

Financial Intermediation and Economic Growth: Evidence from Sri Lanka

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Introduction

The importance of commercial banks in generating growth within an economy has been widely discussed by various scholars. Commercial banks are mainly involved in financial intermediation, which is the channeling of funds from surplus unit to deficit units of the economy, thus transforming bank deposits into loans or credits. The role of credit on economic growth has been recognized as credits that are obtained by various economic agents to enable them meet operating expenses. Business firms obtain credit to purchase seeds, fertilizers, erect various kinds of farm buildings. Therefore, the credit funds are made available for investment in productive capital (Chinwoke et al. 2014).

Soon after financial liberalization in Sri Lanka in 1977, the government introduced financial sector development policies. This created a competitive environment in the financial sector. In this context, a dramatic change can be seen within the commercial banking system. The number of commercial banks have increased while financial intermediation of commercial banks shows an upward trend. However, the growth performance of Sri Lanka during the post liberalization period is higher than the pre liberalization period. Although the country was able to maintain an average five percent growth rate, it was not consistent throughout the period. The data related to economic growth reveals high fluctuation. The existing literature identifies a positive relationship between financial intermediation and economic growth (Rexiang and Rathnasiri, 2008; Donald et al., 2000; Chinwoke et al., 2014). However, the quantitative assessment of the relationship between financial intermediation and economic growth is inadequate and limited in the context of Sri Lanka.

Thus, this study attempts to fill this gap by investigating financial intermediation and economic growth in Sri Lanka.

Objective

The main objective of the study is to investigate the relationship between financial intermediation and economic growth in the long run and the short run for Sri Lanka.

Methodology

The study covers over the period 1977 – 2015. Data on Real Gross Domestic Product (RGDP), commercial bank credit to private sector (BPC), exchange rate (ER) and foreign direct investment (FDINI) were extracted from the annual reports of the Central Bank of Sri Lanka. Real interest rate (RIR) and consumer price index (CPI) data were collected from the World Development Indicator (WDI) data base. Except RIR all the variables were transformed into their natural logarithm. ADF and PP unit root tests methods were employed to test the stationarity of the series. Akaike Information Criterion (AIC) was applied to determine the optimal lag length of each series. RGDP is used as a proxy for economic growth and BPC is the proxy for financial intermediation. The long run relationship between the variables is developed as below:

$$\ln\text{RGDP}_t = \alpha_0 + \alpha_1 \ln\text{BPC}_t + \alpha_2 \ln\text{CPI}_t + \alpha_3 \ln\text{ER}_t + \alpha_4 \ln\text{FDINI}_t + \alpha_5 \text{RIR}_t + \varepsilon_t \quad (1)$$

where, ε_t is a white noise error term, $t = 1, 2, \dots, T$

If the variables in equation (1) have different order, which is $I(1)$ and $I(0)$ we can use the new co-integration method which was developed by Pesaran et al., (2001). This procedure, i.e. Autoregressive Distributed Lag (ARDL) Bound test approach is used to test co-integration among variables. The equation ARDL was further transformed in order to accommodate the error correction term with one period lagged (ECT_{t-1}). Finally, the Wald test was used to determine the direction of causality between the variables.

Results and Discussion

The results of ADF and PP unit root tests indicate that the variables are integrated in order zero (CPI, RIR, ER) and order one (RGDP, BPC, FDINI). AIC advocated the use of ARDL (1, 3, 4, 4, 4, 4) model for this analysis. The long run results are presented in Table 1. BPC has a positive and statistically significant relationship with RGDP in the long run. Particularly, if the BPC increases by 1% RGDP will increase by 0.83%. It clearly shows that BPC has been favourable for RGDP in the long run. FDINI affects RGDP positively in the long run but it is not statistically significant. At the same time, CPI, ER and RIR have (at 5% level of significance) a negative impact on RGDP in the long run.

Table 1: The results of ARDL (1, 3, 4, 4, 4, 4) Model

Panel A: The results of long run coefficients (DV: LRGDPO)

Con	LBPC	LCPI	LER	LFDINI	RIR	R ²
0.66	0.8337	-0.748	-0.437	0.025	-0.017	0.99
	(0.0283)	(0.0339)	(0.0005)	(0.1406)	(0.0005)	

Panel B: The Results of the Diagnostic Test

Serial correlation [LM Test: $X^2_{(df)}$]	Prob.= 0.1007
Normality Test (Jarque -Bera)	Prob.= 0.3839
Heteroscedasticity (BPG Test)	Prob.= 0.7145
Omitted Variable Test	Prob.= 0.0660

Note: Probability values are given in the parenthesis *, ** represents the variables are statistically significant at 10% and 5% level of significance respectively.

