STOCK MARKET DEVELOPMENT, GROWTH AND FINANCIAL OPENNESS: THE EXPERIENCE OF SELECTED EAST ASIAN NATIONS[*]

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ABSTRACT

The finance-growth nexus that argue on the real effect of finance is examined in this study. Specifically, we investigated two related links; stock market development-growth link and financial openness-stock market development link for six East Asian nations (Indonesia, South Korea, Malaysia, Philippines, Singapore and Thailand) from 1985–2000. Our results support the proposition that stock market development influenced the real sector in all countries except for Indonesia. With respect to financial openness our results are mixed. Only Malaysian stock market shows consistent gain from financial openness. There is no significant influence of financial openness on Singapore's stock market development. For all other countries the effect are mixed varies according to measurements used. Each country's experience is unique and consequences of financial openness are critically influenced by underlying country-specific factors. Thus, the effect of financial openness is not common among these East Asian nations. Further investigations that entertain country-specific factors are necessary prior to conclusive view on the effect of financial openness.

INTRODUCTION

A well-developed financial sector often represents a major characteristic of advanced economies. With established financial sector, country's resources are optimally mobilized, resulting in efficient allocation of funds that benefits real activities. Economists such as Bagehot (1873) and Schumpeter (1912) have long mentioned this finance-real link. Gurley and Shaw (1955), Goldsmith (1969), McKinnon (1973), and Shaw (1973) are among earlier modern proponents that suggest finance matters for growth. Financial repression policies (excessive ruling on financial activities) are anti-growth as it prohibits financial advancement. However, this leading role assigned to finance is not unanimous. Lucas (1988) believes that the role of financial sector is *"over stress"* in understanding real growth. Miller (1998, p. 14) notes *"that financial markets contribute to economic growth is a proposition almost too obvious for serious discussion*." We examine this finance-real link within the East Asian economies with specific reference to the stock market.

We shed additional lights on this issue by examining the real contributions of the stock markets in six East Asian nations; Indonesia, South Korea, Malaysia, Philippines, Singapore, and Thailand. Existing models that support the real effect of stock market largely rely on the ability of financial market in alleviating imperfections and enhancing incentives for good behaviors and governance. Thus, real contribution of stock market activities (if any) is potentially greater and more significant within markets that are at their early stage such as the East Asians', where the degree of imperfections and lack of incentives are expected to be greater. Gauging this finance-real link among nations of East Asian would be a good case along this line of arguments. In addition, we also examine the effect of financial openness, a common policy among East Asian nations, on the development of stock market. Rajan and Zingales (2003) argue that financial development is significantly tied to the openness of financial sector. The fact that the 1997–1998 East Asian financial crisis occurs within countries that promote higher degree of financial openness posed a dilemma on this proposition. Our findings generally support the view that stock market activities promote growth in all countries except for Indonesia. The finance-growth link is supported for East Asian countries. Nevertheless, with respect to financial openness favorable effect on stock market development is only consistently true for Malaysia. Characterizations of country-specific effect show that the experience of these East Asian nations is not common to all. Singapore's stock market development is not critically influenced by financial openness. While for other nations the result are mixed depending on measurements used. It is very likely that the effects of financial openness on stock market development are critically influenced by other underlying country-specific factors. Further detail studies examining these qualifying factors are

therefore necessary prior to any conclusive views on the effect of financial openness.

The following are discussed as follows. Section 2 provides brief theoretical and empirical illustrations on relationship between stock market development, growth and financial openness. In section 3 the data sets and the panel data technique that we employ are discussed. Section 4 provides the discussion of our results. We summarize and conclude in Section 5.

