

The Relationship between Banking Sector, Stock Market Development and Economic Growth: The Case of East Asia and Pacific Countries

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ABSTRACT

This thesis aims to investigate the relationship between the financial development and economic growth in East Asia and Pacific countries between the periods 1975 to 2015, using unit root test, cointegration test, Granger causality test and error correction model. The empirical results indicate that there is a long-run equilibrium relationship between the financial development and economic growth. We also found that banking sector positively affect economic growth unlike the stock market that inversely influences economic growth. East Asia and Pacific countries converges to its level of equilibrium in long-run by 2.92 percent through the financial sector contributions. Therefore, the influence of banking sector and the stock market on economic growth vary from one to another country and depends on the nature of country' resources. Our findings are compatible with some literatures and studies in the other regions and countries such as Malaysia, Kenya, Bangladesh, China and Saudi Arabia and other countries (Vaithilingam, 2008; Gleba Nila, 2015; Sheilla Nyasha et al, 2017; Banerjee et al. 2017; Wang, 2013).

Keywords: Gross domestic product, Domestic credit to private sector, Stock value traded, East Asia, Pacific countries.

ÖZ

Bu tezin amacı zaman serisi analiz yöntemleri kullanarak Doğu Asya ve Pasifik ülkelerinde 1975-2015 yılları arasında finansal gelişim belirleyicileri ile ekonomik büyüme arasındaki uzun dönem denge ilişkisini belirlemektir. Zaman serisi analizi sonuçlarına göre ekonomik büyüme ve finansal gelişim belirleyicileri arasında uzun dönem denge ilişkisi bulunmaktadır. Bunun yanında bankacılık sektöründeki gelişim ekonomik büyümeye pozitif katkı sağlarken, menkul kıymetler borsası ekonomik büyümeyi negatif yönde etkilemektedir. Hata düzeltme modeli sonuçlarına göre, Doğu Asya ve Pasifik ülkelerinde ekonomik büyüme bankacılık sektörü ve menkul kıymetler borsalarının katkısıyla uzun dönem denge değerlerine %2.92 hız ile ulaşmaktadır. Bu nedenle bankacılık sektörü ve menkul kıymetler borsalarının ekonomik büyümeye olan etkisi ülkelerin yapısı ve sahip olduğu kaynaklar göz önünde bulundurulduğunda ülkeden ülkeye değişim göstermektedir. Bu tezin sonucunda ulaşılan bulgular literatürde bulunan çalışmaları desteklemektedir (Vaithilingam, 2008; Gleba Nila, 2015; Sheilla Nyasha et al., 2017; Banerjee et al., 2017; Wang, 2013).

Anahtar Kelimeler: Gayri safi yurtiçi hasıla, Özel sektöre yönelik kredi, Doğu Asya, Pasifik Ülkeleri.

DEDICATION

This thesis specially provided to my parents as they are very important in my life due to their unlimited Support and sincere love for my entire life.

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LIST OF ABBREVIATIONS

ADF Test	Augmented Dickey-Fuller Test
AIC	Akaike Information Criteria
AR	Auto Regressive
DC	Domestic Credit Provided by Banking Sector as Ratio to GDP
ECM	Error Correction Model
GDP	Gross Domestic Product
PP Test	Phillips-Peron Test
SIC	Schwartz Information Criterion
SV	Stock value traded as Ratio to GDP
VAR	Vector Auto Regressive Model
VECM	Vector Error Correction Model

Chapter 1

INTRODUCTION

1.1 Background of the Study

In recent years, several researchers have conducted research on this subject trying to find out how financial sector affect and connected to economic growth of many different countries. It is a controversial question between economists whether which banking and stock market have an impact on the economic growth and to what extent can these sectors can influence economic growth. Financial market is significant and it is a key factor in finding channels of the available funds in the economy and transferred to the production, industrial and other sectors, so as a result of these actions, economic growth will be boosted Levine & Zervos (1998), McKinnon (1973), Shaw (1973). Due to the of various conflicting results of the existing studies conducted on this subject, the policymakers and researchers did not reach a consensus on this debate about, the relationship that exist between financial sector and economic growth still remain a puzzle and this call for a further investigation. This among other reasons motivated the author to examine the relationship between financial sector and economic growth in East Asia and Pacific countries. The following studies confirm that financial market positively influences economic growth King and Levine (1993), McKinnon (1973), Smith (1969), Fry (1985), Shaw (1973) while others claim that financial development is a result and yield of economic growth. Thus, the findings of this study might help the policymakers to take accurate and proper decisions, when designing economic policies.

Other studies in the literature were using individual country-based and panel data but for the first time in the literature aggregated data were used to investigate the relationship between banking sector, stock market development and economic growth for the case of East Asia and Pacific countries. So this is the contribution of this thesis to the literature.

1.2 Functions of the Financial System

The following functions of the financial sector remain the focus of all economists' researches. Therefore, to find out the right link between economic growth and financial development, a better understanding of these functions are extremely needed. The efficient allocations of resources are the result of a well and accurate financial system performance. Financial sector act as an intermediary between the savers and other economists or firms that they have an ideal idea of using available funds in the economy (Levine, 1990). The functions of the financial system are as follows:

1. The financial system as an intermediators of finance perform a very difficult and important function of evaluating companies, plans, and managers, which are costly and time consuming. For instance, commercial banks access the potential earning of the company, and the credit risk, they also promote the long-run growth and productivity of the companies. As a result of this, the financial sector has more opportunities to determine the best worth investment of those funds (Levine, 1990).
2. The intermediaries and participants of the financial market provide a control system and act as an administrative staff to the companies which assist in assuring that managers work in the interest of creditors and shareholders of the

company. Therefore, excluding this type of control, it is possible for managers to utilize the resources of the company for their personal interests (Weiss & Stiglitz, 1983).

3. The another function of financial sector, which makes the actions of business and trades more facilitated such as minimize the cost of the transaction, reduce the need for exchange as much as possible, enhance trade, and encourage expertise. On the other word, this function facilitates the activities of the economists such as a settlement of payment or the complex level of credit cards (Levine, 2003).
4. Furthermore, the financial sector, determine the prices and setup mechanism of risk integration, exchange and makes adjustments if it is found necessary. Recently, financial derivatives are applied like future, options, and swap contracts in order to suppress the financial institution's interest rate risk and adjust the maturities of assets and debt for the sake of attracting more investors and savers satisfaction. In addition, Intermediators of finance attempting to settle the financial instruments as such shares and bonds in order to contain that much of liquidity and risk mitigation in order to make it compatible with the customers' demands (Nieuwerburgh et al., 2006).

1.3 The Relationship between Economic Growth and Financial Market Development

Several studies have been carried out on the relationship between the financial sector and economic growth from both empirical and theoretical point of views. Some of the existing studies refer to the fact that economic growth can only be derived through

enhancement in capital market or through labour force. A substantial part of the growth observation could be interpreted through the development of technology. In some growth models, the enhancement of growth is perceived as an endogenous variable to the model. This is the reason why some types of growth models are referred to as endogenous model. But, in external models, development of technology is perceived as an exogenous factor. As such, in terms of the conventional model Solow (1956) believes that financial development through increasing the level of capital accumulation efficiency has as an influence on economic growth.

Schumpeter (1911) suggested the conventional model of endogenous growth in order to demonstrate the linkage among financial and innovation phenomenon. The dissertations of growth models start to concentrate on the main role of financial sector in economic growth operations. The theories of endogenous growth claim that the consistency of the internal models is efficient to explain the issues connected to the varying levels of economic development of the countries putting into consideration the differences in growth rates.

