

Domestic Macroeconomic Fundamentals and World Stock Market Effects on ASEAN Emerging Markets

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ABSTRACT

Liberalization and globalization of world markets have resulted in inter-relatedness of financial markets and contagion global events. Numerous examples of stock market crashes, currency crisis and the recent sub-prime crisis have affected financial performances of markets across the globe. In the recent decade, waves of speculative activities are not limited to one market only but they can move from one corner of the globe to another within hours. This research investigates the effects of domestic macroeconomic fundamentals and world stock market on the domestic financial market performances of ASEAN emerging nations. Findings show that domestic economic growth, interest rate, and exchange rates are significant in affecting domestic financial markets. Dow Jones Industrial Average as a proxy for world stock market is also found to have significant positive relationship with the more developed financial market in Singapore.

Keywords: Financial market performance, macroeconomic fundamentals, world and emerging stock market

INTRODUCTION

Financial market plays an important role as one of the indicators of economic stability while stock market index provides indications on economic health of a country. In addition, financial market performance is used as a measurement to illustrate the wealth and growth potential of nations. Information and knowledge about financial market is important not only to investors and governments but also to firms and individuals. Furthermore, stock indices provide a simple and effective mean for investors to understand and predict the general direction of stock prices and feel the sentiment of the financial markets as well as an indication of the level of economic activity. It is therefore vital that governments provide an appropriate

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financial market environment to ensure vibrant financial performance in order to encourage economic growth and stability.

The financial market and stock index performances of the majority of Southeast Asian countries were in turmoil during the Asian financial crisis in 1997. The composite stock index in Malaysia dropped from a high of 1237.96 to 594.44 points in 1997. In Thailand, the Thailand Stock Index dropped to 372.69 points in 1997 from a peak of 831.57 in 1996. Jakarta Composite Index and the Philippines Stock Exchange Index decline to 401.712 and 1869.23 points in 1997 from 637.432 and 3170.56 points in 1996 respectively. In the recent sub-prime crisis in 2008, the Asian stock markets tumbled from fears of financial crisis and recession in the United States resulting in global economic slowdown. Korea's index fell by 29.4%, Hong Kong by 13.2%, Shanghai by 14.7%, Japan by 18.3% and Malaysia by 6.4% in the first 2 weeks of October 2008.¹ With recession setting in developed markets, there is also contagious effects on other financial markets which investors termed global financial crisis towards the end of 2008. News of problems and failures of banking institutions, insurance giants and eventually multinational manufacturing concerns dampened investors confidence and the outlook for the next year remains gloom.

This study aims to identify the domestic macroeconomic factors that affect financial market performance of five Southeast Asian countries namely Malaysia, Thailand, Indonesia, Singapore and the Philippines. The set of domestic macroeconomic fundamentals include economic growth, interest rate, exchange rates and inflation rates. It is also the intention of this paper to investigate if changes in the U.S. stock index affect the performances of stock indices of these five countries.

The historical financial performance of Southeast Asia has been characterized as interaction between regional players and foreign powers. In addition, confidence in the country's currency value plays a role in financial market performance. Di Iorio and Faff (2001) investigated the effects of foreign exchange exposure on the Australian Stock Returns and found significant evidence. Joseph (2003) did not find any evidence that exchange rate and interest rate can predict the U.S. financial sector indices.

Few studies have investigated the factors that affect financial market performance of Asian countries especially emerging countries in the southeast. Emerging market countries are those that are experiencing economic expansion that would move them from third world status to one that is more economically sound. Examples of emerging markets besides Southeast Asia include China, India, Brazil, Chile, countries in Eastern Europe, the Middle East, parts of Africa and Latin America. During the 1990s, Southeast Asia emerged as the fastest growing economy in the world. Its successes have made some to label Southeast Asia as

¹ Financial Storm Hits Global Markets, The Star Business News, October 11, 2008.

an economic miracle. Some studies have even found that inter-relatedness of the stock markets makes diversification of investments into different markets worthless.

Cohen (2001) stated that stock returns in emerging markets are on average higher than that of the industrial markets which consist of the United States, Japan and the European Union. In addition, Erb, Harvey and Viskanta (1997) stated that some emerging markets have progressed to a viable stand alone asset class and these markets have begun to overlap with developed markets prior to the financial crisis. Countries in those studies include: Taiwan, South Korea, Malaysia, Chile and the Czech Republic and they seem to be creeping into the ranks of the developed markets.

