
        INF |
         D1.|  -.1087014   .1809864    -0.60   0.548     -.4634283    .2460255
            |
        EXC |
         D1.|  -.8112259   1.456516    -0.56   0.578     -3.665945    2.043493
            |
      _cons |   7.693172   1.093523     7.04   0.000      5.549905    9.836438
------------------------------------------------------------------------------
---
```

For Developing Country

```
. xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC ) ec(ECT) replace
pmg

Iteration 0:   log likelihood = -390.82152  (not concave)
Iteration 1:   log likelihood = -373.70592  (not concave)
Iteration 2:   log likelihood = -370.88758
Iteration 3:   log likelihood = -367.22899
Iteration 4:   log likelihood = -366.38399
Iteration 5:   log likelihood = -366.34896
Iteration 6:   log likelihood = -366.34886
Iteration 7:   log likelihood = -366.34886

Pooled Mean Group Regression
(Estimate results saved as pmg)

Panel Variable (i): ID                          Number of obs     =       180
Time Variable (t): T                            Number of groups  =        10
                                                Obs per group: min =        18
                                                              avg =      18.0
                                                              max =        18

                                                Log Likelihood    = -366.3489
------------------------------------------------------------------------------
  D2.GDPGR |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-----------+------------------------------------------------------------------
ECT        |
       EXP |  -9.19e-11   2.11e-11    -4.36   0.000    -1.33e-10   -5.06e-11
       IMP |   9.99e-11   2.27e-11     4.40   0.000     5.55e-11    1.44e-10
       OPN |  -.0125362   .0087453    -1.43   0.152    -.0296767    .0046043
       INF |  -.0003258   .0001602    -2.03   0.042    -.0006399   -.0000118
       EXC |  -.0000616   .0000402    -1.53   0.126    -.0001404    .0000172
-----------+------------------------------------------------------------------
SR         |
       ECT |  -1.548326   .2067977    -7.49   0.000    -1.953642    -1.14301

       EXP |
       D1. |  -.0000402   .0000402    -1.00   0.317    -.0001189    .0000386

       IMP |
       D1. |   -.000087   .000087     -1.00   0.317    -.0002574    .0000835

       OPN |
       D1. |   .7132863   1.131613     0.63   0.528    -1.504634    2.931207

       INF |
       D1. |  -.0099607   .2359326    -0.04   0.966    -.4723801    .4524587

       EXC |
       D1. |  -2.752959   1.328801    -2.07   0.038     -5.35736   -.1485573

     _cons |   11.52121   1.960295     5.88   0.000     7.679098    15.36331
------------------------------------------------------------------------------
```

For Developed Country

```
. xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC ) ec(ECT) replace
pmg

Iteration 0:   log likelihood = -127.99611  (not concave)
Iteration 1:   log likelihood = -115.32066  (not concave)
Iteration 2:   log likelihood = -111.63424  (not concave)
Iteration 3:   log likelihood =  -106.9831  (not concave)
Iteration 4:   log likelihood = -105.82491
Iteration 5:   log likelihood = -104.07869
Iteration 6:   log likelihood = -103.95921
Iteration 7:   log likelihood = -103.95847
Iteration 8:   log likelihood = -103.95847

Pooled Mean Group Regression
(Estimate results saved as pmg)

Panel Variable (i): ID                    Number of obs      =        54
Time Variable (t): T                      Number of groups   =         3
                                          Obs per group: min =        18
                                                        avg =      18.0
                                                        max =        18

                                          Log Likelihood     = -103.9585
------------------------------------------------------------------------------
   D2.GDPGR |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+-----------------------------------------------------------------
ECT         |
        EXP |   7.29e-12   1.92e-12     3.80   0.000     3.53e-12    1.11e-11
        IMP |  -9.56e-12   2.10e-12    -4.54   0.000    -1.37e-11   -5.43e-12
        OPN |    .141332   .0071845    19.67   0.000     .1272506    .1554134
        INF |   -.015901   .0464435    -0.34   0.732    -.1069286    .0751266
        EXC |   .0072556   .0160639     0.45   0.652     -.024229    .0387402
------------+-----------------------------------------------------------------
SR          |
        ECT |  -1.857096   .7338949    -2.53   0.011    -3.295503   -.4186883

        EXP |
        D1. |  -3.13e-12   9.40e-12    -0.33   0.739    -2.15e-11    1.53e-11

        IMP |
        D1. |   3.30e-11   1.91e-11     1.73   0.084    -4.46e-12    7.04e-11

        OPN |
        D1. |   -.068697   .1267059    -0.54   0.588     -.317036     .179642

        INF |
        D1. |  -1.233177   1.483002    -0.83   0.406    -4.139808    1.673454

        EXC |
        D1. |   .5784102   .5163193     1.12   0.263     -.433557    1.590377

      _cons |  -2.722132   5.303486    -0.51   0.608    -13.11677     7.67251
------------------------------------------------------------------------------
```

Results for MG Estimations for Panel Level

For Overall Country