McKinnon (1973) and Shaw (1973) suggest that the development of the financial sector is a strategy and could be perceived as an initial phase to reach the growth of the economy. McKinnon (1973) and Shaw (1973) referred to the financial freedom theory in terms of the studies of (Schumpeter, 1911). In accordance with this theory, the quality and quantity of investment increases due to the disposal of authorities restrictions that imposed on banking sector.

Latest researches employ the models of endogenous growth in order to find out the connection between the economic growth and financial development. These types of

models refer to the impact of the capital markets in the economic growth rate. In terms of this approach, Levine (1991) suggests the followings First, the capital market enhances economic growth in long-run. Second, the amount of liquidity in the market has an efficient function on the economic growth and could provide appropriate sources to capture the desirable and optimum investment. However, the long-run relationship between economic growth and the capital market remains debatable.

Smith and Wood (1996) suggest that with the available efficient technology, capital market could facilitate the investment process and minimize the cost of saving displacement. However, Stiglitz (1985) is of the opinion that the capital market is incapable of developing asymmetrical information due to the instability of its prices, thus the free-rider issue happens.

According to Demirgüç & Levine (1996) in their analysis pointed out some reasons that might decelerate the economic growth due to increasing liquidity of the capital market, that:

1. Growing investment returns leads to increase in the liquidity of the stock market, as a result of this, savings rates decrease by income and substitution effect. If the rates of saving decline enough and connected externality to capital accumulation, economic growth could be decelerated because of greater liquidity of the stock market.
2. With decreasing of uncertainty connected to investment, more capital market liquidity might impact on the rates of savings. (Decreasing the uncertainty linked to investment leads to increase the liquidity of the stock market, and thus savings rates decline due to of mysterious impact of savings uncertainty).

3. Scarcity of capital market liquidity might not promote the hesitated investors to take a decision towards investment, as a result of this problem, economic growth may be decelerated. (Excessive liquidity in the stock market might negatively impact corporate governance. Greater market liquidity might motivate investor myopia. Because greater market liquidity easily help non-satisfied investors to quickly sell their stocks, and market liquidity might weaken the commitment of investors and also minimize their motivation to exert control over the company through observing its performance. Based on this view, boosted liquidity in the stock market might adversely impact on economic growth).

Increasing market liquidity might lead to delay investors to sell their shares. Furthermore, increasing market liquidity results weak investors in transferring their shares, as well as a reduction in the amount of investment, and minimize the company control through owners and its management (Liven, 1996). In contrast with the view of Jensen and Murphy (1990) suggest that capital market leads to allocating the resources efficiently and then the development of economic growth.

In accordance with King and Levine (1993) higher innovations rates might lead to higher economic growth rates. In the lack of financial markets, investment projects might encounter scarcity of liquidity. Thus, financial markets are capable of supplying a proper liquidity within low risk for optimal investments. Furthermore, financial information that the investors can access easily could help financial market to impact economic growth effectively. Tirole and Holmström (1993) suggested that financial markets are able to observe the performance of firms through the existing information that associated with management performance in these companies. Hence, the

presented information regarding the share prices of the companies, have an important role for the structure of management and economic growth. Levine (1997) provided a helpful framework concerning the financial intermediary's role. His belief indicates that the financial intermediaries are capable of boosting economic growth by two methods; technological innovations and accumulation of capital:

1. Distribution of risks occurs through existing of financial intermediaries and thus in the lack of financial markets, investment funds departs long-run projects and this results in reduction of economic growth. Financial markets provide the potential of long-run investments through collections and distributions of funds among investors. Overall, small investors will face diversification of liquidity risks. Financial markets give investors the opportunity, and the ability to participate in several companies with different financial intermediaries, as a result of this, the economic growth will be stimulated and boosted.
2. Financial intermediaries improve the allocation of resources within diversified projects by collected information. In the absence of clear and positive information to all investors, it is necessary to conduct deeply survey because of asymmetric information in the case of running project by the firm. Therefore, it is unaffordable and costly for investors to collect sufficient information. Conditionally, financial markets provide necessary information for investors in order to take a proper decision towards investment.
3. Financial markets ameliorate the control systems of the companies, as well as, financial markets, create common perspectives and interests between shareholders and managers of the companies.

4. Savings are stimulated properly by the financial markets. Financial markets collect small funds and invest them in the optimal and desired projects.
5. The specialization is taken into account and enhanced by the financial market. Specialization minimizes the transaction costs and enhances the economic growth.

Current theories emphasize the relationship between economic growth and financial development and the virtual impacts of banks and stock markets on the economic growth. Several models like Levine and King (1993) found out that financial intermediaries and their connection with capital market how to minimize the information and transaction costs and how to utilize in the allocation of resources which leads to achieve a long-run growth. This approach indicates that financial development might decelerate the economic growth. Particularly financial development might lead to reducing the rate of savings through tools of allocated resources development and decrease the return of savings rate. Existing theories, regarding the relationship between the banks and financial stock markets, demonstrate that these two could be supplement and substitute of each other.

Boyd and Prescott (1986) suggest that the banks have a significant and an efficient role in the allocation of resource improvement, however, Bhide (1993) and Stiglitz (1985) said that capital market is not like banks in an allocation of resources. The models of endogenous growth with postulate that the last outcome of capital is constantly positive and compatible with the result of financial market development that drives to enhance the economic growth in long-run. In this context, Smith and Bencivenga (1991) attempt to discover how efficiently financial development enhances the economic

growth. In accordance with this of studies, the instruments of financial markets are considered as the best channels for allocation of resources toward the most effective way.

Furthermore, researches of Levine (1991) regarding these models verify that without growth of labor productivity, financial development cannot enhance the economic growth. Moreover, Levine (1991) indicated that financial markets are capable of helping companies in evaluating liquidity of the markets and risks of investments. On the contrary, financial markets can lead to increase in savings rates and economic growth through optimal investments. In some conditions, financial markets enable households to rank the risks according to their preferences and provide demanded liquidity. In the advanced financial market, owners of shares can supply demanded liquidity to run the desired projects.

Proxy can be employed to explain the financial sector such as domestic credit to private sector by banks. Financial sector might lead to improvement in rates of savings and accumulated capital and economic growth through reducing costs of transactions and technological growth, these effective tools can be taken into account through different channels. Financial development occur when financial market performs mentioned obligations, meanwhile, financial market can enhance decisions making toward investment and savings, as a result of this economic growth is boosted (Levine, 2004).

Investigating this subject might be very helpful and utilized even in developing or developed countries. The reason for this, some of these countries encounter problems of capital insufficiency which is a very important source for keeping economic growth. Hence, throughout stock markets can accelerate the procedure of capital formation.

The aim of this thesis is to investigate the effect of the banking sector and the stock market as proxies of the financial development on economic growth of East Asia and Pacific countries through applying time series data from the periods 1975- 2015. In this context, domestic credit to the private sector as a percentage of GDP represents banking sector and stock value traded percentage of GDP represents stock market. This is done to explore and show how economic growth is being affected by employing these financial channel tools.

Chapter 2

LITERATURE REVIEW

2.1 Background

There are considerable number of studies searching the link among banking, stock market and economic growth in countries based on time series, panel data, and cross-section analysis. Among them are Agu (2008), Barisik & Tay (2010), Bayram (2007), Berument & Dogan (2011), Büyüksalvarci & Abdioglu (2010), Chandio (2014), Chimobi (2010), Dalgin et al. (2012), Elmas (2009), Hachicha (2008), Kalim et al. (2012), Karacaer & Kapusuzoglu (2010), Kaushal & Pathak (2015), Khakimov et al. (2010), Kuryanov (2008), Michailidis et al. (2008), Nazlioglu et al. (2009), Rjoub (2011), Roy (2012), Saqib & Waheed (2011), Siddiqui (2008), Sodeyfi (2016), Soukhakian (2007), Soukhakian (2007), Tanasie et al. (2008), Waheed & Younus (2010), (Gokgoz, 2007).

