

# FINANCIAL DEEPENING AND INSTITUTIONAL DEVELOPMENT: SOME ASIAN EXPERIENCES (·)

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## 1. Introduction

In the 1980s, as financial deregulation swept through most developed countries and then on to developing ones, the role of finance in economic development has been taken largely for granted. Development finance theory, though, still remains in dispute. There are two key schools of thought: that of the Chenery and Strout's (1966) "two-gap" analysis, and the financial liberalization and deepening framework pioneered by McKinnon (1973) and Shaw (1973). It could be argued though that the two approaches are really complimentary in that the "two-gap" analysis specified the financial conditions of investment growth, while the McKinnon-Shaw model proposed a financial environment where successful economic growth can take place.

This paper expands and updates Harris' (1979) attempt to combine these two approaches and applies the resulting model to a range of Asian economies. The paper first summarises the two development schools, then discusses the Harris model and its results, and finally, presents the approach of this study and its findings. The latter's emphasis is on OSL estimates of the marginal savings rate, marginal rate of capital formation, and the money stock to capital formation ratio. The discussion centres around the two key schools of thought and the institutional aspects of financial development.

## 2. Two-Gap Model

The "two-gap" analysis basically focused on the inadequacy of foreign exchange and domestic savings as the two financial constraints in economic growth. Saving obviously finances investment, but foreign exchange could be used as a substitute. In examining Greece, Israel, Taiwan and the Philippines, Chenery and Strout (1966, p. 670-733) noted that "in each case, a substantial increase in investment financed largely by foreign loans and grants has led to rapid growth of GNP followed by a steady decline in the dependence on external financing". The Chenery and Strout hypothesis stated that economic growth proceeded at a rate permitted by the most limiting factor. Chenery and Strout employed the Harrod-Domar growth framework and argued that the gap between investment and savings was the initial limitation; it was only when increased investment raises the country's productive capacity that an export expansion can help

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(\*) Additional tables are available upon request to the Authors.

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to earn foreign exchange, either to pay off imports or act as capital inflow. The trade gap, then, replaces the savings gap as the binding constraint. Thirlwall (1978 Chapter 13) summarized the "two-gap" analysis arguing that self-sustained growth could be maintained overtime if the marginal saving rate increased at a faster rate than the average saving rate, and the rate of export exceeded the rate of import.

Numerous scholars have constructed macro economic models using the Chenery-Strout "two-gap" analysis including Diwan (1967), Cochrane (1972), Blomqvist (1976), Gervovitz (1982) and Gunning (1983). Taylor (1983), while also following the Chenery-Strout economy wide structural model, incorporated other important behavioural relationships such as income distribution and output levels which varied to satisfy macro equations. Taylor (1983, p.6) started his model by looking at an open economy and argued that two balances must first be satisfied; first, the trade deficit (foreign saving) must equal investment minus national savings, and second, the trade deficit must also equal the sum of imports (capital, intermediate and consumer imports) and net interest payments on debt, minus exports and other net current foreign exchange receipts such as emigrant remittances. To a large extent these two balances expanded on the basic Chenery-Strout two gap concept.

### 3. Financial repression framework

It is generally accepted that in addition to the size of physical investment, the availability and quality of money and other financial variables can influence economic growth. The provision of a suitable financial environment, a positive return on money capital and an appropriate institutional framework, can all help foster economic growth. McKinnon and Shaw considered countries financially repressed when their financial markets were underdeveloped and prices of financial assets distorted, commonly through a government imposed interest rate ceiling below the market equilibrium rate. Typically, saving would be discouraged, despite sound investment opportunities, and economic growth restricted accordingly. McKinnon's remedy was financial liberalization and development that emphasized the quality rather than the quantity of investment. The former included: (a) the relaxation of internal financial constraints, (b) the exercise of an effective fiscal policy (c) the exploitation of the complementarity between the real money value and investment and (d) a radical restructuring of tariff, quota and licensing restraints on foreign trade. McKinnon also acknowledged the use of foreign capital in securing the full liberalization of foreign

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trade. With successful liberalization, McKinnon believed that growth and savings could interact to produce a virtuous circle.