The Lagrange Multiplier (LM) test of autocorrelation indicates that the residuals are not serially correlated. According to the Jarque – Bera (JB) test, the null hypothesis of normally distributed residuals cannot be rejected. The Breush-Pagan-Godfrey (BPG) test of heteroscedasticity suggests that the disturbance term in the equation is homoscedastic. The Ramsey RESET test result confirms that there is no specification error in the estimated model (See Table 1 Panel B above). The CUSUM plots lie between the lower and upper critical bounds at the 5% significance level, which confirms the stability of the parameters. The results of Bound test confirms that there is a long run relationship between RGDP and other variables since the null hypothesis of

no cointegration among the variables is rejected due to the computed F statistic (7.35) being greater than the upper bound critical value (3.79) at 5% level of significance.

Table 2: Error correction representation of ARDL Model

Variables	Lag order				
	0	1	2	3	4
Δ LRGDP		0.436* (0.0686)			
Δ LBPC	0.123** (0.0177)	-0.035 (0.5088)	0.121** (0.0057)	-0.044 (0.1717)	
Δ LCPI	-0.179** (0.0129)	0.299** (0.0208)	0.214** (0.0174)	-0.114* (0.0624)	0.146** (0.0186)
Δ LER	-0.052 (0.3965)	0.063 (0.1820)	-0.160** (0.0070)	-0.046 (0.04141)	-0.124** (0.0062)
Δ LFDINI	-0.0096 (0.1123)	-0.0096 (0.1550)	-0.016** (0.0164)	-0.003 (0.4542)	-0.020** (0.0012)
Δ RIR	-0.007** (0.0021)	-0.0004 (0.6821)	-0.004** (0.0057)	-0.001 (0.1500)	-0.004** (0.0054)
ECT (-1)	-0.8610 (0.0254)				
R ²	0.9671	F-Stat= 7.9108 (0.0044)			
Panel B: The Result of the Diagnostics Test					
Serial Correlation [LM Test: $\chi^2_{(df)}$]					Prob.=0.4038
Normality Test (Jarque – Bera)					Prob.=0.5829
Heteroscedasticity (BPG Test)					Prob.=0.2816
Omitted Variable (Ramsey's RESET)					Prob.=0.6417

Note: Probability values are given in the parenthesis *, ** indicates that variables are statistically significant at 10% and 5% level of significance respectively.

The result of short run dynamic and long run adjustment coefficients are estimated using Equation (3) which is presented in Table 2. The ECM model passed all the diagnostics tests. Panel A of Table 2 reports the short run dynamic coefficients estimates of ARDL-ECM. Accordingly, as expected, the current value of BPC and the two period lagged value of BPC have a positive impact on RGDP, whereas current period CPI, FDINI and RIR have a negative significant impact on RGDP. Further, ECT (-1) carries an expected negative sign, which is highly significant indicating that there should be an adjustment toward steady state line in the long run one period after an exogenous shock. Thus, about 86.1% of the disequilibrium in the RGDP is offset by short-run

adjustment in each period. Finally, the Wald test detected only unidirectional causality between BPC and RGDP in the short run.

Conclusion

The objective of this study was to investigate the long run and short run relationship between financial intermediation and economic growth in Sri Lanka using time series data for the period 1977 to 2015. As per the findings of the study, we conclude that both cointegration approach to ARDL and error correction version of ARDL passed all the diagnostics and the stability tests. The Bound test confirms that the variables are cointegrated. The BPC affects the RGDP positively and significantly in the long run. CPI, ER and RIR have negative and significant impact on RGDP in the long run. Moreover, the current value of BPC and one period lagged value of BPC positively and significantly affect the RGDP in short run. Further, this model confirms that real gross domestic product can get back to long run steady state line at the speed of 86.1% in each period after an exogenous shock. In terms of policy implications, the findings suggest that the financial sector of Sri Lanka should take necessary actions to improve the intermediation process.

References

- Chinweoke, N., Onyidikachi, M. and Elizabeth, C. N. (2014). Financial Intermediation and Economic Growth in Nigeria. *The MacrotHEME Review*. 3(6):124 – 142.
- Donald, S., Allen, and Nadikumana, L. (2000). Financial Intermediation and Economic Growth in Southern Africa. *Journal of African Economics, University of Massachusetts*. 9(2):132 – 160.
- Forgha, G. N., Sama, C. M. and Aquilas, A. N. (2016). An Econometric Investigation in to Financial Intermediation, Domestic Investment and Economic Growth. *Journal of Finance and Economics, Science and Education Publishing*. 4(1):1 – 9.