This chapter produces a summary of previous studies from different methodologies in order to understand how banking sector and financial market are connected to the economic growth. In every country, a very proficient and sophisticated financial system is essential, because this kind of efficient financial system is vital to the fundamentals of an economy Pradhan et al., (2014). As a result, the association between the development of financial systems banks and stock market and economic growth has been the focus of researchers and policymakers alike (Al-Yousif, 2002; Ang, 2008; Law and Singh 2014; Lee and Hsieh 2014).

Generally speaking, when considering the impact of banks and the stock markets on economic growth, there are two primary customary opinions. The first opinion was first postulated by Robinson (1952). This school of thought believe that banks and the stock market are mere passive players in the growth process or passive responders to economic growth of any given economy especially when their roles are compared to those played by other financial actors. They claim that banks and the stock markets are just financial intermediaries who play the role of passive channels through which household savings are geared towards investment.

Gretler & Rose (1994) and Jappeli & Pagano (1994) argued that existing capital and the volume of investments should be considered as principal factors to economic growth rather than the growth of the banking sector and the stock market. They further advocated that policies that boost capital accumulation should be formulated in the public sector in order to foster economic growth. The study of Jappeli & Pagano (1994) revealed that some certain developments in the financial markets have a significant negative impact on economic growth. Gretler & Rose (1994) also found out that the increase in the rate of income which was measured by the level of the real per capita income of some developed countries between the periods (1950-1988) had a negative relationship with the growth of the banking system and the stock market. With these studies, they assert that the financial system and the stock markets are quite passive in connection to economic development.

The second customary opinion is that of Schumpeter (1912). This opinion had early supporters in Shaw (1973) and McKinnon (1973). It proposes that the banking sector and the stock markets are important factors in the development and growth of an economy. It has been further claimed that the level of quality and the quantity of

financial services provided can as well be used to describe the level and economic growth rates in many countries. Gregorio & Guidotti (1995), Levine & Zervos (1998) and Goldsmith (1969) are some of the prominent scholars to first indicate that a positive correlation exists between the development of financial system and economic growth. In his empirical study of 35 different countries, he sought to establish how financial institutions and financial markets influence economic development and growth. In employing the assets of the financial system to the ratio of GDP as a pointer to financial development, he found out that when given enough time, the development of the financial system has a positive bearing on the growth of an economy. In his study it is also reported that when the countries he studied were experiencing rapid economic growth, the average rate of the development of the financial system was also higher. In spite of this Goldsmith (1969) concluded that the development of the financial system has a positive correlation with economic growth. Though, he did not affirm the direction of causation between the variables. .

From existing literature, there are a few different views concerning the direction of causality between financial system and economic growth. A number of scholars have written extensively on the role banking sector plays in economic growth and the direction of causality, as seen in the works of Hristopoulos (2004) Tang, (2005) Majid & Mahrizal (2007) as well as the role that the stock market places in economic development and the direction of causality (Singh, 1997). These two views notwithstanding, it has been generally agreed by scholars that both the stock market and the banking sector development are the main forces that brings about great economic growth and development in economy (Shan et al., 2001; Nieuwerburgh et al., 2006; Trew, 2006). While there are varying degrees to which policymakers agree on the extent to which these financial sector developments influence economic growth,

they generally agree that both stock market and the banking sector development does matter (Rudra et al., 2014).

A comprehensive study carried out using data from 1960-1989 on 77 different countries done by King & Levine (1993) sought to establish whether the level of financial development can explain enduring economic growth, productivity growth and capital accumulation or not; by using different measures of financial development and economic growth. In employing real per capita stock growth, production efficiency growth and real per capita GDP as indicators, they discovered that as countries with lesser growth rate tend towards higher growth rate greater significance of commercial banks, further financial deepening, as well as an increase in the percentage of private sector participation in overall economic activities were also observed in these countries. From these they inferred that a strong positive relationship exists between the indicators of financial development and these three indicators of economic growth.

The banking sector is generally considered as a major source of financing because it carries out the essential role of making the finances that supports an economy available, and it also sustains the transactions carried out by several economic agents (Horvath et al., 2014). In addition, the banking sector equally functions as the go-between in the financial system of any economy; banks also significantly play a vital part in matching lenders to borrowers (Becht, 2009). There is an explicit assertion in literature that the development of the banking sector in an economy is one of the key pointers to the development and growth of that economy (Levine, 1997; Graff, 2003; Beck & Levine, 2004).

Al-Yousif (2002), Christopoulos and Tsionas (2004) and Bojanic (2012) all establish the rationality of a view called ‘supply-leading’. The ‘supply-leading’ view suggests that a unidirectional causality exists from the development of the banking sector to economic growth. They further explained in line with their view that the development in banking sector influences economic growth via two key channels. These channels are increasing the efficiency of capital accretion and as a result the boost of marginal capital productivity, and increasing the rate of savings which in turn also boosts the rate of investment. On the other hand, in favor of another view called the ‘demand-following’ view, Ang & McKibbin (2007), Panopoulou (2009) and Odhiambo (2010) all suggest that economic growth development in the banking sector and not the other way round. According to them, as the overall economy grows, it leads to an increased demand for banking services which in turn fosters the improvement of these services. Craigwell et al. (2001), Al-Yousif (2002), Dritsakis & Adamopoulos (2004) and Lee & Chang (2009) in their further research, assert to a third view called the ‘feedback view’. They argue that the connectedness in question runs both ways simultaneously. In other words, the development in the banking sector does really influence considerable development in the economy and at the same time substantial growth in the economy tends towards a subsequent development in the banking sector. It is therefore apparent from literature that the proof on the direction of causality between these variables (development in the banking sector and economic growth) is in need of more advanced empirical and statistical investigation than what we currently have (Rudra et al., 2014).

Levine & Zervos (1996) carried out an empirical study to find out the implications the financial system has on economic growth and development. Various involved variable like the natural logarithm rate of intermediate school enrollment, real per capita GDP,

exchange rate at the black market, political instability (measured in the total number of revolutions), the overall worth of shares transacted to GDP ratio and the volume of government consumption of GDP. Along with these variables, Levine & Zervos (1996) used Ordinary Least Squares (OLS) method to examine the connection between stock market and economic growth. Their findings revealed a substantial and strong relationship amongst the pointers to stock market development considered and the real per capita GDP.

It has also been pointed out by Rajan and Zingales (1998) that industries that are heavily dependent on financing from external sources can grow much faster in economies that well established financial markets. As a pointer of the banking sector, loans taken by the private sectors into the GDP were used in their analysis so also was the size of the stock markets through market capitalization into GDP measured.

Levine & Zervos (1998) carried out an examination on the topic practical relationships that exist between different variables pointing to banking development, stock market development and the economic growth of 49 different countries between the periods 1976-1993. Current value of domestic shares into values of domestic shares listed and the value of shares traded to GDP were the indicators used in their study because they both are pointers to the liquidity of a stock market. Their results showed that stock market liquidity measures and the development of the banking sector are both positively connected with the future rates of economic growth, production growth and capital accumulation.

The growth nexus between the stock market and the economic growth like that of the previously discussed banking sector and economic growth, has various views as to the

direction and the actual existence of causality between stock market and economic growth. Nieuwerburgh (2006), Enisan & Olufisayo (2009), Tsouma (2009) and Kolapo & Adaramola (2012) all support the legitimacy of a 'supply-leading' view. This view asserts a unidirectional causality from the development of stock market to the growth of an economy.