```
xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC ) ec(ECT) replace
mg

------------------------------------------------------------------------------
Mean Group Estimation: Error Correction Form
(Estimate results saved as mg)
------------------------------------------------------------------------------
------------------------------------------------------------------------------
   D2.GDPGR |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+-----------------------------------------------------------------
ECT         |
       EXP |  -.0000111   .0000111    -1.00   0.317    -.0000328    .0000106
       IMP |  -.0000814   .0000814    -1.00   0.317     -.000241    .0000782
       OPN |  -.4069302   .5570126    -0.73   0.465    -1.498655    .6847944
       INF |  -.1718378   .2203991    -0.78   0.436     -.603812    .2601365
       EXC |   .6573577   1.869576     0.35   0.725    -3.006944    4.321659
------------+-----------------------------------------------------------------
SR          |
       ECT |  -2.096422   .2098464    -9.99   0.000    -2.507714   -1.685131

       EXP |
       D1. |   -.000033    .000033    -1.00   0.317    -.0000975    .0000316

       IMP |
       D1. |   4.69e-06   4.69e-06     1.00   0.317    -4.50e-06    .0000139

       OPN |
       D1. |   1.262208   1.433593     0.88   0.379    -1.547583    4.071999

       INF |
       D1. |   .3728702   .4760731     0.78   0.433    -.5602159    1.305956

       EXC |
       D1. |    1.94464   3.405326     0.57   0.568    -4.729676    8.618956

     _cons |   .2063302   8.371972     0.02   0.980    -16.20243    16.61509
------------------------------------------------------------------------------
```

For Developing Country

. xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC) ec(ECT) replace mg

```
------------------------------------------------------------------------------
Mean Group Estimation: Error Correction Form
(Estimate results saved as mg)
------------------------------------------------------------------------------
------------------------------------------------------------------------------
   D2.GDPGR |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+-----------------------------------------------------------------
ECT         |
       EXP |  -.0000144   .0000144    -1.00   0.317    -.0000427    .0000138
       IMP |  -.0001058   .0001058    -1.00   0.317    -.0003133    .0001016
       OPN |  -.4675498   .7303345    -0.64   0.522    -1.898979    .9638795
       INF |  -.1459322   .2813982    -0.52   0.604    -.6974626    .4055983
       EXC |   .8689683   2.456782     0.35   0.724    -3.946235    5.684172
------------+-----------------------------------------------------------------
SR          |
       ECT |  -1.959993   .2576891    -7.61   0.000    -2.465054   -1.454932

       EXP |
       D1. |  -.0000428   .0000428    -1.00   0.317    -.0001268    .0000411

       IMP |
       D1. |   6.09e-06   6.09e-06     1.00   0.317    -5.85e-06     .000018

       OPN |
       D1. |   1.534886   1.873755     0.82   0.413    -2.137607    5.207379

       INF |
       D1. |   .5132289   .5981569     0.86   0.391    -.6591371    1.685595

       EXC |
       D1. |   2.379843   4.470723     0.53   0.595    -6.382613     11.1423

     _cons |   1.810628   9.118529     0.20   0.843    -16.06136    19.68262
------------------------------------------------------------------------------
```


For Developed Country

. xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC) ec(ECT) replace mg

```
------------------------------------------------------------------------------
Mean Group Estimation: Error Correction Form
(Estimate results saved as mg)
------------------------------------------------------------------------------
------------------------------------------------------------------------------
   D2.GDPGR |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+-----------------------------------------------------------------
ECT         |
       EXP |  -1.16e-11   2.70e-11    -0.43   0.669    -6.46e-11    4.14e-11
       IMP |   2.57e-11   2.85e-11     0.90   0.367    -3.02e-11    8.17e-11
       OPN |  -.2048649   .1986732    -1.03   0.302    -.5942572    .1845274
       INF |  -.2581898   .2652321    -0.97   0.330    -.7780352    .2616556
       EXC |  -.0480109   .1345515    -0.36   0.721     -.311727    .2157052
------------+-----------------------------------------------------------------
```

```
SR          |
       ECT |  -2.551186   .1201737   -21.23   0.000    -2.786722    -2.31565

       EXP |
       D1. |   1.57e-11   3.10e-11     0.51   0.613    -4.50e-11    7.64e-11

       IMP |
       D1. |  -7.13e-12   1.33e-11    -0.54   0.592    -3.32e-11    1.89e-11

       OPN |
       D1. |   .3532827   .4832539     0.73   0.465    -.5938775    1.300443

       INF |
       D1. |  -.0949924    .619376    -0.15   0.878    -1.308947    1.118962

       EXC |
       D1. |   .4939621   .5691206     0.87   0.385    -.6214938    1.609418

     _cons |  -5.141329   23.59101    -0.22   0.827    -51.37886     41.0962
------------------------------------------------------------------------------
```

Results of DFE Estimation for Panel Level

For Overall Country