Shaw discussed the problem of "shallow" finance, and argued that the distortions of financial prices including interest rates and foreign exchange rates, reduced real growth and size of the financial system. Shaw (1973, p. 5) summarized his argument as follows: "where finance is shallow, in relation to national income or non-financial wealth, one finds that it bears low, often negative real rates of return. Holders of financial assets including money are not rewarded for real growth in their portfolios: they are penalized". With "shallow" finance a country would have to depend relatively heavily on its government fiscal budget and on its international capital accounts for savings to finance capital growth. Shaw recommended financial liberalization which would lead to financial "deepening"; the latter included (a) an accelerated growth in "real" assets, and an increase in the real size of the monetary system so that it generated opportunities for the profitable operation of other institutions as well, (b) the specialization in financial functions and institutions, (c) a high interest rate which reflected more accurately the available investment opportunities. The end result would be similar to McKinnon's virtuous circle of saving, investment and growth.

The McKinnon-Shaw model has been applied in a range of studies to include Mathieson (1979, 1980), Harris (1979), Schworm (1980), Buffie (1984), Moore (1986), Jao (1976, 1985) and Fry (1988). Viksnins (1980, p. 10) summarised five different types of financial repression in a fragmented market: real versus financial assets markets; organised market versus the curb market for loanable funds; the urban versus rural credit markets; local currency versus foreign exchange assets markets; short term versus the long term markets.

The more recent research found that financial liberalization in some developing countries did not materialize as predicted. Rather, they experienced severe financial crash and distress. Diaz-Alejandro (1985), for example, concluded his studies of Latin American countries by saying "Good-bye financial repression, hello financial crash". The *World Development Report 1989* also indicated that some developing countries in their process of financial reform and liberalization, experienced severe financial crash and distress. Thus Fry (1989) argued that the two prerequisites for successful financial liberalization are macro economic stability and adequate prudential supervision of the banking sector. Thus some of the more recent problems have flowed more from implementation difficulties rather than the decision to liberalize the financial sector.

By studying the experience of Korea, van Wijnbergen (1983) challenged the McKinnon-

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Shaw hypothesis which rested on the assumption that high time deposit rates will increase the savings rate, which will lead to an influx of deposits into commercial banks and credit can be made available for investment purposes. However, van Wijnbergen raised the importance of the kerb market as an intermediary and argued that the public can choose either to hold cash, time deposits or kerb market loans, and if an increase in the time deposit rates raises the real kerb market rate, then it may actually slow down the rate of economic growth. Despite these new challenges, both the two-gap model and the financial repression approach still represent the two polars in development finance research.

#### 4. The Harris One Equation Model

The Harris (1979) approach was to construct a model incorporating both the "two-gap" analysis and the financial repression concept and then test this equation with data covering Korea, Taiwan, Thailand, Philippines and Malaysia between 1957-1976.

He started with the formation of a two-gap equation:

$$I_t = S_t^* + F_t^* \quad (1)$$

where  $S_t^*$  and  $F_t^*$  are ex-ante domestic savings and foreign capital respectively. It is gross fixed capital formation, each in period  $t$ .

$$I_t = S_t + F_t \quad (2)$$

where  $S_t$  and  $F_t$  represent ex-post realized domestic savings and foreign capital inflows respectively. In principle,

$$S_t + F_t = S_t^* + F_t^* \quad (3)$$

Furthermore, Harris assumed that increments in potential savings are some fraction,  $a$ , of increments in output-income and another portion,  $b$ , of a given capital inflow. Thus

$$\Delta I_t = a \Delta Y_t + b \Delta F_t \quad (4)$$

where  $\Delta S_t^* = a \Delta Y_t$  and  $\Delta F_t^* = b \Delta F_t$ . Furthermore, incorporating a monetary aggregate is appropriate since  $\Delta I_t$  could vary according to changes in the money market

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activity. This was done by including  $\Delta M_t$ . Let  $c$  be the portion of the increment in money stock responsible for changes in investment, then  $\Delta M_t^* = c \Delta M_t$ . Hence,

$$\Delta I_t = a \Delta Y_t + b \Delta F_t + c \Delta M_t \quad (5)$$

Dividing the equation by  $\Delta Y_t$ , and adding a disturbance term  $U_t$ , Harris derived the final equation as:

$$\frac{\Delta I_t}{\Delta Y_t} = a + b \frac{\Delta F_t}{\Delta Y_t} + c \frac{\Delta M_t}{\Delta Y_t} + U_t \quad (6)$$

Harris argued that  $\Delta M_t / \Delta Y_t$  resembled the McKinnon-Shaw indicator of financial deepening. The resulting estimates of  $\hat{a}$ ,  $\hat{b}$  and  $\hat{c}$  are respectively the marginal savings rate, the marginal rate of foreign resource use, and "the marginal tendency of increments in money stock to promote capital formation".

