

# Financial Liberalization on Broad Money: Short Run Analysis from Sri Lankan Experiences

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## Abstract

The research aims to study the impact of financial liberalization on broad money in Sri Lanka during the period 1977-2011. Financial liberalization index was calculated for evaluation the complex process of financial liberalization in Sri Lanka by focusing on important changes in the financial sector. The study has used ten major policy components of financial liberalization to construct financial liberalization index at a particular time. In order to derive the index, Principle Component Method is employed. Impact of financial liberalization on broad money is examined by using computed index and other related variables for money demand in economics literature. The study reveals that there is a positive relationship between broad money and financial liberalization in Sri Lanka in the short run. Therefore, this study opens the door to examine whether financial liberalization positively impacts on broad money in Sri Lanka in the long run as short run.

**Keywords:** Financial liberalization, broad money, Principal Component analysis.

## Introduction

A major turning point in the financial sector in Sri Lanka came after liberalization policies were introduced in 1977. Financial Liberalization was part of the economic policy package. Financial Liberalization has become an emerging trend in both developed and developing countries from 1970s. Since the mid 1980s the World Bank and the International Monetary Fund (IMF) started to prescribe financial liberalization as a basic framework for developing member countries to accelerate economic growth. Financial liberalization in Sri Lanka started in 1977 with the specific aim of developing the economy.

Sri Lanka has implemented financial liberalization reform in order to widen and deepen the financial system under open economic framework. The whole liberalization reforms can be divided into two phases. The period from 1977-1989 is known as the pre and after 1989 it was known as post 1989 period. The first phase focused on interest rate, exchange rate and banking reform and the second phase focused on stabilization and further relaxation of remaining restriction on trade and payments (Cooray 2003).

Researchers have identified many channels through which the financial liberalization may affect broad money. But, very little researches have been undertaken to evaluate the impact of financial liberalization using an index. Therefore, the objective of this study is to examine the impact of financial liberalization on broad money with the help of the constructed index calculated by the researcher. The index reflects the level and consequences of financial liberalization policies in Sri Lanka. But this study covers the short run relationship only.

## Literature Review

Financial liberalization refers to the process to liberalize the financial sector of a country with an aim to create favorable environment to increase the money demand in the economy. It takes place either by increasing the financial resources to lead a supply induced demand for money or by creating a suitable environment for making an investment in the economy.

The study of impact of financial liberalization on various aspects of the economy is quite interested and debatable area among economists. Conceptually financial liberalization aims to improve management and resource allocation in an economy. The financial liberalization ultimately has a positive impact on the real economy. But increased competition between financial institutions, enhanced intermediation, increased number of banks and availability of financial instrument to money may affect lowering the demand for money. Furthermore there can be shifts between the various categories of money. As interest rates are liberalized on time

deposits, private agents may shift their assets from currency and demand deposits, raising the velocity of narrow money, but lowering the velocity of broad money (James 2005).

Perera et al. (2007) examines the role of financial liberalization on money demand and economic growth employing Autoregressive Distributed Lag Approach in Sri Lankan data for the period of 1963-2006. They assert that financial liberalization has a significant negative impact on narrow and broad money demand in the long run, while such impact is found to be positive in the short run but not significant.

Blevins (1999) examined the effects of financial liberalization on the money demand in Peru for the period 1979-1997. Author has presented evidence of a change in the long run elasticity of money demand and its determinants which occurred in 1991. The shift in the money demand function was caused by the measures which the government took to bring down inflation as well as by the financial reforms that have been instituted. Despite the changes in the structure of the financial system, there has been a close relationship between the rate of growth of money and the rate of inflation in Peru. He concluded that there is no consensus about the sequence that must be followed in a process of financial liberalization with complete opening of the capital account in order to reach price stability and economic growth.

Aktham (2003) tests empirically whether there exists a stable function of demand for money in Jordan over the period of 1976 – 2000. A stable money demand function is considered essential for the formulation and conduct of efficient monetary policy. An accurate calibration of the long- run and dynamics and effects of rate of return on the demand for money are important in the design and assessment of the macroeconomic implications of financial liberalization and for the adoption of indirect monetary policy instruments. The empirical foundation for the conduct of a stable money demand function in Jordan is evaluated using the co integration analysis and error correction model. The results indicate that financial liberalization since 1988 may have induced a significant change in money demand in Jordan by increasing financial savings in the form of money holdings in the domestic banking system.