Over the last three decades, world investors have paid more attention to Southeast Asian markets such as Singapore and Malaysia, followed closely behind are Thailand, Indonesia and the Philippines. This is due to their large population which provides the potential to grow their labor intensive exports, capitalize on the process of low-cost production and most importantly a market for more goods and services when their income grow. Even though these countries are now more competitive in the world market, their financial market performances may still be influenced by not only internal but also external factors. In summary, the main purpose of this study is to investigate the relationship between domestic fundamentals: economic growth, interest rate, inflation rate, exchange rate as well as external factor: the U.S.'s Dow Jones Industrial Average and financial market performance of five Southeast Asia countries.

This paper consists of an introduction in section one, a review of literature in section two, followed by data and methods in section three and findings in section four. The last section provides a summary and conclusion.

BRIEF HISTORY ON ASEAN STOCK EXCHANGES AND LITERATURE REVIEW

The Kuala Lumpur Composite Index (KLCI) is a market capitalization weighted index of 100 companies currently traded on Bursa Malaysia, formerly known as Kuala Lumpur Stock Exchange (KLSE) in Malaysia. Historically, the Malayan Stock Exchange was formed in 1960 and public trading of shares began. After the separation of Singapore from Malaya, the Kuala Lumpur Stock Exchange (KLSE) and the Stock Exchange of Singapore (SES) were formed to officially trade shares. The Stock Exchange of Thailand (SET) is the national stock exchange of Thailand. The inception of the Thailand stock market began in April 1975 under the name of the Securities Exchange of Thailand which then changed its name in January 1991 to the Stock Exchange of Thailand. The market index for SET provides an indication of how the stock market performs in Thailand.

The Philippine Stock Exchange being the primary stock exchange of this country is one of the two stock exchanges in the Philippines, the other one being the

Philippine Dealing Exchange. Aside from being one of the major stock exchanges in Southeast Asia, it is also the first and the longest one operating since 1927.

Jakarta Stock Exchange is a stock exchange based in Jakarta, Indonesia. Originally established in 1912 under the Dutch colonial government, it was re-opened in 1977 after several closures during World War I and World War II. In July 1992, the exchange was privatized under the ownership of Jakarta Exchange Inc. The merger of the Jakarta Stock Exchange and the Surabaya Stock Exchange in September 2007 resulted in the Indonesian Stock Exchange today.

The Singapore Exchange Limited (SGX) is Asia-Pacific's first de-mutualized and integrated securities and derivatives exchange. SGX was inaugurated in December 1999, following the merger of two established financial institutions - the Stock Exchange of Singapore (SES) and the Singapore International Monetary Exchange (SIMEX). The Straits Times Index (STI) is a market value-weighted stock market index based on the stocks of 50 representative companies listed on the SGX.

There are three commonly understood theories relating to financial market performance. The Random Walk Theory explained by Malkiel (1973) that stock prices follow no predictable pattern. This theory is also deeply intertwined with the Efficient Market Theory, which affirms that markets are constantly correcting prices based on new information. When markets are efficient, the theory posits, no stock is undervalued or overvalued at a particular moment. Once information becomes available that a stock may not be priced accurately in relation to the company's performance or growth prospects, the market quickly corrects that condition. There has however been mounting evidence that stock prices are not entirely random and markets are not perfectly efficient. Studies on United States and international stock markets have suggested that technical price indicators such as moving averages are indeed positively correlated with accurate predictions of future price movements.

Dow Theory states that market performance can be described by the long term price trends in the overall market according to Hamilton (1922). The theory signals the end of both bull and bear markets but does not indicate when the reversal will occur. It concentrates on the long term trend in market behavior and ignores day to day fluctuations or secondary movements. The key problem of the Dow Theory is that it is an 'after the fact' measure with little predictive power and that investors do not know at any given point whether an existing primary trend will continue or is just about to end.

The third theory is the Elliot Wave Theory which attempts to forecast trends in the financial markets and other collective activities as documented by Prechter and Frost (2000). The wave principle posits that collective investor (crowd) psychology moves from optimism to pessimism and back again. These upward and downward swings of mass psychology follow a similar repetitive pattern which is termed wave. This theory testifies that market prices alternate between different waves at all trends.

