

**THE MACROECONOMIC DETERMINANTS OF STOCK MARKET
DEVELOPMENT: EXPERIENCE FROM TWO ASIAN COUNTRIES**

by

SIN YU HO

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SUPERVISOR: PROFESSOR NICHOLAS M ODHIAMBO

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DECLARATION

I, Sin Yu Ho (student number: 53319125), hereby declare that this thesis, entitled “**The Macroeconomic Determinants of Stock Market Development: Experience from Two Asian Countries**”, is my own work and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I have not previously submitted this work, or part thereof, for examination at Unisa for another qualification or at any other higher education institution.

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SUMMARY

This study examined the relationship between a set of macroeconomic variables and stock market development in Hong Kong and the Philippines for the periods of 1992Q4-2016Q3 and 2001Q4-2016Q4 respectively. In recent decades, the stock markets in Hong Kong and the Philippines have experienced remarkable growth. While the literature has produced diverse views on the relationship between each determinant and the stock market, there are no relevant studies on the determinants of stock market development on these two countries. Against this background, this study enriched the literature by investigating the macroeconomic determinants of stock market development in these two countries using the autoregressive distributed lag bounds testing approach.

The empirical results of this study revealed a number of interesting findings. In the case of Hong Kong, the results showed that banking sector development and economic growth exerted positive impacts, whereas the inflation rate and exchange rate exerted negative impacts on stock market development both in the long and short run. In addition, the results showed that trade openness had a positive long-run impact, but a negative short-run impact on stock market development. Therefore, policymakers should pursue policies that foster banking sector development, enhance economic growth and maintain trade openness in order to foster the development of the stock market. In addition, monetary authority should strive to maintain a low level of inflation rate and the value of the domestic currency so as to further promote stock market development. In the case of the Philippines, the study found that trade openness had a negative impact on the development of the stock market in the long run, whereas banking sector development, and the exchange rate had positive impacts in the short run. Based on these findings, policymakers should consider policies that promote the use of equity financing in the production of main exports, enhance banking sector development, and maintain the stability of the domestic currency in order to promote the development of the stock market.

KEYWORDS:

Macroeconomic determinants; stock market development; Hong Kong; the Philippines; ARDL bounds testing

DEDICATION

This thesis is dedicated to my family and friends for their patience, love and guidance.

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ABBREVIATIONS

Key Acronyms	Meaning
ADF	Augmented Dickey-Fuller
APT	Arbitrage Pricing Theory
ARDL	Autoregressive Distributed Lag
ASX	Australian Stock Exchange
BNK	Banking Sector Development
CAPM	Capital Asset Pricing Model
CCAPM	Consumption-based Capital Asset Pricing Model
CEE	Central and Eastern Europe
CEPA	Closer Economic Partnership Arrangement
CSRC	China Securities Regulatory Commission
CUSUM	Cumulative Sum of Recursive Residual
CUSUMSQ	Cumulative Sum of Squares of Recursive Residual
DF-GLS	Dickey-Fuller Generalized Least Squares
FDI	Foreign Direct Investment
GARCH	Generalized Autoregressive Conditional Heteroskedasticity
GDP	Gross Domestic Product
GEM	Growth Enterprise Market
HKEx	Hong Kong Exchanges and Clearing Limited
HKMA	Hong Kong Monetary Authority
HKSE	Hong Kong Stock Exchange
HSI	Hang Seng Index
ICAPM	Intertemporal Capital Asset Pricing Model
ICRG	International Country Risk Guide
IFS	International Financial Statistics
IMF	International Monetary Fund
IPO	Initial Public Offering
MCR	Market Capitalisation Ratio
MENA	Middle Eastern and North African
MSE	Manila Stock Exchange
NYSE	New York Stock Exchange
OECD	Organisation for Economic Cooperation and Development
OPEN	Trade Openness
PAPM	Production-based Asset Pricing Model
PDP	Philippine Development Plan
PSE	Philippine Stock Exchange
PSEi	PSE Index
PHP	Philippine Peso
QDII	Qualified Domestic Institutional Investor
QFII	Qualified Foreign Institutional Investor
REERI	Real Effective Exchange Rate Index
RGDPG	Real GDP Growth
RMB	Renminbi
SC	Schwarz Criterion
SEC	Securities and Exchange Commission
SFC	Securities and Futures Commission

SFO	Securities and Futures Ordinance
SRC	Securities Regulation Code
SRO	Self-Regulatory Organisation
SSE	Shanghai Stock Exchange
TOR	Turnover Ratio
US	United States
VAR	Vector Autoregressive
VECM	Vector Error-correction Model
WDI	World Development Indicators
WFE	World Federation of Exchanges