```
xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC ) ec(ECT) replace
dfe
------------------------------------------------------------------------------
Dynamic Fixed Effects Regression: Estimated Error Correction Form
(Estimate results saved as DFE)
------------------------------------------------------------------------------
------------------------------------------------------------------------------
             |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
ECT          |
         EXP |  -7.84e-13   5.20e-12    -0.15   0.880    -1.10e-11    9.40e-12
         IMP |   6.08e-14   5.67e-12     0.01   0.991    -1.11e-11    1.12e-11
         OPN |   .0009955   .0101918     0.10   0.922    -.0189801     .020971
         INF |  -.0002087   .0002082    -1.00   0.316    -.0006167    .0001993
         EXC |  -.0000784   .0001745    -0.45   0.653    -.0004204    .0002636
-------------+----------------------------------------------------------------
SR           |
         ECT |  -1.754007   .0862951   -20.33   0.000    -1.923142   -1.584872

         EXP |
         D1. |   1.70e-11   1.59e-11     1.07   0.283    -1.41e-11    4.82e-11

         IMP |
         D1. |  -8.32e-12   1.63e-11    -0.51   0.610    -4.03e-11    2.37e-11

         OPN |
         D1. |  -.0395124    .028673    -1.38   0.168    -.0957104    .0166856

         INF |
         D1. |   .0000673   .0016784     0.04   0.968    -.0032224     .003357

         EXC |
         D1. |  -.0014103   .0004416    -3.19   0.001    -.0022758   -.0005448
```

```
      _cons |   10.32206   1.772507     5.82   0.000     6.848014    13.79611
```

For Developing Country

```
. xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC ) ec(ECT) replace
dfe
------------------------------------------------------------------------------
Dynamic Fixed Effects Regression: Estimated Error Correction Form
(Estimate results saved as DFE)
------------------------------------------------------------------------------
------------------------------------------------------------------------------
             |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
ECT          |
         EXP |  -6.49e-11   2.64e-11    -2.46   0.014    -1.17e-10   -1.32e-11
         IMP |   7.52e-11   2.91e-11     2.59   0.010     1.83e-11    1.32e-10
         OPN |  -.0013647   .0110158    -0.12   0.901    -.0229552    .0202258
         INF |  -.0003629   .0002141    -1.70   0.090    -.0007824    .0000567
         EXC |  -.0001313   .0001731    -0.76   0.448    -.0004705    .0002079
-------------+----------------------------------------------------------------
SR           |
         ECT |  -1.781634   .0996852   -17.87   0.000    -1.977013   -1.586255

         EXP |
         D1. |   5.16e-11   6.52e-11     0.79   0.428    -7.62e-11    1.79e-10

         IMP |
         D1. |  -2.17e-11   6.35e-11    -0.34   0.733    -1.46e-10    1.03e-10

         OPN |
         D1. |  -.0507188   .0352528    -1.44   0.150    -.1198129    .0183754

         INF |
         D1. |  -.0002032   .0016859    -0.12   0.904    -.0035075     .003101

         EXC |
         D1. |   -.001283   .0004725    -2.72   0.007    -.0022091   -.0003569

       _cons |   11.21006   2.247371     4.99   0.000     6.80529    15.61482
------------------------------------------------------------------------------
```


For Developed Country

```
. xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC ) ec(ECT) replace
dfe
------------------------------------------------------------------------------
Dynamic Fixed Effects Regression: Estimated Error Correction Form
(Estimate results saved as DFE)
------------------------------------------------------------------------------
------------------------------------------------------------------------------
             |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
ECT          |
         EXP |  -1.80e-12   4.60e-12    -0.39   0.696    -1.08e-11    7.21e-12
         IMP |   3.64e-13   4.97e-12     0.07   0.942    -9.38e-12    1.01e-11
         OPN |  -.0014353   .0225137    -0.06   0.949    -.0455614    .0426908
         INF |   .3763103   .218092     1.73   0.084    -.0511422    .8037628
         EXC |   -.001582   .0039209    -0.40   0.687    -.0092668    .0061028
```

```
------------+----------------------------------------------------------------
SR          |
        ECT |  -2.041873   .2351228    -8.68   0.000    -2.502706   -1.581041

        EXP |
        D1. |   2.17e-11   1.67e-11     1.30   0.193    -1.10e-11    5.45e-11

        IMP |
        D1. |  -9.68e-12   1.63e-11    -0.59   0.552    -4.16e-11    2.22e-11

        OPN |
        D1. |  -.1349118   .1206263    -1.12   0.263     -.371335    .1015114

        INF |
        D1. |  -.4494657   .3657333    -1.23   0.219    -1.16629    .2673583

        EXC |
        D1. |  -.0061855   .0084241    -0.73   0.463    -.0226965    .0103254

      _cons |   11.68665   4.459485     2.62   0.009     2.946217    20.42707
------------------------------------------------------------------------------
```

Hausman Test Results between PMG and MG, and PMG and DFE

For Overall Country