Economic Growth

Levine and Zervos (1996) found that stock market development is positively associated with economic growth. In addition, Wachtel (2001) also confirmed that there is empirical evidence to make a convincing case that financial sector development promotes economic growth and countries with higher investment to GDP ratios experience higher growth rates. Furthermore, Becsi and Wang (1997) found positive relationship between economic growth and financial performance. An increase in economy growth indicates the efficiency of financial market performance due to its ability in accumulating capital, increasing stock prices and aggregate investment by enhancing profitable opportunities to the economy. This is also consistent with the study by Atje and Jovanovic (1993) which found that stock market improvements have positive impacts on growth performance. They also found significant correlation between economic growth and stock market performances for 40 countries over the period from 1980 to 1988.

Previous studies by Becsi and Wang (1997) and Wachtel (2001) have confirmed that economic growth assert an impact on financial market performance. It is therefore important for a country to maintain sustainable economic growth in order to achieve satisfactory performance in the financial market. Inconsistent performances of stock markets create worries for investors and also regional economies because Asia's stocks markets are influenced by global events. Fluctuations in stock index values are not beneficial to the economy when they cause investors to lose confidence in the country's investments, dampening economic growth.

Interest Rate

Interest rates also influence financial market performance since it determines the movements of asset prices and capital flow. Anoruo, Ramchander and Thiewes (2002) indicated that interest rates within the Asian region respond well to each other; Hong Kong and Singapore are important, but not dominant players in the Asian region. These two countries as developed financial markets serve to mediate interest rate linkages between United States and the Asian region. On other hand, Masayami and Koh (2000) which focused only on the Singapore stock market found significant relationship between changes in interest rates and stock prices. Sinai (2006) demonstrated that interest rates are central to the behavior and function of the contemporary economy, the interrelated portfolio adjustment and movements in asset prices.

Exchange Rate

The influence of exchange rate on financial market performance depends on the direction of change in the value of a particular country's currency. Granger, Huang and Yang (2000) showed significant unidirectional and bidirectional

relationships between the Asian financial markets, especially for Korea. Whenever the relationship was unidirectional, it was found to be negative between exchange rates and stock prices. Similarly Pan, Fok and Liu (2007) indicated that there is significant causal relation from exchange rates to stock prices in Hong Kong, Japan, Malaysia, and Thailand before the Asian financial crisis but none of these countries showed significant causality from stock prices to exchange rates during the same period. In addition, Dimitrova (2005) also found negative relationship between exchange rates and stock prices. This paper expects to find similar results.

Dow Jones Industrial Average

Cheung and Mak (1992) found that the United States and Japanese stock markets led most of the Asian-Pacific markets including Australia, Malaysia, Singapore and Philippines except for Korea, Taiwan and Thailand. Similar to other studies, Cheung and Ho (1989) obtained comparable findings that the United States stock market led the stock market of Australia, Singapore and Malaysia.

The correlation between the KLSE Industrial Index and selected major stock indices is found to be insignificant in Yong (1990). During this period of study, the Malaysian stock market is not found to be significantly influenced by the performance of major stock markets in the world. Kim (2005) found that there are significant dynamic information spillover effects from the U.S. market to all Asia Pacific markets.

DATA AND RESEARCH METHODS

The domestic macroeconomic data used in the study are from International Financial Statistics (IFS) of the International Monetary Fund (IMF) from 1987 to 2007. Economic growth is measured by natural logarithm change in gross domestic product (GDP), the natural logarithm change in base lending rate (BLR) and exchange rates (ER) are measures for interest rate and exchange rate respectively. While the external financial market proxy is the natural logarithm change in Dow Jones Industrial Average (DJIA). Data for closing prices for stock market indices of the five ASEAN countries: Kuala Lumpur Composite Index (KLCI), Singapore Straits Times Index (STI), Stock Exchange of Thailand Index (SET), Jakarta Composite Index (JCI), and Philippines Stock Exchange Index (PSE) are collected from individual country's stock exchanges.