On the contrary, Liang & Teng (2006), Ang & McKibbin (2007), Liu & Sinclair (2008) Panopoulou (2009), Odhiambo (2010), Kar et al., (2011), and put forward evidences in favour of 'demand-following' view. They affirm that there is a unidirectional causality from the growth of an economy to the development of its stock market. Lastly, a third group of scholar agree that the causation between economic growth and stock market development runs in both directions concurrently (Muradoglu et al., 2000; Huang et al., 2000; Hassapis & Kalyvitis, 2002; Wongbangpo & Sharma, 2002; Caporale et al., 2004; Darrat et al., 2006; Rashid, 2008; Hou & Cheng, 2010; Cheng, 2012). As we found out in the nexus between banking sector and economic growth, the existing literature on the connectedness of the stock market and economic development is not definite. There is also need for further empirical and statistical research than what we presently have in literature (Rudra et al., 2014).

Patrick (1966) seems to shed more light when he suggested that the dynamics of a relationship between economic growth and the financial system is greatly influenced by the level of development in each country. He explained that countries in the early development stage characterized by the development of novel financial instruments, improvement of financial services and financial restructuring tends towards economic growth. On the other hand, in the process of economic growth where financial development is now in its secondary stage, the resultant financial evolution demands

for a new kind of financial services, amenities, policies and instruments. Consequently, Patrick (1966) suggested that in the course of the development of financial systems, the direction of causation swings from “supply leading” to “demand following”.

However, when Patrick (1966) was empirically examined, McKinnon (1973), King & Levine (1993), Neusser and Kugler (1998) and Halicioglu (2007) established the “supply leading” hypothesis. Whereas, after Goldsmith (1969), Jung (1986) and Guryay et al., (2007)’s examination the “demand following” hypothesis was acknowledged.

Nonetheless, a group of scholars believe that the development of financial system has nearly nothing to do with economic growth. They argue that no relationship exist between the two. One of such economist is Lucas (1988), he stated that the significance of financial system in an economy has been “very broadly over stressed”. What is more, another wing of economists submits that, financial development and economic growth have a bilateral relationship and concurrently influence on each other (Demeriades and Hussein, 1996).

A recent study between the financial development and economic growth by Michael et al. (2017) in 41 African countries. The findings indicate that financial development has a positive effect on financial instability and therefore economic growth accelerated. Furthermore, Banerjee et al. (2017) examined the relationship between banking sector and stock market and economic growth in Bangladesh and the results indicate that banking sector robustly and positively influence on economic growth. However, there is no significant long-run relationship between stock market development and economic growth in Bangladesh. These group are referring that

financial system of Bangladeshi both stock market and banking sector jointly is not remain a robust promoter of economic growth, though banking sector development alone is strongly linked with economic growth. In contrast Sheilla Nyasha et al. (2017) investigated the relationship between bank and stock market and economic growth in Kenya and their findings indicate that stock market positively effect on economic growth of Kenya while banking sector negatively effect on economic growth based on financial development.

Chapter 3

THE ECONOMY OF PACIFIC AND EAST ASIA

3.1 Introduction

In accordance with world-bank classifications, The East Asia and Pacific countries spread from China to the pacific islands. Includes almost forty countries with various entities of geographic, this vast area consist of diverse economies, societies, cultures and religions (World Bank, 2017).

In spite of the foreign challenging environment, this region which consists of all levels of development of economic (developed, underdeveloped and developing) has a considerable economic growth in the latest previous decades (World Bank, 2017). Some countries are encountering a prompt changes in development of the economic, growth of population, urbanization, and development of technologies (World Bank, 2017) EAP area has appeared as the biggest recipient of capital flow in the developing world, thus, the banking and financial markets sectors of this region play essential role in the world of the financial markets (APFED, 2005).

During the financial crisis of the East Asia between (1997-1998) which fundamentally had negative impacts on Korea, Indonesia, Malaysia, Thailand and Philippines, discovered fundamental vulnerabilities in the financial sector; which are, exaggerating in borrowing, powerless regulatory and supervisory systems of banks. Economies in the area have committed a considerable improvement in running present account

surpluses and building up a huge exchanges reservations, as such an insurance to protect them during crises (World Bank, 2007).

3.2 East Asia and Pacific Area: A Definition

As mentioned above, the EAP region consists of countries from China to Pacific islands, the EAP area have the second biggest figures of conflict and fragile which influenced countries. It has almost 61% of damages and losses caused by disasters during past two decades and has become the most area that struggling from disasters in the world (World Bank, 2017). These entities of geographic include Vietnam and Vanuatu, Tuvalu, Tonga, Thailand, Singapore, Republic of Korea, Philippines, Guinea, New Zealand Malaysia, Japan, Indonesia and Australia and Burma, Cambodia, China, etc.

As mentioned above, the EAP area is a diversified region in each aspect and its economic development power derived from this diversification. Despite the growth of a few economies has declined from 8% to 7.2% between 2009 and 2013, it remains the fastest improving area in the world (World Bank, 2014). Asian-Pacific countries conference for development and environment indicated the region as a small group and referred that extending economies in Asian and Pacific Countries has triggered out increasing of interdependence between those countries in regards to trade and finance and resources nature. Furthermore, these countries have common features in their troubles, their impact, and some of them have common borders (APFED, 2005).

3.3 Recent Developments in East Asia and Pacific

Recently, growth in developing East Asia and Pacific continues to be resilient and in line with previous expectations. Already robust domestic demand has been supported by some pickup in external demand, and a gradual recovery in commodity prices. In

China, growth moderated slightly, but with some strengthening toward the end of 2016. The other large economies, including, in particular, the Philippines and Vietnam, generally solidified their performance in the second half of 2016 and the start of 2017. Among the smaller economies, performance has been more mixed: Cambodia continued to grow rapidly, while Mongolia and Papua New Guinea slowed sharply. Fiscal deficits in the major regional economies widened in 2016, prompting some adjustment toward the end of the year in Indonesia and Malaysia. Monetary policies remained accommodative, and credit continued to grow rapidly in most major economies. Inflation is edging up and producer prices are rising rapidly as commodity prices increase. Capital outflows intensified toward end-2016, leading to depreciation pressures, but external financial conditions have stabilized in 2017. Poverty rates have continued to decline, driven by rapid growth in labor incomes, and across much of the region the bottom 40 percent of the population has enjoyed relatively fast income growth. Despite this, in many countries the public perception is that inequality is high and rising. (World Bank, 2017).

3.4 Developed Economies in the East Asia and Pacific Area

3.4.1 Australia

According with Scotiabank report in 2017, Australia is continuing to be a robust performer between its counterparts in advanced economy during 2018, however, the expectations do not exclude the particular challenges of the country. Australia's GDP increased by 2.5% in 2016 in total; the economy enhanced in the last quarter of 2016 from the stagnation that recorded from July to September period, with GDP increasing by 1.1% against -0.5% in the third quarter. Scotiabank report expect that the economy of Australia will keep expanding in the line with probable growth rate in 2017-18 which around 2.5%.

The financial system of Australia still in a good situation, with banks' ability to face adverse situations that increased in previous years. The capital ratios of banks are more than minimum ranges of most international. Although there is little growth in profits during the previous two years, the generation of capital is being enhanced through aggregated high level of profits. Furthermore, the assets of banks remain perform robustly; the charge for doubtful and inferior debts still low, and there is stabilization level of non-performing assets during the previous 6 months of 2016 (Reserve Bank of Australia, 2017). In regards to Australian loans to private sector raised in April up to 879.58 compared with March were 877.67 AUD billion in of 2017, recorded average of 338.22 AUD Billion for the period of 1976 to 2017, also the highest and lowest points were 879.58 and 20.21 in 2017 and 1976 respectively (Trading Economics Report, 2017).