```
. hausman mg pmg, sigmamore

Note: the rank of the differenced variance matrix (3) does not equal the number of coefficients being tested (5); be sure
      this is what you expect, or there may be problems computing the test.  Examine the output of your estimators for
      anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

                ---- Coefficients ----
             |      (b)          (B)          (b-B)     sqrt(diag(V_b-V_B))
             |       mg          pmg        Difference          S.E.
-------------+----------------------------------------------------------------
         EXP |   -.0000111    -1.91e-12     -.0000111      .0000234
         IMP |   -.0000814     1.50e-12     -.0000814      .0001719
         OPN |   -.4069302     .0005543     -.4074845      1.175885
         INF |   -.1718378    -.0003663     -.1714714      .4652868
         EXC |    .6573577    -.0000712      .6574289      3.946882
------------------------------------------------------------------------------
                    b = consistent under Ho and Ha; obtained from xtpmg
         B = inconsistent under Ha, efficient under Ho; obtained from xtpmg

      Test:  Ho:  difference in coefficients not systematic

                    chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                            =        0.48
                  Prob>chi2 =      0.9243


. hausman mg DFE, sigmamore

Note: the rank of the differenced variance matrix (3) does not equal the number of coefficients being tested (5); be sure
      this is what you expect, or there may be problems computing the test.  Examine the output of your estimators
```

for
anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

```
             ---- Coefficients ----
          |      (b)          (B)          (b-B)     sqrt(diag(V_b-V_B))
          |       mg          DFE         Difference          S.E.
-------------+----------------------------------------------------------------
         EXP |   -.0000111    -7.84e-13      -.0000111        .0000239
         IMP |   -.0000814     6.08e-14      -.0000814        .0001753
         OPN |   -.4069302     .0009955      -.4079257        1.199074
         INF |   -.1718378    -.0002087      -.1716291        .4744673
         EXC |    .6573577    -.0000784       .6574361        4.024757
------------------------------------------------------------------------------
                    b = consistent under Ho and Ha; obtained from xtpmg
         B = inconsistent under Ha, efficient under Ho; obtained from xtpmg

    Test:  Ho:  difference in coefficients not systematic

                chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                        =        0.46
              Prob>chi2 =      0.9281
```

For Developing Country

hausman mg pmg, sigmamore

Note: the rank of the differenced variance matrix (3) does not equal the number of coefficients being tested (5); be sure
this is what you expect, or there may be problems computing the test. Examine the output of your estimators for
anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

```
             ---- Coefficients ----
          |      (b)          (B)          (b-B)     sqrt(diag(V_b-V_B))
          |       mg          pmg         Difference          S.E.
-------------+----------------------------------------------------------------
         EXP |   -.0000144    -9.19e-11      -.0000144        .0000275
         IMP |   -.0001058     9.99e-11      -.0001058        .0002021
         OPN |   -.4675498    -.0125362      -.4550136        1.394441
         INF |   -.1459322    -.0003258      -.1456064        .5372895
         EXC |    .8689683    -.0000616       .8690299        4.690872
------------------------------------------------------------------------------
                    b = consistent under Ho and Ha; obtained from xtpmg
         B = inconsistent under Ha, efficient under Ho; obtained from xtpmg

    Test:  Ho:  difference in coefficients not systematic

                chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                        =        0.37
              Prob>chi2 =      0.9468
```

. hausman mg DFE, sigmamore

Note: the rank of the differenced variance matrix (3) does not equal the number of coefficients being tested (5); be sure
this is what you expect, or there may be problems computing the test. Examine the output of your estimators for
anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

```
              ---- Coefficients ----
             |      (b)          (B)          (b-B)     sqrt(diag(V_b-V_B))
             |       mg          DFE         Difference          S.E.
-------------+----------------------------------------------------------------
         EXP |   -.0000144    -6.49e-11      -.0000144       .0000314
         IMP |   -.0001058     7.52e-11      -.0001058       .0002304
         OPN |   -.4675498    -.0013647      -.4661851       1.589879
         INF |   -.1459322    -.0003629      -.1455693       .6125957
         EXC |    .8689683    -.0001313       .8690996       5.348342
------------------------------------------------------------------------------
                     b = consistent under Ho and Ha; obtained from xtpmg
          B = inconsistent under Ha, efficient under Ho; obtained from xtpmg

    Test:  Ho:  difference in coefficients not systematic

                chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                        =        0.29
              Prob>chi2 =      0.9624
```

For Developed Country

```
hausman pmg mg, sigmamore

Note: the rank of the differenced variance matrix (3) does not equal the number of coefficients being tested (5); be
      sure
      this is what you expect, or there may be problems computing the test.  Examine the output of your estimators
      for
      anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

