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Financial Development and Economic Growth: Panel Evidence from ASEAN Countries

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ABSTRACT

The general consensus of an ever-increasing amount of empirical evidence and theoretical work on economic growth is that a well-developed financial system plays an essential role in fostering a country's economic growth. This paper aims to examine the relationship between financial development and economic growth in ASEAN countries by using the static panel approach. In view of this, this study analyses the evidence on the financial depth for ASEAN countries. To better capture financial development in ASEAN countries this study disaggregates measures of financial depth covering the financial inequality development. This study employs commonly used measures of financial development, which is the ratio of broad money (M2) to GDP (M2/GDP). While for measures of government policies, the ratio of government expenditure (GOV) to GDP (GOV/GDP) and the ratio of trade openness (O) to GDP (O/GDP) were used in this study. We find that there is a relationship between financial development and economic growth for ASEAN countries.

Keywords: Financial Development, Economic Growth, ASEAN Countries, Static Panel

INTRODUCTION

In the determination of economic growth, several factors are identified as causes that may influence economic growth. Among these factors, the role of financial markets in the growth process has received significant attention. In this framework, financial development is considered by many economists to be an important factor for output growth.

According to the classical school of thought in the neutrality of money doctrine, an increase in money stock will increase the price level without affecting the real output. They conclude that money, as the financial variables will not affect the real economy variables. In contradiction to the classical view, the Keynesian and Monetarist schools of thoughts believe that financial indicators will affect the real sector. The development in the financial market will increase the provision of credit resulting in a decrease in the lending rate. Therefore, the fall in the interest rate will increase the real sector with an increase in domestic investment, domestic consumption and government expenditure.

While the empirical works among others by Gurley and Shaw (1955), Modgliani and Miller (1958), Goldsmith (1969), McKinnon (1973), Shaw (1973), Smith (1991), Levine (1991), King and Levine (1993a), Gertler and Rose (1992), Allen and Ndikumana (1998) and Levine et al. (2000) show that the financial development is a significant variables in influencing economic growth. According to Ansari (2000) financial development includes financial deepening, financial broadening and financial liberalization that take into account the number and the role of financial institutions, financial instruments, deregulation of interest rates, and free movement of foreign capital and removal of other restrictive practices. Generally, financial development has predictive power for future economic growth.

The Association of Southeast Asian Nations (ASEAN) consists of 10 countries that have different economic structures and different development model, but all have hit by the global financial crisis. For example, during the second half of 1997, the Asian Financial Crisis, which spread from Thailand to other countries, resulted in increased unemployment, poverty and social dislocation. The 1997 to 1998 financial crisis prompted ASEAN to accelerate regional financial cooperation. In the ASEAN Vision 2020 which they issued in December 1997, ASEAN leaders resolved to: a) maintain regional macroeconomic and financial stability by promoting closer consultations on macroeconomic

and financial policies and b) continue to liberalise the financial services sector and closely cooperate in money and capital markets, tax, insurance and customs matters. (ASEAN, 2009)

Based on the Malaysian experience, the financial sector plays a crucial role that is responsible for driving Malaysian economic growth. The Ninth Malaysian plan reported that the financial sector grew by 8.1 percent from 2001-2005. The share to economic growth was 12.7 percent in 2000 and increased to 15.1 percent by 2005. The financial sector is a main contributor to Malaysian economic growth during the Eight Malaysian Plan that contributed 3.4 percent, compared to the first sector and second sector, which contributed 0.4 percent and 1.3 percent, respectively.

Therefore, the aim of this paper is to examine the relationship between financial development and economic growth in ASEAN countries by using the static panel approach. This research employs new data to gain insight into this issue.

This paper is organized as follows; section 2 discusses the underlying theoretical background and empirical evidence from past literature. Section 3 illustrates the method of the study including the data and the static panel approach. The analysis and conclusion will be discussed in sections 4 and 5 respectively.

LITERATURE REVIEW

The role of financial development has taken a prominent role in recent research in several different areas of literature, such as economic growth, financial stability and international financial integration. In the determination of economic growth, typically financial development is defined as the improvement in quantity, quality and efficiency of financial intermediary services. Among others, Schumpeter (1911), Gurley and Shaw (1995), Goldsmith (1969) and McKinnon (1973) mentioned the importance of financial intermediaries to economic growth.