The one-equation model indicated by equation (6) has conveniently incorporated the basic arguments of the two theories of development finance. The coefficient  $a$ , the marginal saving rate, was a simple and clear indicator of the extent of savings. The second coefficient  $b$ , the marginal rate of foreign resource use, measured the extent to which foreign capital and resources were effectively used in domestic investment activities. Both coefficients  $a$  and  $b$  showed a direct positive effect on investment and economic growth. The third coefficient,  $c$ , the marginal tendency of increments in money stock to promote capital formation, gave a relationship between the effect of the money stock or money supply on capital formation. Employing the McKinnon-Shaw line of analysis, it followed that a positive value of  $c$  meant that the money stock had a positive impact on capital formation. This would reflect a situation of financial deepening in that the real value of money was high and financial prices did help to channel resources to investment activities. On the contrary, a negative value of the coefficient  $c$  would imply a situation of financial repression in that the availability of money stock has no influence on capital formation. This could be due to various reasons. Inadequate and inappropriate financial intermediation due to the poor structure of financial institutions could be one reason. Harris referred to a low or negative value of  $c$  as a situation in which there was a lack of a strong entrepreneur class.

While Harris (1979) employed both the OLS and instrumental variable methods, he found they gave a similar result and argued that OLS should be sufficient. Empirically, Harris

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used a fairly long period for each economies; Korea 1954-77, Taiwan 1954-76, Thailand 1953-76, Philippines 1953-77 and Malaysia 1955-76.

### 5. Differences in the Current Model

This paper extends Harris' study from the late 1970s to the late 1980s and expands it to include Singapore, Indonesia and Hong Kong. It follows the Harris framework in excluding the residual term,  $U_t$ , in equation (6): Harris assumed that since variables are detrended and descaled by the division of  $\Delta Y_t$ ,  $U_t$  represents "some zero-mean white noise". It also follows Harris' choice of  $M^*$  as a suitable monetary aggregates, although the equation was tested also with  $M1$  and  $M2$ :  $M^*$  included deposits in development and postal saving banks. Finally, in line with Harris' conclusion, it employs only OLS analysis. This paper then goes beyond Harris' effort by examining the institutional factors that may effect these  $\Delta M/\Delta Y$  variations.

### 6. OLS Findings

Appendices 1, 2 and 3 present the OLS estimates with respectively  $M1$ ,  $M2$  and  $M^*$  as monetary aggregate together with Harris' results. The estimates of constant and coefficients in equation 6, namely  $\hat{a}$  (marginal savings rate),  $\hat{b}$  (marginal rate of foreign resource use),  $\hat{c}$  (marginal money stock to capital formation ratio) are represented by the figures under constant,  $(\Delta F/\Delta Y)$ , and  $(\Delta M/\Delta Y)$  respectively. In the current study, the sample mean of  $\Delta I/\Delta Y$  was highest for Singapore at 1.2234, and lowest for Taiwan at 0.0999. It should be kept in mind that these figures represent the ratio of first differences rather than simple averages. For the variable  $\Delta F/\Delta Y$ , the Philippines was highest at 21.2893, and Thailand the lowest at -64.0449. These two sets of figures obviously exhibit substantial variation. The sample means for  $\Delta M2/\Delta Y$ , however, were narrower, with highest for Hong Kong at 2.4022, lowest for Singapore at 0.0801. The figures for other economies are presented in Appendix 4.

By adding the  $\Delta M/\Delta Y$  coefficient into the two-gap model represented by equation 4, Harris assumed that there was no correlation between  $F$  (the net export figure) and  $M$  (the monetary variable). This is uncertain since a positive trade balance might simply generate additional cash in the economy and thereby affect the monetary aggregates. Appendix 5 summarises the test of correlation of  $\Delta F$  with  $\Delta M1$ ,  $\Delta M2$ , and  $\Delta M^*$ . These

show that most correlation coefficients are below 0.3, suggesting that Harris' initial assumption, that there was no significant correlation between the trade balance and money supply in influencing growth in income, was correct. There are, however, several exceptions as far as the present sample is concerned. The coefficients for Korea have high negative correlation and can be explained by the fact that a strong trade surplus since 1984 contributed to a negative value for  $F$ . Thus the export expansion in Korea has influenced both income growth as well as the size of money supply in the country. The correlation coefficients for Singapore were fairly high, but these signs were positive as Singapore experienced trade deficits throughout the 1977-88 period. Except for these two countries, one can comfortably argue that the other countries do not show a significant correlation between the estimates of  $b$  and  $c$ .