              ---- Coefficients ----
             |      (b)          (B)          (b-B)     sqrt(diag(V_b-V_B))
             |      pmg           mg         Difference          S.E.
-------------+----------------------------------------------------------------
         EXP |    7.29e-12    -1.16e-11       1.89e-11            .
         IMP |   -9.56e-12     2.57e-11      -3.53e-11            .
         OPN |    .141332    -.2048649       .3461969            .
         INF |   -.015901    -.2581898       .2422888            .
         EXC |    .0072556    -.0480109       .0552665            .
------------------------------------------------------------------------------
                     b = consistent under Ho and Ha; obtained from xtpmg
          B = inconsistent under Ha, efficient under Ho; obtained from xtpmg

    Test:  Ho:  difference in coefficients not systematic

                chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                        =    3610.68
              Prob>chi2 =      0.0000
              (V_b-V_B is not positive definite)


. hausman DFE mg, sigmamore

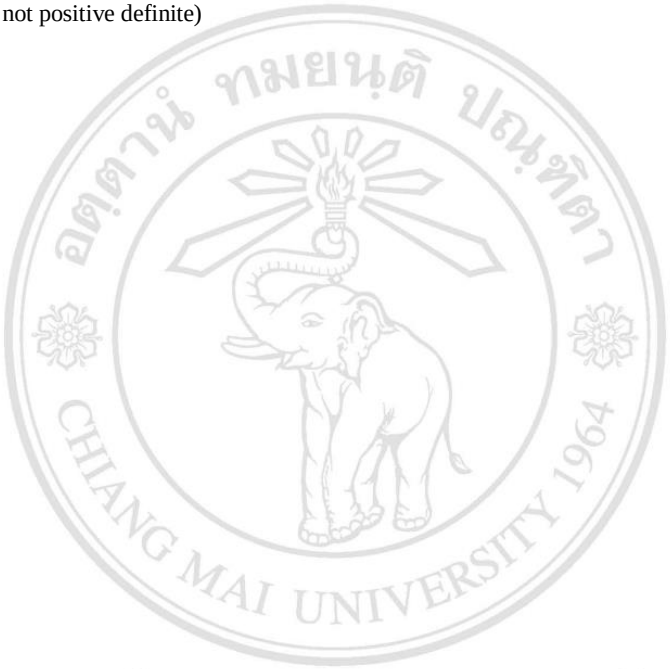
Note: the rank of the differenced variance matrix (3) does not equal the number of coefficients being tested (5); be
      sure
      this is what you expect, or there may be problems computing the test.  Examine the output of your estimators
      for
      anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

              ---- Coefficients ----
             |      (b)          (B)          (b-B)     sqrt(diag(V_b-V_B))
             |       DFE          mg         Difference          S.E.
```

```
------------+----------------------------------------------------------------
        EXP |  -1.80e-12   -1.16e-11    9.77e-12          .
        IMP |   3.64e-13    2.57e-11   -2.54e-11          .
        OPN |  -.0014353   -.2048649    .2034296          .
        INF |   .3763103   -.2581898    .6345001          .
        EXC |   -.001582   -.0480109    .0464289          .
------------------------------------------------------------------------------
                     b = consistent under Ho and Ha; obtained from xtpmg
          B = inconsistent under Ha, efficient under Ho; obtained from xtpmg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =     1064.06
                Prob>chi2 =      0.0000
                (V_b-V_B is not positive definite)
```



APPENDIX [C]

Results of PMG Estimation for Individual Country Level

For Developing Country

```
. xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC ) ec(ECT) replace
full pmg
ID 1 = Cambodia
ID 2 = Laos
ID 3 = Myanmar
ID 4 = Vietnam
ID 5 = Thailand
ID 6 = Indonesia
ID 7 = Malaysia
ID 8 = Singapore
ID 9 = Brunei
ID 10 = Philippines
Iteration 0:   log likelihood = -390.82152  (not concave)
Iteration 1:   log likelihood = -373.70592  (not concave)
Iteration 2:   log likelihood = -370.88758
Iteration 3:   log likelihood = -367.22899
Iteration 4:   log likelihood = -366.38399
Iteration 5:   log likelihood = -366.34896
Iteration 6:   log likelihood = -366.34886
Iteration 7:   log likelihood = -366.34886

Pooled Mean Group Regression
(Estimate results saved as PMG)

Panel Variable (i): ID                    Number of obs      =       180
Time Variable (t): T                      Number of groups   =        10
                                          Obs per group: min =        18
                                                        avg =      18.0
                                                        max =        18

                                          Log Likelihood     = -366.3489
------------------------------------------------------------------------------
   D2.GDPGR |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+-----------------------------------------------------------------
ECT         |
        EXP |  -9.19e-11   2.11e-11    -4.36   0.000    -1.33e-10   -5.06e-11
        IMP |   9.99e-11   2.27e-11     4.40   0.000     5.55e-11    1.44e-10
        OPN |  -.0125362   .0087453    -1.43   0.152    -.0296767    .0046043
        INF |  -.0003258   .0001602    -2.03   0.042    -.0006399   -.0000118
        EXC |  -.0000616   .0000402    -1.53   0.126    -.0001404    .0000172
------------+-----------------------------------------------------------------
ID_1        |
        ECT |  -1.238533    .267899    -4.62   0.000    -1.763606   -.7134611