With Schumpeter (1911), McKinnon (1973) and Shaw (1973) and more recently King and Levine (1993a) and Levine et al. (2000), the relationship between financial development and economic growth has been extensively studied. Initially, traditional views of McKinnon (1973) and Shaw (1973), offered detailed arguments and evidence on the role of the organized financial structure of an economy to accelerate economic growth and improve economic performance. They believe that surplus funds would be channeled efficiently to deficit units in order to stimulate the economy. In their view, differences in the quality and quantity of services provided by financial intermediations are the main reasons for different economic growth of every country. Greenwood and Jovanovic (1990) also found evidence that as income levels increase, the financial structure becomes more extensive, and economic growth becomes more rapid.

McKinnon (1973) and Shaw (1973) also stress on financial market reform that provided optimal strategies to generate both faster and steadier growth in real output by rising saving propensities and the quality of capital formation. Here, the deliberate creation of financial institutions and markets increases the supply of financial services and thus leads to economic growth. However, these traditional views only focus on the components of financial liabilities such as money supply (which includes M1, M2 and M3) through savings or deposits within the financial intermediaries thereby generating more economic growth.

In contrast, during the 1980s and 1990s (during the financial liberalization), many researchers concentrated on financial assets in order to indicate the linkages between financial intermediaries and economic growth. Williamson (1987) and Gertler (1992) provide the evidence of positive correlation between output and the quantity of intermediated credit (as financial assets). He also found that credit leads output, in the sense of Granger causation. However, other models show that financial assets other than credit (loans) also can be used to prove the greater impact of financial system on economic growth. For example, Levin and Zervos (1998) try to investigate the relationship between stock markets and also bank credit with economic growth. They found that the rapid growth of capital market plays a crucial role in allocating fund to entrepreneur and thus ultimately influence the decision to invest.

Furthermore, King and Levine (1993b) not only discussed the relationship between financial development and economic growth, but also the role of the entrepreneur in generating economic growth. They found that efficiently allocated funds from intermediaries to entrepreneurs were able to lower the cost of investing in productivity enhancement and stimulated economic growth. The reason being that the financial intermediates can influence the decision to invest in productivity enhancing activities through their ability to evaluate and monitor the prospective entrepreneur, and provide funds to potential entrepreneur. Holmstrom and Tirole (1997) advocate the function of intermediaries is to monitor firms and thereby alleviate the moral hazard problem.

Hassan, Sanchez and Yu (2010) identified the relationship between financial development and economic growth in low, middle and high-income countries as classified by the World Bank. They adopted a panel regression approach and Granger causality tests for their study. Short term multivariate analysis showed that there was a positive relationship between financial development and economic growth in developing countries. While using Granger causality tests in the short run, they find that there was two-way causality between finance and growth in all regions, but not Sub-Saharan and East Asia and Pacific.

METHODOLOGY

In this section, the static panel data estimation is utilized to measure the relationship between financial development and economic growth for ASEAN countries. This section will discuss the measurement of financial development indicators, the data sources and the panel estimation technique based on the generalized least square method.

MEASURES OF FINANCIAL DEVELOPMENT

Although financial development has been an important issue in many countries, the measurement is not sufficiently clear. To investigate statistically the potential contribution of financial development to economic growth, a quantitative measure of financial development must be constructed. Usually, financial development is defined as the improvement in quantity, quality and efficiency of financial intermediary services. This process involves the combination of many activities and institutions, given that it cannot be captured by a single measure.

The standard approach to measuring the financial development is to make use of balance sheet figures such as assets and liabilities. These figures are purposely used to measure the services provided by financial intermediaries. The traditional practice (e.g. Shaw (1973) and McKinnon (1973) determined the size of the formal financial intermediary sector relative to economic activity in order to measure financial sector development. This research uses the ratio of broad money (M2) to GDP, or M2/GDP. The broad money consists of currency outside the banking system plus demand and time deposits of banking system. A higher M2/GDP ratio implies a larger financial sector and therefore greater financial intermediary development.

SOURCE OF DATA

The findings based on the empirical evidence, as reported in Section 2, show that as income level rise, the financial structure becomes more extensive and economic growth becomes more rapid across ASEAN countries. Therefore, this study uses data for ASEAN countries with different income levels, involving cross-country data from 2004 to 2008. Whilst the research derives its data from the World Bank, for the 10 ASEAN countries, lack of financial data and elimination of major exporters typically restricts the analysis to about 9 countries.

