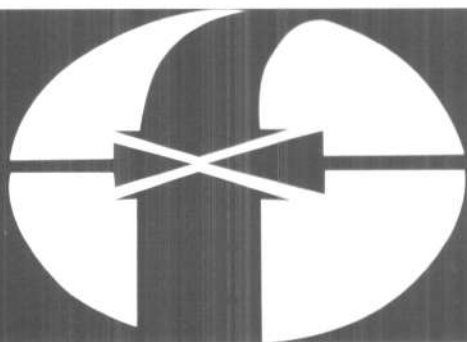


# Savings and Development



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A Centre for Financial Growth and Development Assistance

established by

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# DOES FINANCIAL LIBERALIZATION MATTER FOR HIGHER SAVINGS? SOME EVIDENCE FOR MALAYSIA, THE PHILIPPINES AND THAILAND

Muzafar Shah Habibullah - Universiti Putra Malaysia  
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## 1. Introduction

Economists and policy makers have long recognized the importance of saving and investment in the process for achieving higher economic growth. Since capital goods depreciate over time, a large flow of saving must be generated and transferred into productive investment in order to maintain a country's capital stock and sustain the standard of living. The more amount of current output saved, the greater will be the rate of economic growth. This proposition is supported by research done by the World Bank (1989).

The World Bank Report (1989: p. 27) points out that, "saving determines the rate at which productive capacity, and hence income, can grow. On average, the more rapidly growing developing countries have had higher saving rates than the slower growing countries." According to the World Bank, there are many factors affecting the saving rate. Among others are: the rate of income growth, the age composition of the population, attitudes toward thrift, the availability of social security, tax structure, budget deficits, and macroeconomic and political stability.

Nevertheless, in a modern society, with the complexity of trade and financing needs, it is the financial system to provide and play the utmost important role in channeling the pool of savings for investment to be realized. Hence, finance is the key to investment and therefore to growth. The banks and the central bank can provide a stable financial climate with low inflation in order to facilitate low levels of long run interest rates and higher levels of investment expenditures. Further, by contributing to economic stability and preventing severe economic downturns, the financial system can contribute positively to long-term economic growth. However, all these are possible with a more liberal financial system. However, the World Bank has doubt whether financial variables have any impact on the saving rate. Thus, whether financial variables affect saving rate is still an open issue.

The purpose of the present study is to investigate the role of financial variable affecting the national saving in developing economies such as Malaysia, Philippines and Thailand. According to Chandavarkar (1993), the fact that countries in the Asian-Pacific region (including the Philippines) sustained high average rate of gross domestic saving is recognized as one of the necessary factors accounting for its high rates of growth over the past two decades. One of the main factors that can contribute to higher savings is the role of monetization and financial intermediation. The saving rate

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is known to be responsive to monetization (that is, the enlargement of the monetary economy) and financial intermediation (financial deepening as measured by the ratio of financial assets to GDP and the range and efficiency of financial instruments and institutions). Monetization increases the level of cash incomes and financial intermediation raises the ratio of financial saving and can also help enlarge aggregate saving.

Fry (1984), for example, found out that the bulk of the increase in financial savings arises from the expansion of bank branch network in the developing economies. Similar finding is also supported by Gupta's (1987) study that a rise in the ratio of financial assets to GNP has some positive effect on aggregate saving. A recent study by Faruquee and Husain (1995) contends that the level of financial development and deepening also influences an economy's saving performance, particularly in the developing economies. By increasing the availability of saving instruments, financial deepening could potentially raise the rate of saving. In addition, financial deepening brought about through a liberalization of financial markets could raise real rates of return on financial assets, thereby boosting the saving rate.

## **2. Does Financial Liberalization Matter for Higher Saving?**

It is well known that the developing countries in the 1960s and early 1970s have corresponded to what McKinnon (1973) and Shaw (1973) described as 'financially repressed economies'. According to McKinnon (1973) and Shaw (1973), pervasive government intervention and involvement in the financial system through the regulatory and supervisory network, particularly in controlling interest rates and the allocation of credit, tends to distort financial markets. This situation will adversely affect saving and investment decisions of market participants and lead to fragmentation of financial markets and financial disintermediation. The result is a financially repressed economy. McKinnon (1973) recommended that the authorities liberalize the regulatory regime by allowing interest rates to attain their true equilibrium level and by determining credit allocation on the basis of viability and productivity of projects. McKinnon (1973) contended that higher positive real interest rates are necessary to encourage agents to accumulate real money balances, increase financial intermediation and unification of financial markets, thereby ensuring an efficient utilization of resources for economic growth.

