FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN ASIA

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ABSTRACT

Title of Thesis	FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN ASIA
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This study has the propose to investigate the relationship between financial development and economic growth of overall countries in Asia, using the financial development indicators such as banking development indicators, stock market development indicators and economic growth taken as a panel data of all 48 countries in Asia that cover the period of 1975-2015. The study also proceeds the country-specific effects by applying panel data fixed effects methods, performing the causality test using panel var causality and apply the Generalized Method of Moments (GMM), following the literature the instrumental variable (IV) is included which showed the efficiency of financial development impact on economic growth. The empirical results indicate that stock market capitalization has several causal effects on economic growth. Furthermore, Asian economies with well-developed stock markets tended to grow faster than those without well-developed stock markets. Moreover, economies with large stock market capitalization are inclined to experience strong economic growth. However, there was no significant evidence to support that banking sector development indicators can boost economic growth in Asia.

Keywords: Financial development, Stock market, Economic growth, Panel data, Asia.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Economic growth is recognized as an important factor for countries should has attention which has been attributed the human and capital accumulation for increasing in productivity from technological innovation development. In recent years financial sector is considered as the one of important sector for country development. As the financial development is the main accumulation of providing capital to the economy which conducted the theoretical which is the main role that the finance sector's development able to promote growth of countries has been consider by attention over the past half century. The indicators which estimate about financial size have grown up enormously over a decade. Researchers have investigated relationship between the financial development and economic growth by diversity related which they would like to examine for forecasting the connection between finance sector's development and growth of countries depended on the notion which indicate it can improve in saving mobilization by increasing the saving rate which leads to higher capital accumulation and arising growth rate of economy.

The primary role of the financial development associate with growth rate of country was considerate caution firstly is Gurley and Shaw (1955) who investigated in point of financial development and economic growth showed that improvement in financial sector able to promotes growth by increasing in saving rate which relate to arising in physical capital accumulation. In addition, McKinnon (1973) who supported that well developed financial system is key to economic growth importantly by increasing productivity. Following by Shaw (1973) who argued that financial development in the early stage which is stock market development highly cost developing, such an interest was mute of these. Since the study this topic become less interesting till King and Levine (1993) showed that stock market development tends

to be related with importantly variables to growth of economy such as private investment like helping for saving mobilization and even enhancing the saving rate, decreasing in investment risks by risk diversification in trading of securities. In recent year, financial sector has been the important key of growth of economy in long-term, the panel data econometrics applied (Cournède, 2015). In addition, Ngare et al. (2014) showed that stock market development impact on growth rate in the way of enhancing investment with a positive relationship, the sample in Africa. However, to ensure financial development correlated with growth of country and it has been confirmed by implying a positive and statistically significant effect by a META-Analysis (Valickova, Havranek, & Horvath, 2015). Therefore, we can see how finance sector impact on growth which it stills important likely source of capital accumulation associate with growth.

The foremost part of financial development and economic growth in Asia is the shock circumstance at the past less attention in financial development led to Asian financial crisis, the Asian financial crisis wasted the large costs in potentially of finance sector as also negative effect on economic growth (Estrada, Park, & Ramayandi, 2010). The point of view, Asian financial markets are not weakness and strongest financial system because there are only few countries that make financial development outstanding in Asia and many countries like developing countries most of them are unable to take a good performance in financial development. Many countries in Asia can perform their financial development in other level with a stock market, in opposite there are some countries unable concentrate to develop in stock market sector. Base on list of Asian countries, there are 48 countries in total divided by continent, beside that from 1975 to 2015 there are stock markets appeared in 41 countries in Asia which the rest of 8 countries do not have stock market. Furthermore, It is not all countries that have stock market will have the stock market development in the developed level, in most countries the stock market size (stock market capitalization) almost does not exit and it's close to zero (World bank), Thus based on World bank database which is the main database for this paper those countries that have stock market but their data cannot access these countries will be conducted in low level development in stock market sector namely, Azerbaijan, Bhutan, Iraq, Uzbekistan, Cambodia, Lao PDR, Maldives and Myanmar. Many studies in scope of

Asia still do not have any paper examine finance and growth by include countries without stock market which in Ngare et al. (2014) supported that including countries do not have a stock market able to investigate the correlation of finance and growth more clearly.

A list of Asian countries based on WDI database by geographically continent, expand with the ability to access in the data of countries depended on World bank database. Thus, we can list countries which there are 48 countries, consisting of 32 countries with the well-developed stock markets, 16 countries without the well-developed stock market[1] consisting of 8 with low level stock market development and 8 without stock market (see Table 1.1)[2]. Stock market development indicators are available for only the 32 economies with well-developed stock markets. Hence, a dummy variable is applied to represent the indicators for economies without well-developed stock markets which should not be disregard in purpose of this paper the seek the difference effect on growth.

Table 1.1 List of Asian Countries

Economies with well-developed stock market	**Economies without well-developed stock markets**	
List of countries	Low level of stock market development	No stock market
Armenia, Bahrain, Bangladesh, China, Cyprus, Georgia, Hong Kong, India, Indonesia, Iran, Israel, Japan, Jordan, Kazakhstan, Korea Rep, Kuwait, Kyrgyz, Lebanon, Malaysia, Mongolia, Nepal, Oman, Pakistan, Philippines, Qatar, Russia, Saudi Arabia, Singapore, Sri Lanka, Thailand, UAE, Vietnam	Azerbaijan, Bhutan, Cambodia, Iraq, Lao PDR, Maldives, Myanmar, Uzbekistan	Afghanistan, Brunei, Macao, Syrian Arab Republic, Tajikistan, Timor-Leste, Turkmenistan, Yemen

Source: The WDI database.

[1] Economies with low level of stock market development are defined as those in which the markets had been set up for less than 10 years or where market capitalization was too small compared to GDP to have a significant macroeconomic effect.

[2] Hong Kong and Macao are included, which are special administrative regions of China. Both economies have their own currencies and macroeconomic management. The WDI database does not include Taiwan.

When we considered the evolution of stock market development in Asia which 32 countries has include of well-developed in stock market. See Figure1.1 below shows the average market capitalization in Asia in period of 1975-2015, which in this period the highest average stock market capitalization was found in Hong Kong, followed by Singapore and Malaysia, indicating that within a 40-year period many economies developed stock markets and results they can perform the size of stock market over 100 percentage to GDP.

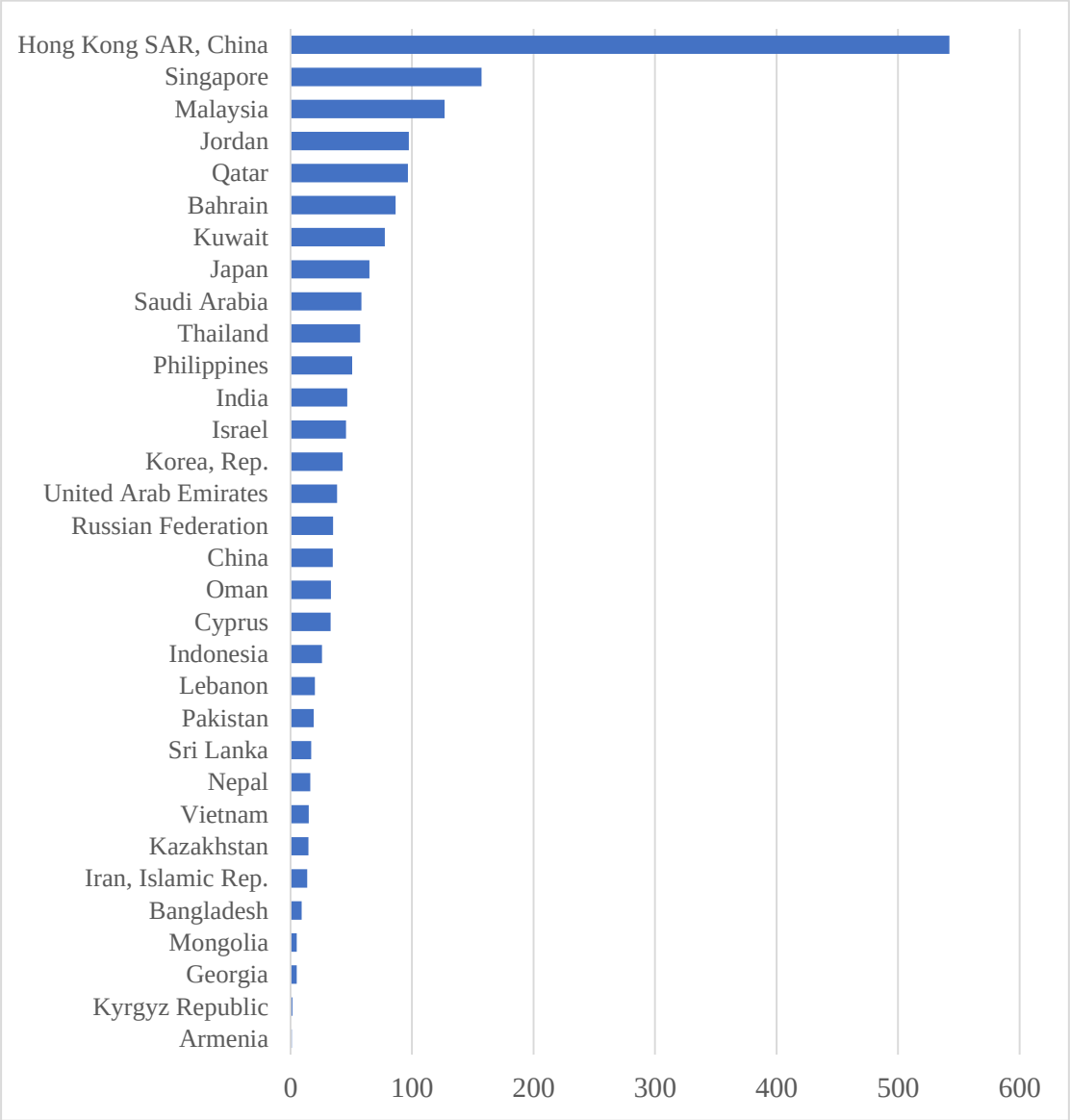

Figure 1.1 Market Capitalization (percent of GDP) by Average in Asia

Source: The WDI database.

Economic growth by average in Asia has continuously grown up as Figure 1.2 shows the flows of average growth rate in Asia and average stock market capitalization percentage to GDP in Asia, this is showed that during the period 1995-2015 the average market capitalization to GDP had rising trend which was highest at 114 percent in 2015 and was associated with economic growth of Asia, however, the trend of average GDP growth was fluctuated but it arose as the whole till 2004 which had growth at 7.52 percent. During the period 2008-2009 is the global financial crisis period, the average GDP growth in Asia had a sharp decline which was associated with the average stock market capitalization to GDP in Asia respectively.

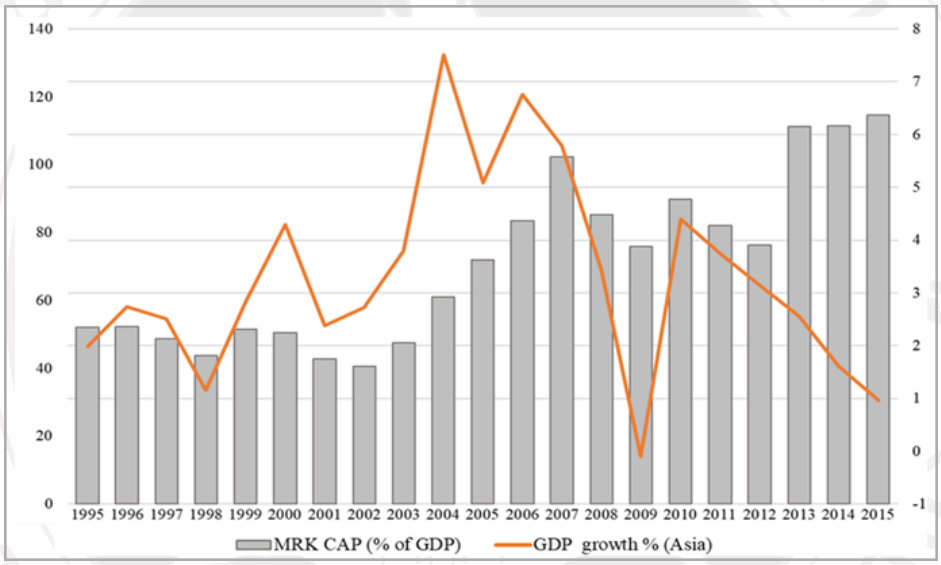

Figure 1.2 Evolution of Stock Market Indicator and Economic Growth in Asia
Source: The WDI database.

