

Financial Development and Economic Growth: The Post-Liberalization Experience in Sri Lanka

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Introduction

Financial development is considered by many economists to be of paramount importance for economic growth. A large number of studies have focused on the theoretical and empirical relationship between financial development and economic growth. Schumpeter (1934) highlighted how financial institutions could actively induce innovation and future growth by identifying and funding productive investments. Government restrictions on the banking system such as interest rate ceilings and directed credit would negatively affect the development of the financial sector and harm economic growth (McKinnon and Shaw, 1973).

While a considerable body of empirical literature confirmed a positive relationship (Ayadi *et al.*, 2013; Estrada *et al.*, 2000; Levine, 1997; and Goldsmith, 1969) some other literature suggests a negative association (Shan *et al.*, 2001; Demetriades and Hussein, 1996; and Neusser and Kugal, 1996) between financial development and economic growth. In the Sri Lankan case, Perera and Paudel (2009) using 1955- 2005 data, found two-way causality between broad money and economic growth but, they found little evidence that financial development boosts economic growth. Amarathunga (2010) found that

economic growth causes financial development in the long-run and there is no reverse causation.

The above studies on Sri Lanka covered the transition period of the economy. The post-1977 reforms included financial liberalization with its accompanying dramatic changes in the structure, market and instruments in the financial system. It is likely that changes in the financial development – economic growth nexus before and after 1977 would impact on the empirical results obtained therein. Therefore this study attempts to investigate the impact of financial development on economic growth of Sri Lanka after liberalization of the economy.

Objective

The objective of this study is to empirically investigate the impact of financial development on economic growth in Sri Lanka over the period of 1978-2012.

Methodology

The study adopted a Vector Error Correction Model (VECM) to investigate the relationship between economic growth and a set of variables used as proxies for financial development. In the model, Gross Domestic Product (GDP) is used as a dependent variable and a proxy for economic growth; and capital output ratio (K), broad money supply (M_2), Credit given to Private Sector (CPS), Bank Density (BD) and Trade Dependency (TD) are used as explanatory variables to investigate the impact of financial development. All the data are collected from the Annual Reports published by the Central Bank of Sri Lanka and the Department of Census and Statistics. All the data were transformed in to natural logarithm.

The Augmented Dickey-Fuller (ADF) unit root tests were employed to test the stationarity properties of the variables. Akaike Information Criterion (AIC) and Schwartz Information Criterion (SIC) and Likelihood Ratio (LR) statistics are adapted to determine the optimum lag length. Granger Causality Test (GCT); and Johansson and Juselius Cointegration Test (JJCT) were adapted to identify the direction of causality and long-run relationship between the variables respectively. The VECM was used to examine the short-run and long-run relationship as well as long-run equilibrium of the model.

Results and Discussion

Unit root tests revealed that all variables were non-stationary at the levels but were stationary in their first difference which suggest that all the variables under this study are integrated in the same order [I(1)]. The lag length selection criteria suggested one lag is optimal. Pair wise GCT reveals that there is long-run causality relationship between some variables: K causes GDP; CPS causes GDP; GDP causes TD; K causes CPS; TD causes K; M₂ causes CPS; and CPS causes M₂. Johansen cointegration rank test detected three co-integrating relationships among the variables which confirm long-run relationship between variables that suggested using the Error Correction Model (ECM) in the study.

VECM results are given in the following three cointegrating equations which show the long-run relationship among the variables.

$$LGDP_t = 45.1 - 6.02LM_{2t-1} + 11.3LBD_{t-1} - 8.74LTD_{t-1} \dots (1)$$

(9.44) (-14.3) (6.17)

$$LK_t = 1.9 + 0.03LM_{2t-1} - 0.16LBD_{t-1} + 0.37LTD_{t-1} \dots (2)$$

(-0.37) (0.16) (1.93)

$$LCPS_t = 48.8 - 7.05LM_{2t-1} + 12.5LBD_{t-1} - 9.84LTD_{t-1} \dots (3)$$

(10.08) (-14.45) (6.34)

Note: t-statistics are given in parenthesis.

According to equation (1), M_2 and TD have negative and significant relationship with GDP while BD and GDP has positive and significant relationship in the long-run. The structural break or changes caused by the internal conflict period may explain the negative correlation between M_2 and GDP. Note that Sri Lanka's imports are higher than exports that might lead to a negative impact of TD on GDP. The results of equation (2) revealed that only one variable; TD has a significant and positive long-run impact on K. The equation (3) explains negative and significant long-run relationship between TD and CPS; and M_2 and CPS whereas a positive and significant association between BD and CPS.