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The recommendations made by McKinnon are well taken by majority of the developing countries of the Latin American, African and Asian regions. Many of these developing countries attempted to increase the role of market forces in the determination of interest rates, the allocation of credit and the overall scale of financial intermediation in the late 1970s and the 1980s. However, the results of the process of financial liberalization in many developing countries have varied from a disastrous one to a successful transition to a more efficient and market oriented financial system. On one hand, the Southern Cone region of Latin America - Argentina, Chile and Uruguay - experienced bank panics and collapses as a result of financial liberalization (Díaz-Alejandro, 1985). Other countries in this region that have abandoned financial liberalization programmes include Colombia, Brazil and Mexico (Fry, 1989).

On the other hand, financial liberalization in a number of Asian countries has helped make financial systems more efficient and has enhanced the effectiveness and flexibility of monetary policies. In the early 1960s, the financial systems of almost all countries in Asia were characterized by one or more of a range of restrictive financial measures, including interest rate regulations, selective credit allocation controls, explicit and implicit taxes on financial institutions, government ownership of financial institutions, segmentations and international capital controls, among others. However, such features have either become less distinct or completely removed as deregulation, market orientation and internationalization of banking and finance have proceeded at a rapid pace since the early 1980s.

It is the purpose of financial liberalization to enhance the development of an efficient financial system through a greater reliance on market forces as well as to improve the effectiveness of monetary policy. This development, often referred to as the process of financial deepening, involves the design and implementation of policies to increase the monetization of the economy, to foster and develop a sound and diversified financial structure with coordinated money and capital markets and to maintain monetary stability (Bank Negara Malaysia, 1994). The key reforms were aimed at liberalizing interest rates, reducing control on credit, enhancing competition and efficiency in the financial system, strengthening the supervisory framework and promoting the growth and deepening of financial markets. The effort towards liberalization also includes the relaxation of restrictions on international capital flows and a shift toward a more flexible exchange rate arrangement (Tseng and Corker, 1993).

The liberalization of interest rates was a prominent feature of the financial reforms

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implemented by the Asian countries during the 1980s. The objective of liberalizing the interest rates was to promote savings and efficient investment and to deepen financial markets. Positive real interest rates (as pointed out by McKinnon, 1973) favour financial over non-financial savings, leading to the deepening of financial markets. In turn, greater financial intermediation tends to ensure that more productive investments are financed. Positive real interest rates, therefore, contribute to economic growth by promoting financial deepening and improving the productivity of investment.

Interest rates were fully deregulated in the Philippines in the early 1980s. In fact, the Philippines initiated an ambitious program of financial reforms which focused primarily upon institutional change but also had the goal of interest rate liberalization. Interest rate ceilings on deposits and term loans were removed in July 1981 and on short-term loans in June 1983.

Malaysia's Central Bank introduced a new interest rate scheme for the commercial bank in October 1978. Accordingly, commercial banks were free to quote the interest rate payable on deposits and lending rates. However, with effect from November 1983, all interest rates on loans and advances have been tied to the base lending rates of the two largest commercial banks. In fact the deposit rates of the banks and finance companies became linked to the deposit rates of the two leading domestic banks (namely, Malayan Banking Berhad and Bank Bumiputra Malaysia Berhad) with effect from October 1985. In February 1987, all deposit rates at financial institutions were fully liberalized. However, it was only in February 1991 that interest rates on loans became free from the administrative control of the Central Bank.

Interest rates in Thailand have been geared towards a liberal regime since the early 1980s. One of the first and most important steps towards this flexibility was the freeing of ceiling rates on loans. Accordingly, the ceiling on lending rates of financial institutions was freed from 15.0 percent per annum limit imposed since 1924. In June 1989, a ceiling of deposit rates for deposits of more than one year was announced. In March 1990, the ceilings on time deposits of less than one year maturity were terminated. From January 1992, ceilings on savings deposit rates were also abolished, thus, completely eliminating all deposit rates ceilings for commercial banks. On the other hand, ceilings on lending rates were abolished on June 1992.