Even though stock market development has been well-developed in most Asian economies, there are some countries where they still do not exist or in the early stages of development. A well-developed stock market is defined as an economy where market capitalization is able to cover more than 5% of GDP and the market has been established for more than 10 years. When the stock market is very small and undeveloped (i.e., been in operation for just a short period of time), the impact on economic growth is negligible. Hence, these can be categorized as economies without well-developed stock markets. Based on the World Bank database in 2015, stock markets in several Asian countries e.g., Cambodia and Laos PDR, have been

established for less than 10 years. Additionally, in some countries such as Uzbekistan, the market capitalization is too small to provide a significant macroeconomic effect. As a result, the existing empirical studies on stock market development in Asia still do not include economies without well-developed stock markets in the sample under study. Furthermore, many studies focus on banking sector indicators, using historical data on Asia as the proxy for financial development.

Therefore, the main objective of this paper is to examine the relationship between stock market development and economic growth using datasets for economies with well-developed stock markets and those without. In addition, banking sector development indicators are used to investigate their impact on economic growth. Some of the econometric methods from previous studies are also applied in this paper. Firstly, causality tests are conducted to check the direction of the relationship between financial market development and economic growth. Secondly, the dynamic panel data model is estimated using the generalized method of moments (GMM) to control against the possibility of endogeneity bias. Thus, the empirical results in this study could provide useful information for governments in Asian countries to focus on stock market promotion as the central aspect of their financial development plans. For example, a tax incentive policy may be required to accelerate the growth of stock market capitalization. The outline of this paper is as follows.

1.2 The Study Problem

In past while the banking sector become more interested which is a part that can stimulate economic development by provide the capital to the entrepreneurs in competition product and technology after it was not efficiently for firms who would like to increase their funds. Accordingly, stock market become the sector that respond funds for entrepreneurs and become more popular and make financial structure become complicated able to provide the different financial services. There are many product in the stock market of Asia such as exchange-trade and derivatives that has more variety, by contrast, financial development in Asia is developed moderately which the most of developed countries has the strong financial structure and financial size that have a better level in investment more than the rest of countries has lower

develop in financial system, for instance in lower develop countries in Asia there are lower opportunities and limited funds for entrepreneurs including employment moreover there is lower investment rate both domestic investment and capital income from oversea that is a reason these countries need better in finance. Compare with the other continent that there are many developed countries such as Europe that the most countries have strongly finance and widely sustainable in financial foundation, they also have an advantage in technology and variety of product in finance's sector which can stimulate their highly investment rate. In the point we can address this issue has become the problem of Asian developing countries.

1.3 Research Objective

The study has the objective is to investigate the role of financial development on economic growth in Asia both in terms of stock market development and banking sector development to address the issue that they can promote growth of countries. In particular, the study examines for efficiency in financial development and economic growth as below:

1) To investigate comparative how financial development impact on growth between countries with and without well-developed in stock market.

2) To examine the causality between financial development and economic growth. Furthermore, to investigate the impact of financial development on the economic growth in Asia.

1.4 Scope of Research

The study of financial development and economic growth in Asia which cover almost all countries in Asia which there are 48 countries: Afghanistan, Armenia, Azerbaijan, Bahrain, Bangladesh, Bhutan, Brunei, Cambodia, China, Cyprus, Georgia, Hongkong, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kazakhstan, South Korea, Kuwait, Kyrgyz Republic, Laos, Lebanon, Macao, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Oman, Pakistan, Philippines, Qatar, Russia, Saudi Arabia, Singapore Sri Lanka, Syrian Arab Republic, Tajikistan, Thailand, Timor-

Leste, Turkmenistan, UAE, Uzbekistan, Vietnam, Yemen. The data period is from 1975 to 2015.

1.5 Significance of Research

For greater understanding the importance issue of this area for the relationship between financial development and economic growth especially in Asia countries which can policies approve to reach the countries target effectively in their growth. For apply policies this study recommends for developing countries especially under develop countries in Asia which do not have strong financial system by situation of countries.

1.6 Limitations of Research

The main limitation of this study is data. Data availability in Asia collected from 1975 which has only for developed countries, the rest of countries were formed since 1980s or 1990s and small countries were formed later which become the gap of all data. Another limitation is missing data in the specific year especially in developing countries which reduced the total of data collected. Nevertheless, all data can cover till now of all countries which can apply the statistic method to investigate by unbalanced panel data set.

CHAPTER 2

THEORETICAL AND LITERATURE REVIEW

2.1 Overview of Financial Market

2.1.1 Global Financial Market

In global financial market the role-playing countries in the first are G7 countries and OECD countries such as United Kingdom, Japan and United states. In the part, United states is the place that has strongly in financial structure and they are the first in financial mobilization but in the ambitious made the financial system in United states become more insecurity, more recently by the declining dollar and budget deficits it affected to other currency such as European currency become more stronger and after that European countries become the competition (International monetary Fund, 2007). Then a decade later one countries that has fast development in this area and become important role of increasing economic growth which both developing and developed countries must get a sight is China (Klein, 2008).

Subprime in 2008 to 2009 is the global financial crisis which happened from wrong way financing of the housing in the United States. There is large cost in this incidence which almost of bank that doing housing loan are completely unable to absorb this problem because many banks had inefficient of managing their capital which led to bankrupt for small bank and bank run for larger banks which affected to economy breakdown wildly in the world. Nevertheless, If most banks had sufficient capital managing for cost absorbing such as the technological crisis in 2000 which did not take the high impact on economy development in widely, in that case banks can control and reduce affected of crisis in the specific sectors, so result is financial intermediation able is continue function of economy process (Klein, 2008).

It has become the important to remember through the serious challenges in the global financial crisis, however these financial markets are able to recover which showed that it has own ability to become prosperous in period of times. The

fluctuation of economy always happens whether in short-term by flow of times that called business cycles which can be highly growth and recession in particular for developing countries. So, it is the challenges for countries to use the ability to optimize using of resource to reach the max benefit which able to flip business cycles back from recession period to growth of economy.

2.1.2 Asian Financial Market

For Asian financial market it is not weakness and strongest financial system in the world because it has only few countries that make financial development outstanding in Asia and many countries like developing countries most of them are unable to take a good performance in financial development. In overview of Asia, financial market is able to monitor, control of entrepreneurs and government as well of using funds to develop countries, most of countries solve the issue successfully which addressed such as macroeconomic issue like a fluctuation of exchange rate and inflation in great level, also good in tackling like a crime, poverty and corruption in overview (Court & Yanahihara, 1998).

The important event that Asian countries must remember is Asian financial crisis in 1997 to 1998 which had deep affected wildly in many countries, a shortage of reserve money had caused currencies of countries become less value same as equities fall drastically which the noteworthy countries faced that problem are Thailand, South Korea, Indonesia (Nanto, 1998). Krugman (1999) said that there are many countries faced trade deficits by the Japan and United stated capital flow in the early 1990s such as Malaysia, Indonesia and Thailand that led to the devaluation of currencies of each country affect to reduced domestic and foreign investor’s confidence not only in these countries but also in Asian countries which impact widely for each region.

It can be indicated that before crisis there is a warning signs that led to have problem which the signs such as in period of times that countries had been achieved increasing dramatically in growth rate opposite productivity was constant, this situation can be explain as the growth rate of that countries or overall in Asia countries were from investment stimulation to mobilization rather than efficiency which led to fluctuated growth promotion that instability (Krugman, 1999). Thus, in the term of differently in opposite sectors but connected for each, like financial

market and good and service market that is policies which applied and work well in one sector neither it is not make a good effect in other sector (Goodhart, 2004).

Although Asian countries faced economy problems otherwise many countries had crossed that problem and continue develop to achieve their target. In general, Asia is the continent that can achieve the higher rate of return through emerging market. Moreover, there are many opportunities for investors to invest and make a risk diversification better in the emerging market which can led increasing in growth rate through technology development and more population with younger generation can boost the productivity whether the growth rate (Ogunremi, 2010).

2.2 Theoretical background

2.2.1 Financial Development and Growth

Financial institutions consist of two main sectors are financial markets which include stock and bond markets and commercial banks all of this is included in a financial system. In addition, Financial development also has the costs in different types that include costs of receiving information, enforcing financial contract and making transactions thus it requires to create incentive for particular types to alter financial development frictions. For instance, improving of acquisition in bank of information about firms will have better allocation of credit, for instance investor must have better confidence with the financial contracts. This section describes how market frictions create incentive for financial markets, financial contract and intermediaries become altering in the ways that influence growth. According to Kunt and Levine (2008) “Financial Development and Growth: Theory” , which describe the function of a financial system is to alter market frictions that impede economic activity which has five core functions which include producing extra information about possible investments and allocating capital; eliminate the exchange of goods and services; monitoring investments and corporate governance require after providing finance; mobilization and pool savings; and facilitating in trading, manage risk diversification. All of this is depending on the operation of financial system that can functions financing to the financial system to offer an improvement to financial development.

Financial systems produce extra information about possible investments and allocating capital. It is large costs arising from manager, firms and markets decide to invest in conditions. There is not enough ability to process information whether information collecting for each entrepreneurs or firms to make the investments as possible. In addition, entrepreneurs will apply the little reliable information in investment which make an investment has a cost. In the whole, Investments of firms or savers depend on the quality of reliable information and quantity which they can access. Thus, Financial intermediaries such commercial banks should provide the reliable information on investments as more as possible to make efficiently than individual savers do by themselves. Financial institution able to encourage firms or savers for efficiency investment by collecting and producing reliable information. This operating effect is lead to efficient allocation of capital formation from the producers which has higher productive. By the way, the same as stock markets able to encourage the information in term of occupancy to investors and producing profitable information about specific firm and even financial intermediaries such as bank lead to have new technologies and products can also incentive innovation by motivating the most hopeful. Finally, financial intermediations frictions can influence growth by obstructing in human capital the initial distribution of wealth will influence for allocating of resource with potential performance on short run and long run aggregate output.

Financial systems monitor investments and corporate governance require after providing finance. The central who can understand economic growth by financial factors is corporate governance which the capital providers able to monitor of using funds in way of allocation or saving of these firms or savers. To the extent that managers of the firm use the funds to maximize firm value which can develop firms in allocating resources and efficiency of finance production and innovation thus creditors and shareholders in a firm must have effectively monitor and influence on them. In financial intermediation frictions may push shareholders from effectively attempt corporate governance in the reason of managers enjoy pursuing projects that they always get the benefit not the society get the benefit. Furthermore, some shareholders lack the abilities and motivation for process interrupting their boss because the reason of sophisticated in operation that must use the large cost which

problem led to a “free-rider” problem. Consequently, financial intermediaries to make an economizing on monitoring which can be the indirect effect that enhance the growth rate, they should have improving in a corporate governance. Same as stock markets it can also act as a power associate with benefits of firm owners and managers.

Financial system facilitates in trading, manage risk diversification. There are three categories: cross-sectional risk diversification, intertemporal risk sharing and liquidity risk. In general, they addressed cross-section risk is the main issue which is the important for financial development in risk diversification in the industries because of commercial bank and securities markets include mutual funds all also provide tools for trading, pooling and diversifying risk. In Long-run economic growth can be affected by sufficiency in resource allocation and increasing in saving rate which all can stimulated by risk diversification operation. While in generally in economy activities that led to have high-return investment opportunities will come beside the individual’s firms that averse to risk. To enable cross-section risk diversification, financial intermediations can influence the allocation of resources by allowing individuals to diversify their risk using effectively portfolios. The diversifying cross-section risk also has a positive effect to economy activity which associate with innovative technology since many savers are more likely a risk adverse, so they will not make the single investment in opposite they always make a portfolio to invest in the product. By the way, liquidity risk is also having liquidity reflects the cost which can apply into associated purchasing power at agreed prices. The ability to convert the assets into the other asset that can make the transaction easier in the uncertain situation can make increasing in liquidity which component also include the transaction cost and become more asymmetric information. Financial intermediation should offer liquid to moderate liquidity risk by this operation financial intermediation or banks should offer liquid deposit to savers by low-return investments and illiquid by high-return investment. For stock markets, bonds, and demand deposits which have high liquidity which can transform these financial securities into high-return project with long-term investments.

