Relationship between Telecommunication and Economic Growth in Thailand

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Objective and Problem

- There is need for robust evidence to understand the link between telecommunication and economic growth.
- My paper examines the issue of long run and causal relationship between economic growth and telecommunication using some respected tools in time series econometrics.

Results

- I applied Johansen (1988,1990) and bounds tests(2001) to examine long run relationship between economic growth and telecommunication in Thailand.
- The results indicates that there is long run relationship between telecommunication and economic growth.
- There is also evidence of causality from telecommunication to economic growth.

Table 1.Johansen cointegration test(1988,1990) Bivariate analysis

Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value	Max-Eigen Statistic	0.05 Critical Value
None	43.516	20.180	40.081	15.870
At most 1	3.435	9.160	3.436	9.160

Note: Lag length of 1 was used. The deterministic terms were selected based on Pantula principle (1989).

Table 2. Bound test for cointegration (2001) Bivariate analysis

Computed F-Statistics		Without deterministic trend	With deterministic trend
When the dependent is			
In Y_t		4.1071	4.1941
In T_t		***3.377***	2.4567
Critical Values		**I(0)**	**I(1)**
Table III (k=1;n=30)	1%	8.170	9.285
	5%	5.395	6.350
	10%	4.290	5.080
Table IV(k=1,n=30)	1%	7.593	8.350
	5%	5.377	5.963
	10%	4.427	4.957

Note: Critical values are obtained from Narayan (2005).

Table 3.Johansen cointegration test (1988, 1990) Trivariate analysis

Hypothesized	Trace	0.05	Max-Eigen	0.05
No. of CE(s)	Statistic	Critical Value	Statistic	Critical Value
None	46.714	42.915	27.155	25.823
At most 1	19.559	25.872	15.175	19.387
At most 2	4.384	12.517	4.384	12.517

Note: Lag length of 1 was used. The deterministic terms were selected based on Pantula principle (1989).

Table 4. Bound test for cointegration (2001) Trivariate analysis

Computed F-Statistics		Without deterministic trend	With deterministic trend
When the dependent is			
$\ln Y_t$		3.5627	3.2755
$\ln T_t$		3.3629	1.8210
$\ln L_t$		***4.7411***	4.4077
Critical Values		**I(0)**	**I(1)**
Table III (k=2;n=30)	1%	6.183	7.873
	5%	4.267	5.473
	10%	3.437	4.470
Table IV(k=2,n=30)	1%	6.428	7.505
	5%	4.535	5.415
	10%	***3.770***	***4.535***

Note: Critical values are obtained from Narayan (2005).

Table 5.Causality results between telecommunication and economic growth

Direction of Causality	Computed Statistics
Telecommunication Granger does not Cause Economic Growth	0.471[0.492]
Economic Growth Granger does not Cause Telecommunication	0.059 [0.806]

Note: Figures in brackets are computed p-values.

Table 6.Causality results between telecommunication, laborforce and economic growth

Direction of Causality	Computed Statistics
Telecommunication Granger does not Cause Economic Growth	3.487[0.061]*
Economic Growth Granger does not Cause Telecommunication	0.006[0.984]
Telecommunication Granger does not Cause laborforce	4.436[0.035] **
Economic Growth Granger does not Cause laborforce	0.097[0.755]
Laborforce Granger does not Cause Economic Growth	8.648[0.003]***
Laborforce Granger does not Cause Telecommunication	0.646[0.421]

Note:Figures in brackets are computed p-values.*** ,**,* indicate statistical significance at 1% ,5% ,10% respectively.

Policy Recommendation

- Results suggest that telecommunication does matter for economic growth.
- The study provides some important policy implications.
- Government can improve economic growth through telecommunication sector(improved regulation, human capital, foreign investment etc).
- Support for ICT related research.

Thank You