3.4.2 Hong Kong

The economy of Hong Kong expanded by 4.3% in the initial 3 months of 2017, more than upwardly revised 3.2% in the last period and reached to the expectation by 3.4%. It is the highest growth rate from the first half of 2011. The average of GDP growth of Hong Kong is 5.29% between 1974 and 2017 and the highest and lowest level are recorded in 1976 and 1998, 20.70% and -8.10% respectively. (Trading Economic, 2017). Furthermore, Scotiabank report in 2017 indicates that GDP growth will increase up to 2.2% and 2.4% in 2017 and 2018 respectively.

The banking system in Hong Kong is well capitalized and the quality of the asset remains high, furthermore, according to IMF in latest 2016, the non-performing loan ratios still low at 0.9% and the capitalization ratio was 16.4%. While Stock market of Hong Kong, Hang Seng refers to major index of the stock exchange and indicates to the performance of almost fifty largest firms listed in the mentioned stock market of

Hong Kong (Trading Economic, 2017). Although a number of uncertainties and challenges, Hong Kong stock market remain possesses a healthy line of greater than 120 active IPO applications included improving market liquidity, they expect steady stock market and due to the diversification of geography and sectors will support the competitiveness and attractiveness of Hong Kong's capital markets. (KPMG report, 2017).

3.4.3 Japan

The economy of Japan grew faster than the expectations of previous three months of 2016. Based on Cabinet office of Japan (2017), GDP increased by 3% in December. The GDP of Japan was equivalent to \$ 4383.10 billion US dollar in 2015. The value of GDP represents 7.07% of the international economy. The average of GDP in Japan was recorded \$ 2616.08 US billion between 1960 and 2015, also the highest and lowest points were at 6203.20 USD and 44.30 USD billion in 2012 and 1960 respectively (Trading Economic Report, 2017).

The financial system of Japan has a big exposure to debt securities of the government where insurance companies and domestic banks held 41% of government bonds. The banking sector in Japan is sound in the last six months of 2016 (Scotiabank report, 2017). Furthermore, based on IMF report (2017) indicates to the Capital ratio at 13.4% where the ratio of non-performing loan recorded at 1.4% and the lending of the outstanding bank has slightly increased by 3% in previous months. The Nikkei index represents to Tokyo Stock market which refers to the performance of the Top 225 firms with value of 176.21 in May of 1949.

3.4.4 New Zealand

The economy of New Zealand increased by 0.5% in the first quarter of 2017, after the expansion by 0.4% in the last period which caused gaining and enhanced the GDP.

However, remains in below of market expectations of 0.7%. Furthermore, the average of GDP in New Zealand is about 0.61 percent between the period of 1987 and 2017, recorded the highest and lowest points of 2.80 % and -2.40 % in 1999 and 1991 respectively (Trading Economics Report, 2017).

According to IMF report in (2017), In New Zealand, the banks are dominated the financial sector, concentrates its actions on lending to the domestic private sector. Furthermore, 75% of total financial assets represented by banks and financial system sounds well liquid and capitalized also the ratio of non-performing loan ratio is low and profitability remains the broadly steady.

3.4.5 Singapore

The GDP of Singapore declined by 1.30% in the initial year of 2017 compared with previous year. The average of Singapore GDP is 6.81 % between the period of 1975 and 2017, recorded the highest and lowest points of 37.20% in 2010 and -13.50% in the latest of 2008. However, IMF 's expectation for the GDP growth in 2018 is 2%. The output of the Singapore is expended by 2.1% in the half of 2016. However, expected to decelerate in the rest of the year (IMF, 2017).

According to the tests that have done by Central Bank of Singapore, the banking sector would remain flexible because of its capital soundness to encounter the need of funding and liquidity during the difficult circumstances (Scotiabank, 2017). Furthermore, the quality of assets still high in the banking sector of Singapore, however, the ratio of none performing loans increased to 1.7% at the beginning of 2016 compared to 1.3% in a recent year, based on the MAS report in 2017. Due to the downside of the property prices in Singapore, more increase in trouble of loans.

3.5 Developing Economies in the East Asia and Pacific Area

3.5.1 China

The economics of Chinese begun with solid momentum, where the GDP grew by 6.9% in the initial year of 2017 compared with the previous year of 2016 where a slight increase recorded by 6.8%. The rebound indicates to the robust of real estate sector activities and also indicates to government infrastructure expenditures. However, expectations from IMF refer that the growth will decelerate slightly in the rest of year because of restrictions on the property market by administrative measurements. Furthermore, it is expected for the economy to reach its growth goal in output of almost 6.5% this year given the steady infrastructure outcome of the government. IMF's expectations refer that the GDP gains will gradually slow toward 6% in 2018.

In regards with Chinese Financial Sector, China has a considerable amount of corporate debt which is might cause the main hazard to the economic outlook in the long-run, making worries about Banking sector health in the future. Furthermore, non-performing loans ratio recorded 5.7% in the final of 2018. A possible correction of prices in the hot real estate market poses additional risks to financial stabilization of China and its bank budgets (IMF's report, 2017).

3.5.2 Indonesia

The economy of Indonesia will remain on a plausible pace of growth, where the expected average increase in GDP is 5.2% "between" (2016-17), following the 4.8% increase in 2015. Furthermore, household spending has driven this activity, where enhanced by rising disposable incomes. While the government dedicates its efforts to install further infrastructure enterprise, the investment expected to boom from increasing government sectors outlays (Scotiabank report, 2017).

The assessment of IMF indicates that banking system of Indonesia is broadly healthy, profitable and well capitalized, but the ratio of non-performing loans 2.7% which increasing vulnerability according to Central Bank, and also the indicates to the liquid assets at a very low level compared to short-run liabilities IMF report (2017). Moreover, the Capital ratio rose to 18.8% at the end of 2015. The growth of credit decelerated to 9.6% from 10.4% in the latest of 2015. However, the latest measures of easing monetary could translate to raised liquidity and growth of credit through the next months (Scotiabank report, 2017).

3.5.3 Malaysia

The economy of Malaysia considered as middle-income economies, and it is one of 13 countries that recognized by the commission on growth and development in its report where recorded the average of growth was 7% for more than 25 years or more. Malaysian economic growth was succeeded and comprehensively in almost alleviating poverty. The economy of Malaysia was predominated by the production of raw materials resources as such rubber and tin until to 1970s, However, Malaysia currently diversified its economy to become an exporter of electronic parts, electrical appliances, and natural gas. Economic outlook of Malaysia still widely favorable, the government have taken a series steps of several reforms and still responsible for financial consolidation, with the fiscal deficit found at 3 % of GDP for 2017 (World Bank, 2017).

The banking sector of Malaysia is soundness and well capitalized and the ratio of capital was 14% in 2017 and it is able to encounter any economic shocks. Although Malaysia was affected by Global financial crisis in 2009, rebounded quickly and recorded average growth at 5.7% from 2010. Also in Asian financial crisis between 1997 and 1998, recorded average at 5.5% of growth (World Bank, 2017).

3.5.4 Thailand

Due to political uncertainty, the economy of Thailand still challenging, but modest points of recovery keeping emerge. The GDP of the country increased by 3.2% at the beginning of 2016, compared with 2.8% that recorded at recent 3 months of 2015. The sector of tourism is performing well, which enhanced GDP to increase in the first year of 2017. Meanwhile, declined rural incomes because of drought situations that are affected on the consumers of Thai. Public outlays will enhance the growth of economic over 2017, representing fiscal measures on the military, so far the investment of private sector will remain to be decelerated because of political instability. Also, GDP expected to expand by 3.2% in the end of 2017 (IMF reports, 2017).

The performance of banking system of Thai remains resilient, though the profits are negatively affected by the decelerating economic recovery and the quality of loans is deteriorated specifically in the manufacturing and commercial sectors. The Capital ratio improved slightly to 14.6% in the first year of 2017, indicating to enough Capital adequacy, while the ratio of non-performing loan increased to 2.6% from 2.3% a recent year.