Financial systems mobilize and pool savings. The mobilization or pooling of saving is the cost arising due to gathering capital from disparate savers to invest. The

mobilize savings becoming the transaction costs in term of making a large amounts funds which that funds can be use or finance in many projects since small to large investment by collecting savings from many individuals into collectively. A good financial system should have the sufficiency in collecting fund to create a larger pool of capital or saving, faster rate of capital accumulation that led to higher aggregate investment which can use in technology innovation development and efficiency resource allocation that can lead faster economic growth. In addition, both stock market and financial institutions or bank can use this function to higher performance. Thus, without access of multiple investors would be constrained to less saving mobilization and hence economy inefficient of scale. This core function has been important for economic till now. For contrast, the mobilization or pooling of savings are matters more important for low-income countries for investment. The high quantitative capital accumulation relative importance with savings mobilizing function can mirror relative importance of in economic growth especially of financial systems at low-income levels.

Financial intermediation eliminates the exchange of goods and services. It can explain as the lower transaction cost, innovative technology can enhance economic growth by using financial formula which there is a link between this facilitating were called “Wealth of Nations” (Adam smith, 1776). The new era of making transition has crossed over the transition from barter economy to monetary economy which has efficiency and welfare by the three basic functions of money as medium of exchange, unit of account, and store value. Workers able to make the activities by using money which can reducing the transactions costs of economic exchange activity. Financial innovation also can reduce in transactions costs which is not in term of the money introduction but also continue along with. For instance, Financial technology such as credit cards and mobile banking both are mostly impact on reducing transaction cost. Finally, it indicates that faster economic growth is from increasing of specialization and innovation.

In conclusion, a stronger and better in financial structure whether in financial system will led to sufficiency in financial development which able to enhance the growth rate. the cores functions associate relatively to financial development that be a part of financial development in processes and complement for higher growth in

countries by improve resource allocation, technology innovative improvement, increasing the productivity, arising the saving rate led to higher investment to reach the economic growth target of each countries.

2.2.1 Theoretical Frameworks

The theoretical frameworks of financial development and economic growth were formed by many researchers who studied, investigated, examined in this area as finance sector whether stock market and banking sector as well. The important piece is studied which introduced the neoclassical theory economic link to finance sector or financial intermediaries from the two question of research which become a well-known starting point of the impaction of financial development to economic growth (King & Levine, 1993). Beside that there are many researchers tried to apply theories to address the issue from those question of financial development through many studies upward becoming a composite framework of financial development and economic which the well-known researchers are Odedokun (1996) and Favara (2001), who cited the studied of King and Levine (1993) is based to investigated the relationship between financial development and the growth rate per capita and their studied could be represented as good of measured about increasing in economic growth.

Although, the studied of King and Levine (1993) become well-known but it is not the first concept of the area, the model which formed by entrepreneurship and innovation is the first that described about financial development by the result that financial intermediaries' development was from financial innovations and the beneficial entrepreneur's project which can earn the benefit not only in firms but also in society, in the meantime, the development in financial intermediaries will continue grow as a part of market mechanism and become the entrepreneur screening to offer financing for intangible investment, increasing in productivity and technology innovation enhancement (Knight, 1951; Schumpeter, 1911).

Thus, the above concept has been combined in the studied of King and Levine (1993), in the model of financial system has the great functioning in countries will have high rate for innovations technology appear more than countries have weaker in

financial system in term of allocating saving and increasing in productivity, through the great financial system it can boost growth by productivity increasing, arising in capital accumulation led to have more efficient in intangible investment and increasing in human capital.

Composite theoretical framework of investigating for the relationship between financial development and economic growth by introduced the outstanding studies in the past. Favara (2003) who studied the impact of financial development and economic growth which is the principles of conditional convergence such as the growth of economy will increase faster than it should be which means the growth per capita in lower level of countries had increasing rate faster than long-term steady-state position, steady-state based on the rate of capital accumulation or saving rate, the increasing of population which are differently in every country. Furthermore, the empirical showed that there is differently effect which from the various of government policies in cross-country.

For better understanding, the relationship between financial development and economic growth by using selected production function model: $Y_{i,t} = F(X_{i,t}, Fn_{i,t})$.

In the model, $Y_{i,t}$ GPD per capita growth rate represent of growth of countries is a function of $X_{i,t}$ represent of control variables of growth determinants such as government spending, gross fixed capital formation, human capital formation and $Fn_{i,t}$ represent of financial development indicators.

Thus, the model is written as: $Y_{i,t} = \beta X_{i,t} + \gamma Fn_{i,t.}$ (2.1)

By adding the intercept and error terms in the model as bellow:

$$Y_{i,t} - Y_{i,t-1} = \alpha Y_{i,t-1} + \beta X_{i,t} + \gamma Fn_{i,t} + E_{i,t} \quad (2.2)$$

which $Ei_{,t} = \mu_t + V_t + \varepsilon_{i,t}$

By following the neoclassical standard growth model of steady state regression (Favara & giovanni, 2003). They estimated the equation by using all variables in the model which also represent each variable as the logarithm of GDP growth rate per capita represent as $Y_{i,t}$, control variables for growth rate determinant represent as $X_{i,t}$, Financial development indicators represent as $Fn_{i,t}$, error terms

represent as $E_{i,t}$ which control the effects of cross-countries, time specific control represent as μ_t , the fixed effects V_t , and idiosyncratic error $\varepsilon_{i,t.}$

The standard growth model of neoclassical theory, $Y_{i,t-1}$ represent of the level of income diminisher which implied of rate of diminishing returns of growth rate of countries as $Y_{i,t}$ - $Y_{i,t-1}$, the level of GDP per capita rising overtimes initially by a permanent increase in control variables $X_{i,t}$ or $Fn_{i,t.}$. Thus, In long-term it is not the increase in growth rate but it is an impact on level of output such an impact from arising in amount if credit which provided by bank (Favara & giovanni, 2003).

Control variables for growth rate determinant are also capture technological part through the productivity of labor which calculated as GDP per labor force. The $X_{i,t}$ is variables which consist of GDP per labor force represent as Prod, Trade openness represent as Open1, External Debt - Extdebt, Gross Fixed Capital Fromation-Grsfcap inflation- infl1, and government spending-Gove1. In addition, financial development indicators variables have market capitalization per GDP (%) – Mktcap1, Liquid liabilities represent of money in economy M3 per GDP- Liqli, Insurance Services as export (%)–Ins1 and Domestic credit to private sector per GDP (%) – Domcred2.

For the empirical result, it showed the impact of financial development on growth of economy by one thing which should be considered is the country-specific effects especially in the panel regression to controls other factors whether time or cross specific effects of all variables.

2.3 Literature Review

Levine, Loayza and Beck (2000) who studied financial intermediation and growth: Causality and causes of impaction from financial intermediary to growth of countries, variable cross-section data and dynamic panel estimators by GMM. They found that financial intermediary development in term of the exogenous variables are positively associated with economic growth. Also, the result showed that differencing in legal and accounting systems in cross-country had impact of helping in account for financial development in differences level. For the following evidence Beck and Levine (2000) which panel data of 77 countries from 1960 to 1995 are used to

examine the relationship between financial development and growth by analyzing the causality, the result if their study concluded that higher levels of financial sector development can produces the efficiency of processing in factor of productivity associated to economic growth.

In another study Muslumov and Aras (2002) who investigated the relationship of development in capital market to economic growth in OECD countries which panel data analysis are used with a Granger causality test, the study showed that it has a relationship by one sided from capital market development to economic growth. Rioja and Valev (2004) found there are relationship between financial and growth and relationship is stronger and had positive sign for the countries which has high development in financial system follow by middle development countries, also found that there is unclear relationship in the lower development of finance sector countries. Follow by Adamopoulos (2008) who examined the relationship between financial development and economic growth, the Granger causality is applied. The empirical result indicated that there is a relationship in two side direction between financial development and growth of Ireland economy. Again Estrada, Park, and Ramayandi (2010) investigated that the efficiency of financial system which includes bond markets and equity markets in term of beneficial part of physical capital to better productive used association for economic growth in developing Asia. The study used a panel data of 125 countries with the formal econometric approved. The empirical result showed that in the middle and low-income countries there is the strongly positive relationship between financial development and economic growth.

Their finding was further supported by Bayar (2014) who studied the financial development and economic growth in emerging Asian countries, they found that financial development variables which had various indicators representing bond and equity market development had positive effect on economic growth in emerging Asian countries. On a similar Cournède and Denk (2015) who studied the finance and economic growth in OECD and G20. Their study uses annual data from a panel of OECD and G20 countries which cover all period of data, Panel data econometric was applied and causality test, financial deregulation as Instrumental variable was applied from the GMM. The empirical result indicated that the development of finance at current levels had further slows rather than economic growth, become more credit

cause slower growth which can complain in point to five factors as too-big-to-fail, Banks increase in credit issuance more than other intermediaries, excessive financial deregulation, a lower quality of credit, and rise of business credit compared with household is disproportionate, stock market development of expansion funds can boost growth in general, finance has become important key of long-term boost economic growth ingredient in OECD and G20 countries. Again, Rana and Barua (2015) examined the relationship between financial development and economic growth. The variables including growth rate and financial development indicators as five major variables have been used namely total debt services, domestic credit provided by financial sector, gross domestic savings, trade balance, and broad money. The study results showed that domestic savings and total debt services have significant effect on economic growth of these countries even matter domestic credit, trade balance and broad money had insignificant impact which us unexpected on fostering economic growth of emerging south Asian countries.

Some researchers focused their study from a part of financial development such as the impact of stock market development to growth whether in banking development on growth. For example, Levine and Zervos (1998) who studied the relationship between stock markets and economic growth, the result described that the different variety in products and service for stock market more than bank providing can arising growth of countries by variety of financial services. Even matter there are none of the financial indicators is closely associated with private saving rates which volatility, international integration and stock market size are not robustly effect on economic growth. Their finding was further investigated by Beck and Levine (2004) generalized-method-of moments techniques (GMM) developed for dynamic panels was applied by using a panel data set for the period of 1976 to 1998 in the study the relationship between developing in stock, banking services and growth of countries. Finally, the empirical result showed that it had positive impaction on economic growth by stock markets and banking development, their result had collected to omitted variables or unobserved country-specific effects and potential biases induced by simultaneity. Caporale, et. al. (2009) examined the impact of stock market and banking sector on economic growth of selected countries from ten new EU members found that the variable that increased economic growth as well is banking sector more

than stock market development which had the impact on growth slightly, while causality there is unidirectional causal from financial sector development to economic growth.

Again, Wong and Zhou (2010) studied the correlation between stock market development and economic growth in selected countries panel regression is applied indicated that the development of stock market and economic growth was positively correlated. In another study with Ngare, Nyamongo and Roseline N. Misati (2014) who investigated the impact of stock market development on economic growth: empirical evidence in Africa by using econometrics technical panel regression and causality test are applied in estimation which overall of countries in sample total 36 countries both countries with and without stock market cover from 1980 to 2010, methodology was followed to formulate a standard growth model tradition. By methodology they used models to examine one of their objectives for countries without stock market by expanse model with a dummy variable to analyze the effect of countries with and without stock market had the different impaction on economic growth in Africa. The result of study found that stock market development is positive impact of growth of Africa, and the perception was supported the increasing in economic was high in countries which have stock market more than countries do not have stock market, furthermore the opposite finding was the growth rate in developed countries relatively is lower than small countries which both have stock market.

Conversely, an opposite view is also available from Lucas (1988) said that economist often overstate the importance of financial system is a key to boost economic growth, on a similar note the studied of Singh (1997) who examine the relationship between stock market and economic development, he argued that it had inefficient of allocation resources in the developing countries which have stock market because of the market pricing process had high volatility. Thus, In the developing countries banking system was pressured to be key of boost growth as well led to economic problem alongside without stock market. Again, Shan, et. al. (2003) supported Lucas's view by indicated that some Asian economies (like China) financial system had weakly influence on the growth of economy. Further, Deidda and Fattouh (2002) indicated that there is nonlinear relationship between financial development and economic growth using a threshold regression model. Furthermore,

Ince (2011) studied relationship between economic growth and financial development used data from 1980 to 2010 for Turkey with cointegration and causality test are applied. The result investigated that the long-term relationship between economic growth and financial development is unclear which unexpected. Again, Al-Malkawi et. al. (2012) used ARDL test in period of 1974-2008 in United Arab Emirates also found that there was relationship between financial development and growth but in term of negative relationship. Moreover, Yildirim et. al. (2013) examined the relationship between financial development and economic growth by using asymmetric causality test on stationary of Toda-Yamamoto which applied in period of 1990 to 2012 in emerging European countries. They found non-direction causality between financial development and economic growth.