Ordinary least squares and cross-sectional econometric model of fixed effects (FE) panel data were employed to investigate financial market behaviour of individual country as well as all countries as a panel respectively. Panel data

fixed effect allows cross-sectional variations in the data set, and thus yields robust estimates of the test statistics and it permits the constant term to be the country-specific variations in the regression as explained by Greene (2003): this is referred to as the least squares dummy variable (LSDV) model. This method can be applied here rather than estimating the equation in one cross section, which would be wasteful as it would leave out information in the data set. Panel data model is estimated using generalized least squares algorithm.

In summary, the analysis of the determinants of financial market performance is carried out by estimating the individual country and panel data regressions as follows for Model 1: Domestic (1), Model 2: External (2) and Model 3: Overall Analysis (3):

$$\ln chgStkInd_{jt} = \alpha_{0j} + \beta_{1j} (\ln chgGDP)_{jt} + \beta_{2j} (\ln chgBLR)_{jt} + \beta_{3j} (\ln chgInfn)_{jt} + \beta_{4j} (\ln chgEXR)_{jt} + \epsilon_{ij} \quad (1)$$

$$\ln chgStkInd_{jt} = \alpha_{0j} + \beta_{1j} (\ln chgDJIA)_{jt} + \gamma_{ij} \quad (2)$$

$$\ln chgStkInd_{jt} = A_{0j} + B_{1j} (\ln chgGDP)_{jt} + B_{2j} (\ln chgBLR)_{jt} + B_{3j} (\ln chgInfn)_{jt} + B_{4j} (\ln chgEXR)_{jt} + B_{5j} (\ln chgDJIA)_{ij} + \gamma_{ij} \quad (3)$$

In the above equation, the subscript j represents a country in the sample, while t denotes the number of yearly periods. The fixed effect approach allows the constant term to vary from one cross-section unit to another. This helps to control for unobserved components of country heterogeneity (through having country-specific constant terms) that may in fact drive country characteristics included in the regressions.

Investigation of individual country analysis was also carried out similar to the panel model in equations (1), (2) and (3) in order to confirm if domestic macroeconomic fundamentals as well as external financial market performance effects on each local domestic stock market and to test the robustness of the estimation results.

Table 1 reports the descriptive statistics of variables in natural logarithm change modes in the model and Table 2 to 5 report the individual and panel unit root tests results. The stationarity of the time series is confirmed by the various tests on panel unit root in columns (1) – (4) with null hypothesis of the existence of a unit root while Hadri Z-test in column (5) has a null hypothesis of no unit root in any of the series in Table 5. We observed that the time series applied in this study are stationary.

Table 1 Descriptive statistics

	Mean	Standard deviation	Max	Min
CI	0.092327	0.353871	1.291014	-0.802569
GDP	0.110099	0.058129	0.420445	-0.042658
BLR	-0.025875	0.144002	0.387585	-0.490623
INFLN	0.052567	0.818960	2.169054	-3.657131
EXRATE	0.026843	0.141187	0.668507	-0.252858
DJIA	0.095421	0.125210	0.288568	-0.183484

Table 2 Unit root test results for domestic and external variables for Malaysia and Singapore

Variables	Malaysia			Singapore		
	ADF Test		KPSS test	ADF Test		KPSS test
	t-stats	Model (lag)	KPSS statistic	t-stats	Model (lag)	KPSS statistic
CI	-4.84***	C(0)	0.169	-4.77***	C(0)	0.147
GDP	-3.95***	C(0)	0.417*	-3.69***	C(0)	0.405*
BLR	-4.43***	C(0)	0.116	-4.31***	C(4)	0.266
INFLN	-2.59*	C(1)	0.275	-3.89***	C(1)	0.217
EXRATE	-4.52***	C(0)	0.118	-3.79***	C(0)	0.196

Critical values for ADF tests at 10, 5 and 1% levels of significance are respectively, -2.59, -2.90 and -3.53 with a constant and -3.17, -3.48 and -4.09 with a constant and a deterministic trend. Critical values for KPSS tests at 10, 5 and 1% levels of significance are respectively, 0.35, 0.46 and 0.74 with a constant and 0.12, 0.15 and 0.22 with a constant and a linear trend.

Note: For the ADF tests, the unit root null is rejected if the value of the ADF t-statistics is less than the critical value. For the KPSS tests, the null of stationarity is rejected if the value of the KPSS statistic is greater than the critical value. *, ** and *** denote statistical significance at 10, 5 and 1% level. The critical values for the ADF tests are from MacKinnon (1991).