3.5.5 Philippines

The outlook economy of Philippines remains favorable, with robust momentum of growth and possibility to be kept over 2016, the GDP increased by 6.9% at the end of 2016 after grew a 5.3% in the previous year, and undoubtedly Typhoon Haiyan and other natural disasters at the end of 2013 caused some weakness base.

IMF expects the GDP growth of the country to average 6.25% between 2015 and 2016. The banking sector of Philippine is performing well with robust profitability and solid capital adequacy. Banking lending remains growth rapidly with an average of 18.8%

during last six months. Furthermore, the ratio of non-performing loans was 3.0% in the last year of 2016 and capital ratio was almost 13.6% (IMF report, 2016).

3.6 Conclusion

Based on the World Bank notes in 2017 about Asia and Pacific countries, and although the external challenging environment, this area capable of being the growth engine of the world in someday because of its diversified resources and it is an emerging region and this opportunity could be translated through building on this strengths of this region.

Chapter 4

DATA AND METHODOLOGY

4.1 Type and Source of Data

This thesis, make use of annual frequency time series data between the periods 1975 to 2015 for East Asian and Pacific countries by employing stock value traded and domestic credit to private sector by banking sector as a proxies for stock market development and banking sector growth respectively and Gross Domestic Product (GDP) as a proxy of economic growth. Data is obtained from World Bank Development Indicators

$$GDP = \beta_0 + \beta_1 CD_t + \beta_2 SV + \epsilon_t \quad eq.1$$

where GDP is Gross Domestic Product, DC is Domestic credit to private sector and SV is Stock value traded as DC and SV are in % of GDP and data for GDP are in constant 2010 US\$.

4.2 Empirical Model

This thesis aims to investigate the relationship between financial sector and economic growth of East Asian and Pacific countries. Therefore, the thesis suggests that SV and DC are the determinants of GDP in the case of East Asian and Pacific Countries. The functional relationship for this research is shown as follow:

$$GDP = f(SV, DC) \quad eq.2$$

As GDP is a function of domestic credit to private sector (DC) and stock value traded (SV). The equation (2) of functional relationship is illustrated in natural logarithmic form as shown below.

$$\ln \text{GDP} = \beta_0 + \beta_1 \ln \text{CDt} + \beta_2 \ln \text{SV} + \varepsilon_t \quad \text{eq.3}$$

LnGDP is the natural log of GDP; lnDC is the natural log of the DC lnSV is natural log of SV while ε_t is the error term. According to Katircioglu (2010), the slope coefficient of β_1 and β_2 represent the long-run elasticities estimates of DC and SV as independent variables.

4.2.1 Methodology

For sound econometric estimations, the thesis employed the followings: First, Augment Dickey Fuller (ADF) and Phillips & Perron (PP) unit root tests are conducted in order to examine the stationarity properties of the variables. Second, Johansen long-run cointegration tests are utilized to measure the long-term relationship between the dependent and independent variables that are mentioned above. Finally, Granger causality tests are conducted in order to examine the direction of causality among variables, i.e. to examine if the variables under observation have predictive power over one another.

4.2.2 Unit Root Tests

Augmented Dickey-Fuller (ADF) and Phillips – Perron (PP) unit root tests are taken into account in order to examine the order of integration among variables (Dickey and Fuller 1981; Phillips and Perron 1988). The procedures of PP are employed into this thesis for unit roots that is a substitute to ADF unit root tests and calculate a residual variance which is strong to auto- correlation (Katircioglu, 2009).

According to Enders (1995) unit root test should begin with the most common model with intercept and trend which is;

$$\Delta y_t = a_0 + \lambda y_{t-1} + a_2 t + \sum_{i=2}^p \beta_j \Delta y_{t-i-1} + \varepsilon_t \quad eq.4$$

To be sure about errors that are white noise, it is recommendable to select the figure of lags (P) in the variable that is dependent by utilizing the Akaike Information Criteria (AIC) or another substitute tests for the most favorable lag (Katırcıoğlu et al. 2007). The presence of the further estimated parameters makes a trouble which restricts degrees of freedom and reduces robustness of the test.

The ADF and PP unit root tests concentrate on the t-statistic measure while the null hypothesis is specified as non-stationary. Thus, rejection of the null hypothesis indicates that the coefficient is significantly differs from zero. That is, we fail to reject the null hypothesis of non-stationary at level, i.e. I (0). Furthermore, Doldado and Sosvilla, (1990) were of the opinion that, due to estimating process, researchers might encounter problems in rejecting null-hypothesis. Hence, it is recommended for researchers to conduct unit root tests with both trend and intercept. If the trend and drift is rejected unsuitably, the robustness of the test would be declined to low grades and it might result to zero (Campbell and Perron, 1991). According to (Enders 1995), reduced power could lead researchers to summarize wrong outcomes of unit root procedure.

The Phillips – Perron test creates corrections into t-statistic of coefficient from regression of AR (1) in order to account serial correlation in the ϵ_t . The correction is non-parametric because we use an estimation of the series of γ coefficient at zero frequency and this is robust to autocorrelation and heteroscedasticity of unknown pattern (Katircioglu et al., 2007). The heteroscedasticity and autocorrelation of Newey-West is the most common method and it is given below;

$$\omega^2 = \gamma_0 + 2 \sum_{j=1}^q (1 - \frac{j}{q+1}) \gamma_j \quad eq.5$$

$$\gamma_j = \frac{1}{T} \sum_{t=j+1}^T \epsilon_t \epsilon_{t-j} \quad eq.6$$

As q represents a truncation lag, T indicates to the sample size, and estimated residuals covariance is. The t –statistic of *PP* is calculated as:

$$t_{pp} = \frac{\gamma_0 \frac{1}{2} t_b}{\omega} - \frac{(\omega^2 - \gamma_0) T s_b}{2 \omega \sigma} \quad eq.7$$

Where s_b and t_b represent the standard error of β and t-statistic, σ is standard error of regression test.

4.2.3 Cointegration Tests

This test aims to examine whether there is a long-run equilibrium relationship between the variables under observation. In the other words, cointegration test checks whether the variables move together in long-run or not. Therefore, in order to find out the cointegration relationship between the variables, Johansen cointegration approach was adopted for the present study. The trace test and maximum eigenvalue test are applied via Johansen method these tests, provides a more reliable and robust cointegration

vector between variables (Cheung & Lai, 1993). Furthermore, based on Johansen and Juselius (1990) as well as Johansen (1988) method helps us for an estimation of cointegrating vectors between the set of variables in order to avoid the problems that emerge from Engel and Granger (1987) method. The following (VAR) approach can illustrate the procedure of Johansen Method.

$$X_t = \Pi_1 X_{t-1} + \dots + \Pi_k X_{t-k} + \mu + e_t \quad (\text{for } t = 1, \dots, T) \quad eq.8.$$

As $X_t, X_{t-1}, \dots, X_{t-k}$ represent the vectors for the level and lagged value of P indicators that are known $I(1)$ in the approach; Π_1, \dots, Π_k that reflect the coefficient matrices within the dimensions of $(P \times P)$; μ also reflects the intercept vector; e_t indicates as random errors. The figure of lagged values is computed in a manner where there is non-autocorrelation between variables. The cointegration vector could be attained by the rank of Π . In order to access this vector, it is desired to test whether its Eigen Values (λ_i) are not equivalent to zero. Upon to Johansen (1988) and Johansen and Juselius (1990), suggest that utilizing the Eigen Values is for calculation of trace statistics (Katircioglu et al, 2007).