Furthermore, there are some researchers also study in another attitude. For instance, Valickova et. al. (2015) who studied financial development and economic growth by doing a meta-analysis. This paper investigates the effect of financial development on economic growth using 1334 estimates from 67 studies. The result of this study found that there are some differences of studies' result depend on the way of heterogeneity role in describing and research design. It had overstated the effect of finance on growth in studies that do not address endogeneity. The effect of finance to growth tend to be weaker in less developed countries and the relationship decreases slightly after the 1980s in worldwide. Moreover, the results also expansion that the variable that can enhancing economic growth effectively is stock market. In addition, some researcher commented in a different way such as Zou and Wang (2017) who analyzed the effect of undervaluation on economic growth in the presence of borrowing constraints. Based on a two-sector, small open-economy model, showed that undervaluation can promote economic growth by partly correcting distortions in financial markets through the channels of increased within-sector productivity and the relative share of the tradable sector in an economy. Such an effect is magnified amid tight borrowing constraints. They empirically test the theoretical conclusions using cross-economy data for the period 1980 to 2011. For economies whose level of financial development lies at the 25th percentile of their sample, a 50% undervaluation can boost the economic growth rate by 0.3 percentage points. There is an additional 0.045 percentage point increase in economic growth with a 10% decline

in the financial development measure. Again, Lei and Vinod (2018) who investigated the effect of stock market in the Chinese economy. The result showed that global financial crisis from 2007 to 2012 had significant impact on both real sector and financial sector in China, also found the long run relationship between one of stock market with growth in country and even causality by Toda Yamamoto method explored that china economy spurred by one of stock market, even matter that unseen short run relationship between the stock markets and growth rate of Chinese economy.

From the above literature review we can conclude that various literatures had the strong positive correlation between financial development and economic growth. By the way, the rest papers have various conflicting in the difference of the way by method selection have been used. in Asia, Therefore, we can see that literatures in many countries supported in the same direction view and also for Asia which supported the view of financial development is positive effect on growth and strong relationship with growth, but there are no researchers have been studied in point of the role of financial development and economic growth of countries without stock market. The attempt of this study is to fill the gap and to understand the role of financial and growth in Asia.

CHAPTER 3

METHODOLOGY

3.1 Model Specification

In this study uses econometric techniques for panel data to investigate the role of financial development effect on economic growth by following the general approach in the literature. The base model of this study follows the standard growth model in the important evidence of Barro (1990) which model expansion is applied on regression analysis in cross-countries, the model augment by adding the important variables of financial development such as financial development indicators with the control variables which effect on growth.

Panel data is considered using a full sample dataset, i.e., 48 economies, including those without well-developed stock markets. The dependent variable is the growth rate of GDP per capita (GROWTH) and the main independent variables are banking sector development indicators named as BSD which consist of Domestic credit to private sector and Liquid liabilities. The control variables, i.e., lagged GDP per capita ($YPCR_{t-1}$), gross fixed capital formation (GL), primary school enrollment rate (PL), trade openness (TR), inflation rate (INF) and government spending (GOV). Dummy variables are used to indicate economies with stock markets (DUM), and the interaction between dummy variables and stock market capitalization is expressed as an interactive term ($DUM{*}MRKCAP$) to control for the level of stock market development. Panel data is estimated with a fixed effects model. The regression is shown as follows.

$$Growth_{i.t} = \alpha + \lambda[BSD]_{i,t} + \beta_1 YPCR(-1)_{i,t} + \beta_2 Gl_{i,t} + \beta_3 Pl_{i,t} + \beta_4 TR_{i,t} + \beta_5 INF_{i,t} + \beta_6 GOV_{i,t} + \beta_7 DUM_{i,t} + \beta_8 DUM * MRKCAP_{i,t} + \varepsilon_{i,t} \quad (3.1)$$

Next, the sub-sample is considered only for those economies with well-developed stock markets (32 out of 48) to investigate the impact of financial development on growth rate, using a similar set of control variables as for the previous regression ($YPCR_{t-1}$, GL, PL, TR, INF, and GOV). The financial development indicators [FD] consist of proxies for banking sector development indicators, i.e., domestic credit to the private sector (CD) and liquid liabilities (LQD), and proxies for stock market development indicators, i.e., stock market capitalization (MRKCAP), value of total stock traded (ST) and stock market turnover ratio (TO). The regressions are displayed as follows.

$$Growth_{i.t} = \alpha + \lambda[FD]_{i,t} + \beta_1 YPCR(-1)_{i,t} + \beta_2 Gl_{i,t} + \beta_3 Pl_{i,t} + \beta_4 TR_{i,t} + \beta_5 INF_{i,t} + \beta_6 GOV_{i,t} + \varepsilon_{i,t} \quad (3.2)$$

Where the dependent variable $Growth_{i.t}$ is the growth rate of real GDP per capita. To seek the impact of financial development and economic, thus the interest parameter is the coefficient λ which is the conditional correlation of financial development indicators and economic growth. i and t are indices for country and year. The idiosyncratic error term denoted by $\varepsilon_{i,t}$.

According to investigating comparative how financial development impact on growth between well-developed stock market and without well-developed stock market will use dummy variable $DUM_{i,t}$, which a value of 1 is well-developed stock market in a particular year and 0 otherwise, and also incorporate dummy variable, interacted with stock market capitalization as an interaction term $DUM * MRKCAP_{i,t}$ to control for the level of development in stock market, In this study it is investigate the difference level of stock market development impact on economic growth.

The baseline control variables to determine the growth rate most of them are generally applied in most of literature for standard growth model. The baseline control variables in this study consist of gross fixed capital formation (or the investment rate) $Gl_{i,t}$, the gross primary school enrolment rate $Pl_{i,t}$ which proxy of stock of human capital formation.

The other standard growth determinants controlled for relative such as real GDP per capita - $YPCR_{i,t}$ where this variable used in literature reviews to proxies the developed level of countries by using the number of lagged of real GDP per capita for conditional convergence consistency effect on growth , trade openness - $TR_{i,t}$ in literature it was used to measures the openness of countries in sums of export and import, inflation - $INF_{i,t}$ the variable effects on growth in term of macroeconomic instability, and government consumption - $GOV_{i,t}$ associated with government expenditures in term of macroeconomic to measure the crowding in or crowding out effect on economic growth, the baseline control variables all will be applied in the estimation which in case of Asia these variable have not been perform yet.

3.2 Methodology

3.2.1 Causality Test

The objective of this study is to seek the direction of the panel data causal relation between financial development and economic growth in Asia. At first step, the unit root test is required to test for the variables selection are stationary, the method for panel unit root tests using the augmented Dickey-Fuller (ADF) test. Second, apply of the causality between financial development and economic growth by using panel VAR Granger causality (Engle & Granger, 1987).

$$y_{i.t} = \alpha_{0,i} + \alpha_{1,i} y_{i,t-1} + \cdots + \alpha_{1,i} y_{i,t-n} + \beta_{1,i} x_{i,t-1} + \cdots + \beta_{1,i} x_{i,t-n} + \varepsilon_{i,t} \quad (3.3)$$

$$x_{i.t} = \alpha_{0,i} + \alpha_{1,i} x_{i,t-1} + \cdots + \alpha_{1,i} x_{i,t-n} + \beta_{1,i} y_{i,t-1} + \cdots + \beta_{1,i} y_{i,t-n} + \varepsilon_{i,t} \quad (3.4)$$

Whereby, the dependent variable *y* represented as economic growth, and the independent variable *x* denotes as financial development indicators, *t* represented as the time period dimension of the panel and *i* indicate the cross-sectional dimension.

3.2.2 Panel Least Square Fixed Effects Model

In this study the panel estimation technique that be used is the fixed effects technique, the reason as the fixed effect models should give a better result that can investigate the effect of financial development to economic growth consistency more than normal panel least square estimation. Before deciding to use this method, there

are the fixed effects model (FEM) and random effect model (REM) which both can use to fit with the models, thus this study conducted a Redundant test and a Hausman test, where their null hypothesis are the random effects is preferred for the model appropriately, and alternative hypothesis is fixed effects model.

Fixed effect model will be used after the results indicate that we can reject the null hypothesis of both Redundant test and Hausman test. The advantage of fixed effects model is for controlling for omitted variables that were not included in the regression vary among all samples and fixed over time. In addition, the fixed effects model proceeds the samples as they are fixed or constant over time, by contrast the time invariant will be remove from the regression. The fundamental framework for fixed effects model showed as below:

$$y_{i.t} = X'_{i,t}\beta + Z'_{i}\alpha + \varepsilon_{i,t} \quad (3.5)$$

$$y_{i.t} = X'_{i,t}\beta + v_i + \varepsilon_{i,t} \quad (3.6)$$

Whereby, the dependent variable *y* denotes as economic growth and the independent variable *x* denote as financial development indicators and control variables of growth determinant, while *Z* from the equation 3.5 shows the country effects or unobservable heterogeneity whereby *Z* include a constant term and a set of specific variables which can be observed and cannot be observed. Thus, the fixed effects model from the assumption that the omitted unobservable variables, *v* in equation 3.6 are correlated with the fixed effects model.

3.2.3 Generalized Method of Moments (GMM)

This section is the once econometric technique to investigate a causal of financial development and economic growth. With the causality testing can explain financial development is said to cause economic growth, economic growth is said to cause financial development or causality happens in both directions which lead to have the econometric problem like endogeneity, endogeneity problem found from a loop of causality between the independent and dependent variables which happen oftentimes in estimation (Barton & Jackson, 2003). To avoid or reduce the endogeneity problem in this study will use strategy of standard generalized method of

moments (GMM), the GMM estimator is associated with dynamic panel data which is specifically designed to address the econometric problems induced by unobserved country specific effect and joint endogeneity of the explanatory variables in lagged dependent variable models (Levine, Loayza, & Beck, 2000).

A system estimator for the level equation have been used to apply the moment condition of the dependent variable where using the lagged levels of independent variable are utilized as instruments (Blundell & Bond, 1998). Since the lagged level-instruments estimator seems to be persistent, the level of panel-effect variance is more than over the idiosyncratic error, it has been showed that this is the most important to use instruments variable in the dynamic panel data estimation, the reason is the correlation between the lagged of dependent variable and lagged of error terms which lead to have an inconsistency in results. According to Blundell & Bond (1998) by the assumption that the initial condition is the correlation between lagged of dependent variable and lagged of error terms is equal to zero, this additional moment conditions become valid and expanded using instrumental variable is crucial in dynamic panel data equations.

Dynamic panel data appropriate for GMM, which using of instrumental variable modelling with the lags of dependent variable and the difference of independent variables to control for econometric problem (endogeneity bias and omit variables bias), thus, to avoid of any inconsistency. The second step GMM can be write as an equation below:

$$Growth_{i.t} = \sum_{j=1}^{p} \alpha Growth_{i,t-j} + \lambda[FD]_{i,t} + \beta_1 YPCR(-1)_{i,t} + \beta_2 Gl_{i,t} + \beta_3 Pl_{i,t} + \beta_4 TR_{i,t} + \beta_5 INF_{i,t} + \beta_6 GOV_{i,t} + \varepsilon_{i,t} \quad (3.7)$$

In the model of GMM, the equation will be estimated under the instrumental variable, which is the lagged of growth rate of real GDP per capita to control the endogeneity bias by using 2 to 3 lag number of growth rate of real GDP per capita in estimation.

3.3 Expected Results

The estimate strategy follows the following empirical result in the literature, the parameter of interesting coefficient λ which is the conditional correlation of financial development and growth rate of economy which estimated by financial development indicators, which divided into two main factors as banking development indicators and stock market development indicators.

The first one is banking development indicators include domestic credit to private sector to GDP, liquid liabilities (% GDP) which these variables have been used (Estrada et al., 2010) are expected to have a positive relationship. The second is stock market development indicators which consist of stock market capitalization to GDP, total value of share traded to GDP is expected to have a positive sign (Levine & Zervos, 1998) and stock turnover ratio are expected to have positive relationship (Ngare et al., 2014). All financial development variables are expected of significant relationship with economic growth, more than that these financial development indicators seems to be good in results of the literature but in case of Asia which include of all 48 countries that may cause to have unexpected in some results, however the significant level of the first once thing of this estimation that we are looking for the financial development and economic growth. In addition, (Estrada et al., 2010) show that financial system consists financial development are especially important for sustaining growth in developing Asia because efficiency of investment will overshadow quantity of investment as the driver of growth in the region.