STOCK MARKET, GROWTH AND FINANCIAL OPENNESS

Theoretical explanations have been forwarded to link market-based activities such as the stock market with the real sector.[1] Levine (1991) and Bencievenga, Smith, and Starr (1996) assign a special role for stock market in enhancing liquidity without which investments will be restricted to low risk-short maturity projects. Trading facilities offered by stock markets, where shares are bought and sold at competitive prices, permit premature liquidation of financial assets that channels more resources into longer term investments that promote growth. Well functioning market that offers profitable trading activities promote research activities on firms and increase the speed of information flow that are critical in allocation of scarce resources (Holmstrom & Tirole, 1993; Boot & Thakor, 1997). Treat of takeovers promote application of good governance and effective decisions that lead to greater efficiency among existing firms (Jensen & Murphy, 1990). Overall, theoretical propositions on the developmental aspects of stock market activities largely rely on its ability to remove obstacles that restrict resource mobilization and promotion of effective conduct and governance.

Empirical investigations on the real contributions of the stock market are mixed. Atje and Jovanic (1993) show that trading value of stock markets across 40 countries carries significant correlation with economic growth. Levine and Zervos (1998) propose an independent role for the stock market in influencing long term growth. Enhanced liquidity offered by stock market is found to be a robust predictor of real per capita gross domestic product (GDP), capital and productivity growth. The state of stock market development in the beginning of the sample period is shown to be a good predictor of future growth. Nevertheless, other measures of stock market development (size and international integration) are not link to these real performances. In a micro framework, Rajan and Zingales

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[1] Theoretical models supporting real role for banks are numerous. Among them are Diamond (1984), Boyd and Prescott (1986), Allen and Gale (1997), Greenwood and Jovanic (1990), Bencivenga and Smith (1991), Japelli and Pagano (1993) and Rajan and Zingales (1998).

(1998) find that industries that heavily rely on external financing perform better if they operate in an economy with well-developed financial sector (banks and stock markets).

Supporting findings cited above are mostly derived from pure cross-countries based studies. Scepticism on evidence based on pure cross-country evidence are highlighted by Quah (1993), Evan (1995), and Lee, Pesaran, and Smith (1995). Cross-country based analysis is challenged on the ground of heterogeneity of sample countries and possibility of simultaneous bias due to endogeneity of variables investigated. In addition, as noted by Levine and Zervos (1993), reliance on cross-countries analysis preclude significant conclusion on the causation pattern between finance and growth. Applying time series techniques, Arestis and Demetriades (1997) demonstrate that the effect of stock market is vague. For the case of Germany, stock market capitalization effect on output is indirect, i.e. through the banking system. The effect is rejected for the United States, instead it is argued that the causation is reversed running from output to financial sector. Harris (1997) shows that the real effect of stock market are overstated due to the presence of endogeneity within cross-country analysis. The findings of Kamat and Kamat (2007) suggest that stock market is more likely to promote economic growth in the presence of certain conditions, for examples, liberalization and openness of the investment policies, improvement in the size of the market and the deregulation of the stock market in line with the overall macroeconomic stability. Expanding the sample to five developed nations, Arestis, Demetriades, and Luintel (2001) argue that existing evidence that support real contribution of stock market are exaggerated. Compared to the banking variables, stock market contribution is very minimal and for the United Kingdom and United States there is no significant causation that can be traced from stock market activities to growth. The authors note on the exclusion of less-developed economies in their sample. Thus, to the extent that real contributions of stock market are derived from the presence of imperfections that are more likely to appear in developing market, examining the stock market-growth link among developing East Asian would be appropriate. Instead of adopting extreme position (cross-country versus time series) we mediate between the two by employing a panel data analysis that incorporates both, cross-country and time dimensions. This will be explained in the next section.

In addition to the finance-growth link, we also examine the implication of financial openness, a common policy among East Asian nations, on stock market development. Financial openness, as argued in several studies, forms a major force that stimulates financial development. Rajan and Zingales (2003) postulate a private interest group theory as possible explanation to the variations in the level of financial development across countries traced from 1913 to 1999. Financial openness (high cross-border capital mobility) is shown to be a

preconditioned for financial development to take place within period of high trade openness such as those in 1913 and late 1990s periods.[2] In a comprehensive study covering over 95 countries, Bekaert, Harvey, and Lunblad (2005) favor the pro-growth effect of financial liberalization. Equity market liberalization not only reduces constraints for external finance by increasing the availability of fund but also through its effect on better corporate governance insisted by foreign players. Koo and Maeng (2005) show that financial liberalization (deregulation and openness) within the South Korean economy benefits small and non-chaebol firms. With greater openness investments are less constraint by internal cash flows due to the increasing availability of external funds.