The following formula express the calculation of trace statistic (λ_{trace});

$$\lambda_{trace} = -T \sum \ln(1 - \lambda_i), i = r + 1, \dots, n - 1 \quad eq.9$$

and the hypothesis are :

$$H0: r = 0 \quad H1: r \geq 1$$

$$H0: r \leq 1 \quad H1: r \geq 2$$

$$H0: r \leq 2 \quad H1: r \geq 3$$

4.2.4 Error-Correction Model

There is a postulate according to Katircioglu (2010) that the GDP in equation (2) might not directly be adjusted to their long-run equilibrium levels and pursue a shift for each of its factors. Thus, the error correction model used in order to determine the speed of adjustment between the long-run and short-run levels of real income.

$$\begin{aligned} \Delta \ln GDP_t = & \beta_0 + \sum_{i=1}^n \beta_1 \Delta \ln GDP_{t-j} + \sum_{i=0}^n \beta_2 \Delta \ln DC_{t-j} \\ & + \sum_{i=0}^n \beta_3 \Delta \ln SV_{t-j} + \beta_4 \varepsilon_{t-1} + u_t \quad eq.10 \end{aligned}$$

As Δ indicates the change in the GDP, CD and SV variables and ε_{t-1} represent to the one period lagged error correlation term (ECT), which is captured from equation (2). The ECT in equation (10) illustrates how rapidly the elimination of disequilibrium among short-run and long-run values of dependent variable for each period. The ECT is expected to be negative (Katircioglu, 2010).

4.2.5 Granger Causality Tests under Block Exogeneity

The Granger causality test is applied into this study for determination of direction of causalities between variables (Granger, 1969). One of the prerequisites to run Granger

causality test is Vector Error Correction Model (VECM) if there is cointegration relationship among variables (Katircioglu et al, 2007). However, Granger causality test within VAR manner could not be involved due to the existence of cointegrating vector in related approach. Furthermore, Granger causality tests focus on the T-test related with error correction in VECM. The residuals of the cointegration are taken-into account by causality tests in order to estimate the Error Corrections Model. The following equations illustrate the ECM;

$$\Delta \ln Y_t = C_0 + \sum_{i=1}^k \beta_i \Delta \ln Y_{t-i} + \sum_{i=1}^k \alpha_i \Delta \ln X_{t-i} + \phi_i ECT_{t-1} + ut \quad \text{eq.11}$$

$$\Delta \ln X_t = C_0 + \sum_{i=1}^k \gamma_i \Delta \ln X_{t-i} + \sum_{i=1}^k \zeta_i \Delta \ln Y_{t-i} + \phi_I ECT_{t-1} + \varepsilon t \quad \text{eq.12}$$

Where X and Y represent the consideration series, the coefficient of ECT are ϕ_i and ϕ_I that refers the Error Correction in VECM model. Δ indicates first differences of indicators. Based on equation (11), direction of causality is running from X to Y conditionally that ϕ_i is significant and is not equal to zero. On the contrary, in equation (12) indicate that direction of causality is from Y to X involved ϕ_I is statistically significant.

Chapter 5

EMPIRICAL RESULTS

5.1 Unit Root Tests

The procedure of unit root test is employed into this research to determine whether the indicators are stationary or not. Regards to this, ADF and PP tests are applied for the existence of unit root procedure. Due to unit root tests, the variables are stationary at their first differences. The results of ADF and PP are demonstrated below in Table 1. Based on the PP and ADF unit root tests that demonstrated in Table 1, we can realize that GDP, DC and SV of East Asian and Pacific countries are non-stationary variables at their level. However, all above variables are stationary at their first difference I(1) for the sample period.

Table 1: ADF and PP Tests for Unit Root

Statistics (Level)	Ln GDP	Lag	Ln DC	Lag	Ln SV	Lag
τ_T (ADF)	-1.67	(0)	-1.37	(1)	-2.64	(1)
τ_μ (ADF)	-1.09	(0)	-1.51	(1)	-1.07	(0)
τ (ADF)	20.24	(0)	0.87	(1)	1.33	(0)
τ_T (PP)	-1.79	(2)	-1.20	(3)	-2.69	(2)
τ_μ (PP)	-1.00	(1)	-1.43	(3)	-1.13	(1)
τ (PP)	17.86	(2)	-1.37	(3)	1.27	(1)
Statistics (First Difference)	Ln GDP	Lag	Ln DC	Lag	Ln SV	lag
τ_T (ADF)	-4.82*	(0)	-4.30*	(0)	-5.11*	(0)
τ_μ (ADF)	-4.76*	(0)	-4.29*	(0)	-5.23*	(0)
τ (ADF)	-0.69***	(2)	-4.20*	(0)	-5.02	(0)
τ_T (PP)	-4.82*	(0)	-4.29*	(1)	-5.11*	(1)
τ_μ (PP)	-4.79*	(1)	-4.26*	(2)	-5.23*	(1)
τ (PP)	-0.77***	(4)	-4.17*	(2)	-5.06*	(2)

Note: GDP indicates to gross domestic product; (DS) is Domestic credit to private sector by banks (% of

GDP); (SV) stock value traded ((% of GDP). All indicators are logarithmic. τ_T represents the most general model with a trend and intercept; τ_μ is the model include only with an intercept but without trend; τ is the most restricted model without a drift and trend. Figures in brackets are lag lengths used in ADF test (as determined by AIC set to maximum 9) to remove serial correlation in the residuals. When using PP test, numbers in brackets indicate Newey-West Bandwith (as determined by Bartlett-Kernel). Both in ADF and PP tests, unit root tests were performed from the most general to the least specific model by eliminating trend and intercept across the models (See Enders, 1995: 254-255). *, ** and *** denote rejection of the null hypothesis at the 1%, 5% and 10% levels respectively. Tests for unit roots have been carried out in E-VIEWS 7.0.

5.2 Cointegration Tests

Cointegration of Johansen test could be solely utilized for those non-stationary variables that are integrated of the similar order. In this research, the indicators were found at $I(1)$ and the tests were applied to GDP, CD and SV to determine cointegration between the variables. Furthermore, GDP refers as dependent variable and SV and CD refers as independent variables. Three types of the hypothesis were specified for the empirical analysis. First, the null hypothesis indicates non-cointegrating vectors between variables. Second is the alternative hypothesis which indicates that the cointegrating vector is less or equal to one. The third indicates the existence of a cointegrating vector at most two.

Based on the Johansen cointegration test, we found evidence in support of at least one cointegrating vector in the model. The rejection of null hypothesis at 5% significant level indicates the presence of a long-run equilibrium relationship between GDP and financial sector variables in the East Asia and Pacific countries. This implies that, the variable of interest move together in the long-run.

Table 2: Cointegration Johansen Test

Hypothesized		Trace	5 Percent	1 Percent
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Critical Value
None **	0.45220	42.27306	34.91	41.07
At most 1*	0.325602	20.00478	19.96	24.60
At most 2	0.136093	5.412739	9.24	12.97

Note: Trace test indicates 2 cointegrating equation(s) at the 5% level. Trace test indicates 1 cointegrating equation(s) at the 1% level. (**) denoted rejection of the hypothesis at the 5% (1%) Level

5.3 Level coefficients and Error Corrections Model Estimation

Error correction model characterizes the dynamic of short run where variables are cointegrated at their long-run on their equilibrium values. In accordance with the cointegration outcomes, long-run cointegrating vectors found between GDP, SV and DC. However, the level coefficients is needed for the $GDP = f(CD, SV)$ model in order to determine the short-run coefficient and ECT. Table 4 show the results of level equation and error correction model. In the present thesis, the model of Vector Error Correction is used since the indicators are cointegrated. Hence, it is required to estimate the short-run and long-run coefficients of ECM. Based on the results reported in Table 4, the intercept (c) coefficient is -14.43. This implies that if domestic credit to private sector by bank and stock value traded remain constant (no change), the GDP will decrease by 14.43%. On the other hand, the domestic credit to private sector by banks has an elastic impact on GDP of East Asia and Pacific countries, this implies that, if DC increase by 1% the GDP will increase by 0.88% in the long-run. However, the stock value traded has inelastic impact on the GDP of East Asia and Pacific countries, implies that if stock value increase by 1 % the GDP will decrease by 0.66 in the long run. Table 4 shows the model is statistically significant at lag one (1) and

ECM indicates the speed of adjustment annually. This implies that the GDP of East Asia and Pacific countries converges to its long-run equilibrium through 2.92%. Furthermore, low speed of adjustment indicates our data is heterogeneous and there is no consensus in results between countries in this region.