Table 3 Unit root test results for domestic and external variables for Indonesia and Thailand

Variables	Indonesia			Thailand		
	ADF test		KPSS test	ADF test		KPSS test
	t-stats	Model (lag)	KPSS statistic	t-stats	Model (lag)	KPSS statistic
CI	-5.06***	C(0)	0.155	-4.04***	C(0)	0.141
GDP	-4.20***	C(0)	0.097	-2.63*	C(1)	0.370
BLR	-4.49***	C(1)	0.313	-3.86***	C(0)	0.290
INFLN	-4.80***	C(3)	0.189	-6.94***	C(0)	0.097
EXRATE	-3.41**	C(0)	0.136	-3.30**	C(0)	0.082

Critical values for ADF tests at 10, 5 and 1% levels of significance are respectively, -2.59, -2.90 and -3.53 with a constant and -3.17, -3.48 and -4.09 with a constant and a deterministic trend. Critical values for KPSS tests at 10, 5 and 1% levels of significance are respectively, 0.35, 0.46 and 0.74 with a constant and 0.12, 0.15 and 0.22 with a constant and a linear trend.

Note: For the ADF tests, the unit root null is rejected if the value of the ADF t-statistics is less than the critical value. For the KPSS tests, the null of stationarity is rejected if the value of the KPSS statistic is greater than the critical value. *, ** and *** denote statistical significance at 10, 5 and 1% level. The critical values for the ADF tests are from MacKinnon (1991).

Table 4 Unit root test results for domestic and external variables for the Philippines

Variables	Philippines		
	ADF Test		KPSS Test
	t-stats	Model (lag)	KPSS statistic
CI	-4.91***	C(0)	0.114
GDP	-3.46**	C(1)	0.089
BLR	-4.46***	C(4)	0.183
INFLN	-6.09***	C(1)	0.305
EXRATE	-4.25***	C(0)	0.201

Critical values for ADF tests at 10, 5 and 1% levels of significance are respectively, -2.59, -2.90 and -3.53 with a constant and -3.17, -3.48 and -4.09 with a constant and a deterministic trend. Critical values for KPSS tests at 10, 5 and 1% levels of significance are respectively, 0.35, 0.46 and 0.74 with a constant and 0.12, 0.15 and 0.22 with a constant and a linear trend.

Note: For the ADF tests, the unit root null is rejected if the value of the ADF t-statistics is less than the critical value. For the KPSS tests, the null of stationarity is rejected if the value of the KPSS statistic is greater than the critical value. *, ** and *** denote statistical significance at 10, 5 and 1% level. The critical values for the ADF tests are from MacKinnon (1991).

Table 5 Panel unit root test results for domestic and external variables

	(1) Levin, Lin & Chu t*	(2) Im, Pesaran and Shin W-stat	(3) ADF - Fisher Chi-square	(4) PP - Fisher Chi-square	(5) Hadri Z-stat
CI	-8.73605*	-7.70182*	64.6679*	67.6754*	-0.34276
GDP	-4.79482*	-3.89044*	33.0345*	31.6338*	2.59399*
BLR	-5.65184*	-6.38283*	54.9261*	56.6263*	0.82388
INFLN	-6.85059*	-7.44526*	65.7584*	367.072*	0.45985
EXRATE	-8.38121*	-6.74828*	56.4070*	56.9685*	-0.11703
DJIA	-5.54188*	-6.08165*	50.6623*	51.1978*	0.29057

Note: LLC, IPS and ADF and PP-Fisher tests have null hypothesis of the existence of a unit root in any of the series in the panel while Hadri Z-test is similar to KPSS that has a null hypothesis of no unit root in any of the series in the panel. Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. For a group or pool unit root test, the EViews default is to use automatic selection methods: information matrix criterion based for the number of lag difference terms (with automatic selection of the maximum lag to evaluate), and the Andrews or Newey-West method for bandwidth selection. *, ** and *** denote statistical significance at 1, 5 and 10 %.