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### 3. Methods of Estimation and Empirical Results

From a survey of saving behaviour in the Asian-Pacific region, Chandavarkar (1993) categorized factors that affect household saving into long-term and short- and medium-term factors. The long-term structural factors include demographic (population growth, life expectancy, age distribution); institutional (occupational composition of work force, distribution of income and wealth, urban/rural sectors); monetization and financial intermediation; socio-cultural factors (political stability, value system in relation to motivation of saving, family patterns, literacy rates etc). The short- and medium-term factors are domestic (level and rate of change of income and wealth, rate of return of savings) and external (export earnings, terms of trade, foreign savings, capital flight).

However, in this study, the model draws from earlier studies by Corbo and Schmidt-Hebbel (1991), Masson *et al.* (1995), Dayal-Ghulati and Christian (1997), and Haque *et al.* (1999). The following restricted error-correction model is estimated

$$\Delta NS_t = \alpha_0 + \alpha_1 \Delta MS_t + \alpha_2 \Delta GDP_t + \alpha_3 \Delta CPI_t + \alpha_4 \Delta DEM_t + \beta(NS_{t-1} - a_0 - a_1 MS_{t-1} + a_2 GDP_{t-1} + a_3 CPI_{t-1} + a_4 DEM_{t-1}) + \varepsilon_t \quad (1)$$

where NS is national saving, MS is the monetization variable defined as money supply (M2) as a percentage of GDP, CPI is the consumer price index to proxy for inflation, the gross domestic product (GDP) is used to measure economic growth, and DEM represents the demographic variable,  $\beta$  is the error-correction term and  $\varepsilon$  is white noise.

Our main interest is to investigate the role of financial variable MS, which proxy for monetization and financial intermediation in three selected Asian countries – Malaysia, the Philippines and Thailand. As mentioned earlier, the development of financial markets increases the availability of saving instruments and most likely also the return on saving (Bayuomi, 1993). However, financial market development is difficult to quantify. The volume of total assets (or employees) of financial institutions, the geographical density of banking outlays, or share value added of this sector in the economy could be useful indicators, but on most of them no data are available. Thus, virtually all studies have used the degree of monetization of the economy – generally measured as the ratio of broad money (M2) to GDP – to capture the degree of finan-

cial development. The coefficient has been found to be significant and positive throughout (Harrigan, 1995), leading to the conclusion that financial market development has a positive net effect on saving.

Given that financial liberalization may have changed the interest rate effects, it is not too surprising that these are not robust. The effect of liberalization on saving behavior can operate through at least two channels. First, financial development may provide outlets for financial saving, thereby raising saving rates, a channel that has been emphasized in the development literature (McKinnon, 1973; Shaw, 1973). However, although financial liberalization generally affects the form that saving takes and also the efficiency of investment, it needs not raise the level of saving. The second aspect involves the liberalization of consumer access to bank credit, which occurred in a number of industrial countries in the 1980s. Regulatory changes have allowed bank to lend more freely to individuals, for instance for the purchase of a house or for consumption, and this may lead at least initially, to a significant decline in saving. Empirical evidence supports these effects in countries that have liberalized access to consumer credit (Jappelli and Pagano, 1989; Bayoumi, 1993; Lehmussaari, 1990). Financial liberalization may involve one or another of these aspects, each of which will tend to increase the sensitivity of saving to interest rates. Financial liberalization in a given country may also expand the international diversification possibilities of other countries, making their saving more responsive to foreign interest rates. Thus, we would expect that the relationship between national saving and MS is positive.

As for the other variables, GDP, CPI and DEM, we would expect that  $\alpha_2 > 0$ ,  $\alpha_3 > 0$  and  $\alpha_4 < 0$  respectively. This implies that the higher the income the greater will be the savings. As a matter of fact, Chandavarkar (1993) points out that income variable are the most important determinant of the national saving rate. Inflation creates uncertainty. Uncertainties can result in economic instability and political instability. Studies in the business cycle suggest that interest rate and inflation (through the Fisher effect) are procyclical. If we assume that households are rational, they react not only to current financial conditions but also to expected financial and monetary phenomena. If they perceive that the economy is moving into period of increasing inflationary pressures, they are likely to expect the central bank to implement restrictive monetary policy actions to increase interest rates and cool off the economy. Thus, a rational behaviour seeking for higher returns will move their position into cumulating financial assets. Therefore, we would expect that the relationship between savings and inflation is positive.