ESTIMATION MODEL

Based on the theory of financial development and economic growth, specifically, the regression model can be specifying as follows:

$$GGDP_{it} = \alpha_{0i} + \alpha_1 FD_{it} + \alpha_2 GP_{it} + v_i + u_{it} \quad (1)$$

Where GGDP is the growth of GDP, FD is financial depth variables that cover the ratio between M2 to GDP (M2/GDP). While GP is government policy represented by the ratio of openness to international trade to GDP (O/GDP) and the ratio of government expenditure over GDP (GOV/GDP). In this specification *vi* denotes country and residual specific effects. The cross-section and period specific may be handled using fixed or random effects methods.

Since panel data relate to individual country, there is bound to be heterogeneity in these units. In order to take into account the heterogeneity explicitly in the estimation procedure, several assumptions have to be made to the intercept value and the error term. In other words, to incorporate fixed and random effects in the estimation model, so as to take into account the heterogeneity.

The techniques used will be the Ordinary Least Squares (OLS) as well as the Generalized Least Squares (GLS) and panel data regression technique. Under both techniques, the GDP is regressed against the explanatory variables. The purpose of this regression is to identify the relationship between

financial development and economic growth (with the government policy variables as the control variables) and to evaluate whether the coefficients are consistent with the theory or not.

The Generalized Least Square pooled time-series cross sectional method is utilized due to the normality distributions of the data. Furthermore, the Generalized Least Square pooled time-series cross sectional specification assumes that all countries have the same behavior. In other words, it assumed that the slope and intercept of countries are constant across individuals and time.

More specifically, as well as the Generalized Least Square, the estimation technique utilizes the cross-section weights for correcting cross section heteroscedasticity. While the white (diagonal) coefficient covariance robust method is utilized to compute the coefficient standard error (robust coefficient covariance) since the white method is robust to observation specific heteroscedasticity in the disturbances. Therefore the estimator is robust to different error variances in each cross-section.

PANEL ESTIMATION RESULTS

This section provides empirical evidence on the relationship between financial development and economic growth based on the sub-sample countries and pooled sample. The investigation reported here consists of the panel estimation results.

To run the regression model, we utilize the Generalized Least Square (GLS) method to test the estimation model for equation (1). Table 1 presents the GLS regression results for all sample cross-section time-series as well as the results of GLS respectively with Pooled Least Square. In order to test the appropriate model with the hypothesis that the individual effects are uncorrelated with the other regressors in the model, the Breusch and Pagan Langrangian Multiplier test is utilized. The results as shown in table 1 indicate that the results of generalized least square with Pooled Least Square better explains the relative random effect on the relationship of the related variables both for the sub sample country and pooled sub sample country estimations.

Table 1 show that all significant exogenous variables explain the endogenous variables with the consistent effect. Based on the estimation results, the R^2 for equation (1), which is the common measure of the goodness of fit, stood at 0.3006. That is 30.06 percent variation in GGDP is explained by the independent variables.

For equation (1), the financial depth variable, M2/GDP is significant in influencing the GGDP for at 5% significant level. The result implies that an increase in the M2/GDP increase the GGDP. The regression results show that there exists a positive significant relationship between M2/GDP and the endogenous variable.

The first policies variables, O/GDP, contrary from other studies, the result shows that O/GDP is negative in influencing the GGDP. But the t-test fails to reject the null hypothesis of no relationship between the Openness trades (O) with economic growth. The relationship between the GOV/GDP to GGDP is positively significant at 5 percent significant level respectively. This finding shows that an increase in government expenditure trade will increase the economic growth.

CONCLUSION

The lack of financial institution in some ASEAN countries is simply a manifestation of the lack of demand for their service. Furthermore, the measurement of financial development is essential because it has significantly different implications for the development policy (bank-based *versus* market based). However, this measurement remains clear. This research employs to gain insight into this issue. In this study, M2 was reported as having a positive relationship with GGDP.

Based on this simple research it is quite hard to suggest appropriate policies. However, in order to stimulate economic growth in Malaysia, the government could take several actions especially in bank supervision and regulation. Hence, in addition to financial reform, both legal and accounting reforms are required to strengthen the banks rights, contract enforcement, and accounting practices. The strengthening of these elements can boost financial development and accelerate economic growth. They also conversely support the evidence that the countries that have no reform in legal and accounting systems weaken banks rights, contract enforcement, and accounting practices. For instance, transparent rules and encouragement should be provided.