RESULTS AND DISCUSSIONS

Individual Country Analyses

This section reports the individual test results on Malaysia, Singapore, Indonesia, Thailand, and the Philippines in Tables 6, 7 and 8. The results are robust where similar results are obtained from different analyses. The next five individual sub-sections indicate that different variables maybe more significant for different countries due to differences in country characteristics.

Malaysia

Domestic macroeconomic variables which are statistically significant in affecting financial market performance in Malaysia include exchange rates and interest rates in Table 6. There is positive relation between exchange rate (p-value 0.001) and financial market performance indicating that a rise in the value of domestic currency would promote investors confidence thus escalating the performance of the KLCI.

On the other hand, rising interest rates would cause uncertainty in the market with higher costs of running businesses thus resulting in poorer financial market performance. There is marginal significance for economic growth where expansion in the economy positively affects financial market. The adjusted R-square of 0.416 shows that domestic Model 1 in Table 6 can explain 41.6% of changes in financial market performance in Malaysia. The model is also significant with F-probability of 0.024.

Table 6 Model 1: Domestic individual country results

	Malaysia	Singapore	Indonesia	Thailand	Philippines
GDP	2.011 (0.104)	-0.156 (0.918)	1.561 (0.436)	2.218 (0.045)**	-0.036 (0.991)
BLR	-0.799 (0.004)*	-1.226 (0.036)**	-0.312 (0.763)	-1.018 (0.001)*	-1.174 (0.247)
Inflation	0.008 (0.921)	0.024 (0.709)	-0.089 (0.141)	0.139 (0.001)*	0.262 (0.309)
Ex Rate	-1.830 (0.001)*	-1.828 (0.002)*	-0.886 (0.005)*	-1.097 (0.001)*	-0.899 (0.221)
Constant	-0.049 (0.406)	0.067 (0.678)	-0.009 (0.983)	-0.194 (0.021)**	0.084 (0.807)
Adj R ²	0.416	0.221	0.053	0.358	0.220
F-prob	0.024	0.154	0.327	0.028	0.102

P-values are in parentheses. *, ** and *** denote statistical significance at 1, 5 and 10%.

From the external Model 2 in Table 7, external financial market seems not to have any significant impact on the financial market in Malaysia. However, it is interesting to note that coupled with domestic and external factors of Model 3 in Table 8, the overall analysis, interest rate, exchange rate and external financial market performance are all significant in affecting the domestic financial market. More than 60% of changes in financial market performance are explained by both domestic and external factors. In summary, these variables are drivers of financial market performance in Malaysia: interest rates, exchange rates as well as the world financial market.

Table 7 Model 2: External individual country results

	Malaysia	Singapore	Indonesia	Thailand	Philippines
DJIA	0.605 (0.156)	0.967 (0.054)**	0.665 (0.249)	0.663 (0.389)	1.087 (0.063)***
Constant	0.027 (0.475)	-0.021 (0.645)	0.111 (0.254)	-0.009 (0.943)	-0.031 (0.694)
Adj R ²	0.018	0.195	0.001	0.001	0.107
F-prob	0.261	0.029	0.409	0.389	0.087

P-values are in parentheses. *, ** and *** denote statistical significance at 1, 5 and 10%.

Table 8 Model 3: Domestic and external individual country results

	Malaysia	Singapore	Indonesia	Thailand	Philippines
GDP	1.521 (0.232)	0.629 (0.676)	1.278 (0.549)	2.155 (0.051)**	-1.260 (0.628)
BLR	-0.807 (0.014)**	-1.370 (0.005)*	-0.428 (0.685)	-0.994 (0.001)*	-1.080 (0.274)
Inflation	0.042 (0.499)	0.066 (0.308)	-0.031 (0.665)	0.123 (0.003)*	0.232 (0.314)
Ex Rate	-2.098 (0.001)*	-2.013 (0.001)*	-1.066 (0.007)*	-1.130 (0.001)*	-0.957 (0.131)
DJIA	1.033 (0.001)*	1.086 (0.108)***	0.794 (0.127)	0.344 (0.662)	1.169 (0.015)**
Constant	-0.093 (0.362)	-0.151 (0.552)	-0.025 (0.954)	-0.219 (0.101)***	0.114 (0.678)
Adj R ²	0.608	0.479	0.034	0.326	0.394
F-prob	0.004	0.035	0.387	0.057	0.030

P-values are in parentheses. *, ** and *** denote statistical significance at 1, 5 and 10 %.