In contrast, several views financial liberalizations and openness exert a reverse effect. With respect to the 1997–1998 East Asian crisis, Kaminsky and Reinhart (1999) and Hickson and Turner (1999) argue that the changing role of bank brought by liberalization and globalization adversely affect financial stability. Banking firms in the affected countries are enticed into riskier activities following greater liberalizations. Allen (2001) argues that the rush toward financial liberalization in the East Asian leads to debt-funded asset bubbles. Bursting bubbles adversely affect the banking sector (via borrowers default) and in turns the real sector.

In a recent study, Fratzscher and Bussiere (2008) investigated the financial liberalization-growth nexus for 45 industrialized and emerging market economies from a new perspective, i.e. taking into consideration the existence of a time-varying relationship between financial openness and economic growth over time. In particular, their findings provide strong evidence that countries experience a *short-run gain* at the expense of *medium-to long-run pain* from their capital account liberalization. The short-term gains are often driven by rapid growth of both investment and inflows of portfolio and debt. However, in the medium to long-run, these gains become detrimental to the economic growth. While many previous studies analyze the finance-growth link, the implications of financial openness on the stock market are not directly investigated. Evidence of the influence of financial openness on the stock market development remains

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[2] Rajan and Zingales (2003) also argue that structural/institutional variables (e.g. legal origin) as proposed by La-Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998) matter for financial development but for a different indirect reason. Legal environment (such as Civil Law) enables large incumbents to influence policies of their interests in favor of financial repression. Thus, consistent with La Porta et al., it is shown that financial development in Civil Law countries are generally less developed compared to those of Common Law. See Levine (2002) and Demiguc-Kunt and Maksimovic (2002) for empirical evidence on the law-finance views.

insufficient. We fill up this gap by examining this link for the Southeast Asian nations.[3]

DATA SETS AND METHOD OF ANALYSIS

Data sets employed in this study are gathered from two main sources. The Asian Development Bank (ADB) compiles a comprehensive database for Asian countries under its Asia Region Information Centre (ARIC) that traces various dimensions of economic performances of the Asian countries since 1990. In addition to ARIC's database, various other sites of ADB's web provide comprehensive and longer dated data series for all of its other developing member countries (DMCs). Indicators of stock market development are retrieved from Database on Financial Development and Structure (www.worldbank.org/research/projects/finstructure/database.htm). Our data sets span over a 16-year period (1985–2000) for six East Asian countries, i.e. Indonesia, South Korea, Malaysia, Philippines, Singapore and Thailand. Appendix 1 provide additional details of the data sets. Singapore represents the benchmark country for the analysis. Table 1 provides descriptive measures of these data sets.

Economic performance is measured by the real GDP (RGDP) growth and real per capita GDP (RPGDP) growth. The East Asian remarkable achievement prior to the 1997–1998 crisis is witnessed by its high RGDP growth recorded for each of its economies, averaging at 7.2% annually from 1990 to 1997. As shown in Table 1 (Panel A), this persistent high growth rates, achieved within a relatively stable inflation environment of an average rate of 5.9% yearly are accompanied by sound fiscal spending and monetary expansion.[4] Region's average fiscal balance is in a surplus of about 2.% of its GDP, signaling no concern of budget-run type crisis of the first generation crisis model (Krugman, 1979; Flood & Garber, 1984)[5]. This is further supported by steady monetary environment, with M2-money growing at a rate of 18.8% per annum, matching its growing real transaction needs. In all, these standings deserve the region the "miracle" status.

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[3] Our literature shows limited finance-growth studies have been conducted for the emerging East Asian economies. Among those that provide explicit treatment are Murinde and Eng (1994: Singapore), Choe and Moosa (1999: South Korea), Wang (1999: Taiwan), Fase and Abma (2003: selected Asian countries). Our study sourced new evidence from major Asean nations.

