



Appendix

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
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1. Unit root test at Level I(0)

1.1 test unit root of international tourism demand (DTit)

Panel unit root test: Summary

Series: LNDIT

Date: 06/02/14 Time: 11:41

Sample: 2005 2011

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

Balanced observations for each test

Method	Statistic	Prob.**	Cross-Sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.26417	0.0118	8	48
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.36018	0.6406	8	48
ADF - Fisher Chi-square	13.4844	0.6371	8	48
PP - Fisher Chi-square	19.2669	0.2551	8	48

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

1.2 Unit root test of GDP per capita in each country

Panel unit root test: Summary

Series: LNGDPIT

Date: 06/02/14 Time: 11:51

Sample: 2005 2011

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

Balanced observations for each test

Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.19466	0.1161	8	48
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	1.11097	0.8667	8	48
ADF - Fisher Chi-square	7.87964	0.9524	8	48
PP - Fisher Chi-square	14.3343	0.5738	8	48

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

1.3 Unit root test of Price of oil

Panel unit root test: Summary

Series: LNPOIT

Date: 06/02/14 Time: 11:56

Sample: 2005 2011

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

Balanced observations for each test

Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.60516	0.0000	8	48
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.07186	0.1419	8	48
ADF - Fisher Chi-square	22.7274	0.1212	8	48
PP - Fisher Chi-square	25.2698	0.0652	8	48

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

1.4 Unit root test of Tourism Price

Panel unit root test: Summary

Series: LNTPIIT

Date: 06/02/14 Time: 11:58

Sample: 2005 2011

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

Balanced observations for each test

Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.90763	0.1820	8	48
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	1.23901	0.8923	8	48
ADF - Fisher Chi-square	11.0222	0.8081	8	48
PP - Fisher Chi-square	17.0205	0.3843	8	48

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

2. Unit root test at First difference I(1)

2.1 unit root test of international tourism demand

Panel unit root test: Summary

Series: D(LNDIT)

Date: 06/02/14 Time: 11:49

Sample: 2005 2011

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

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.23247	0.0000	8	40
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.89797	0.0288	8	40
ADF - Fisher Chi-square	31.1158	0.0130	8	40
PP - Fisher Chi-square	44.2918	0.0002	8	40

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

2.2 unit root test of GDP

Panel unit root test: Summary

Series: D(LNGDPIT)

Date: 06/02/14 Time: 11:53

Sample: 2005 2011

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

Balanced observations for each test

Method	Statistic	Prob.**	Cross- sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.36661	0.0000	8	40
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.05193	0.1464	8	40
ADF - Fisher Chi-square	23.3140	0.1056	8	40
PP - Fisher Chi-square	32.3970	0.0089	8	40

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

2.3 unit root test of Tourism price

Panel unit root test: Summary

Series: D(LNTPIT)

Date: 06/02/14 Time: 12:02

Sample: 2005 2011

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

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.43895	0.0000	8	40
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.53780	0.2954	8	40
ADF - Fisher Chi-square	18.9371	0.2719	8	40
PP - Fisher Chi-square	26.3707	0.0490	8	40

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

3. Pooled Mean Group Regression (Estimate results saved as pmg)

Pooled Mean Group Regression
(Estimate results saved as pmg)

Panel variable (i): id
Time variable (t): year

Number of obs = 64
Number of groups = 8
Obs per group: min = 8
 avg = 8.0
 max = 8

Log Likelihood = 90.99193

D.lndt		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
ec							
	lmgdp	2.463315	.1359057	18.13	0.000	2.196944	2.729685
	lnpo	.5356962	.0677245	7.91	0.000	.4029586	.6684337
	lntp	.7363867	.1409598	5.22	0.000	.4601105	1.012663
SR							
	ec	-.7774005	.1849474	-4.20	0.000	-1.139891	-.4149103
	lmgdp D1.	-1.027676	1.591162	-0.65	0.518	-4.146297	2.090945
	lnpo D1.	-.0918386	.1981687	-0.46	0.643	-.4802422	.296565
	lntp D1.	1.615864	1.093693	1.48	0.140	-.5277341	3.759462
	_cons	-11.54398	4.271041	-2.70	0.007	-19.91506	-3.172889