REFERENCES

Ansari, M.I. 2002. Impact of financial development, money and public spending on Malaysia national income: an econometric study. *Journal of Asian Economics* 13: 72-93.

ASEAN (2009). http://www.aseansec.org/. Retrieve on April 2012.

Banerjee A., 1999. Panel Data Unit Roots And Cointegration: An Overview. *Oxford Bulletin of Economics and Statistics* 61: 607-629.

De Gregorio, J. and Guidotti, P.E. 1995. Financial Development and Economic Growth. *World Development* 23: 433-448.

Gertler, M. 1992. Financial Capacity and Output Fluctuations in an Economy with Multi-Period Financial Relationship, *The Review of Economic Studies Limited* 59: 455-472.

Goldsmith, R. 1969. Financial Structure and Development. New Haven, CT: Yale University Press.

Gujarati, D. 2003. *Basic Econometrics*. McGraw-Hill Higher Education.

Greenwood, J. and Jovanovivz, B. 1990. Financial development, growth and the distribution of income. *Journal of Political Economy* 98: 1076-1107.

Holmstrom, B. & Tirole. J. 1997. Financial Intermediation, Loanable Fund, and The Real Sector. *The Quarterly Journal of Economics.* CXII: 663-691.

Im K.S., Pesaran, M.H., Shin, Y., 1997. Testing for unit roots in heterogeneous panels. Working paper, Department of Applied Economics, University of Cambridge.

Khan, Mohsin S. and Senhadji, Abdelhak S. 2000. Financial development and economic growth: an overview. IMF Working Paper.

King, Robert.G. & Rose Levine, 1993a. Financial and Growth: Schumpter Might Be Right. *The Quarterly Journal of Economics* 108: 717-727

King, Robert.G. & Rose Levine, 1993b. Finance, entrepreneurship, and growth, *Journal of Monetary Economics* 32: 513-542.

Levin A., Lin, and F. Chu. 1993. Unit root test in panel data: new results. Discussion paper 93-56, Department of Economics, University of California at San Diego.

Levine, R. 1997. Financial development and economic growth: views and agenda. *Journal of Economic Literature* 35: 668-726.

Levine, Ross, Loayza, N., & Beck, T. 2000. Financial intermediation and growth: Causality and causes *Journal of Monetary Economic* 46: 31-77.

Levine, Ross, & Zervos, S. 1998. Stock markets, banks, and economic growth. *American Economic Review* 88: 537-558.

Maddala G.S and Wu, S. 1999. A comparative study of unit root test with panel data and a new simple test. *Oxford Bulletin of Economics and Statistics* 61: 631-652.

McKinnon, R.I. 1973. Money and Capital in Economic Development. *Brookings Institution*, Washington DC.

M. Kabir Hassan, B. Sanchez, J. Suk-Yu. 2010. Financial development and economic growth: New evidence from panel data. *The Quarterly Review of Economics and Finance* 51: 88-104.

Rioja, F. & Valev, N. 2002. Does one size fit all? A reexamination of the finance and growth relationship Gergio State University Working Paper.

Shaw, E.S. 1973. Financial Deepening in Economic Development. London: Oxford University Press.

Schumpeter, J.A. 1911. The Theory of Economic Development. Cambridge: Harvard University Press.

Williamson, S D. 1987. Costly Monitoring, Loan Contrast, and Equilibrium Credit Rationing. *The Quarterly Journal of Economics*, 135-145.

World Bank Group (2012). http://www.worldbank.org/. Retrieve on March 2012.

TABLE 1: Balanced Panel Estimation Results for ASEAN Countries

Dependent variable is GDP growth (GGDP). The t-test values are given in parentheses.

Variable	**Pooled Least Square**
C	2.9504
	(0.6889)
M2GDP	0.2942**
	(0.1372)
OGDP	-0.1245
	(0.3590)
GOVGDP	0.6131**
	(0.2387)
R^2	0.3006
F	2.29*
Bruesch-Pagan Langrangian Multiplier Test	1.9
	(0.1684)
Cross Section	9
N	80

***Significant at 1% level
**Significant at 5% level
*Significant at 10% level