Singapore

Domestic results for Singapore in Table 6 show that interest rates and exchange rates are significant drivers of financial market performance in this developed island nation and similar to Malaysia. Interest rate is shown to affect financial market in Singapore negatively where increase in interest rate dampens the financial market performance. Exchange rate on the other hand is directly affecting market performance where strengthening of the domestic currency builds confidence in investors and market.

This domestic Model 1 can only explain 22% of changes in market performance in Singapore, as shown by the adjusted R-squared and there may be other factors which are not exposed here and yet to be studied. This study also confirms that for a developed market as in Singapore, external factor is very significant in affecting the financial market performance in Table 7. U.S. stock market can explain about 20% of changes in the Singapore market performance, one of the major markets in ASEAN. Overall analysis in Table 8 is consistent with individual results where interest rate, exchange rates and external market play significant roles in the domestic financial market.

Indonesia

Indonesia's domestic fundamental findings in Table 6 found exchange rate (p-value 0.005) being the only significant domestic variable that influence the country's stock

market. Economic growth, interest and inflation rates have no significant relation with the domestic financial market. This domestic model can explain very little of the changes in the financial market in Indonesia and there may be other factors which has not been considered here which are driving the market in the country.

It is not surprising that change in world financial market is also not significant in affecting the Indonesia's market as shown in Table 7. This country maybe sheltered from the influence of the world capital flows and is relatively more independent from external influences. The overall model in Table 8 is also not significant confirming that fundamentals investigated in these models do not have significant impact on the Indonesia's financial market compared to other neighboring countries.

Thailand

It is interesting to note that for developing financial market in Thailand, interest rate (p-value 0.001), inflation (p-value 0.001) and exchange (p-value 0.001) rates are very important determinants of its domestic financial market. Inflation rate has positive effect on financial market where higher inflation would cause investors to look for higher return in the stock market to protect against negative real return. In addition, economic growth (p-value 0.045) is also significant in affecting Thailand's financial performance. The variables in the domestic model can explain more than 35% of changes in financial market performance as shown with adjusted R-squared of 0.358. The model is also significant with F-probability of 0.028.

External variable model in Table 7 however shows that world financial market represented by DJIA is not significant in explaining changes in the domestic financial market in Thailand. This also shows that the market in this country is relatively independent from external impacts similar to Indonesia. These results are confirmed by the overall model in Table 8 where economic growth, interest rate, inflation rate and exchange rate are significant in determining domestic financial market.

The Philippines

The Philippines is the only country in this analysis where none of the domestic variables is shown to influence financial market performance significantly in Table 6. On the other hand, the domestic market is significantly influenced by world financial market movements (DJIA p-value 0.063) as shown in Table 7. Changes in DJIA can account for about 10% of changes in the Philippines financial market.

This result is confirmed by the overall findings in Table 8 where domestic interest rate, economic growth, inflation rate and exchange rate are not important determinants of the domestic financial market but DJIA is significant in driving the Philippines' stock performance with adjusted R-squared of 0.394 and F-probability of 0.03.

In summary, the findings show that domestic factors including economic growth, interest, inflation and exchange rates do affect financial market performance of some of these Southeast Asian countries to some extent. The external factor of world financial market performance proxy by DJIA also affects some countries more than others.

Panel Results

This section reports the panel test results for five ASEAN emerging countries as a region as shown in Table 9. The coefficient for economic growth is positive for Model 1 as well as the overall model in Model 3. This is consistent with other studies where improvement in the economy with higher growth rate would stimulate the financial market performance of the country. In addition, interest rate is significantly negatively related to financial market performance where increases in interest rate dampen the stock market of the nations. Domestic interest rates are found to be significant in affecting domestic stock market performance in a negative manner. When interest rates increase, the cost of business would also increase causing a fall in the performance of the stock market.

Table 9 Fixed effects panel results for all five ASEAN countries

	Model 1: Domestic	Model 2: External	Model 3: Fixed effects
GDP	1.514 (0.030)**		1.324 (0.029)**
BLR	-0.790 (0.001)*		-0.864 (0.001)*
Inflation	0.043 (0.277)		0.059 (0.086)***
Ex Rate	-1.364 (0.001)*		-1.515 (0.001)*
DJIA		0.839 (0.001)*	1.004 (0.001)*
Constant	-0.052 (0.538)	0.012 (0.765)	-0.127 (0.106)
Adj R ²	0.313	0.071	0.467
F-prob	0.000	0.035	0.000

P-values are in parentheses. *, ** and *** denote statistical significance at 1, 5 and 10%.