Reinhart et al. (2005) studied what happens to key macroeconomic variables following domestic and external financial liberalization. Their sample covers 50 countries, 14 developed countries and 36 developing countries for the period 1970-1998. The selected annual data series were gross national savings, gross investment, current account balance, gross private capital flows, foreign direct investment, GDP growth, consumption, real interest rate, their ration of narrow money to broad money ( $M1/M2$ ), credit to private sector and the spread between lending and deposit rates. He analyzed what happen to the variables before and after financial liberalization. He compared pre and post liberalization means for each indicator and test for differences, allowing the possibility that the variances may have also changed across regimes. Reinhart concluded that; with greater certainty, financial liberalization appear to deliver; high real interest rates, lower investment, but not lower growth; a higher level of foreign direct investment; and high gross capital flows the catch is that occurs only in the higher income countries. Liberalization appears to deliver financial deepening, as measured by the credit and monetary aggregate but again, low income countries do not appear to show clear signs of such a benefit. As regard savings, savings increased following financial sector reforms in some regions, but in the majority cases savings declined.

Khan et al. (2011) examine the effect of financial liberalization on demand for money in Pakistan. They employed Co integration and Auto Regressive Distributed Lag to co integration in order to determine the long run relationship between broad money ( $M2$ ) and Gross Domestic Product, financial liberalization index, real deposit rate and exchange rate. The short as well as long run results indicate that Gross Domestic Product, financial liberalization index, real deposit rate positively influence the long run demand for money in Pakistan. The results suggest that financial liberalization boosts demand for money in the long run.

The effect of financial liberalization in four ASEAN countries i. e.0 Indonesia, Malaysia, Singapore and Thailand on real money demand has been estimated by Dekle and Pradhan (1999). Using Johansen Full Information Maximum Likelihood procedure for long run real money demand, the study found that demand equation was cointegrated. The real money and its determinants (interest rate, real income and financial innovation index as a proxy for financial liberalization) move together in the long run. They conclude that demand for money remained stable despite financial banking market and liberalization for restrictions on cross-broader capital flows remained considerably higher in these countries than other developing economies.

Akhtaruzzaman (2007) analyzed the effect of globalization and financial liberalization on demand for money in Bangladesh by using Co integration and vector Error Correction Model. The study concluded that process of

globalization has no significant influence on demand for money but financial liberalization has a significant effect.

### Materials and Methods

This study is mainly based on secondary data published from Central Bank of Sri Lanka and Department of Census and Statistics of Sri Lanka. The time series data of 35 years (1977-2011) is collected to construct the index. In order to construct the financial liberalization index, the Principal Component Method is employed. To achieve the objective of examining the impact of financial liberalization on money demand Ordinary Least Square (OLS) method is employed.

### Results and Discussion

The study used directly related 10 major policy components of financial liberalization package in Sri Lanka to construct the index; Interest Rate (IR), Decontrol of exchange rates(ER),Reserve Requirements (RR),Credit Supply (CS),Capital Account Liberalization (CAL), Current Account Liberalization (CAAL), Share Market Reform (SR), Bond Market Reform (BMR), Money Market Reform (MMR),Banking Policy Reforms (BPR).

In order to construct the financial liberalization index, some arbitrary value is assigned to each of the selected policy components. Each policy component takes value between 0 and 1 depending on the implementation status of the policy. When a particular policy component is fully liberalized, that variable takes a value of 1 and when the variable remains regulated it takes a value of 0.If liberalization occurs in a gradual process in some contexts 0.25,0.5 and 0.75 values are assigned as some selected variables have been liberalized in different phases. The assigned values presented in their implementation status are used to construct the index .The weight of each of the component is calculated by employing the Principle Component method. The index can be expressed as following formula.

$$FLI_t = w_1IR + w_2ER + w_3RR + w_4CS + w_5CAL + w_6CAAL + w_7SR + w_8BMR + w_9MMR + w_{10}BPR \dots \dots \dots (1)$$

Where:

$FLI_t$  = Financial Liberalization index at respective year

$W_i$  = weight of the component given by the respective eigenvector of the selected principle component. The Eigen values and Eigenvectors of the correlation matrix of financial liberalization policy variables are shown in table 1.

Table. 1 Eigen values and Eigen vectors of policy components

Variables	Eigenvector
	$\lambda_1$
IR	-0.328164
ER	-0.341778
RR	-0.174694
CS	-0.234072
CAL	-0.331626
CAAL	-0.336129
SR	-0.341567
BMR	-0.338313
MMR	-0.356663
BPR	-0.329996
Eigen value	7.489961

Source: Author ccomputed using E-views

For the analysis, the first principal ( $\lambda_1$ ) component is selected, because it covers 74% of total variance.