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Over the past few decades, the world's stock markets have undergone significant development. Consequently, the relationship between stock market development and economic growth has attracted numerous theoretical and empirical studies. In particular, the theoretical contribution indicates the importance of the stock market in promoting economic growth through different channels. For example, by addressing the principal-agent problem, the stock market may improve corporate governance, thereby contributing to economic growth (Jensen and Murphy, 1990). Also, as the stock market develops, it enables the world portfolio to be better diversified. Such reallocation from safer low-return capital to riskier high-return capital may lead to growth in consumption and eventually an increase in welfare gain (Obstfeld, 1994). Moreover, a liquid stock market on the one hand allows investors to trade financial assets in a less risky way, while on the other hand allows companies to have easy access to capital. Such improvements promote economic growth (Bencivenga et al., 1996). Besides, stock markets also reduce the cost of mobilising savings, so that the fund can be invested into more productive technologies, thereby promoting long-term economic growth (Greenwood and Smith, 1997). Empirically, studies have shown that stock market development and economic growth are positively related (see, for example, Levine and Zervos, 1998; Rousseau and Wachtel, 2000; Beck and Levine, 2004; Masoud and Hardaker, 2012; Naik and Padhi, 2015). In addition, recent studies such as those of Athanasios and Antonios (2012), Nyasha and Odhiambo (2015) and Ho and Lyke (2017a) have also found that stock market development causes economic growth.

Due to the importance of the stock market in promoting economic growth, there have been an increasing number of studies exploring factors that drive its development. Based on the existing literature, the macroeconomic factors being investigated in the literature include economic development, banking sector development, interest rate,

inflation rate, exchange rate, private capital flows, trade openness, and stock market liquidity. However, the relationship between these factors and the development of the stock market are highly debatable in the literature. For example, in terms of the relationship between the banking sector and the stock market, some studies argue that they are negatively related, whereas other studies show that banks and stock markets are positively related (see, for example, Levine, 2005; Yartey, 2010; El-Nader and Alraimony, 2013). Regarding the relationship between the inflation rate and stock market development, existing studies also show inconclusive results. Some argue that a higher inflation rate has a negative impact on stock market development (see, for example, Boyd et al., 2001; Ben Naceur et al., 2007). In contrast, other studies argue that the inflation rate can have a positive impact on the stock market through stock returns in a high inflationary environment (see Barnes et al., 1999; Boyd et al., 2001).

With regard to the exchange rate, existing studies also show diverse results on the relationship between exchange rate behaviour and stock market development. Some studies find the exchange rate to have a negative impact on the stock market, while others find the exchange rate to exert a positive impact on the stock market (see, for example, Adler and Dumas, 1983; Ma and Kao, 1990; Phylaktis and Ravazzolo, 2005). Other studies even demonstrate that the relationship between exchange rates and the stock market can be negative or positive under different circumstances (see Gavin, 1989; Wu, 2000). In addition, studies on the relationship between foreign direct investment (FDI) and stock market development also demonstrate opposing views. While studies such as those of Hausmann and Fernández-Arias (2000a), (2000b) and Rhee and Wang (2009) conclude that FDI is just a substitute for stock markets, other studies such as those of Jeffus (2004) and Raza et al. (2015) contest that FDI complements the development of stock markets. Regarding the relationship between trade openness and stock market development, some studies such as those of Rajan and Zingales (2003) and Niroomand et al. (2014) show that trade openness exerts a positive impact on stock market development, whereas others studies such as those of Jin (2006) and Kim et al. (2011) find that it hurts stock market development.

The only consensus found in the majority of exiting literature is the impact of economic development and stock market liquidity on the development of the stock market.

Current studies show that there is a positive association between economic development and stock market growth (see, for example, Levine and Zervos, 1996; Raza et al., 2015). In addition, existing studies show that the liquidity of the stock market has a positive impact on its development (see Garcia and Liu, 1999; Şükrüoğlu and Nalin, 2014).

During recent decades, some Asian countries have experienced remarkable growth in their stock markets. One of the prominent examples is the case of Hong Kong. According to the World Development Indicators (WDI) (2016), it had the largest stock market in the world in 2014 in terms of the stock market capitalisation ratio. It also had the most liquid market as indicated by the total value traded ratio in 2014 (WDI, 2016). Another salient example is the case of the Philippines. According to the WDI (2016), the global ranking of the Philippine Stock Exchange (PSE) has substantially improved from 44th in 2009 to 12th in 2014, as measured by the stock market capitalisation ratio. In addition, the PSE Index outperformed other markets and was reported by the World Federation of Exchanges as being one of the top three best performing benchmark indices in the world in 2012. Based on the impressive performances of both Hong Kong and the Philippines, it is worth analysing the sources of this development.