        EXP |
        D1. |   4.53e-09   6.05e-09     0.75   0.454    -7.32e-09    1.64e-08

        IMP |
        D1. |  -5.13e-09   7.78e-09    -0.66   0.509    -2.04e-08    1.01e-08

        OPN |
        D1. |   10.63621   10.34546     1.03   0.304    -9.640512    30.91294

        INF |
        D1. |   .0626895   .0600091     1.04   0.296    -.0549262    .1803051

        EXC |
```

```
       D1. |  -.0002852   .0051552    -0.06   0.956    -.0103893    .0098189

     _cons |   11.11607   3.297579     3.37   0.001     4.652931     17.5792
-------------+----------------------------------------------------------------
ID_2         |
       ECT |  -1.938669   .2717419    -7.13   0.000    -2.471274   -1.406065

       EXP |
       D1. |   3.92e-09   1.03e-09     3.79   0.000     1.89e-09    5.95e-09

       IMP |
       D1. |   2.35e-09   9.00e-10     2.61   0.009     5.82e-10    4.11e-09

       OPN |
       D1. |  -.1734966   .0264817    -6.55   0.000    -.2253998   -.1215934

       INF |
       D1. |   .0370949   .0062374     5.95   0.000     .0248699    .0493199

       EXC |
       D1. |  -.0004024   .0002611    -1.54   0.123    -.0009142    .0001094

     _cons |   15.19388   2.529428     6.01   0.000     10.23629    20.15146
-------------+----------------------------------------------------------------
ID_3         |
       ECT |  -.2768009   .2342292    -1.18   0.237    -.7358817    .1822799

       EXP |
       D1. |  -.0004016   .0006771    -0.59   0.553    -.0017286    .0009255

       IMP |
       D1. |  -.0008696   .0004021    -2.16   0.031    -.0016576   -.0000816

       OPN |
       D1. |  -2.638576   4.476125    -0.59   0.556    -11.41162    6.134468

       INF |
       D1. |   .0459821   .0325711     1.41   0.158     -.017856    .1098203

       EXC |
       D1. |   .0065482   .0040742     1.61   0.108    -.0014371    .0145335

     _cons |   3.188947   3.052635     1.04   0.296    -2.794107    9.172001
-------------+----------------------------------------------------------------
ID_4         |
       ECT |  -.8743361   .1671603    -5.23   0.000    -1.201964    -.546708

       EXP |
       D1. |   2.32e-11   6.86e-11     0.34   0.736    -1.11e-10    1.58e-10

       IMP |
       D1. |   2.77e-11   6.83e-11     0.41   0.685    -1.06e-10    1.62e-10

       OPN |
       D1. |   .0663347   .0303438     2.19   0.029     .0068619    .1258074

       INF |
       D1. |  -.0002067    .000313    -0.66   0.509    -.0008202    .0004068

       EXC |
       D1. |  -.1337728    .035829    -3.73   0.000    -.2039962   -.0635493
```

```
       _cons |   10.63677   2.987761     3.56   0.000     4.780867    16.49268
-------------+----------------------------------------------------------------
ID_5         |
         ECT |  -2.138859   .2895462    -7.39   0.000     -2.70636   -1.571359

         EXP |
         D1. |  -3.00e-11   1.64e-10    -0.18   0.855    -3.51e-10    2.91e-10

         IMP |
         D1. |  -9.16e-11   1.38e-10    -0.67   0.506    -3.62e-10    1.78e-10

         OPN |
         D1. |  -.2035517   .1731348    -1.18   0.240    -.5428897    .1357863

         INF |
         D1. |   1.284917   .5931787     2.17   0.030     .1223077    2.447525

         EXC |
         D1. |  -1.163009   .6033322    -1.93   0.054    -2.345519    .0195003

       _cons |   12.82497   3.605881     3.56   0.000     5.757574    19.89237
-------------+----------------------------------------------------------------
ID_6         |
         ECT |  -1.420661   .2221598    -6.39   0.000    -1.856086    -.985236

         EXP |
         D1. |  -2.89e-11   8.50e-11    -0.34   0.734    -1.95e-10    1.38e-10

         IMP |
         D1. |   7.38e-11   8.08e-11     0.91   0.361    -8.46e-11    2.32e-10

         OPN |
         D1. |  -.3708621   .1604655    -2.31   0.021    -.6853688   -.0563555

         INF |
         D1. |   .2301349   .1014845     2.27   0.023     .031229    .4290407

         EXC |
         D1. |  -.001298   .0014837    -0.87   0.382    -.004206    .0016099

       _cons |   8.013313   2.458125     3.26   0.001     3.195477    12.83115
-------------+----------------------------------------------------------------
ID_7         |
         ECT |  -1.961052   .4091668    -4.79   0.000    -2.763004    -1.1591