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Finally, one would expect national saving to be affected by the age profile of the population. In general, the lower the dependency ratio – the proportion of non-working-age population to working-age population – the higher the level of saving.

### 3.1 *The Test for the Order of Integration*

Before estimating equation (1), we have to determine the order of integration of all five time series involved. An integrated series needs to be differenced in order to achieve stationarity. A time series  $Y_t$ , that requires no such differencing to obtain stationarity is denoted as  $Y_t \sim I(0)$ . Therefore, an integrated series such as  $Y_t \sim I(2)$  is said to be growing at an increasing rate,  $Y_t \sim I(1)$  series appear to grow at a constant rate while  $Y_t \sim I(0)$  series appear to be trendless. Thus, if two time series  $Y_t$  and  $M_t$  are integrated of different order, say  $Y_t \sim I(2)$  and  $M_t \sim I(1)$  respectively, then they must be drifting apart over time. Therefore, a regression of  $Y_t$  on  $M_t$  would encounter a spurious regression problem, as the residual would also be  $I(2)$ , which violates the underlying assumptions of ordinary least squares (OLS). Thus, it is important to determine that the time series of interest have the same order of integration before we proceed into further estimation.

If, on the other hand, the two time series  $Y_t$  and  $M_t$  are both  $I(1)$  then it is normally the case that a linear combination between the two will also be  $I(1)$  so that a regression of  $Y_t$  on  $M_t$  would produce spurious results. This is because the residual is also  $I(1)$ , which violates the assumptions of OLS. However, in a special case, a linear combination of two  $I(1)$  variables will result in a variable (residual) which is  $I(0)$  and in this special case, the two series are said to be cointegrated. This regression is permissible since the residual is  $I(0)$  or stationary, which satisfies the underlying assumption of OLS.

Nelson and Plosser (1982) have demonstrated that most economic time series appear to be difference-stationary processes. Thus, in numerous studies, the augmented Dickey and Fuller (1981) unit root tests were employed to determine the order of integration of the individual series. This is because only variables that are of the same order of integration may constitute a potential cointegrating relationship. The test is the  $t$ -statistic on the parameter  $\alpha$  from the following equation

---



$$\Delta Y_t = \delta_0 + \alpha Y_{t-1} + \sum_{i=1}^L \delta_i \Delta Y_{t-i} + v_t \quad (2)$$

where  $v_t$  is the disturbance term. The role of the lagged dependent variable in the augmented Dickey-Fuller (ADF) regression equation (2) is to ensure that  $v_t$  is white noise. The null hypothesis,  $H_0: Y_t$  is  $I(1)$ , is rejected (in favour of  $I(0)$ ) if  $\alpha$  is found to be negative and statistically significantly different from zero. The computed  $t$ -statistic on parameter  $\alpha$ , is compared to the critical value tabulated in MacKinnon (1991). The unit root tests were also carried out for first-difference of the variables, that is, the following regression equation is estimated

$$\Delta^2 Y_t = \delta_0 + \alpha Y_{t-1} + \sum_{i=1}^L \delta_i \Delta^2 Y_{t-i} + \omega_t \quad (3)$$

where the null hypothesis is  $H_0: Y_t$  is  $I(2)$ , which is rejected (in favour of  $I(1)$ ) if  $\alpha$  is found to be negative and statistically significantly different from zero.

Table 1 in the Appendix presents the augmented Dickey-Fuller (ADF) test for all series involved in the analysis in logarithmic form in levels and first-differenced<sup>1</sup>. Our results indicate that non-stationarity cannot be rejected for the levels at the 5 percent significance level base on the ADF test. When the series are differenced, non-stationarity can be rejected for all series. The ADF statistics suggest that all five series are integrated of order one, whereas the first-differenced are integrated of order zero. Therefore, all series is best characterized as difference-stationary process instead of trend-stationary process.