#### 6.1. *The Marginal Savings Rate*

With the marginal savings rate estimate for each country, Harris found that the broader the monetary aggregate, the smaller the associated estimate of the marginal savings rate. In the present study, covering a shorter period but a larger number of economies, no general pattern appeared. As OLS estimates were fitted with different monetary aggregates of  $M1$ ,  $M2$  and  $M^*$ , each country's marginal savings rate performed differently. The majority of  $t$ -statistics were in excess of 2.0, but concentrated around 2.0 to 3.8 when a broader monetary aggregate was used. The value of  $t$ -statistics declined for some economies, but increased in others. A notable one was Malaysia which dropped to 0.4 from 7.8 when a broader monetary aggregate was used.

The marginal savings rate estimates do support the Chenery-Strout hypothesis. With the exception of Thailand, these estimates for marginal savings rates for both  $M1$  and  $M2$  in the latter period are generally higher than those obtained by Harris. This was not so for the  $b$  estimates ( $\Delta F/\Delta Y$ ); Taiwan and Malaysia, for example, have increased over the two periods whereas Thailand and the Philippines declined. Thus the savings constraint has seemingly become less severe in most Asian countries, except Thailand, and that foreign exchange has become the limiting factor to income growth, especially Thailand and the Philippines which had experienced a decline. This trend has largely coincided with the Chenery and Strout prediction that trade-limit growth would become the binding constraint in later stages of economic development.

Turning to the specific marginal savings rate results, as shown in Table 1, Korea's increased between  $M1$  and  $M2$ , then fell between  $M2$  and  $M^*$ , but were generally higher than Harris' findings. The picture is similar for Taiwan. For Thailand the marginal savings rate has declined, but was quite steady when different monetary aggregates were

Table 1

## OLS ESTIMATES FOR MARGINAL SAVINGS

	HARRIS RESULTS			LI & SKULLY RESULTS		
	M1	M2	M*	M1	M2	M*
HONG KONG	na	na	na	0.21397	0.30426	na
INDONESIA	na	na	na	0.41418	0.36833	0.36766
KOREA	0.16280	-0.04870	na	0.25510	0.30013	0.28696
MALAYSIA	0.53570	0.61920	0.63170	0.85553	0.76803	0.13893
PHILIPPINES	0.26500	0.19850	0.17250	0.13384	0.20832	0.21553
SINGAPORE	na	na	na	0.51114	0.65439	0.69126
TAIWAN	0.09590	0.15820	0.17230	0.22535	0.38791	na
THAILAND	0.28560	0.30800	0.22280	0.16704	0.17640	0.17645

applied. The OLS results of Malaysia and the Philippines are virtually the same in the two studies with the marginal savings rates improving. One difference between Malaysia and the Philippines is that the marginal savings rate of the former declined from M1 to M2, and drastically from M2 to M\*, while the latter experienced a steady increase. In the case of Singapore, the estimates are acceptable. Indonesia showed a very high marginal savings rate, but declined steadily when broader monetary aggregates were used. Lastly, the Hong Kong's result showed a low marginal savings rate compared with over Asian economies, but increased when M2 was utilised. This may be due to the fact that M3 would be a more appropriate measure of savings in Hong Kong since large deposits are included in that category.

These comments, like Harris' assertions, are based solely on the empirical findings, but deserve somewhat more detailed consideration. As these marginal savings results relate to the degree of financial intermediation, the institutional development within the countries concerned is important. A shortage of institutions might be responsible for a lower marginal savings rate rather than a lack of savings. It would appear though that each of the countries has a considerable diversity in the numbers and types of institutions. This was not necessarily the case during Harris' study; many new institutional types were only introduced in the late 1970s or early 1980s.

Looking at the institutional position in the late 1980s, summarized in Table 2, Indonesia certainly has the largest number; some 7,892 separate financial institutions. It also has the greatest range of institutions with 19 different types. Unfortunately, given Indonesia's showing, numbers and diversity alone do not seem to be the determining factor in financial development.