[4] Despite being larger than average rate recorded for the second half of eighties (4%), this rate is still considered low compared to other Developing Member Countries (DMCs) of ADB. Average inflation rate for DMCs over the nineties is approximately 12% annually.

[5]   Singapore's fiscal position ranks highest with average surplus of 12.5% during the nineties. Excluding Singapore, average fiscal balance for crisis-affected countries is 0.3%. Region's fiscal position still remains within sound range even with the exclusion of Singapore.

Table 1 (not supplied by author)

Financial openness is measured in two classifications; portfolio capital flows (PORTFOLIO) and foreign direct investments (FDIs). Both are measured relative to GDP. Portfolio flows are direct measures of stock market openness. It is expected to have direct influence on stock market development. The FDIs represent a major block of foreign funds that enter into East Asian real sectors. The contribution of FDIs to the real sector is widely accepted. In addition, the presence of FDIs in a particular economy is argued to exert good governance and managerial skills that could in the end influence stock market development. The level and fluctuations of portfolio investments and foreign direct investments are subject to different influencing factors. Their characters are different, with FDIs representing longer term financial flows and generally less volatile as compared to portfolio investments.

A significant and common policy track of these East Asian nations in entering the nineties is the embarkation of financial openness and liberalization policies beginning since mid-1980s. In 1996, it is estimated that the six nations as a whole attracts US$67,536 million of net private capital flows, representing nearly 48% of the amount received by DMCs of the ADB. Panel B of Table 1 provides the descriptive picture of East Asian's financial openness. The amount of net private capital flowing to East Asian nations amount to approximately 47% of total private capital flowing into DMCs. In term of nation's output, net private capital flows totaled to nearly 5% of GDP. For comparison we specify the net absolute amount of these financial flows relative to GDP in multiples of the average amount recorded from 1985 to 1989, such that increasing openness is

indicated by larger multiples. Improvement in FDIs is insignificant. From 1990–1997, average FDIs-GDP ratio is 1.1 times greater than what it was by end of 1980s. Average portfolio investments relative to GDP increased by 3.9 times of the average amount recorded from 1985 to 1989. This largely surpasses average increase in FDI by nearly four times. Marked increased are recorded in 1993 and 1997 where share prices within the region reached their peaks (1993) and crisis-driven capital pull out took place (1997), respectively.

In order to get a picture of the linkages between stock market development and economic growth, we employ two stock market indicators. The first indicator measures the size of the stock market relative to the GDP, labeled (CAPGDP). It is the ratio of stock market capitalization to GDP. The second measure proxies for the activity or liquidity of the stock market, which is defined as total share value traded relative to GDP (VATGDP). This indicator measures trading volume relative to the size of the economy and should therefore reflects the overall liquidity in the economy. Both the stock market development indicators are expected to be good predictors of economic growth. Panel C of Table 1 presents the summary statistics for the two stock market development indicators. East Asian's significant growth in the size of its stock market is shown by the CAPGDP indicator which recorded a threefold increase from an average ratio of 0.3 over the 1985–1989 period to an average ratio of 0.9 over the 1990–1997 period. Similarly, the stock market liquidity measure, VATGDP reveals that in the years 1985–1989, East Asian member countries' share value traded to GDP averaged 0.1 and this ratio has increased to 0.5 over the 1990–1997 period.

In addition to the above three measures, a set of variables is used in the empirical estimations as control vectors. This captures country-specific structure and macro variables that includes; annual population growth, unemployment rate, contribution of agriculture sector to country's GDP, fiscal balance relative to GDP, annual inflation rate, annual M2-money growth and trade-GDP ratio.