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<sup>1</sup> National saving (NS) is defined as the difference between national income and the sum of private and government consumption. Monetization (MS) variable is measured by the ratio of M2 and GDP. Inflation (CPI) is defined as the consumer price index. Economic growth (GDP) is measured using the gross domestic product. Demographic (DEM) variable is measured using the dependency ratio which is defined as the sum of the population over 65 years as a percentage of the working-age population. Data were compiled from various issues of the International Financial Statistics published by International Monetary Fund. All variables were transformed into logarithmic form before estimation.

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### 3.2 The Cointegration Tests

After determining that the series are of the same order of integration, the linear combination of the series that are non-stationary in levels and cointegrated is then tested. Recently, Banerjee *et al.* (1986) and Kremers *et al.* (1992) have shown that the ADF and CRDW tests for cointegration using the Engle-Granger two-step procedure have low power and are sensitive to the choice of lag length, and therefore have recommended the estimation of an Error Correction model (ECM) as the starting point for modelling and testing. Kremers *et al.* (1992) demonstrated that the *t*-ratio of the coefficient on the error correction term in a dynamic error correction model (ECM), denoted as the ECM statistic ( $t_{ECM}$ ), is a more powerful statistic for testing cointegration as compared to the augmented Dickey-Fuller ( $t_{ADF}$ ) type tests<sup>2</sup>. Kremers *et al.* (1992) point out that, 'the Dickey-Fuller statistic ignores potentially valuable information and a loss of information can occur from assuming error dynamics rather than structural dynamics.'

Therefore, as an alternative test for testing cointegration, the Error Correction model is the appropriate approach. The ECM approach is derived from an important theorem presented by Engle and Granger (1987) that if a set of variables are cointegrated then there always exists an error correcting formulation of the dynamic model and vice versa. Using this approach, following Banerjee *et al.* (1986) and Kremers *et al.* (1992), the following regression is then estimated using OLS

$$\Delta Y_t = \phi_0 + \phi_1 \Delta X_t + \beta ECM_{t-1} + \varepsilon_t \quad (4)$$

where  $X = (MS, GDP, CPI \text{ and } DEM)$ , the variable  $ECM_{t-1}$  is the lagged one-period residual from regressing national saving with all the determinants selected in this study. Parameter  $\beta$  is then evaluated and a test carried out to check if it is significantly different from zero. The significance of the error correction term ( $ECM_{t-1}$ ) is sufficient to infer cointegration among the variables in question. The fourth and fifth terms on the right hand side of equation (4) are to ensure white noise in  $\mu_t$ .

Results of the error-correction models estimated for each country are presented in

<sup>2</sup> See Mokhtari (1994) for a recent application of the ECM statistic,  $t_{ECM}$ .

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Table 2 in the Appendix. In all three equations estimated, the error-correction term is strongly significant and above the 5 percent value in MacKinnon's (1991) tables, thus providing support for the hypothesis of cointegration. In all three cases the monetization variable, *MS*, is significantly different from zero at the 5 percent level and indicate positive sign. This implies that the role of financial development has a positive effect on national saving in Malaysia, the Philippines and Thailand. The wide spread of the commercial banks in the financial system would encourage positive saving behaviour among the public.

As for other variables, Table 2 suggests that economic growth has positive effect on saving only in the case of the Philippines. On the other hand, inflation affected saving positively in all three countries – Malaysia, the Philippines and Thailand. Higher inflation will result in higher interest rate through the Fisher effect. Higher saving will induce the public to save to reap higher returns. Nonetheless, the demographic variable is not important in affecting national saving in all the three countries.

#### 4. Conclusion

Proponents of the McKinnon (1973) and Shaw (1973) approach strongly advocate the efficacy of financial development in contributing significantly to the real growth of developing economies. They contend that the banking system is invariably growth-inducing and that only when it is repressed, which in their view is often the case, would it fail to make a positive contribution or act as an obstacle to real growth. McKinnon (1973) points out that in a repressed economy, the only source of funds for investment is from 'self-finance'. Potential investors must accumulate savings (money balances) prior to their investment. In a financial system where positive real interest rates prevail, the process of accumulating money will be more significant and subsequently, total investment will also increase. Shaw (1973: 3) emphasizes that "the financial sector of the economy does matter in economic development...if it is repressed and distorted it can intercept and destroy impulses to development." In like manner, Cameron (1972: 24) concludes that "if the banking system is 'tilted' by the unwise legislation and policy, it can distort and even thwart the growth of the economy." Thus, according to their view, without these distortions and deviations from the free-market system, the banks will have the largest impact on developing economies.