Once again by a purpose of this paper is to seek the difference of countries with and without well-developed stock market by using dummy. the Dummy variable which is expected to consistent with the research objective which the dummy variable is expected to have a positive sign with this sign of relationship will describe that countries with stock markets have higher growth rate or grow faster compared with countries without stock market, and one objective which in equation the variable is incorporate dummy variable interacted with stock market capitalization as an interaction dummy DUM*MRKCAP is expected to have a positive sign which can complain that the presence of a stock market in countries relatively developed tend to grow slower then small countries with a stock market (Ngare et al., 2014).

The baseline specification control variables for the growth determinants, gross fixed capital formation and the stock of human capital formation proxied by the gross primary school enrolment rate are expected to have a positive sign (Barro, 1990). Furthermore, The other growth determinants controlled for relative as real GDP per capita which proxies the level of development is expected to have negative relationship, trade openness which measure the extent to which a country is integrated with the rest of the world is expected to have positive sign, inflation which proxies macroeconomic instability is expected to have a negative sign and government consumption which measures the crowding out/in aspect associated with government expenditures which is expected to have a negative sign (Ngare et al., 2014).

3.4 Data Source and Type

The annual data is collected from secondary data source of world bank development indicator (WDI), data market of QilkTech international AB company (QID) and International monetary fund data base (IMF) cover period of 1975 to 2015.

Table 3.1 List of variables

Variables	**Definitions**	**Sources**
Dependent Variable		
GROWTH	Growth rate of GDP per capita	WDI
Main independent Variables		
CD	Domestic credit to private sector (% of GDP)	WDI
CDB	Domestic credit to private sector by bank (% of GDP)	WDI
LQD	Liquid liabilities (% of GDP)	QID
MRKCAP	Stock market capitalization (% of GDP)	QID
ST	Stock total value traded (% of GDP)	QID
TO	Stock market turnover ratio (% of GDP)	QID

Variables	Definitions	Sources
Control Variables		
YPCR	GDP per capita ($)	WDI
GL	Gross fixed capital formation (% of GDP)	WDI
GOV	General government spending (% of GDP)	WDI
INF	Inflation rate (% of GDP deflator)	WDI
PL	Primary school enrollment (% gross)	WDI
TR	Trade openness (% of GDP)	WDI

CHAPTER 4

EMPIRICAL ANALYSIS AND RESULTS

4.1 Data Overview and Descriptive Analysis

This section explains about data overview and descriptive analysis of the variables which be used in estimation. Non-financial development variables consist of growth rate per capita, GDP per capita, primary school enrollment rate, gross fixed capital formation, government spending, inflation rate and trade openness. Financial development variables consist of domestic credit to private sector, domestic credit to private sector by bank, liquid liabilities (broad money), stock market capitalization, stock total value traded, stock market turnover ratio and financial deregulation.

4.1.1 Non-Financial Variables

4.1.1.1 GDP per Capita Growth

First, considering for dependent variable is economic growth, growth rate per capita base on constant currency show on annual percentage growth rate. In the literature, this variable has become the important and interest for researcher to find out the method to enhance growth of countries by increasing in capital accumulation (King & Levine, 1993). In Asia, the flow and fluctuated of growth rate per capita during the sample period show the development in Asian countries for better overview vision Figure 4.1 shows the average growth rate per capita in Asia by region.

As figure 4.1, GDP per capita growth rate of sample in period of 1975-2015 separate by regions in Asia show that the highest growth rate per capita is eastern Asia at 4.6 percentage, second is south-east Asia has growth rate per capita at 3.6 percentage, south-central Asia is 2.5 percentage, western and middle east Asia is 1.3 percentage and the lowest is northern Asia at 0.8 percentage. The deference growth rate in deference region shows the level of development of each region as well which the highest growth rate region consists of the big important countries in Asia such as

Japan, China, etc. follow by south-east Asia consist of developing countries as well such as Thailand, Malaysia and developed countries like Singapore. Although, the rest of countries in rest region average growth is not good perform cause most of countries is underdeveloped except northern Asia which there is only one country is Russia.

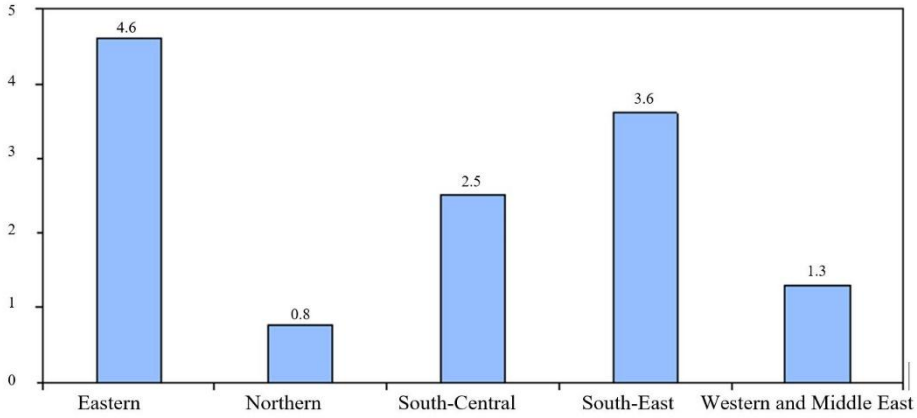

Figure 4.1 The average GDP per Capita Growth rate in Asia by Region.
Source: The WDI database.

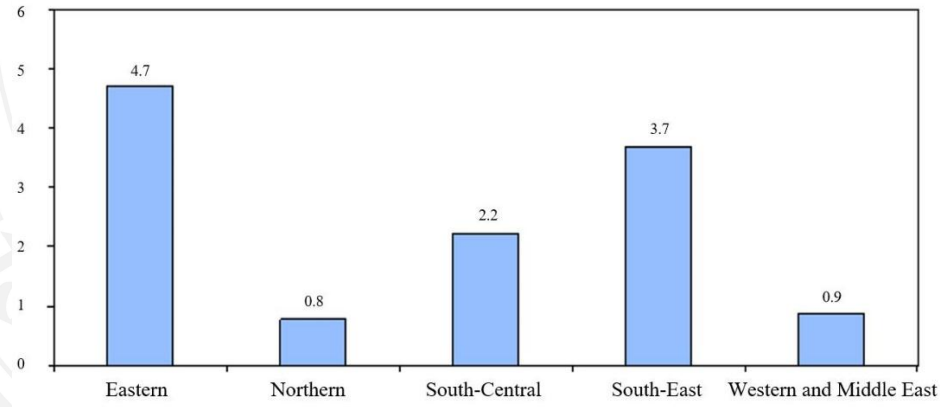

Figure 4.2 The average GDP per Capita Growth Rate in Asian Countries with Stock Market by Region.
Source: The WDI database.

In addition, Figure 4.2 shows the average growth rate of Asian countries with stock market separate by regions which show that highest growth rate is eastern Asia at 4.7 percentage, follow by south-east Asia is 3.7, south-central Asia is 2.2, western and middle east is 0.9 and northern Asia is 0.8 percentage. Compare average growth rate between Asian countries and Asian countries with stock market can explain as

there is just a little difference from amount of the number such as in eastern and south-east growth rate of countries with stock market are higher than all countries in Asia, but in south-central and western-middle east growth rate of countries with stock market are lower than Asian countries at all.

Table 4.1 below shows summary statistic for growth rate per capita in the sample period. The average GDP growth per capita across the panel is at 2.65% for Asian countries and 2.45% for Asian countries with stock market. The highest growth rate by average is 7.54% for Asian countries and 7.12% for Asian countries with stock market. The observations Asian countries is 1621 and 1160 for countries with stock market.

Table 4.1 Descriptive Statistics of Economic Growth in Period of 1975-2015.

	Asian countries	**Asian countries with stock market**
Mean	2.65	2.45
Median	3.22	3.11
Maximum	7.54	7.12
Minimum	-1.24	-1.30
Std. Dev.	7.56	6.23
Observations	1621	1160

4.1.1.2 Real GDP per Capita

The variable definition of Real GDP per capita is division between gross domestic product and population in country in midyear which data obtained is in U.S dollars. Real GDP per capita used for proxy the level of development and relative to growth with lag (Ngare et al., 2014).

Table 4.2 show the summary statistic of real GDP per capita indicate that mean value of the data in Asian countries with stock market higher than mean value of Asian countries which is at 9,242.4 $ and 8,134.7 $ respectively. Asian countries with stock market have higher development level compare to Asian countries. Data sample of Asian countries is 1626 and 1177 for Asian countries with stock market.

Table 4.2 Descriptive Statistics of Real GDP per Capita in Period of 1975-2015.

	Asian countries	**Asian countries with stock market**
Mean	8,134.70	9,242.40
Median	2,049.17	2,893.65
Maximum	16,169.16	18,103.46
Minimum	3,378.18	3,561.84
Std. Dev.	12,872.54	13,216.00
Observations	1626	1177

4.1.1.3 Capital and labor

Depend on standard growth model (Barro, 1990), The baseline control which useful in studies thus we use gross fixed capital formation (or the investment rate) as a proxy for physical capital (Odedokun, 1996) and the gross primary school enrolment rate which proxy of stock of human capital formation (Ngare et al., 2014).

Gross fixed capital formation defines as all expense to invest in tangible assets inside the country such as construction of roads, railways, building of offices, schools, hospital, investing in private business, commercial building till industry include land improvement and so on. Net worth acquisition is also including in gross fixed capital formation (World bank).

Gross primary school enrolment rate defines as division between the number of children in primary schooling irrespective of age and total population of children in the age group and multiplying by 100, which is a percentage of total with relative to the same level of children (UNICEF).

Table 4.3, Consider for Gross fixed capital formation data have nearly value of mean between Asian countries and Asian countries with stock market, at 25.18% to GDP and 25.54% to GDP by following which in Asian countries with stock market is a little bit higher. Median value of both are not far away from mean value which indicate most of data are in middle, nevertheless there are the big gap bet maximum and minimum value ,same as Gross primary school enrolment rate of Asian countries which mean value is at 100.24% to GDP and 100.45% to GDP for Asian countries

with stock market, for gross primary school enrolment rate it is possible of over 100 percentage because of its equation is divide the number students enrolled in a given level of education regardless of age by the population of the age-group which officially corresponds to the given level of education, and multiply the result by 100.

Table 4.3 Descriptive Statistics for Gross Fixed Capital Formation and Gross Primary School Enrolment Rate in Period of 1975-2015.

Variable	**Countries**	**Mean**	**Median**	**Max**	**Min**	**Std. Dev.**	**Obs.**
GL	Asian countries	25.18	24.12	73.33	1.85	8.97	1447
	Asian countries with Stock market	25.54	24.56	73.33	2.65	7.88	1089

4.1.1.4 The selected control variables

Base on empirical result in the respective literature, there are many control variables for growth determinants relative that useful for this study which consist of general government spending, inflation rate and trade openness (Beck, Levine, & Loayza, 2000; Ngare et al., 2014). These variables are not only determining growth rate of economy, but they are still interesting to investigate for the impact on growth of economy which in the most literature found the relationship between these variable and economic growth as the expected sign in this study (Fischer, 1993; Gwartney, Holcombe, & Lawson, 1998; Tyler, 1985) , nevertheless some studies found adversely result which opposite from the study expectation (Witt, 1965).

General government spending is the final consumption expenditure of government which include almost expenditure such as expenditures on building construction, purchasing good and service till expenditure for national defense and security. Nevertheless, general government spending excludes the military expenditure of each country (World bank). General government spending is divided by nominal GDP which used in this study with expected relationship with growth.

Inflation rate used in this study is the GDP deflator percentage per annual, the definition of this inflation rate is the growth rate of ratio between nominal GDP to real

GDP which indicate changing in price of good and service in country by percentage change as a whole of economy.

The last is trade openness which measured as the sum of total in export and import of goods and services then divided to nominal GDP.

Table 4.4 Descriptive Statistics General Government Spending, Inflation Rate, Trade Openness in Period of 1975-2015

Variable	Countries	Mean	Median	Max	Min	Std. Dev.	Obs.
GOV	Asian countries	14.75	13.09	135.78	1.38	8.42	1541
	Asian countries with stock market	14.40	12.88	76.22	3.16	6.55	1144
INF	Asian countries	44.72	6.74	674.47	-1.73	449.32	1622
	Asian countries with stock market	42.29	5.92	674.47	-1.48	512.98	1161
TR	Asian countries	92.84	78.90	442.62	0.02	69.16	1574
	Asian countries with stock market	94.01	77.88	442.62	8.38	75.28	1136

The summary of descriptive statistic is showed in the Table 4.4 which indicate that the control variables of growth determinant there are large variation between the maximum and minimum value with outstanding variable is Inflation which can explain that the data of inflation has higher fluctuated in period time of sample. The mean value of general government spending is closely to median value in both Asian countries and Asian countries with stock market with mean value at 14.75% to GDP and 14.40% to GDP by following and median value at 13.09% to GDP and 12.88% to GDP, opposite for inflation and trade openness which most of data of these two variables are not gather in middle of normal distribution, which inflation have mean value at 44.72% for Asian countries and 42.29% for Asian countries with stock market means the economy in Asia unable to hold the stability of economic flow over 40 years.