The speed of adjustment of three cointegrating equations is presented in Table 1 of Annexure A. First, the significant and negative error correction coefficient (-0.445) of GDP indicates 44.5% disequilibrium is corrected every year and negative sign of this coefficient implies GDP moves downward and towards long run equilibrium path. Second, the negative and significant coefficient (-0.801) of speed of adjustment of K revealed that 80.1% disequilibrium is corrected each year and moves downward towards long-run equilibrium path with this percentage. Third, the significant (at 10% level) and positive error correction coefficient (0.159) of CPS indicates that the variables moves upwards toward disequilibrium every year with 15.9%. The results show a positive and significant relationship between K and GDP; K and CPS; K and M_2 ; BD and K; and BD and CPS whereas, there is a negative and significant relationship between TD and K; and TD and CPS in the short-run (see Table 2 in Appendix A).

Conclusion and Policy Implications

This study found three cointegrating relationships among the variables under investigation. The findings of this study revealed that broad money supply and trade dependency have a negative impact on gross domestic product where as bank density has a positive impact on gross

domestic product in the long-run. Further, the study conclude that trade dependency is positively correlated with the capital output ratio and negatively correlated with credit to private sector in the long-run. Moreover, Broad Money Supply has a negative long-run impact on credit given to private sector whereas bank density affects positively.

The study suggests that the government of Sri Lanka should motivate the financial sector to improve the quality of the services rather than expanding the number of the bank branches. It also suggested liberalize the economy further in order to explore the benefit from trade dependency through attracting more investments and increase capital output ratio to accelerate the economic growth in the long-run.

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Annexure A

Table 1: Results of Speed of Adjustments

Error Correction	D(LGDP)	D(LK)	D(LCPS)	D(LM2)	D(LBD)	D(LTD)
CointEq1	-0.445 [-2.62]	-0.299 [-0.99]	-0.158 [-0.65]	0.038 [0.03]	0.843 [1.57]	-0.333 [-1.04]
CointEq2	-0.202 [-1.60]	-0.801 [-3.57]	-0.254 [-1.41]	-0.802 [-2.20]	0.478 [1.20]	-0.519 [-2.19]
CointEq3	0.386 [2.64]	0.263 [1.01]	0.159 [1.76]	-0.164 [-0.17]	-0.724 [-1.57]	0.299 [1.09]

Note: t-statistics are given in the brackets. CointEq1, CointEq2 and CointEq3 denote the coefficients of speed of adjustments of GDP, K and CPS equations.

Table 2: The Short-run Results of ECM

	D(LGDP)	D(LK)	D(LCPS)	D(LM2)	D(LBD)	D(LTD)
D(LGDP(-1))	0.156 [0.75]	0.265 [0.72]	0.076 [0.25]	2.381 [1.77]	-0.236 [-0.36]	-0.354 [-0.91]
D(LK(-1))	0.294* [2.49]	0.552*** [2.64]	0.594*** [3.54]	1.630** [2.13]	-0.102 [-0.27]	0.333 [1.50]
D(LCPS(-1))	-0.110 [-0.52]	-0.235 [-0.62]	-0.392 [-1.30]	1.137 [0.82]	0.197 [0.29]	-0.405 [-1.01]
D(LM2(-1))	-0.006 [-0.27]	0.061 [1.53]	0.037 [1.16]	-0.077 [-0.52]	0.050 [0.70]	0.013 [0.32]
D(LBD(-1))	-0.108 [-1.14]	0.275* [1.64]	0.248* [1.84]	-0.673 [-1.09]	0.226 [0.76]	0.153 [0.86]
D(LTD(-1))	-0.181 [-1.37]	1.054*** [4.52]	-0.858*** [-4.59]	-0.360 [-0.42]	-0.052 [-0.12]	-0.573** [-2.32]
C	0.142 [4.05]	-0.026 [-0.42]	0.191 [3.81]	-0.575 [-2.51]	0.028 [0.25]	0.089 [1.35]

Note: t-statistics are given in the parenthesis.

*, **, *** denotes significance at 10%, 5% and 1% level, respectively.