         EXP |
         D1. |   2.13e-10   1.71e-10     1.25   0.212    -1.22e-10    5.48e-10

         IMP |
         D1. |  -3.11e-10   2.34e-10    -1.33   0.183    -7.69e-10    1.47e-10

         OPN |
         D1. |  -.0604046   .1143984    -0.53   0.597    -.2846213    .1638122

         INF |
         D1. |   .4572494   .5720814     0.80   0.424    -.6640095    1.578508

         EXC |
         D1. |  -7.963188   3.665292    -2.17   0.030    -15.14703   -.7793478

       _cons |   17.31673   4.593163     3.77   0.000     8.314292    26.31916
-------------+----------------------------------------------------------------
```

```
ID_8        |
       ECT |  -2.379156   .2499621    -9.52   0.000    -2.869073    -1.88924

       EXP |
       D1. |  -1.41e-10   1.81e-10    -0.78   0.434    -4.96e-10    2.13e-10

       IMP |
       D1. |   3.59e-10   2.37e-10     1.51   0.130    -1.06e-10    8.23e-10

       OPN |
       D1. |   -.163549    .070766    -2.31   0.021    -.3022478   -.0248503

       INF |
       D1. |    -1.5062   1.168879    -1.29   0.198     -3.79716    .7847596

       EXC |
       D1. |  -10.97037   26.13514    -0.42   0.675    -62.19431    40.25357

      _cons |   23.76746   8.164245     2.91   0.004     7.765833    39.76908
-------------+----------------------------------------------------------------
ID_9        |
       ECT |  -1.245966    .150892    -8.26   0.000    -1.541709   -.9502229

       EXP |
       D1. |   6.99e-10   2.45e-10     2.85   0.004     2.18e-10    1.18e-09

       IMP |
       D1. |  -3.16e-09   1.17e-09    -2.71   0.007    -5.45e-09   -8.80e-10

       OPN |
       D1. |    .045459    .069483     0.65   0.513    -.0907253    .1816432

       INF |
       D1. |  -.8888826    .265177    -3.35   0.001     -1.40862   -.3691453

       EXC |
       D1. |  -7.035478   6.893415    -1.02   0.307    -20.54632    6.475367

      _cons |   3.790218   1.293926     2.93   0.003     1.254171    6.326266
-------------+----------------------------------------------------------------
ID_10       |
       ECT |  -2.009225   .313322    -6.41   0.000    -2.623325   -1.395125

       EXP |
       D1. |   5.28e-10   2.10e-10     2.51   0.012     1.16e-10    9.40e-10

       IMP |
       D1. |  -3.92e-10   2.63e-10    -1.49   0.136    -9.07e-10    1.24e-10

       OPN |
       D1. |  -.0047032   .1583279    -0.03   0.976    -.3150202    .3056138

       INF |
       D1. |   .1776154   .3503187     0.51   0.612    -.5089966    .8642275

       EXC |
       D1. |  -.2683335   .3278916    -0.82   0.413    -.9109893    .3743224

      _cons |   9.363714   3.048152     3.07   0.002     3.389446    15.33798
------------------------------------------------------------------------------
```

Results of PMG Estimation for Individual Country Level

Developed Country

```
. xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC ) ec(ECT) replace
full pmg
ID 11 = China
ID 12 = Korea
ID 13 = Japan
Iteration 0:   log likelihood = -127.99611  (not concave)
Iteration 1:   log likelihood = -115.32066  (not concave)
Iteration 2:   log likelihood = -111.63424  (not concave)
Iteration 3:   log likelihood =  -106.9831  (not concave)
Iteration 4:   log likelihood = -105.82491
Iteration 5:   log likelihood = -104.07869
Iteration 6:   log likelihood = -103.95921
Iteration 7:   log likelihood = -103.95847
Iteration 8:   log likelihood = -103.95847

Pooled Mean Group Regression
(Estimate results saved as PMG)

Panel Variable (i): ID                    Number of obs      =        54
Time Variable (t): T                      Number of groups   =         3
                                          Obs per group: min =        18
                                                        avg =      18.0
                                                        max =        18

                                          Log Likelihood     = -103.9585
------------------------------------------------------------------------------
   D2.GDPGR |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+-----------------------------------------------------------------
ECT         |
        EXP |   7.29e-12   1.92e-12     3.80   0.000     3.53e-12    1.11e-11
        IMP |  -9.56e-12   2.10e-12    -4.54   0.000    -1.37e-11   -5.43e-12
        OPN |    .141332   .0071845    19.67   0.000     .1272506    .1554134
        INF |   -.015901   .0464435    -0.34   0.732    -.1069286    .0751266
        EXC |   .0072556   .0160639     0.45   0.652     -.024229    .0387402
------------+----------------------------------------------------------------
ID_11       |
        ECT |  -2.373138   .1991607   -11.92   0.000    -2.763486   -1.982791