Table.2 Weight of selected policy variables

Variables	Eigenvectors $\lambda_1$	Weight of variables $W_i = \lambda_i / \sum \lambda_i$
IR	-0.328164	0.105417
ER	-0.341778	0.109790
RR	-0.174694	0.056118
CS	-0.234072	0.075192
CAL	-0.331626	0.106529
CAAL	-0.336129	0.107976
SR	-0.341567	0.109723
BMR	-0.338313	0.108677
MMR	-0.356663	0.114572
BPR	-0.329996	0.106006
<b>Total (<math>\sum \lambda_1</math>)</b>	-3.113	

Source: Author computed using E-views

The index equation (1) with the fixed values weight based on arrives at equation (2) as:

$$FLI_t = 0.105417IR + 0.10979ER + 0.056118RR + 0.075192CS + 0.106529CAL + 0.107976CAAL + 0.109723SR + 0.108677BMR + 0.114572MMR + 0.106006BPR \dots\dots\dots(2)$$

Then equation (2) with weight of variables multiply the correspondent value for all ten variables, the index for the individual policy components was calculated. Finally the financial liberalization index for each year is obtained by summing up the calculated values of all 10 policy variables for the respective year.

In the economic literature, there is a general agreement that demand for money is primarily a demand for real balances. Keynes postulated three motives for holding real money balances: transaction, precautionary and speculative. Following the liquidity preference theory, economist have questioned Keynes' rational for a speculative demand for money and have contributed to the theoretical literature by distinguishing between the transaction demand for money and the assets motive (Friedman 1956; Tobin 1958).

To investigate the association between demand for money and financial liberalization the following log linear model has been used with the help of economics literature on money demand.

$$\ln(M_2) = a_1 + a_2LRGDP + a_3RDR + a_4FLI + a_5ER + e_t$$

Where: M =Real money demand (Broad Real Money Demand  $M_2$ )

$a_1$ = intercept

$a_2, a_3, a_4, a_5$  = Coefficients of relevant variables

RGDP =Real Gross Domestic Product

RDR=Real Deposit Rate

FLI =Financial Liberalization Index (Constructed index by the author)

ER=Exchange rate

$e_t$  = Error tem

According to computed OLS results, the model can now be mathematically expressed in the short run as;

$$M_2 = 6.434 + .642LRGDP + .041RDR + 2.078FLI + .000ER + e_t$$

Dependant Variable	Independent Variables					Summary of Results	
	constant	RGDP	FLI	ER	RDR	R <sup>2</sup>	Adj.R <sup>2</sup>
$M_2$	6.434	.642	2.078	.000	.041	.962	.925

Table no: 1 Summery of OLS Results

Source: Author computed using SPSS

From the regression analysis results, it could be inferred that the constant parameter is positively related to broad money. This implies that if all the explanatory variables are held constant, broad money which is the explained variable will increase by 6.434 units. The coefficient of FLI is 2.078. It reveals that there is a positive relationship between broad money and financial liberalization in Sri Lanka in the short run. The coefficient of multiple determination denoted as  $R^2$  with a value of 0.962 shows that 96% of total variation in broad money can be explained by RGDP, RDR, FLI and ER while remaining 4% is being explained by the stochastic/error term in the model.

### Conclusion

Most of the past studies considered only full liberalization level or non liberalization level for their evaluation of impact of financial liberalization on various aspects. But, this study has presented the real picture of financial liberalization process in Sri Lanka by considering various phases of policy reforms in financial liberalisation. This index would make it easy to further studies on financial liberalization Sri Lanka. Further, the study reveals that there is a positive relationship between broad money and financial liberalization in Sri Lanka in the short run. Therefore, this study opens the door to examine whether financial liberalization positively impacts on broad money in Sri Lanka in the long run as short run.

### References

- Central Bank Annual Reports (various annual reports) Central Bank of Sri Lanka, Colombo.
- Cooray.A. (2003) Financial Reforms: Sri Lanka, Stamford Lake Publication, Sri Lanka.
- Friedman .F.(1956) The Quantity theory of Money-A Restatement ,University of Chicago Press.
- James.G.A. (2005) Money Demand and Financial Liberalization in Indonesia. Journal of Asian Economics.Vol.16, No.5, PP817-829.
- Laeven . L. (2003), “Does Financial Liberalization Reduce Financing Constraints?”, Financial Management, Vol. 32, No. 1, pp. 5-34.
- Perera N. and Paudel C. R. and (2007), How Does Financial Liberalization Impact of Money Demand and Economic Growth? Evidence from Sri Lanka, Sydney Business School, University of Wollongong. Australia.
- Quinn, D. P. (2003), “Capital Account Liberalization and Financial Globalization, 1890-1999: A Synoptic View”, International Journal of Finance and Economics, Vol. 8, No. 3, pp. 189-204.
- Tobin.J. (1958) Liquidity Preference as Behavior towards Risk, Review of Economic Studies, Vol.25, No.2, pp65-86.

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