Our empirical analysis is based on panel data fixed effect model (FEM) that incorporates the preceding balanced annual data series of East Asian. We established evidence for stock market-growth and financial openness-stock market links in these countries. This is performed by estimating the following equation:

$$\text{OUTPUT}_{jt} = a + bX_{jt} + d\text{DINT}_{jt} + e\text{STOCKDEV}_{jt} + e_{jt} \qquad (1)$$

$$\text{STOCKDEV}_{jt} = a + bX_{jt} + d\text{DINT}_{jt} + e\text{OPENNESS}_{jt} + e_{jt} \qquad (2)$$

Equations (1) and (2) are for stock market-growth and financial openness-stock market development links, respectively. X_{jt} is the structure-macro control vectors for country j at year t. In controlling for other factors that

associate with dependent variables, we include a set of control variables that comprise of measures of structural and macroeconomic variables described earlier. For Equation (1), the coefficient for STOCKDEV, e, i.e. the slope coefficient, provides the direct influence of stock market development on output growth for the benchmark country, Singapore. The interactive dummies ($DINT_{jt}$) is define as the product of country dummy (DC_j) and stock market development ($STOCKDEV_{jt}$) and the estimated coefficient (d) measures the slope differential that characterizes country specific experience. The sum of benchmark country's slope coefficient (e) and coefficient of interactive dummies (d) (slope differential) measures unique slope coefficient for each of the nations investigated. The direction and degree of influence of stock market development on output growth in each country is dictated by the sum of slope and interactive dummy coefficient (e + d). Equation 2 is can be interpreted similarly for the case financial openness-stock market link.

EMPIRICAL RESULTS AND DISCUSSIONS

Estimations of Equations (1) and (2) provide direct influence of stock market development on growth and financial openness on stock market development, respectively. In addition to the case for the benchmark country (Singapore) that is represented by the slope coefficient, the estimated regressions also generate additional insights into the experience of each of the individual countries examined as reflected by the slope differentials.

Tables 2 and 3 show the estimations for the case of stock market-growth link. As shown by the slope coefficients in Tables 2 and 3, stock market development contributes significantly to output growth in Singapore. This is true regardless of measures used in the estimations. All of the slope coefficients are significantly greater than zero at 5% level. Thus, stock-market growth link are supported for Singapore. Nevertheless, this significant contribution is not common for all nations and varies according to the measurements used. This is shown by the sum of slope coefficients (e) and slope differentials (d) for each country. When stock market development is measured by its size (CAPGDP), significant positive influence on output growth remains true for Malaysia, South Korea and Thailand where all of the sum coefficients are significantly greater than zero at 5% level. The effect is largest for Thailand followed by South Korea and Malaysia. However when market activity (VATGDP) measures stock market development, significant (5% level) positive effect remain true for South Korea. Malaysia and Philippines depicts only 10% level. Overall, the proposition that suggest stock market matters for real growth can be supported for all countries except Indonesia.

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Table 2
East Asian Stock Market Development (CAPGDP) and Real Output Growth

Variable	A. Dependent: RGDP		B. Dependent: RPGDP	
	Coeff	T-Stat	Coeff.	T-Stat
Constant	–2.966	–0.506	–4.380	–0.779
Population Growth	0.532	0.788	0.037	0.056
Unemployment	–0.736	–2.013[**]	–0.706	–1.848[*]
Agricultural Sector	0.556	1.933[*]	0.551	1.926[*]
Government Expenditure	–0.015	–0.063	0.088	0.370
Inflation	–0.436	–5.305[**]	–0.453	–5.972[**]
M2 Money Growth	0.085	0.8560	0.086	0.947
Trade	1.432	0.432	–0.172	–0.057
Interactive Dummy (Indonesia)	1.987	0.270	–0.727	–0.099
Interactive Dummy (Malaysia)	–3.889	–1.634[*]	–5.318	–2.162[**]
Interactive Dummy (Philippines)	–2.095	–0.737	–4.563	–1.468
Interactive Dummy (South Korea)	16.822	1.884[*]	15.049	1.790[*]
Interactive Dummy (Thailand)	1.308	0.433	0.018	0.006
CAPGDP	5.379	1.982[**]	6.890	2.515[**]
Adjusted R Square		0.432		0.456
Net Direct Effect of CAPGDP:				
Indonesia	7.366	0.960	6.164	0.815
Malaysia	1.490	2.141[**]	1.572	2.508[**]
Philippines	3.284	1.312	2.328	0.876
South Korea	22.201	2.759[**]	21.940	2.867[**]
Thailand	6.687	2.762[**]	6.908	3.011[**]
Average	8.206		7.782	
Null: All interactive dummies are zero				
Chi-Squared (5)		13.125[**]		14.763[**]