Lag Length Selection:

One of important decisions in VAR modelling is the selection of appropriate lag length. Eventually, the appropriate lag length selection remains one of the weaknesses in VAR modelling due to different lag length provided by different test criteria. Two out of the lot; Akaike information criterions (AIC) and Schwarz Bayesian information criterions (SBIC) are widely used; they are considered to be good and quite reliable. As a result of this, we select one lag based on below table.

Table 3: VAR Lag Order Criteria 1

Lag	Log L	LR	FPE	AIC	SC	HQ
0	65.011	NA	7.680	-3.263	-3.134	-3.217
1	252.331	335.203	6.410*	-12.649*	-12.131*	-12.46*
2	256.466	6.746	8.430	-12.392	-11.487	-12.070
3	268.259	17.379*	7.470	-12.539	-11.247	-12.079

Note; *indicates lag order selected by the criterion and LR refers sequential modified LR test statistic (each test at 5% Level) Also the FPE indicates Final prediction error and AIC refers Akaike information criterion SC: Schwarz information criterion, HQ: Hannan- Quinn information

Table 4: Error Correction Model

Variables	Coefficients
GDP(-1)	1.000000
SV(-1)	-0.666452 -0.09108 [-7.31744]
DC(-1)	0.883326 -0.42601 [2.07347]
C	-14.433 -0.90964 [-15.8667]
<hr/>	
Error Correction: D(GDP)	
CointEq1	-0.02922 -0.00574 [-5.08801]
D(GDP(-1))	0.12974 -0.16535 [0.78466]
D(GDP (-2))	-0.26073 -0.16194 [-1.61005]
D(SV(-1))	-0.00106 -0.0079 [-0.13453]
D(SV(-2))	-0.01704 -0.00741 [-2.29985]
D(DC(-1))	0.020387 -0.03136 [0.65015]
D(DC(-2))	0.037779 -0.0318 [1.18822]
<hr/>	
R-squared	0.341624
Adj. R-squared	0.214196
Sum sq. resids	0.00089
S.E. equation	0.005357
F-statistic	2.680923
Log likelihood	148.6633
Akaike AIC	-7.45596
Schwarz SC	-7.1543
Mean dependent	0.019124
S.D. dependent	0.006043
<hr/>	
Determinant resid covariance (dof adj.)	4.57E-10
Determinant resid covariance	2.48E-10

Table 4: Error Correction Model (Continued)

Akaike information criterion	-12.2876
Log likelihood	258.4649
Schwarz criterion	-11.2103

5.6 Granger Causality Tests

In this research, the test of cointegration has been employed in order to examine the existence of a long-run relationship between variables. However, the direction of causality between the variables could not be demonstrated by this test. The tests of Granger causality should be employed under the Vector Error Correction,(Enders, 1995) Therefore, outcomes of Granger causality test are shown in Table 5. The rejection of null hypothesis indicates that SV and DC Granger cause GDP. The results reported in Table 5 indicate that GDP does cause DC and SV at 5% significant level. However, the SV and DC Granger cause GDP. In addition, the results suggest that there is a bidirectional causality running from DC to SV to GDP respectively. However, we found is a unidirectional causality running from GDP to SV to DC.

Table 5: Granger Causality Test under Block Exogeneity Approach 1

Dependent variable: Log (GDP)			
Excluded	Chi-sq.	DF.	Prob.
Domestic credit	10.63	1	0.0310
Stock value	21.855	1	0.0002
All	24.149	2	0.0022
Dependent variable: Log (DC)			
D(GDP)	13.52452	1	0.0090
D(SV)	3.534176	1	0.4727
All	17.24359	2	0.0277
Dependent variable: Log (SV)			
D(GDP)	2.7949	1	0.5927
D(DC)	1.5248	1	0.8222
All	4.2982	2	0.8293

Chapter 6

CONCLUSION AND POLICY IMPLICATIONS

6.1 Conclusion

This thesis concentrated on finding out the relationship between the banking sector and stock market as financial proxies on economic growth in East Asia and Pacific countries which are in aggregated developing and developed economies. In this context, it is an interesting subject region to investigate this relationship in the case of East Asia and Pacific countries. Variables that are tested were the stock value traded and domestic credit to the private sector are proxies for stock market development and banking sector growth and Gross Domestic Product as a proxy for economic growth. The outcomes of this thesis indicate that there is a long-term relationship between the economic growth (GDP) and financial sector development (SV, DC) which emphasized through utilizing the test of Johansen co-integration. There is a long-run statistically significant effect of banking sector and stock market development on GDP in East Asia and Pacific countries. Moreover, the GDP of East Asia and Pacific countries converges to its level of equilibrium in long-run by 2.9 percent through the financial sector determinant. In addition, the reason of negative effect of stock market on economic growth might be the problem of transferring the hot money from stock markets to the real sector in order to contribute the economic growth. Policy makers should be aware of negative relationship between stock market development and economic growth and they need to find ways to transfer the hot money from stock markets to the real sector to achieve higher rates of growth. However, the approach of

Granger causality tests under Block Exogeneity tests indicate that GDP does cause DC and SV; but, SV and DC does not cause GDP. Furthermore, because of P-value are not identical meaning that there is a bidirectional causality among variables, from DC and SV to GDP which illustrates the trends of variable are similar. However, there is a unidirectional causality between variables, from GDP and SV to DC. Moreover, domestic credit to private sector by banks has elastic impact on GDP of East Asia and Pacific countries in the long run. However, the stock market has an inelastic impact on the GDP of East Asia and Pacific countries, in the long run. Hence, banking sector positively and significantly affect GDP. However, stock market development exhibit a negative impact on economic growth of East Asia and Pacific countries and this might be due to transferring the hot money from stock markets to the real sector in order to contribute the economic growth.

6.2 Limitations and Further Research

To conduct this research, GDP and SV ratio of stock value traded and DC ratio of domestic credit to the private sector by the bank are employed taking into account time series for the period of 1975 to 2015. Additional researches could be conducted by employing other financial proxies for the purpose of accessing and investigating the controversial question whether financial sector development affect economic growth or financial development accelerates economic growth.

6.3 Recommendations

In the context of policy implication, an efficient stock market is essential because it plays a significant role in accelerating and enhancing economy through capital formation and resources allocation. An effective and liberalized stock markets have a significant role to increase and mobilize savings and providing optimal investments which are a very important issue for economic growth and stability. Global and

national investors might find empirical findings useful in making profitable investment decision in the financial sector of the East Asia and Pacific countries for accelerating their growth rates, a region that highlighting its fast growing environment.

The results indicate to the negative effect of the stock market on economic growth, an issue which demands more attentions from policymakers. Arouri et al. (2009), argued that essential factors in improving the financial market are law of investment, accounting standards, market regulations and transparency, the quality and quantity of the financial information that the investors can access easily. Hence, those factors could improve the quality and efficiency of the stock market and therefore accelerate economic growth.

From the perspective of global investors, the stock market, through providing diversification across various assets leads easing risk that investors should bear and therefore, minimize the cost of capital, an issue that attracts more investment and accelerates economic growth too.

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