Exchange rate also plays an important role in the financial market performance. This study found that improvement in the value of a country's currency would positively improve the nation's financial market. It is important to note that the

relation is represented by a negative sign due to the measurement of exchange rate as the value of local currency for one unit of U.S. dollar. Therefore, financial market performance would improve with a fall in the value of external currency or an increase in the value of domestic currency. Inflation rate on the other hand is not significant in driving the local financial market as shown in Table 9.

World stock index as represented by DJIA is also positively significant in influencing the domestic financial market performance both in the separate analysis as well as the overall fixed effect panel analysis. This is consistent with both Cheung and Mak (1992) as well as Cheung and Ho (1989) where external stock market affects financial markets of Singapore, Malaysia and the Philippines. This shows that financial markets are truly globalized and that fluctuations in a major market will bring about related effects in the group of emerging markets as analyzed in this study. The explanatory power of the model actually improved with adjusted R-squared increasing from 0.313 to 0.467 in Table 9. Overall, the F- statistics of the models are statistically significant.

In summary, for this region of rapidly developing countries, domestic factors including economic growth and exchange rates play a very important role in affecting the financial market performance positively. Interest rates also significantly drive the overall financial performance in an inverse manner. In addition, external market performance affects the performance of these financial markets significantly.

SUMMARY AND CONCLUSIONS

From the overall perspective, domestic economic growth is shown to be significant in influencing the financial markets of Malaysia and Thailand but not for Singapore, Indonesia and the Philippines. This finding is consistent with Wongbangpo and Sharma (2002), Ramin and Tiong (2000) where growth rate is positively related to stock market performance. Similar to Masayami and Koh (2000), Tang, Habibullah and Puah (2007) also found that Singapore stock market and economic growth do not induce a stable cointegration relationship and they do not have a tendency to move together in the long run. The governments of Malaysia, Thailand, Indonesia and Philippines are consistently focusing to improve the countries' economic development thereby encouraging financial stability, consistent with Beck and Levine (2004) which stated that stock market development is strongly correlated with growth rates of real GDP per capita. Inflation rate is not shown to significantly influence financial market in all countries except Thailand.

Interest rate is significant in some countries including Malaysia, Singapore, and Thailand. Exchange rate is also important for the performance of the financial markets in Malaysia, Singapore, Indonesia and Thailand except the Philippines. As the value of particular country's currency appreciates, that particular country's

currency is relatively stronger against the U.S. dollar. This attracts investments and confidence to invest in the country thus results in more capital inflow. This would directly and indirectly strengthen the financial markets of these countries.

It is also interesting to note that world financial market proxied by DJIA is a significant factor that affects domestic financial market performance in Singapore, Malaysia and the Philippines. This is consistent with Cheung and Mak (1992) who found that DJIA led most of the Asian Pacific stock markets. Singapore financial market is most influenced by the DJIA followed by the Philippines. Any change in the movement of the DJIA would result in similar changes in the performance of these markets in Southeast Asia. Recently when U.S. market is drastically affected by the sub-prime crisis, the rest of the other markets also tumbled. Again this shows that the financial market today is more integrated than what it used to be previously.

This study helps to clarify the openness of some financial markets to internal and external influences where Malaysia and Singapore are more open economies with both domestic and internal fundamentals affecting its financial market performance. The Philippines is one where world market drastically influences its stock market but domestic factors do not play significant roles. Indonesia and Thailand however are less open in their financial markets and only domestic fundamentals significantly drive their financial market and they are less influenced by external factors.

The study also provides investors information concerning the effects of domestic macroeconomic fundamentals on financial market performance of five Southeast Asian countries. In addition, the world financial market influence on these five markets is also investigated and provided robust results with different models. It should provide investors with vital statistics to make rational investment decisions. Further studies might wish to investigate other fundamentals including commodity prices or the current global crisis which may affect domestic stock markets differently in trying times.

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