Empirical evidence on numerous developing countries surveyed by Fry (1988) and

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more recently by Odedokun (1996), support the view that there is a direct association between financial and real development as a result of financial liberalization. In a more recent study of the Asia-Pacific economies, Fry (1996) indicates the importance of financial liberalization in promoting economic growth. Fry (1996: 24) concludes that "undistorted financial and foreign exchange markets have stimulated investment and export growth. High investment and rapid export growth has accelerated output growth. Higher output growth rates and undistorted financial and foreign exchange markets raise both saving and investment ratios. The evidence presented in this paper suggests that financial conditions established by government policies played an important role in producing virtuous circles of high saving, investment, output growth and export growth found in the Pacific Basin."

A comprehensive study by the World Bank (1989) on developing countries that have embarked on financial liberalization programs supports the contention that 'financial liberalization matters for economic growth'. The World Bank (1989: 30) reports that, "faster growth, more investment and greater financial depth all come partly from higher saving. In its own right, however, greater financial depth also contributes to growth by improving the productivity of investment. Investment productivity is significantly higher in the faster growing countries, which also have deeper financial systems. This suggests a link between financial development and growth." The World Bank's report (1989) further stressed that this is workable as a result of the positive real interest rates that favor financial saving over other forms of saving which promotes financial deepening. The results of our study seem to support the above contention that monetization and financial intermediation are important for accumulating saving in Malaysia, the Philippines and Thailand.

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## Appendix

**Table 1: Results of integration tests**

Series	Levels		First-differenced	
	$\tau_1$	Lags	$\tau_\mu$	Lags
Malaysia:				
NS	-2.31	2	-6.62*	2
MS	-2.35	2	-3.09*	2
GDP	-2.87	2	-3.80*	2
CPI	-3.00	2	-6.46*	2
DEM	-1.05	2	-5.60*	2
Philippines:				
NS	-2.82	2	-4.77*	2
MS	-2.67	2	-3.01*	2
GDP	-2.69	2	-3.93*	2
CPI	2.28	2	-4.06*	2
DEM	-2.86	2	-3.32*	2
Thailand:				
NS	-2.31	2	-3.97*	2
MS	0.35	2	-3.49*	2
GDP	-1.70	2	-4.25*	2
CPI	-2.78	2	-3.13*	2
DEM	-3.11	2	-3.29*	2

Note: Asterisk (\*) denotes statistically significant at 5% level. The calculated statistics are those computed in MacKinnon (1991). The critical values at 5% for  $T=50$  is -3.49 and -2.91 for  $\tau_1$  and  $\tau_\mu$  respectively.

**Table 2: Results of error-correction models**

Variable	Malaysia	Philippines	Thailand
Constant	-0.004 (0.059)	-0.191 (1.55)	-0.128 (2.257)*
$\Delta MS$	0.950 (2.456)*	0.630 (4.168)*	1.418 (4.390)*
$\Delta GDP$	0.812 (1.559)	0.823 (3.155)*	-0.006 (0.282)
$\Delta CPI$	1.732 (2.199)*	1.054 (2.681)*	0.539 (2.689)*
$\Delta DEM$	-1.908 (1.301)	1.607 (1.458)	2.438 (1.449)
$\Delta ECM(-1)$	-1.290 (5.129)*	-0.598 (4.780)*	-0.634 (4.323)*
Adj R <sup>2</sup>	0.59	0.76	0.564
DW	2.162	1.678	1.194

Note:  $\Delta$  refers to first differences of variables. Asterisk (\*) denotes statistically significant at 5% level.

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## Abstract

*This paper analyses the effect of financial liberalization on national saving in three Asian countries, namely; Malaysia, the Philippines and Thailand, using annual data for a sample period from 1971-1999. A model that includes money supply as proxy for monetization and financial intermediation, inflation, growth and demographic factors to explain national saving is employed. After examining the time series properties of the series involved, an error-correction model is estimated. The results clearly indicate that monetization and financial intermediation as a result of financial liberalization in these countries play a positive role in affecting higher saving rate.*