4. Mean Group Estimation: Error Correction Form (Estimate results saved as mg)

Mean Group Estimation: Error Correction Form (Estimate results saved as mg)						
	D.Indt	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
ec	lngdp	-1.438168	5.311702	-0.27	0.787	-11.84891 8.972577
	lnpo	-1.2425	1.150831	-1.08	0.280	-3.498087 1.013087
	lntp	-7.998904	9.971567	-0.80	0.422	-27.54282 11.54501
SR	ec	2.133183	1.305056	1.63	0.102	-.4246797 4.691046
	lngdp D1.	-105.6618	104.1096	-1.01	0.310	-309.7128 98.38928
	lnpo D1.	-1.323656	1.069223	-1.24	0.216	-3.419296 .7719832
	lntp D1.	-43.12969	29.99663	-1.44	0.150	-101.922 15.66262
	_cons	-70.53151	67.03746	-1.05	0.293	-201.9225 60.8595

5. hausman mg pmg, sigmamore (Model selection)

. hausman mg pmg, sigmamore				
	---- Coefficients ----			
	(b) mg	(B) pmg	(b-B) Difference	sqrt(diag(v_b-v_B)) S.E.
lngdp	-1.438168	2.463315	-3.901483	1.80e+14
lnpo	-1.2425	.5356962	-1.778196	3.91e+13
lntp	-7.998904	.7363867	-8.735291	3.38e+14
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)				
= 0.00				
Prob>chi2 = 1.0000				

6. Individual FMOLS Result (t-stats in parentheses)

Member	Variable	Coefficient	t-statistic
*****	*****	*****	*****
No.1	LNGDP	4.07	(2.24)
No.1	LNPO	-0.55	(-2.73)
No.1	LNTP	-3.80	(-1.91)
-----	-----	-----	-----
No.2	LNGDP	7.23	(34.24)
No.2	LNPO	0.55	(20.20)
No.2	LNTP	-2.61	(-17.00)
-----	-----	-----	-----
No.3	LNGDP	2.50	(0.19)
No.3	LNPO	0.43	(0.54)
No.3	LNTP	-1.08	(-0.09)
-----	-----	-----	-----
No.4	LNGDP	1.49	(2.19)
No.4	LNPO	0.57	(2.45)
No.4	LNTP	-1.37	(-0.67)
-----	-----	-----	-----
No.5	LNGDP	3.94	(23.28)
No.5	LNPO	-0.57	(-7.66)
No.5	LNTP	1.05	(5.37)
-----	-----	-----	-----
No.6	LNGDP	0.88	(2.15)
No.6	LNPO	-0.12	(-1.84)
No.6	LNTP	-4.64	(-6.15)
-----	-----	-----	-----
No.7	LNGDP	2.42	(7.65)
No.7	LNPO	-0.46	(-4.01)
No.7	LNTP	-1.37	(-1.48)
-----	-----	-----	-----
No.8	LNGDP	5.70	(4.05)

Member	Variable	Coefficient	t-statistic
*****	*****	*****	*****
No.8	LNPO	0.29	(1.31)
No.8	LNTTP	-2.75	(-4.97)
-----	-----	-----	-----
*****	*****	*****	*****

7. PANEL GROUP FMOLS RESULTS

	Coefficient	t-statistic
LNGDP	3.53	(26.87)
LNPO	0.02	(2.92)
LNTTP	-2.07	(-9.51)