Notes:
1. The above are panel regression estimates for Equation 2 with Real Output Growth (4 indicators) as dependent variables.
2. Single asterisk (*) indicates significance at 10 percent level and double asterisk (**) indicates significance at 5 percent level.
3. All estimates are Newey-West heteroskedastic-autocorrelation consistent (HAC).
4. OUTPUT: Growth of real output measures (Real Gross Domestic Products (RGDP) and Real Percapita GDP (RPGDP). STOCK MARKET DEVELOPMENT: Stock Market Capitalization to GDP (CAPGDP). See Appendix 1 for details of other regression variables.

Table 3
East Asian Stock Market Development (VATGDP) and Real Output Growth

Variable	A. Dependent: RGDP		B. Dependent: RPGDP	
	Coeff	T-Stat	Coeff.	T-Stat
Constant	6.045	1.591	4.097	1.0723
Population Growth	1.076	1.100	0.797	1.025
Unemployment	–0.901	–2.143[**]	–0.965	–2.398[**]
Agricultural Sector	0.165	0.740	0.117	0.534
Government Expenditure	0.011	0.056	0.187	0.865
Inflation	–0.386	–4.284[**]	–0.391	–4.719[**]
M2 Money Growth	0.064	0.621	0.058	0.604
Trade	–1.099	–0.479	–3.139	–1.575
Interactive Dummy (Indonesia)	–11.124	–0.761	–14.553	–0.989
Interactive Dummy (Malaysia)	–4.197	–1.631[*]	–7.190	–2.888[**]
Interactive Dummy (Philippines)	4.733	0.842	3.295	0.524
Interactive Dummy (South Korea)	–1.813	–0.564	–4.976	–1.643[*]
Interactive Dummy (Thailand)	–4.202	–1.489	–6.584	–2.436[**]
VATGDP	5.430	2.033[**]	8.375	3.488[**]
Adjusted R Square		0.377		0.421
Net Direct Effect of VATGDP:				
Indonesia	–5.694	–0.367	–6.178	–0.399
Malaysia	1.233	1.658[*]	1.185	1.738[*]
Philippines	10.163	1.733[*]	11.670	1.875[*]
South Korea	3.617	2.347[**]	3.400	2.250[**]
Thailand	1.228	0.453	1.791	0.667
Average	2.109		2.374	
Null: All interactive dummies are zero				
Chi-Squared (5)		6.509		12.815[**]

Notes:

1. The above are panel regression estimates for Equation (2) with Real Output Growth (4 indicators) as dependent variables.

2. Single asterisk (*) indicates significance at 10 percent level and double asterisk (**) indicates significance at 5% level.

3. All estimates are Newey-West heteroskedastic-autocorrelation consistent (HAC).

4. OUTPUT: Growth of real output measures (Real Gross Domestic Products (RGDP); Real Percapita GDP (RPGDP). STOCK MARKET DEVELOPMENT: Stock Market Total Value Traded to GDP (VATGDP). See Appendix 1 for details of other regression variables.

Tables 4 and 5 present findings that link financial openness and stock market development. Regardless of the measures employed (PORTFOLIO or FDI), financial openness is not a significant factor that contribute toward stock market development in Singapore. All of the slope coefficients for benchmark country (Singapore) in Tables 4 and 5 are not significantly different than zero. On the other hand, country-specific experiences across East Asian are different. Higher degree of portfolio flows contributes significantly for Malaysia's stock market development in term of size (CAPGDP) as well as activity (CAPGDP). Portfolio flows also affected Thailand's share market capitalization. All of the other countries are not affected by increasing portfolio flows. The influence of

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Table 4

Relationship between Stock Market Development and Financial Openness (PORTFOLIO)