Table 2

## FINANCIAL INSTITUTION TYPES AND NUMBERS BY COUNTRY

Institution	H.K.	Indo.	Kore.	Mala.	Phil.	Sing.	Taiw.	Thai.
Central banks	—	1	1	1	1	—	1	1
Monetary authority	—	—	—	—	—	1	—	—
Currency board	—	—	—	—	—	1	—	—
Domestic comm. banks	32	70	17	23	29	13	16	16
Foreign comm. banks	125	11	61	16	4	37	35	14
Offshore banks	na	—	—	—	na	86	na	—
Merchant banks	35	9	6	12	13	64	8	na
Other banks	—	—	3	—	—	—	8	—
Development banks/bds	—	2	3	2	45	1	—	—
Regional dev. banks	—	27	—	1	—	—	—	—
Regional dev. corps.	—	—	—	2	—	—	—	—
Govt. invest. corps.	—	—	—	1	—	1	—	1
Other dev. corps.	—	2	—	1	1	—	—	1
Agricultural banks	—	—	3	1	1	—	—	1
Savings banks	—	3	1	1	9	1	1	1
Housing finance inst.	2	1	1	2	176	—	—	20
Finance companies	216	—	32	39	369	35	4	95
Leasing companies	55	79	8	na	na	20	—	6
Discount houses	—	—	—	5	—	4	—	—
Natl. Provident Fund	—	1	—	1	1	1	—	—
Other provident fds	1379	na	5	2	na	na	na	624
General insurers	199	70	13	50	111	90	19	63
Life insurers	52	23	14	5	24	6	8	12
Composite insurers	—	—	—	—	—	9	—	—
Credit co-operatives	81	na	1627	1076	—	na	378	2108
Credit unions	65	1322	5512	220	83	na	na	389
Pawnshops	173	479	na	—	574	na	na	326
Money lenders	448	na	na	na	na	na	na	na
Petty trader banks	—	175	—	—	—	—	—	—
Village/paddy banks	—	5614	—	—	1040	—	—	—
Unit/invest trusts	643	2	9	na	76	na	na	5
Venture capital cos	25	1	26	na	13	—	—	3
Total	3530	7892	7342	1461	2570	370	478	3686

Source: Compiled through correspondence with central banks and published sources in 1988-9. Most numerical details relate to the year ending 31 December, 1988 or earlier.

In terms of the M\* results, it is interesting that neither Hong Kong, Singapore, Taiwan nor Thailand had many government related development finance institutions: most other countries have a number of, generally government owned, development institutions. This is in part, in the case of Singapore, Taiwan and Thailand, due to the presence of government owned or controlled commercial banks. Where specialist development institutions were not created, or where the development banks do not raise significant

deposits, the  $M^*$  calculation was of little importance. Only where postal savings bank were important, such as in Singapore, did the  $M^*$  results show significant improvement. Perhaps the greatest problem in the current study is the failure to obtain a total financial institutions asset figure which includes those for contractual savings institutions. Unfortunately, despite the growing number of these institutions across Asia, private pension fund statistics are not commonly available. Public sector provident funds in Malaysia and Singapore should also be incorporated as the national fund in each country. They are now the largest single institution within their respective markets. Indeed exclusion of their assets within the  $M^*$  figures may account, at least in part, for the relatively poor showing of Malaysia and, to a lesser extent, Singapore.

#### 6.2. *The marginal foreign resource use ratio*

With the marginal rate of foreign resource use, the coefficient estimates for  $\Delta F/\Delta Y$ , as shown in Table 3, suggest that Malaysia and Singapore made the greatest marginal use of foreign resources for capital formation, although Malaysia's value dropped significantly when  $M^*$  was used as the monetary aggregate. In Harris' results, Philippines, Taiwan and Thailand were the winners in this aspect. With the exception of Hong Kong, the general result was that the broader the monetary aggregate, the larger numerically the coefficient estimate for  $\Delta F/\Delta Y$ .

**Table 3**  
OLS ESTIMATES FOR FOREIGN RESOURCE USE

	Harris results			Li & Skully results		
	M1	M2	$M^*$	M1	M2	$M^*$
Hong Kong	na	na	na	0.69808	0.435740	na
Indonesia	na	na	na	-0.04397	-0.137290	-0.136270
Korea	0.20740	0.39940	-0.05009	0.11302	-0.074660	-0.050090
Malaysia	0.19570	0.24740	0.23920	0.78759	0.827060	0.173010
Philippines	0.78900	0.94450	0.93380	0.00117	0.001200	0.000126
Singapore	na	na	na	1.12873	0.899660	0.939430
Taiwan	0.52930	0.70780	0.68610	0.00117	0.010116	na
Thailand	0.66020	0.59810	0.82960	0.00029	0.000311	0.000311

The estimates for Korea, Thailand and the Philippines have declined between the two periods. Their actual positions, however, differ. With Korea, for example, the decline

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implies its capital formation is becoming less dependent on foreign sources. The decline in Thailand and the Philippines, however, was due to their weaker export performance over 1977-8; foreign investment sources have become the most dominant constraint on income growth in these countries. With Malaysia, the coefficients have increased but declined drastically when  $M^*$  was used. The results of both Hong Kong and Singapore are similar; namely that foreign capital is contributing to investment growth. Indonesia's position is serious as all the estimates are negative; it has seemingly failed to attract foreign capital for its investment growth.