Nsecs = 8 , Tperiods = 9 , no. regressors = 3

8. Variables to estimate the international tourism demand for Laos

Year	Id	DT	GDP	PO	TP
2005	1	603189	2689.953	52.91	0.999768
2006	1	675845	2813.027	60.38	0.979729
2007	1	949452	2946.296	66.92	0.958354
2008	1	891448	3014.545	100.53	0.939109
2009	1	1274064	2940.224	58.20	0.930843
2010	1	1517064	3163.904	70.03	0.907043
2011	1	1579941	3158.067	94.31	0.875271
2012	1	1937612	3352.529	97.73	0.864839
2013	1	2059434	3389.58	92.75	0.83085
2005	2	165151	699.4879	49.12	1.121213
2006	2	190442	740.0391	56.06	1.005468
2007	2	290584	784.252	62.13	1.041843
2008	2	351384	819.8815	93.34	1.191754
2009	2	296763	855.07	54.04	1.275378
2010	2	431011	900.4937	65.02	1.310031
2011	2	561586	946.8034	87.56	1.445207
2012	2	705596	986.0138	90.74	1.512253
2013	2	910164	1,029	86.11	1.515484

Year	Id	DT	GDP	PO	TP
2005	3	6609	5553.944	168.26	0.978444
2006	3	6846	5756.408	192.01	0.970104
2007	3	7937	6007.901	212.80	0.946951
2008	3	15625	6185.513	319.69	0.92769
2009	3	13816	5984.915	185.08	0.932774
2010	3	15427	6318.901	222.69	0.895181
2011	3	17702	6531.321	299.89	0.858749
2012	3	18872	6786.185	310.78	0.837317
2013	3	19023	6990.25	294.95	0.80379
2005	4	5247	1200.938	203.90	0.999786
2006	4	6433	1241.547	232.68	0.987669
2007	4	11401	1301.221	257.87	0.972338
2008	4	12647	1332.827	387.41	0.978044
2009	4	8331	1325.903	224.29	1.018071
2010	4	10341	1403.306	269.87	0.997873
2011	4	11847	1429.748	363.42	0.970693
2012	4	12455	1501.07	376.61	0.960586
2013	4	15333	1581.01	357.42	0.929889
2005	5	5179	471.1625	77.02	0.934521
2006	5	3888	514.264	87.90	0.99383
2007	5	4351	558.858	97.41	1.023748
2008	5	5482	587.9897	146.35	1.18894
2009	5	7530	580.0238	84.73	1.180671
2010	5	6908	605.168	101.94	1.15854
2011	5	7561	637.2626	137.28	1.135938
2012	5	9534	671.6363	142.27	1.121512
2013	5	11014	709.18	135.02	1.085424
2005	6	3868	29403.39	188.70	0.987543
2006	6	4511	30954.84	215.34	0.945872
2007	6	5486	32370.06	238.65	0.923902
2008	6	4866	31228.89	358.53	0.914373
2009	6	5286	30062.56	207.57	0.91957
2010	6	6087	33900.43	249.75	0.891954
2011	6	7130	34913.95	336.33	0.872688
2012	6	7544	34517.46	348.54	0.874954
2013	6	7997	36110.13	330.78	0.84236

Year	Id	DT	GDP	PO	TP
2005	7	2784	1273.465	278.66	1.099981
2006	7	2415	1324.467	318.01	1.059053
2007	7	2032	1388.606	352.43	1.078159
2008	7	2034	1451.558	529.46	1.099668
2009	7	3158	1498.007	306.53	1.152191
2010	7	2245	1570.153	368.82	1.142957
2011	7	3338	1650.629	496.68	1.11938
2012	7	3359	1731.653	514.71	1.119615
2013	7	3453	1810.31	488.48	1.126132
2005	8	385	25913.58	201.96	0.98443
2006	8	302	26556.3	230.47	0.93781
2007	8	234	26127.17	255.42	0.905923
2008	8	338	25186.32	383.72	0.859266
2009	8	267	24341.27	222.16	0.867869
2010	8	197	24589.28	267.30	0.821787
2011	8	354	24764.88	359.96	0.779301
2012	8	465	24947.1	373.03	0.736816
2013	8	576	25011.02	354.02	0.694331

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CURRICULUM VITAE

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