	A. Dependent: CAPGDP		**B. Dependent: VATGDP**	
Variable	Coeff	T-Stat	Coeff.	T-Stat
Constant	0.008	0.024	0.780	2.964**
Population Growth	0.016	0.224	–0.100	–1.939*
Unemployment	–0.006	–0.241	0.035	1.345
Agriculture Sector	0.026	1.394	–0.012	–0.876
Government Expenditure	–0.020	–1.640	–0.023	–1.403
Inflation	–0.007	–1.353	–0.002	–0.510
M2 Money Growth	–0.001	–0.143	–0.005	–0.994
Trade	0.637	3.401**	0.202	1.512
Interactive Dummy (Indonesia)	–8.258	–0.941	2.753	0.306
Interactive Dummy (Malaysia)	14.670	4.811**	14.231	8.912**
Interactive Dummy (Philippines)	–0.032	–0.011	–1.196	–0.766
Interactive Dummy (South Korea)	10.186	1.351	19.298	1.463
Interactive Dummy (Thailand)	10.192	1.790	4.747	0.953
PORTFOLIO	0.848	0.329	1.389	1.139
Net Direct Effect of PORTFOLIO:				
Indonesia	–7.409	–0.882	4.142	0.459
Malaysia	15.518	5.706**	15.620	13.445**
Philippines	0.816	0.427	0.193	0.156
South Korea	11.035	1.609	20.687	1.560
Thailand	11.040	2.083**	6.136	1.228
Adjusted R Square	0.711	0.539		
Null: All interactive dummies are zero Chi-Squared (5)	35.194**	127.353**		

Notes:

1. The above are panel data regression estimates with Financial Development (three indicators) as dependent variables.

2. Single asterisk (*) indicates significant at 10% level and double asterisks (**) indicate significant at 5% level.

3. All estimates are Newey-West heteroskedasticity-autocorrelation consistent (HAC).

4. Financial Development: Stock Market Capitalization to GDP (CAPGDP) ; Stock Market Total Value Traded to GDP (VATGDP).

Table 5

Relationship between Stock Market Development And Financial Openness (FDI)

	A. Dependent: CAPGDP		B. Dependent: VATGDP	
Variable	1.006	3.871**	0.928	3.445**
Constant	–0.074	–1.186	–0.086	–1.656*
Population Growth	–0.041	–1.580	–0.012	–0.452
Unemployment	0.013	0.971	0.017	1.219
Agriculture Sector	–0.055	–3.431**	–0.061	–3.768**
Govt. Expenditure	–0.009	–1.985**	–0.004	–0.920
Inflation	0.001	0.309	–0.0003	–0.070
M2 Money Growth	0.716	4.909**	0.440	2.977**
Trade	–7.959	–1.416	–6.003	–1.252
Interactive Dummy (Indonesia)	24.063	6.715**	14.741	3.971**
Interactive Dummy (Malaysia)	27.606	2.044**	5.959	0.594
Interactive Dummy (Philippines)	32.963	1.923*	174.284	30.427**
Interactive Dummy (South Korea)	–1.870	–0.595	–0.292	–0.119
Interactive Dummy (Thailand)	–3.518	–1.294	0.713	0.318
FDI				
Net Direct Effect of FDI:	–11.477	–2.143**	–5.290	–1.027
Indonesia	20.545	4.990**	15.454	3.131**
Malaysia	24.088	1.844*	6.672	0.673
Philippines	29.445	1.765*	174.997	5.821**
South Korea	–5.388	–2.371**	0.420	0.211
Thailand	0.806	0.590		
Adjusted R Square	60.770**	59.204**		
Null: All interactive dummies are zero Chi-Squared (5)				

Notes:

1. The above are panel data regression estimates with Financial Development (three indicators) as dependent variables.
2. Single asterisk (*) indicates significant at 10% level and double asterisks (**) indicate significant at 5% level.
   3. All estimates are Newey-West heteroskedasticity-autocorrelation consistent (HAC).
4. Financial Development: Stock Market Capitalization to GDP (CAPGDP) ; Stock Market Total Value Traded to GDP (VATGDP).