4.1.2 Financial indicators variables

Evaluation the impact of financial development on growth of countries in Asia, based on literature review the way to find appropriate measurement the relationship between financial development and economic growth is in concerned (Beck et al., 2000; King & Levine, 1993; Levine et al., 2000). In this study, the variables are selected base on literature review are two sectors, banking sector and stock market.

First, regarding of banking sector which there are domestic credit to private sector and domestic credit to private sector by bank along with liquid liabilities which proxied of liquid liabilities to capture the overall size of the financial sector.

Domestic credit to private sector is defined as the amount of money that financial corporation provided to the private sector, such as nonequity securities purchasing, loans, repayment claiming, for some countries repayment claiming include public enterprises credit in provided. For more detail, the financial corporation is the gathering of many finance sector such as deposit money banks, leasing company, insurance corporation, foreign exchange companies and pension funds till monetary authorities. Furthermore, domestic credit to private sector is capture in financial technology, consumption, money transmission and capital formation which affect in economic activity. Deference from domestic credit to private sector by bank, this variable is defined as the resource of finance, which is offered to private sector by depository corporation, which except central bank (World bank).

Liquid liabilities (Broad money) are the sum of currency outside banks (World bank), which is the amount of money circulate in economy, which is determined as M3 that includes M2, which M2 is measured by M1 “near money” consist of cash and checking deposit, sum of savings deposit, mutual funds, equity in money market and other (Investopedia). is the long time deposit, short-term agreement repurchase, money market funds and assets with larger liquidity (OECD, 2018). The M3 to GDP is the important of financial system to capture the financial deepening that has positive relationship with growth of economy (Favara & giovanni, 2003; King & Levine, 1993).

Table 4.5 Descriptive Statistics of Domestic Credit to Private Sector, Domestic Credit to Private Sector and Liquid Liabilities in Period of 1975-2015.

Variable	Countries	Mean	Median	Max	Min	Std. Dev.	Obs.
CD	Asian countries	46.47	31.65	253.26	0.96	44.81	1438
	Asian countries with stock market	55.52	39.83	253.26	1.92	46.74	1090
CDB	Asian countries	44.94	31.05	253.15	0.34	42.33	1430
	Asian countries with stock market	53.68	39.24	253.15	1.92	43.89	1082
LQD	Asian countries	63.44	45.76	362.88	3.76	52.96	1425
	Asian countries with stock market	70.29	51.29	362.88	6.82	56.34	1077

In table 4.5 summary of descriptive statistic for financial variables which the mean value of domestic credit to private sector is at 46.47% to GDP for Asian countries and 55.52% to GDP for Asian countries with stock market indicate that in countries which have stock market present of higher average domestic credit to private sector to GDP show the better development in financial system, for domestic credit to private sector by bank and liquid liabilities are show the same result of difference in average value for Asian countries and Asian countries with stock market.

Now consider the variables of stock market indicators include stock market capitalization to GDP, stock total value traded to GDP and turnover ratio. Three variables are more widely be used in many studies which reviewed in the literature.

Market capitalization is measured as the value shares of listed company is a ratio to nominal GDP which also known as market value. Stock total value traded is defined as multiplying between the number of share trade in total and market price of them which calculated both in domestic and foreign, total value traded just measure the size of stock market nether it does not provide to be the liquidity and total value traded increase value without increase in the number of share trade reason from value

measured by quantity and price (Beck & Levine, 2004). Turnover ratio is the ratio between total value of shares traded and total value of listed shares or market capitalization, which it can measures liquidity of market as well.

Table 4.6 Descriptive Statistics of Stock Market Capitalization, Stock Total Value Traded, Stock Market Turnover Ratio in Period of 1975-2015.

Variables	MRKCAP	ST	TO
Mean	66.71	43.59	54.53
Median	37.23	15.34	31.26
Max	114.56	100.58	212.15
Min	3.13	5.53	19.25
Std. Dev.	25.81	22.40	29.22
Obs.	746	621	754

In Table 4.6 The highest stock market capitalization by average is at 114.56% to GDP, stock total value traded by average is 100.58% and 212.15% to GDP for turnover ratio that show the size of stock market has developed. For more understanding, in the average value of stock market development indicators are higher than median value, mean value is at 66.71% to GDP for stock market capitalization, 43.59% to GDP stock total value traded and 54.53% to GDP turnover ratio that can support the development of stock market which has grown up over 41 years.

Table 4.7 Correlation of All Variables.

Correlation	***GROWTH***	***YPCR(-1)***	***GL***	***PL***	***GOV***	***INF***	***TR***	***CD***	***CDB***	***LQD***	***MRKCAP***	***ST***	***TO***
GROWTH	1.00												
YPCR(-1)	-0.31***	1.00											
GL	0.33***	-0.15***	1.00										
PL	0.04	-0.03	0.10*	1.00									
GOV	-0.23***	0.37***	-0.25***	-0.08	1.00								
INF	0.00	-0.34***	-0.01	0.03	-0.33***	1.00							
TR	-0.10**	0.13**	-0.11**	-0.05	-0.08*	-0.11**	1.00						
CD	-0.05	0.52***	0.29***	-0.11**	0.07	-0.40***	0.25***	1.00					
CDB	-0.02	0.43***	0.34***	-0.09**	0.02	-0.38***	0.35***	0.96***	1.00				
LQD	-0.08*	0.46***	0.14***	0.04	0.09**	-0.38***	0.28***	0.85***	0.82***	1.00			
MRKCAP	-0.03	0.33***	0.00	-0.01	-0.03	-0.15***	0.60***	0.44***	0.49***	0.51***	1.00		
ST	0.06	0.36***	0.08*	-0.04	0.00	-0.15***	0.41***	0.47***	0.49***	0.51***	0.78***	1.00	
TO	0.16***	0.06	0.17***	-0.24***	-0.05	-0.08*	-0.21***	0.20***	0.18***	0.13**	-0.02	0.44***	1.00

Note: *** indicates significance at the 1%, ** at the 5% and * at the 10% levels.

Source: Author's calculation.

Consider the correlation of variables used in the models by results of their correlation shows in the Table 4.7. High correlation of variables able to lead a multicollinearity as the results from table 4.7 explored that the correlation between one lagged of real GDP per capita – YPCR and Domestic credit to private sector (CD) is 0.52 not too high thus both of them can use in same model, correlation of trade openness – TR and stock market capitalization – MRKCAP is 0.6 means it has quite high correlated but in literature review these two variables cannot exclude because TR is a control variable and we can avoid endogeneity bias by using of GMM. Domestic credit to private sector – CD, domestic credit to private sector by bank – CDB and liquid liabilities – LQD are highly correlated is more than 0.8, same as the high correlation between stock market capitalization – MRKCAP and stock total value traded – ST which all have value more than 0.8 (see Table 4.7), which lead to have multicollinearity problem in the model, three variables are capturer for banking sector namely CD, CDB. LQD, and two variables are capturer for stock market development MRKCAP, ST, if these variables are used in the regression model it may become difficult to interpret the coefficients of variables. However, in this study is used these variables excepted CDB must be removed because of high correlation and will be interpret in same definition with CD.

4.2 Causality

In Table 4.8 shows results from the unit root tests for growth rate per capita, domestic credit to private sector to GDP, domestic credit to private sector provided by bank to GDP, liquid liabilities, market capitalization to GDP, stock total value trade to GDP and turnover ratios. In this study used the Schwarz Info Criterion (SIC) to determine optimal lags for each variable, the augmented Dickey-Fuller (ADF) values are used in both individual intercept and trend.

The results form panel unit root explored that dependent variable as growth rate per capita found no unit root both in level and first difference means it is stationary at level, same as stock market development indicators namely MRKCAP, ST and TO which have significant statistically. However, for banking sector development indicators namely CD, CDB and LQD found to have unit root which

means the variables are not stationary at level, but the variables found to be stationary at first difference by significant statistically chi square.

Table 4.8 Results from Panel Unit Root Test.

	Level	**First difference**	**Lag**
Variables	ADF – Fisher chi-square	ADF– Fisher chi-square	
GROWTH	450.24***	1053.05***	1
CD	48.38	363.25***	1
CDB	46.06	355.41***	1
LQD	69.82	704.17***	1
MRKCAP	81.72**	299.28***	1
ST	81.93***	245.79***	1
TO	115.59***	344.23***	1

Note: *** indicates significance at the 1%, ** at the 5% and * at the 10% levels.

Table 4.9 display results from panel var causality test. As the unit root test choosing the optimal lags determined by the Schwarz Info Criterion (SIC) before testing the causality. For causality it starts with the null hypothesis is the financial development do not homogeneously cause economic growth, and economic growth does not homogeneously cause financial development. In Table 4.9 can be interpreted as, stock market capitalization found to be homogeneously caused economic growth (rejected the null hypothesis) with the significant at the 1% level and economic growth has not cause of stock market capitalization, it shows the one-way direction causality which means stock market development cause growth as expected. In addition, there is no found the causality between stock total value share traded and growth, turnover ratios does not homogeneously cause economic growth, but growth found to be homogeneously caused turnover ratios, this is not surprise because high growth can support encourage investors to invest which led to have high turnover ratios, whatever turnover ratios unable to capture the size of financial development.

Table 4.9 Results from Panel VAR Causality Test.

Outcome			Lag	Chi-sq
MRKCAP	→	GROWTH	5	41.17061***
	↛		5	2.880202
ST	↛	GROWTH	1	0.409922
	↛		1	0.272281
TO	↛	GROWTH	1	1.160567
	←		1	5.231399**
D(CD)	↛	GROWTH	1	0.421877
	←		1	9.184304***
D(CDB)	↛	GROWTH	1	0.507543
	←		1	7.017781***
D(LQD)	→	GROWTH	3	18.20233***
	←		3	7.966265**

Note: *** indicates significance at the 1%, ** at the 5% and * at the 10% levels.

For banking sector development, domestic credit to private sector and domestic credit to private sector provided by bank have not cause economic growth, but growth found to have homogeneously cause them by the significance at the 1% level of significant. By the way, liquid liabilities and growth can reject the null hypothesis, liquid liabilities found to be homogeneously caused growth, and growth found to be homogeneously caused liquid liabilities, this show both direction causality which supposed to be endogeneity problem.

4.3 Panel least squares estimation

4.3.1 Financial Development and Economic Growth of Asian Countries (All Economies).

The method used wildly to choose between fixed effects and random effect showed in the Table 4.10. Redundant test showed the probability of F-test is statically significant at the 1% level and the probability of Hausman Chi-square is statically significant at the 1% level (see Table 4.10). Thus, the result is able to reject the null hypothesis and accept the alternative hypothesis which shows that fixed effects model using is appropriated.

Table 4.10 Fixed Effects and Random Effects Model Test.

Redundant fixed effect tests	Cross-section F-test: 3.7391	Prob. 0.0000
Random effects - Hausman Test	Chi-sq. Statistic: 20.2238	Prob. 0.0025

Table 4.11 Results from Fixed Effects Model for Control Variables

Variable	**GDP growth per capita**
YPCR(-1)	-0.000231***
	(-6.933)
GL	0.114440***
	(3.915)
PL	-0.072097***
	(-3.705)
GOV	-0.167203***
	(-4.920)
INF	-0.004014***
	(-5.240)
TR	-0.004915
	(-0.601)
C	11.67461***
	(5.404)
Observations	1152
R-squared	0.308
F-test	5.397
	[0.000]

Note: All regressions are OLS and contained country fixed effects, t-values are in parentheses. *** indicates significance at the 1% level, ** at the 5% level and * at the 10% levels respectively.

In the table 4.11 shows the results from the panel least squares fixed effects model of control variables for economic growth determinant explored that control variables which determine for economic growth consist of real GDP per capita, gross fixed capital formation, primary school enrolment, government spending and inflation rate are statistically significant at the 1% level of significance. In addition, there is no found relationship between trade openness and growth in the model and then the effect of primary school enrollment rate to growth which has significant negative relationship that difference from the expectation sign, nevertheless this sign has not surprise for this study because of the primary enrollment will create liability in economy as the unskilled of these individual cannot achieve jobs that are more productive (Hanif & Arshed, 2016).