        EXP |
        D1. |  -5.54e-12   3.93e-12    -1.41   0.159    -1.32e-11    2.18e-12

        IMP |
        D1. |   1.67e-11   4.10e-12     4.08   0.000     8.67e-12    2.47e-11

        OPN |
        D1. |  -.1428945   .0765204    -1.87   0.062    -.2928718    .0070829

        INF |
        D1. |  -.3539945   .0742753    -4.77   0.000    -.4995713   -.2084177

        EXC |
        D1. |   1.610347   2.144949     0.75   0.453    -2.593675     5.81437

      _cons |    7.84909   1.008919     7.78   0.000     5.871646    9.826535
------------+----------------------------------------------------------------
ID_12       |
        ECT |  -.4090829   .3643812    -1.12   0.262    -1.123257    .3050911

        EXP |
```

Developed Country

```
. xtpmg d2.GDPGR d.EXP d.IMP d.OPN d.INF d.EXC ,lr(l.GDPGR EXP IMP OPN INF EXC ) ec(ECT) replace
full pmg
ID 11 = China
ID 12 = Korea
ID 13 = Japan
Iteration 0:   log likelihood = -127.99611  (not concave)
Iteration 1:   log likelihood = -115.32066  (not concave)
Iteration 2:   log likelihood = -111.63424  (not concave)
Iteration 3:   log likelihood =  -106.9831  (not concave)
Iteration 4:   log likelihood = -105.82491
Iteration 5:   log likelihood = -104.07869
Iteration 6:   log likelihood = -103.95921
Iteration 7:   log likelihood = -103.95847
Iteration 8:   log likelihood = -103.95847

Pooled Mean Group Regression
(Estimate results saved as PMG)

Panel Variable (i): ID                    Number of obs      =        54
Time Variable (t): T                      Number of groups   =         3
                                          Obs per group: min =        18
                                                        avg =      18.0
                                                        max =        18

                                          Log Likelihood     = -103.9585
------------------------------------------------------------------------------
   D2.GDPGR |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
------------+-----------------------------------------------------------------
ECT         |
        EXP |   7.29e-12   1.92e-12     3.80   0.000     3.53e-12    1.11e-11
        IMP |  -9.56e-12   2.10e-12    -4.54   0.000    -1.37e-11   -5.43e-12
        OPN |    .141332   .0071845    19.67   0.000     .1272506    .1554134
        INF |   -.015901   .0464435    -0.34   0.732    -.1069286    .0751266
        EXC |   .0072556   .0160639     0.45   0.652     -.024229    .0387402
------------+----------------------------------------------------------------
ID_11       |
        ECT |  -2.373138   .1991607   -11.92   0.000    -2.763486   -1.982791

        EXP |
        D1. |  -5.54e-12   3.93e-12    -1.41   0.159    -1.32e-11    2.18e-12

        IMP |
        D1. |   1.67e-11   4.10e-12     4.08   0.000     8.67e-12    2.47e-11

        OPN |
        D1. |  -.1428945   .0765204    -1.87   0.062    -.2928718    .0070829

        INF |
        D1. |  -.3539945   .0742753    -4.77   0.000    -.4995713   -.2084177

        EXC |
        D1. |   1.610347   2.144949     0.75   0.453    -2.593675     5.81437

      _cons |    7.84909   1.008919     7.78   0.000     5.871646    9.826535
------------+----------------------------------------------------------------
ID_12       |
        ECT |  -.4090829   .3643812    -1.12   0.262    -1.123257    .3050911

        EXP |
```

```
       D1. |   1.42e-11   1.11e-10     0.13   0.898    -2.03e-10    2.32e-10

       IMP |
       D1. |   7.11e-11   9.28e-11     0.77   0.444    -1.11e-10    2.53e-10

       OPN |
       D1. |  -.2414416   .3564168    -0.68   0.498    -.9400058    .4571226

       INF |
       D1. |  -4.125963   1.068024    -3.86   0.000    -6.219251   -2.032675

       EXC |
       D1. |   .0294788   .0240672     1.22   0.221    -.0176921    .0766496

      _cons |  -8.761297   7.755676    -1.13   0.259    -23.96214    6.439548
-------------+----------------------------------------------------------------
ID_13        |
       ECT |  -2.789066   .4161378    -6.70   0.000    -3.604681   -1.973451

       EXP |
       D1. |  -1.81e-11   2.79e-11    -0.65   0.518    -7.28e-11    3.67e-11

       IMP |
       D1. |   1.12e-11   2.51e-11     0.45   0.655    -3.79e-11    6.03e-11

       OPN |
       D1. |    .178245   .5853531     0.30   0.761    -.969026     1.325516

       INF |
       D1. |   .7804273   .6849922     1.14   0.255    -.5621327    2.122987

       EXC |
       D1. |   .0954049   .1309939     0.73   0.466    -.1613385    .3521482
           |
      _cons |   -7.25419   5.569614    -1.30   0.193    -18.17043    3.662054
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Curriculum Vitae

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