FDI on stock market development also varies across countries. In term of stock market size, three countries (Malaysia, South Korea, and Philippines) gain from increasing FDI. The positive effect is significant at 5% for Malaysia and 10% for South Korea and Philippines. The effect of FDI however turns significantly negative for Indonesia and Thailand. Sum of slope coefficients and slope differential are both negative at 5% level. In term of market activity, both Malaysia and South Korea are affected positively at 5% level. Thus, overall, among the six countries, financial openness always benefits Malaysian stock market development. These differences in term of country-specific experiences highlight a major view with respect to financial openness. The view that financial openness is precondition for stock market development and will always be net

gain should be accepted with caution. The findings of the study imply that gain from financial openness is not unambiguous but possibly condition upon several other underlying country-specific factors.[6] Generalization of the effect must therefore be country specific. Policies encouraging higher degree of financial openness do not necessarily translate into adverse consequences either. The final outcome of financial openness is not as straight forward and more need to be studied on the *'how-to'* aspect of it.

CONCLUSIONS AND IMPLICATIONS

The finance-growth nexus suggests that finance exerts real effect and financial development is a critical part of economic development. We examine this proposition with respect to the link between stock market and economic growth in six East Asian nations. As explain by theoretical models, real gain from stock market development is mainly generated from its ability in alleviating imperfections and promoting effective decisions and good governance. Thus, examination based on East Asian stock markets that are mostly at their early stage of development brings additional evidence on the issue. In addition, we also investigate the effect of financial openness, a common policy adopted by these countries, on stock market development.

We perform panel analysis on six countries of East Asia (Indonesia, South Korea, Malaysia, Philippines, Singapore, and Thailand) over a 16-year period (1985–2000). Our goal is to establish firm link between stock market development and growth, and financial openness and stock market development. Our results are in favor of the first proposition that links stock market activity to the real sector. Except for Indonesia, larger and active stock market positively influenced economic performance of all other East Asian nations examined in the study. Nevertheless, the effect of financial openness is rather mixed. Only Malaysian stock market consistently gain from increasing financial openness. There is no significant link traced for Singapore stock market. The effect in all other countries varies according to measures used in the estimations. Thus, the ultimate effect of financial openness on stock markets is critically influenced by other qualifying country-specific factors. Evaluating the effect of increasing financial openness requires greater attention to these country specific-factors.

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[6] This is in line with existing extensions of research on finance-growth nexus that explore on pre-conditions for finance-lead growth. Potential underlying factors that are currently examined include legal framework, economic freedom, corporate governance, macro-economic status, culture and openness. See for example Rajan and Zingales (2003), Stultz and Williamson (2003), Hung (2003), and Beck, Demirguc-Kunt, and Levine (2003). The experience of Singapore that able to insulate itself from the crisis despite being the most open nation in the sample set implies the importance of country-specific underlying factors (see also footnote 26).

Consequences of financial openness are not unambiguous and further detail studies are call for prior to commonly accepted consensus.

APPENDIX 1: DATA SETS

Countries (6): Indonesia, South Korea, Malaysia, Philippines, Singapore, Thailand.

Source of data:

1. Asia Development Bank (ADB)-Asia Recovery Information Centre (ARIC): http://aric.adb.org/
2. Asia Development Bank (ADB)-Asia Development Outlook (ADO) various issues: http://www.adb.org/documents/
3. Database on Financial Development and Structure (http://www.worldbank.org/research/projects/finstructure/database.htm).

Period/Frequency: Annual Data (16 years, 1985–2000)

Data Description:

No.	Category	Definitions	Source
1.	Output	Real gross domestic products (RGDP)	ADB
		Real per capita GDP (RPGDP)	ADB
2.	Financial openness	Foreign direct investments/GDP (FDI)	ADB
		Portfolio investment/GDP (PORTFOLIO)	ADB
3.	Stock market development	Stock market capitalization/GDP (CAPGDP)	Levine
		Stock market total value traded/GDP (VATGDP)	Levine
4.	Control variables	Population growth (POP)	ADB
		Agriculture sector % to GDP (AGRI)	ADB
		Unemployment rate (UNEMP)	ADB
		Government finance % GDP (GOV)	ADB
		Consumer prices (INF)	ADB
		M2 money (M2)	ADB
		Exports (EXP) and imports (IMP) [TRADE= (EXP + IMP)/GDP]	ADB

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