One factor that has changed since the Harris study is the marked increase in the number of foreign banks operating within the Asian region. In some cases, these operate through local branches in the country concerned, in others through non-bank financial institutions (notably merchant banks and finance companies), through bank representative offices, or local visits from foreign staff based in nearby regional financial centres. In regards to specific countries, Table 2 showed that all have some locally licensed foreign commercial banks but there are some marked differences in their relative numbers: in Hong Kong, Singapore, South Korea and Taiwan foreign banks outnumber their domestic counterparts whereas the reverse is true in the other, generally poor scoring, countries. It is likely that these foreign institutions also provide a more direct flow of new technology and financial innovation as well as access to additional funding to their host countries than through solely domestically owned institutions. The degree of government control over the banking and financial sector influences foreign banks establishing offices in Asia.

The foreign banking numbers shown in Table 2, however, have not been constant and the large number in both Taiwan and Korea are a product of the 1980's deregulation. Large numbers also may not reflect their impact on the local economy as new foreign institutions have often been restricted simply to an office in the capital city and, in some cases, a few major trading centres. These restraints are designed to limit their impact on domestic banking; Singapore, by allowing only new foreign banks entry only through offshore banking licenses, makes this position the most obvious.

A similarly important factor could be the impact of foreign exchange controls within these countries. Except for Hong Kong, each of the countries examined has some degree of control on foreign direct investment and in many cases portfolio investment is similarly constrained. In Korea and Taiwan, for example, non-residents are effectively prohibited from purchasing local shares except indirectly through a limited number of approved investment trusts and, in Korea, convertible debt securities. Capital outflow is also com-

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monly subject to some control, particularly Taiwan, but with the deregulation of the 1980s this has become increasingly less of bothersome.

### 6.3. *The money stock to capital formation ratio*

With regard to the marginal tendency of increments of money stock to promote capital formation, the estimate of  $\Delta M/\Delta Y$  results were not too different from Harris' estimates. The estimates for Korea, Thailand and Hong Kong are positive (Hong Kong became negative when M2 was used): the Korea and Thailand t-statistics values are not as strong as Harris' results. As shown in Table 4, for the four ASEAN countries, notably Philippines, Malaysia, Singapore, and Indonesia as well as Taiwan, the signs were usually negative, though Malaysia improved when M\* was used. While t-statistics differed from Harris' result in some cases, the estimates generally followed Harris' observation that the broader the monetary aggregate, the smaller the absolute numerical value of the estimated coefficient. Harris tested on the estimate of  $\hat{c}$  which was sufficiently positive to warrant rejection of the null hypothesis,  $H_0: c = 0$ , in favour of the onesided alternative that  $c$  was positive. Harris found that investment growth was constrained by insufficient intermediation. At the other extreme, if  $\hat{c}$  turned out to be significantly negative, intermediation would generate "gaps".

Table 4

OLS ESTIMATES FOR MONEY STOCK TO CAPITAL FORMATION

	Harris results			Li & Skully results		
	M1	M2	M*	M1	M2	M*
Korea	0.89830	1.02800	na	0.770900	0.05410	0.08605
Taiwan	1.20230	0.49900	0.42600	-0.053070	-0.09314	na
Thailand	-0.27860	-0.14840	0.00780	0.000095	0.05513	0.05936
Philippines	0.41840	-0.02520	-0.02380	-0.676640	-2.47505	-0.46356
Malaysia	-0.74120	-0.54340	-0.45030	-1.770510	-0.40497	0.06282
Singapore	na	na	na	-0.719770	-0.35861	-0.34198
Indonesia	na	na	na	-1.158100	-0.29160	-0.28691
Hong Kong	na	na	na	0.040080	-0.00404	na

In Harris' results, the coefficients of  $\Delta M/\Delta Y$  for Korea and Taiwan gave a positive value. Harris concluded that credit availability, rather than saving, was the major constraint