Table 4.12 shows the results of the relationship between financial development and economic growth in Asian countries which financial development is proxy by banking development indicators. The results found that, domestic credit to private sector has negative relationship with economic growth by statistically significant in the 1% level, which can explain as increasing in credit lead to have slower growth rate of countries. Furthermore, the relationship between liquid liabilities and economic growth in 1% level of significant negative relationship.

By adding the dummy variables which the value of 1 present as countries with stock market and 0 is others in columns 3 and 5, which the estimated coefficients of dummy variable are positive impact on growth at 1% level of significant. Suggests that, in Asian countries with well-developed stock market tend to boost growth more than those countries without well-developed stock market by 1.756 percentage (see column 1). Then, the interaction dummy which induced to control for the level of stock market development found that there are positive and significant relationship with economic growth (see columns 4 and 6), which interpreted that while the presence of a stock market in countries with high developed in stock market tend to grow faster compared with countries with low level development in stock market.

Table 4.12 Empirical Results from Fixed Effects Model (FEM) of Asian Economies (All Economies).

	GDP growth per capita					
Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Financial Development indicators						
CD	-0.0326***	-	-0.0416***	-0.0347***	-	-
	(-2.351)		(-3.679)	(-3.131)		
LQD	-	-0.0244***	-	-	-0.0329***	-0.0325***
		(-2.579)			(-3.382)	(-3.273)
DUM	-	-	1.7567***	-	1.7612***	-
			(3.468)		(3.431)	
DUM*MRKCAP	-	-		0.0085*	-	0.0125***
				(1.922)		(2.603)
Control Variables						
Lag of per capita GDP	-0.0001***	-0.0001***	-0.0001***	-0.0001***	-0.0001***	-0.0001***
	(-3.539)	(-3.770)	(-3.615)	(-3.887)	(-3.883)	(-4.177)
GL	0.1067***	0.0908***	0.1045***	0.1103***	0.0853***	0.0949***
	(3.361)	(2.835)	(3.309)	(3.476)	(2.675)	(2.970)
PL	-0.0208	-0.0244	-0.0302	-0.0199	-0.0343*	-0.0223
	(-1.121)	(-1.130)	(-1.616)	(-1.070)	(-1.832)	(-1.198)
GOV	-0.2307***	-0.2267***	-0.2215***	-0.2223***	-0.2150***	-0.2132***
	(-5.910)	(-5.759)	(-5.691)	(-5.665)	(-5.469)	(-5.386)
INF	-0.0068***	-0.0067***	-0.0064***	-0.0067***	-0.0063***	-0.0066***
	(-5.822)	(-5.715)	(-5.443)	(-5.748)	(-5.323)	(-5.624)
TR	0.0266***	0.0274***	0.0234**	0.0166	0.0256**	0.0167
	(2.748)	(2.648)	(2.422)	(1.513)	(2.480)	(1.502)
Intercept	6.1528***	6.8127***	6.7699***	6.6203***	7.5574***	7.4474***
	(3.061)	(3.389)	(3.374)	(3.275)	(3.758)	(3.689)
Observations	1024	1009	1024	1024	1009	1009
R-squared	0.216	0.210	0.225	0.219	0.220	0.216
F-test	5.641	5.318	5.653	5.441	5.508	5.379
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Note: All regressions are OLS and contained country fixed effects, t-values are in parentheses. *** indicates significance at the 1% level, ** at the 5% level and * at the 10% levels respectively.

4.3.2 Financial Development and Economic Growth of Asian Countries with Well-Developed Stock Market.

At first, the examination financial development and economic growth in case of Asian countries with stock market, if compare with all Asian countries the samples are able to cover of 32 economies which are selected in the estimation.

Table 4.13 Fixed Effects and Random Effects model test.

Redundant fixed effect tests	Cross-section F-test: 3.9371	Prob. 0.0000
Random effects - Hausman Test	Chi-sq. Statistic: 11.7083	Prob. 0.0688

Table 4.13 indicate that the models are fit with fixed effects model by Redundant test and Hausman test are significant. Thus, result reject the null hypothesis and accept the alternative hypothesis with fixed effects model using is appropriated.

Table 4.14 Results from Fixed Effects Model for Control Variables.

Variable	**GDP growth per capita**
YPCR(-1)	-0.000167***
	(-5.059)
GL	0.112558***
	(3.663)
PL	-0.004405
	(-0.252)
GOV	-0.263085***
	(-3.399)
INF	-0.003824***
	(-5.740)
TR	0.005450
	(0.703)
C	4.863044**
	(2.326)
Observations	884
R-squared	0.231
F-test	7.287
	[0.000]

Note: *** indicates significance at the 1%, ** at the 5% and * at the 10% levels.

In the table 4.14 above shows the results from the panel least squares fixed effects model of control variables for economic growth determinant of Asian countries with well-developed stock market, which explored that the sign of these control variables is not difference from Asian countries (All economies), but in Asian countries with well-developed stock market found the insignificant in the relationship between primary school enrolment rate and growth.

This study used the models specific with financial development indicators added in several model with control variables for growth determinant. Then, by adding financial development indicators in the models to see the difference of statistically significant with multicollinearity considered as shows in Table 4.15 and 4.16.

The relationship between financial development and economic growth is showed in Table 4.15 with panel least square fixed effects model. Firstly, consider the banking development indicator, explores that domestic credit to private sector has negative impact on economic growth by statistically significant in the 1% level, and there is no found the relationship between liquid liabilities and growth. Secondly, focus on stock market development indicators namely stock market capitalization, stock total value share traded, turnover ratios were found to be positive relationship with economic growth with the relationship of stock market capitalization and stock total value share traded have significance relationship at the 1% level of significant except turnover ratios with insignificant.

In the table 4.16 shows the relationship between financial development and growth by filling the financial development indicators in the same models with pondering of multicollinearity problem. The result indicated that the sign of credit impact to growth is still same as sign in the Table 4.15 except in the column 4 which found the impact of liquid liabilities to growth has significant at 5% level with the negative sign, and stock market development indicators have found positive impact to growth namely stock market capitalization and total share traded value with the significant at 5% and 1% level by following, except turnover ratios that see the weak relationship on growth which unexpected.

Table 4.15 Results from Fixed Effects Model of Countries with Stock Market.

	GDP growth per capita				
Variable	**(1)**	**(3)**	**(4)**	**(5)**	**(6)**
Financial Development indicators					
CD	-0.031627***	-	-	-	-
	(-3.076)				
LQD	-	-0.014422	-	-	-
		(-1.523)			
MRKCAP	-	-	0.007331**	-	-
			(2.097)		
ST	-	-	-	0.007794*	-
				(1.831)	
TO	-	-	-	-	0.000304
					(0.114)
Control variables					
Lag of per capita GDP	-0.0000921**	-0.000111***	-0.000198***	-0.000186***	-0.000209***
	(-2.349)	(-2.715)	(-6.847)	(-6.347)	(-7.389)
GL	0.139589***	0.117463***	0.089900**	0.033769	0.052848
	(4.232)	(3.519)	(2.568)	(0.964)	(1.529)
PL	0.018466	0.011794	-0.023721	0.029594	-0.001614
	(1.060)	(0.673)	(-0.852)	(0.906)	(-0.058)
GOV	-0.174324**	-0.186811***	-0.222214***	-0.408546***	-0.341917***
	(-2.546)	(-2.664)	(-3.089)	(-5.129)	(-4.787)
INF	-0.003655***	-0.003622***	-0.018323***	-0.091373***	-0.055467***
	(-3.456)	(-3.372)	(-4.411)	(-3.885)	(-4.914)
TR	0.013803	0.008739	0.002900	-0.003824	0.010315
	(1.514)	(0.856)	(0.273)	(-0.473)	(1.395)
Intercept	1.401750	2.531912	7.785463**	7.236515*	8.257468***
	(0.662)	(1.189)	(2.464)	(1.950)	(2.625)
Observations	812	797	571	487	580
R-squared	0.240	0.226	0.366	0.378	0.369
F-test	6.814	6.365	8.579	8.933	8.840
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Note: All regressions are OLS and contained country fixed effects, t-values are in parentheses. *** indicates significance at the 1% level, ** at the 5% level and * at the 10% levels respectively.

Table 4.16 Results from Fixed Effects Model of Countries with Stock Market.

	GDP growth per capita			
Variable	**(1)**	**(2)**	**(3)**	**(4)**
Financial Development indicators				
CD	-0.0258***	-0.0443***	-	-
	(-2.585)	(-4.671)		
LQD	-	-	-0.0160	-0.0330**
			(-1.402)	(-2.564)
MRKCAP	0.0071**	-	0.0089**	-
	(2.047)		(2.353)	
ST	-	0.0134***	-	0.0182***
		(2.871)		(3.305)
TO	0.0001	-0.0052	0.0002	-0.0064*
	(0.068)	(-1.534)	(0.101)	(-1.754)
Control variables				
Lag of per capita GDP	-0.0001***	-0.0001***	-0.0001***	-0.0001***
	(-4.966)	(-2.751)	(-4.969)	(2.666)
GL	0.0939***	0.0737**	0.0794**	0.0052
	(2.689)	(2.093)	(2.195)	(0.137)
PL	-0.0094	-0.0382	-0.0162	-0.0491
	(0.336)	(-1.110)	(-0.571)	(-1.306)
GOV	-0.2127***	-0.2972***	-0.1963**	-0.3615***
	(-2.826)	(-3.689)	(-2.497)	(-4.295)
INF	-0.0493**	-0.0835***	-0.0523**	-0.0864***
	(-2.162)	(-3.479)	(-2.232)	(-3.352)
TR	0.0102	0.0053	0.0081	0.0051
	(0.935)	(0.582)	(0.706)	(0.488)
Intercept	7.2376**	13.607***	7.7745**	16.987***
	(2.238)	(3.358)	(2.350)	(3.778)
Observations	556	438	539	423
R-squared	0.371	0.404	0.355	0.369
F-test	8.035	8.290	7.450	7.116
	[0.000]	[0.000]	[0.000]	[0.000]

Note: All regressions are OLS and contained country fixed effects, t-values are in parentheses. *** indicates significance at the 1% level, ** at the 5% level and * at the 10% levels respectively.

4.4 Results of Generalized Method of Moments (GMM)

This study estimates GMM system approach by using lag of dependent variable as an instrumental variable, which is suitable for the two-step estimator of generalized method of moments, the number of lagged used of dependent variable as instrumental variable optimal used is two-three number of lagged GROWTH(-2,-3). The estimation was conducted in order of cross-sectional in the first difference of the first order correlated. In estimation results, J-statistic, which has the null hypothesis that the instrument variable is valid and the alternative hypothesis that the instrument variable is invalid (Hansen, 1982), from the results are showed the probability of J-statistic more than 0.1 which means insignificant that cannot reject the null hypothesis as this instrument variable able to use and fit with the model as well.

Table 4.17 The impact of control variables to growth (GMM).

Variable	**GDP growth per capita**
GROWTH(-1)	0.279946***
	(31.300)
YPCR(-1)	-0.000167
	(-0.918)
GL	0.052505***
	(3.214)
PL	-0.100235**
	(-2.205)
GOV	-0.418027***
	(-11.216)
INF	-0.004449***
	(-4.517)
TR	0.056898***
	(3.546)
Country fixed effects	1st differences
Observations	1094
J-statistic	20.414
Prob(J-statistic)	[0.992]

Note: *** indicates significance at the 1%, ** at the 5% and * at the 10% levels.

From the results show in the Table 4.17, the first lagged of dependent variable namely growth rate per capita is found to be statistic significant at the 1% level of significance which means the explanation power to the dependent variable is good, also support that the coefficient of lagged Growth is positive, this sign indicates that the previous year of Growth can positively affect the current year Growth. The control variables are included in the model which shows that all control variables found to be significant relationship with growth such as gross fixed capital formation and trade openness are positive relationship and significant at 1% level, government consumption and inflation rate are negatively significance at 1% level of significant with growth as expected sign that look better than the fixed effects model. However, gross primary school enrolment rate is negative relationship and significant at 5% level with growth means increasing in gross of primary school tend to harm the growth rate of economy with unexpected sign.