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in these two economies. The existence of a strong entrepreneur class should be able to assist financial deepening or raise the investment content of real output if there was sufficient financial intermediation. "Economies with agents who possess entrepreneurial skills may have investors who lack only credit to undertake successful investment projects, and therefore benefit from increased money market activity in the financial deepening sense". (Harris 1979, p. 303). Hence, Harris commented that Korea and Taiwan would benefit most from increased money activities. Malaysia had the highest negative value of the  $\Delta M/\Delta Y$  coefficient. Harris claimed that the effects of financial deepening would be the reverse, and that "intermediation tended to channel resources in other directions", and reasoned that "it may be that the lack of a strong entrepreneur class makes investment performance a function of intervention in financial markets, whereupon liberalization shifts the investment content of output back to its lower steady state value". As a result, "financial liberalization may not steer a developing economy to higher steady state levels of output and capital formation". (Harris 1979, p. 303). With Thailand and the Philippines, Harris' results were less clear, and their  $\Delta M/\Delta Y$  coefficients were negative, but not as severe as Malaysia. For Thailand, Harris result did not suggest that the lack of savings was due to insufficient intermediation. Likewise, the Philippines did not appear to be classifiable as saving constrained.

The current study's coefficient deserved some comments. With Thailand, the coefficients of  $\Delta M/\Delta Y$  changed from a negative value to a small positive one in both the M1 and M2 results. Both Korea and Taiwan estimates of  $\Delta M/\Delta Y$  coefficient declined. With the three new countries covered, Singapore, Indonesia and Hong Kong, the estimates of Singapore show a negative on the  $\Delta M/\Delta Y$  coefficient. The DW statistic for Singapore was weak at 0.9, suggesting the possibility of serial correlation. The t-statistics for Hong Kong for the last coefficient is so small that  $\Delta M/\Delta Y$  may be an irrelevant explanatory variable. Furthermore, the  $R^2$  statistics for Hong Kong is low at 0.3, suggesting that the sample size is too small to make any meaningful judgment on the result. The coefficients on  $\Delta M/\Delta Y$  in the two monetary aggregates are close to zero with a very low t-statistics. One can conclude that there is no noticeable financial repression in Hong Kong. For Indonesia, the sign of the last coefficient is significantly large. The picture is very similar as one uses a broader monetary aggregate, though one significant change occurs in Malaysia's result. With  $M^*$  as the monetary aggregate, the last coefficient becomes positive. However, the  $R^2$  statistics falls to a very low value at 0.02. A near-zero value of  $R^2$  gives a poor "goodness of fit" of the regression plane to the sample observations.

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With Korea, the coefficient on  $\Delta M/\Delta Y$  is similar to the previous period, indicating that the lack of financial intermediation has not been improved over the two periods. Taiwan's coefficient on  $\Delta M/\Delta Y$  has become negative with a weak t-statistics of 0.33. It would be difficult to say if the lack of financial intermediation has posed a problem on investment activities. The results of Thailand and the Philippines are similar to Harris' result of the earlier period. In the case of Malaysia, the  $\Delta M/\Delta Y$  coefficient has worsened from a value of (-0.74) to (-1.77). This is discouraging in that the financial intermediation "gap" as mentioned by Harris has become greater. Government intervention in financial activities probably has extended and expanded, resulting in a considerable degree of financial distortion and repression. A noticeable point is that the coefficient of  $\Delta M/\Delta Y$  changes to a positive value when  $M^*$  was used as the monetary aggregate. This supports the fact that since development and postal savings banks are state agents, government intervention in capital formation has discouraged and deprived the investment activities of private entrepreneurs. In the case of Singapore, the value of the  $\Delta M/\Delta Y$  coefficient is negative, indicating some degree of financial repression. The situation in Indonesia is more serious, the last coefficient shows a negative value all through the three sets of monetary aggregates. Similar to Malaysia, government intervention in the financial affairs in Indonesia has significantly discouraged the private sector in conducting investment activities.

Another explanation is the experience of savers/investors in respect to inflation. Where inflation, often coupled with government interest rate controls, resulted in long periods of negative interest rates as inflation rates fluctuated, it would not be surprising if savers chose to place their funds in non-banking sector financial assets and hence out of the  $M1$ ,  $M2$ ,  $M^*$  statistics. As shown in Table 5, this proved exactly the case in Indonesia where the marginal savings rates declined as one moved from mainly transactional ( $M1$ ) to savings ( $M2$  and  $M^*$ ) balances. Hong Kong's recent history of negative rates, though, is explained in part by the residents' ability to hold foreign denominated deposits whose interest rates may well have provided positive returns: both local and foreign currencies are included in the Hong Kong money supply figures. The threat of imposing a negative nominal interest rate in early 1988 in order to maintain the linked US dollar-Hong Kong dollar exchange rate was a clear example. The rates for the other countries are somewhat less clear. Taiwan and Singapore, for example, have had a relatively stable history of significant real rates of return (even some deflation in former in 1984 and 1985) whereas the others, particularly Thailand and Malaysia, have varied significantly over the period.

Table 5

## NOMINAL &amp; REAL DEPOSIT RATE OF INTEREST, 1977-88

YEAR	Indo.		Korea		Mala.		Sing.		Taiw.		Thai.		H.K.	
	N%	R%	N%	R%	N%	R%	N%	R%	N%	R%	N%	R%	N%	R%
1977	9.00	-1.98	14.40	4.23	5.21	0.47	4.06	0.89		2.50	8.00	0.52	1.75	-3.35
1978	6.00	-2.19	18.60	4.14	5.13	0.14	4.75	-0.10	na	3.70	8.00	0.05	4.50	-1.14
1979	6.00	-14.57	18.60	0.34	5.50	1.96	6.20	2.25	na	2.70	8.25	-1.62	9.25	-3.31
1980	6.00	-12.48	19.50	-9.20	6.23	-0.49	9.37	0.91	12.45	-6.50	12.00	-7.76	11.00	-3.81
1981	6.00	-6.20	16.20	-5.10	9.07	-0.03	10.71	2.41	12.51	-3.30	12.50	-0.20	10.00	-4.49
1982	6.00	-3.54	8.00	0.75	9.75	3.92	7.22	3.43	13.04	5.70	13.00	7.76	4.75	-5.77
1983	6.00	-5.80	8.00	4.62	8.02	4.32	6.31	5.06	8.05	6.70	13.00	9.29	8.00	-1.90
1984	16.00	5.59	9.20	6.90	9.54	5.64	6.98	4.34	6.25	6.30	13.00	12.11	5.50	-3.54
1985	18.00	13.25	10.00	7.53	8.81	8.49	4.99	4.56	6.25	6.42	13.00	10.58	2.25	-1.70
1986	15.41	9.56	10.00	7.16	7.17	6.45	3.91	5.27	6.25	5.55	9.57	7.94	2.00	-3.34
1987	16.78	7.51	10.00	7.03	3.00	1.89	2.89	2.37	6.25	5.73	9.50	7.03	1.50	-4.50
1988	17.72	9.72	10.00	3.00	3.33	1.33	2.74	0.74	4.28	3.00	9.50	5.50	5.25	-3.75

Source: International Financial Statistics, various issues, and correspondence with respective central banks.

## 7. Conclusion

The development finance theories of the two-gap model analysis and the financial liberalization and deepening approach have come a long way. Despite financial distress experienced by many developing countries in the 1970s and 1980s, the two approaches still provide a solid theoretical framework upon which future studies of financial development can be conducted. Few scholars, however, have noted the complementarity aspect between the two approaches. Harris (1979) attempted to consolidate them into a one equation model which reduced the empirical problem to the estimation of the marginal savings rate, the marginal foreign resource utilization rate and the money stock to capital formation rate. The first two parameters basically embody the essence of the two-gap analysis (the savings and foreign exchange gaps) while the latter show the extent of financial deepening.

Although Harris (1979) found no general pattern, particularly regarding financial deepening, from his five Asian country study, his results did raise the issue as to what determined the extent of the deepening. This study has enlarged Harris' country sample but the number of year observations is somewhat smaller. Even so, to a large degree the findings do not deviate much from the Harris results. This study also attempted to consider the sample's institutional framework with the hope that it might throw some light

on the determinants of financial deepening. It was found that in Malaysia and Indonesia, for example, a high degree of government financial sector involvement may have reduced private sector investment, and so good investment opportunities might have been lost. Also in regard to real interest rates, one may conclude that negative and fluctuating real interest rates may not be helpful in conducting financial and, hence in the longer term, economic growth. The issue of investment has not been considered in detail in either study. It could be argued that the actual investment strategy followed by each country might result in significantly different economic performances. For example, within four of the ASEAN countries, investment has been dominant within the Asian "dragons". This potential differential, however, is a matter for further study.

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**Abstract**

*In the literature of development finance, both the structuralist's "two-gap" approach of Chenery and Strout (1966) and the financialist's "liberalisation" approach of McKinnon (1973) and Shaw (1973) represent the two polar theories for academic research and policy recommendations. Harris (1979) has attempted to set up a simple model incorporating the two approaches and tested it with the experiences of five Asian economies. This paper first employed Harris' (1979) model, and empirically extended the analysis to include other Asian economies, giving particular attention to the financial impacts on growth. Secondly, an attempt is made to incorporate the structure of financial institutions as an instrument of analysis. A general conclusion one can make is that economies with lesser government controlled financial institutions tend to face a more favourable climate for financial development.*