As the results from the Table 4.18, the control variables used for determining of growth rate per capita, banking sector development indicators are used to seek the relationship of banking and growth and by adding the dummy variables to examine the difference between countries with and without stock market, from results explored that domestic credit to private sector and liquid liabilities are still negative impact on growth at 1% level of significant (see column 1, 2 and 4). Conversely, in columns 1 and 3 the stock market dummy is included which find that the estimated coefficients of dummy variable are positive impact on growth at 1% level of significant. Suggests that, in Asian countries with well-developed stock market tend to boost growth more than those countries without well-developed stock market by 2.248 percentage of growth rate per capita (see column 1). Furthermore, the interaction dummy which induced to control for the level of stock market development found that there are positive and significant relationship with economic growth (see columns 2 and 4), which interpreted that while the presence of a stock market in countries with highly developed in stock market tend to grow faster compared with countries with low level development in stock market, as in column 4 the coefficient of DUM*MRKCAP can explain as countries with high level development in stock market tends to have growth more than countries with low level development in stock market by 0.0074 percentage.

Table 4.18 Result from GMM of all Asian Countries.

	GDP growth per capita			
Variable	**(1)**	**(2)**	**(3)**	**(4)**
Financial development variables				
CD	-0.0264***	-0.0252***	-	-
	(-2.735)	(-8.759)		
LQD	-	-	-0.0400	-0.0275***
			(-1.446)	(-2.896)
DUMMY	2.2482***	-	1.8237***	-
	(10.713)		(4.007)	
DUM*MRKCAP	-	0.006657***	-	0.0074**
		(3.325)		(1.864)
Control variables				
Lag of GDP	0.1644***	0.2002***	0.1538***	0.2064***
growth	(24.154)	(115.240)	(22.658)	(27.597)
Lag of per capita	-0.0004***	-0.0002***	-0.0003***	-0.0002***
GDP	(-5.272)	(-18.979)	(-2.181)	(-7.019)
GL	0.0235**	0.0502***	0.0902***	0.0542***
	(2.496)	(6.349)	(3.810)	(6.491)
PL	-0.1713***	-0.0595***	-0.1958***	-0.0649***
	(-14.826)	(-17.596)	(-10.188)	(-5.074)
GOV	-0.4509***	-0.3783***	-0.4706***	-0.3839***
	(-9.941)	(-42.554)	(-4.774)	(-16.237)
INF	-0.0007**	-0.0024***	0.0002	-0.0025***
	(-2.148)	(-7.653)	(0.371)	(-7.696)
TR	0.0586***	0.0340***	0.0701***	0.0313***
	(6.157)	(9324)	(6.690)	(7.888)
Observations	976	976	962	962
J-statistic	31.1366	32.9006	33.6808	39.3361
Prob(J-statistic)	0.655199	0.569825	0.386049	0.207282

Note: t-values are in parentheses. *** indicates significance at the 1% level, ** at the 5% level and * at the 10% levels respectively.

The results of financial development and economic growth by GMM estimator are showed in the Table 4.19 as the empirical results explore as below:

Financial development considers banking sector development which measured by domestic credits to private sector and liquid liabilities were found to be significant at 1% level (see columns 1 and 2). However, from the results show the negative relationship with economic growth for Asia in the panel which can investigate that increasing in domestic credit to private sectors by 1 percentage to GDP tend to reduce GDP growth per capita by 0.023 percentage and liquid liabilities arise 1 percentage to GDP will decrease in growth rate by 0.017 percentage. In the other word, domestic credit to private sector and one provided by bank, liquid liabilities have negative contribution to economic growth that means when increasing in funding by rising the credit it is not support the growth of countries and instead it harms the economic growth grow up slower.

Beside banking sector development indicators there are stock market development indicators namely stock market capitalization, stock total value share traded, turnover ratios which can see the results in the Table 4.20 (see columns 3, 4 and 5). This finding investigates that stock market capitalization and stock total value trade have positive relationship and significance in the 1% level of significant, that means when stock market capitalization expands by 1 percentage to GDP will make GDP growth per capita arise by 0.017 percentage, supports by increasing by 1 percentage to GDP in stock total value share traded will increase 0.039 percentage for growth rate per capita. For Turnover ratios does not have any relationship with economic growth which it is not surprise for this variable. At last, the better positive coefficient of stock market development indicators for results in GMM which can explained as when stock market has developed in more level it has an effect to lead economic grow up higher, in another word, developing in stock market can boost growth of countries as increasing in arising in investment enhancement.

Table 4.19 Results of Financial Development and Growth by GMM.

	GDP growth per capita				
Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Financial development variables					
CD	-0.0236***	-	-	-	-
	(-4.443)				
LQD	-	-0.0171**	-	-	-
		(-1.850)			
MRKCAP	-	-	0.0173***	-	-
			(2.814)		
ST	-	-	-	0.0394***	-
				(2.667)	
TO	-	-	-	-	0.0007
					(0.517)
Control variables					
Lag of GDP growth	0.2003***	0.2069***	0.1191***	0.1166***	0.1798***
	(62.058)	(13.594)	(5.679)	(3.873)	(21.514)
Lag of per capita GDP	-0.0002***	-0.0002***	-0.0005***	-0.0004*	-0.0002
	(-7.985)	(-6.280)	(-4.749)	(-1.937)	(-1.483)
GL	0.0545***	0.0585***	0.0477	0.0258	-0.0187
	(5.658)	(6.657)	(1.345)	(0.266)	(-0.528)
PL	-0.0648***	-0.0755***	-0.0556	-0.0325	-0.0409
	(-10.064)	(-4.770)	(-1.577)	(-0.595)	(-0.792)
GOV	-0.3898***	-0.4059***	-0.7204***	-1.1872***	-0.5284***
	(-10.006)	(-4.437)	(-9.951)	(-7.263)	(-5.860)
INF	-0.0020***	-0.0025***	-0.0061	-0.1520***	-0.0373**
	(-3.459)	(-4.454)	(-0.871)	(-3.830)	(-2.072)
TR	0.0412***	0.0364***	0.0388**	0.0187	0.0375***
	(7.201)	(5.515)	(2.458)	(0.497)	(4.184)
Observations	976	962	539	460	548
J-statistic	35.0970	32.3912	23.7023	19.0117	23.1702
Prob(J-statistic)	[0.463]	[0.594]	[0.363]	[0.327]	[0.392]

Note: t-values are in parentheses. *** indicates significance at the 1% level, ** at the 5% level and * at the 10% levels respectively.

4.5 Summary of Results

In this study, there are main three method contribution to investigate the relationship between financial development and economic growth in Asia consist of causality tests, panel data methods (panel least square fixed effects model) and panel data methods (generalized method of moments). Through the estimation was made, the brief summary of the estimated results can be written by following.

Panel VAR causality test which shows that all Asian countries have the clearly causal effect between stock market development and economic growth and causality from economic growth to banking sector development at most.

Using panel data methods of panel least square fixed effects model for financial development and economic growth of all Asian countries (all economies), the estimation shows that banking sector development indicators have a negative and significant relationship with economic growth while dummy variable were assigned to identify countries with well-developed stock market and without, which countries with well-developed stock market were found to have higher contribution to growth of countries compared with those without well-developed. Furthermore, argument that countries with higher level in stock market development tent to grow faster.

Using panel data methods of panel least square fixed effects model for financial development and economic growth of Asian countries (Selected countries) with well-developed stock market, the results explore that financial development associated correlated with growth significantly which can divide in two sectors as banking sectors development have negative impact on growth and stock market development have positive impact on growth, except turnover ratio which has unexpected weak relationship.

Generalized method of moments (GMM), the study shows the better significantly of the relationship between financial development and economic growth by using lagged of dependent variable economic growth as an instrumental variable. Second step of GMM shows the negative and significant relationship between banking sector development and growth while stock market development is found to be positive and significant impact on economic growth through robust in Asian countries.

CHAPTER 5

CONCLUSION AND POLICY RECOMMENDATION

According to the current Asian financial market has demonstrated the development in financial market as well as in banking development and stock market development which in the bank sector is become the main role of all countries in Asia opposite a stock market that is not expansion widely, many countries in Asia proceed their economic activity without well-developed stock market. This study investigated the role of financial development and economic growth that showed the difference the impacting on growth rate between countries with and without well-developed stock market, also shown financial development as measured by the banking development and stock market development as the role for driving growth of Asia.

5.1 Conclusion

This study has the propose to investigate relationship between financial development and economic growth of overall countries in Asia, using the financial development indicators such as banking development indicators, stock market development indicators and economic growth taken as a panel data of all 48 countries in Asia that cover the period of 1975-2015. The study also proceeds the country specific effects by applying panel data fixed effects methods, performing the causality test using panel var causality and apply Generalized Method of Moments (GMM), following the literature the instrumental variable (IV) is included which showed the efficient of financial development impact on economic growth.

The main findings of this study are as follow, the dummy variables for countries with and without well-developed stock market, in the result found that Asian countries with well-developed stock market tend to boost growth faster more than those without. This result explains the important of stock market as the main role in economy. Furthermore, the interaction dummy which proxy the level of developing in stock market of each countries that have stock market in Asia, this variable found

to be a positive and significant relationship with economic growth means while the presence of a stock market in countries with high developed in stock market tend to grow faster compared with countries with low level development in stock market.

Financial development indicators, firstly, banking sector development, indeed have the opposite effect on economic growth especially the present of the negative and significant relationship between domestic credit to provide sectors. This result shows the relationship between banking development and economic growth has weak relationship, nevertheless this is not surprise according to the literature increasing in credit can harm to be slower economic growth, the reason of the lower quality of credit that instead this will increase growth opposite this make dept for economy because of a disproportionate rise of household more than business credit (Cournède, 2015). Furthermore, there is found the increasing in liquid liabilities able to decrease the growth rate.

Secondly, Stock market development indicators, the positive and significant relationship was found for stock market capitalization, stock total value traded and turnover ratio which investigated that developing in equity markets as stock markets are key to capitalize values of growth facilities that boost growth of countries as well. At last, this study found the casual effect of stock market capitalization to economic growth as the one-way directional causality that can say that stock market development is considered as the key for growth enhancement in Asian countries. Thus, economic policies should be looked toward by improving in the financial market and especially for stock market development for promoting overall economic development.

5.2 Policy Recommendations

This study further has demonstrated that financial development as represented by the banking sector and stock market has an impact on economic growth in Asia. The study also shows that the presence of a stock market has a higher contribution to economic growth compared with countries without well-developed or without stock market, furthermore, the level of development in stock market of each countries have difference impact on growth by countries with higher development in stock market tend to have higher economic growth. The finding also shows that financial

deregulation can be the important key of financial development to reach the growth target as expect.

Expand stock market in Asia. This study has shown the contribution of stock market development that has the positive impact on growth of economy in Asia, the development in stock market can be causal of high economic growth. In addition, showing the need for Asia to expand their stock markets and offer the convenient tools to make attractive to investors. Furthermore, expand stock market is not enough to become the main role in economy, thus require the policies to make these new stock market developments toward become the strongest funding of financial structure and looking forward making as the new wave of finance industrialization.

Financial market oversight. According to the study shows the weak relationship between banking sector development and economic growth in Asia. The reason as lack of credit efficiency, unable to speculative in using fund to invest and leads to market volatility (Ogunremi, 2010). The furthered financial market oversight can lead to have market efficiency and confidence of investor. Financial intermediaries can be effectiveness in funding and indirect effect that enhance the growth rate by monitoring, thus the effectiveness of these policies should be improved. In addition, this requires the policies to make stability in financial activity and reduce the risk of bank credit that can affect to slower growth.

5.3 Suggestions for Future Studies

Baseline for control variable to determine growth rate which in this study there are many control variables have used, for instance primary school enrollment rate to proxy of human capital and gross fixed capital formation proxy the rate of investment. A suggestion would be, to look at additional variable that can proxy of human capital because the result in this study showed that primary school enrollment has a weak relationship with growth and negative relationship, thus looking for the other human capital variable will be the good variable to better estimate of growth determinant that will affect in the models of financial development indicators impact on growth.

This study only used main five financial development indicators namely, domestic credit to private sector, and liquid liabilities for banking sector development and stock market capitalization, stock total traded value and turnover ratio for stock

market development. For future studies, if the data would be available, to augment the additional financial development indicators that can measure the development of financial institution, mutual fund, insurance etc. More and varied indicators may give the better policy and seeking for better result in area of financial development and economic growth.

Once results of this study showed that there are weak and negative relationship between banking sector development and growth rate of economy, thus the suggestion is conducted at the microeconomic level, for instance using banking structure variable to seek the way it harmful to economic and variable of firm level data to study the role of financial development both for banking and stock market.

In the literature, there is some studies which interested in finding the impact of difference societal norm and legal institution impact on financial development impact on economic growth. In addition, if the data would be available for legal system in the financial structure or financial institution, it would be beneficial in determining growth through the developing or changing in the legal system. Furthermore, it would be important if the future study to investigate the role of financial development impact on growth rate by using a better methodology of econometric technique.

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