1.2 Statement of the Problem

From the above, it is clear that there is a huge volume of studies that has documented the importance of a set of macroeconomic factors on stock market development. However, the evidence documented in existing studies appears inconclusive at best. Additionally, despite the fast pace of stock market development in especially Asian countries such as Hong Kong and the Philippines, few studies have assessed the sources of this development.

It is against this backdrop that this study attempts to examine the impact of macroeconomic factors on stock market development. In particular, the study attempts to investigate both the long-run and short-run impacts of economic growth, banking sector development, inflation rate, exchange rate, trade openness, and stock market

liquidity on stock market development in Hong Kong and the Philippines, using the autoregressive distributed lag (ARDL) bounds testing approach.

1.3 Objectives and Hypotheses of the Study

1.3.1 Objectives of the Study

The primary objectives of the study are to:

- (i) critically assess the dynamics of stock market development in Hong Kong and the Philippines;
- (ii) empirically investigate the long-run macroeconomic determinants of stock market development in Hong Kong and the Philippines;
- (iii) empirically investigate the short-run macroeconomic determinants of stock market development in Hong Kong and the Philippines; and
- (iv) empirically assess the dynamic relationship between the macroeconomic determinants and stock market development in Hong Kong and the Philippines.

1.3.2 Hypotheses of the Study

From the above objectives, the study seeks to test the following hypotheses:

- (i) The key long-run macroeconomic determinants of stock market development in Hong Kong and the Philippines are: economic growth, banking sector development, inflation rate, exchange rate, trade openness, and stock market liquidity;
- (ii) The key short-run macroeconomic determinants of stock market development in Hong Kong and the Philippines are: economic growth, banking sector development, inflation rate, exchange rate, trade openness, and stock market liquidity;
- (iii) Economic growth, banking sector development, trade openness, and stock market liquidity have positive impacts on stock market development in Hong Kong and the Philippines; and
- (iv) The inflation rate and exchange rate have negative impacts on stock market development in Hong Kong and the Philippines.

1.4 Significance of the Study

By examining the macroeconomic determinants of stock market development in Hong Kong and the Philippines, this study enriches the literature in various ways. First of all, although there are a number of studies that have explored the factors driving the development of stock markets, the literature has produced diverse views on the relationship between each determinant and the stock market. In addition, the topic of the macroeconomic determinants of stock market development has not been studied exhaustively. There are a fairly limited number of studies that have directly examined the key macroeconomic determinants of stock market development. Instead, most studies have examined the relationship between individual macroeconomic variables and stock market development. Against this background, this study contributes to the existing literature by investigating the key macroeconomic determinants of stock market development in Hong Kong and the Philippines.

Second, to the best of our knowledge, this study is the pioneer study examining the macroeconomic determinants of stock market development in Hong Kong and the Philippines. These two countries were chosen due to the remarkable growth of their stock markets in recent decades. In the case of Hong Kong, the growth in the size and liquidity of the stock market was impressive. Hong Kong had the largest stock market in the world in 2014, as measured by the stock market capitalisation ratio (WDI, 2016). It also had the most liquid market in terms of the total value traded ratio in 2014 (WDI, 2016). In the case of the Philippines, the global ranking of the Philippine Stock Exchange (PSE) substantially improved from 44th in 2009 to 12th in 2014, as measured by the market capitalisation ratio (WDI, 2016). In addition, the PSE has been cited by the World Federation of Exchanges as one of the best performing stock markets in the world in 2012. In the same year, the PSE Index outperformed other markets and was reported by the World Federation of Exchanges (WFE) as one of the top three best performing benchmark indices in the world. Based on their impressive performances, it is worth analysing the sources of this development.

Third, this study employs an econometric technique, namely the autoregressive distributed lag (ARDL) bounds testing approach, to estimate both the short and long-run impacts of macroeconomic factors on stock market development. While the long-run impacts of macroeconomic variables on stock market development are important, the short-run impacts cannot be overlooked because the stock market is highly sensitive to the short-term development of the macroeconomic environment. Therefore, by using the ARDL bounds testing technique, the study unveils both the short and long-run impacts of macroeconomic variables on the growth of the stock market.

Finally, this study selects a set of macroeconomic factors with sound theoretical support on how they affect stock market development. These factors include economic growth, banking sector development, inflation rate, exchange rate, trade openness, and stock market liquidity. Therefore, the findings of this study will not only contribute to the existing debate on the key macroeconomic determinants of stock market development, but could also provide policy guidance on how to promote stock market growth in Hong Kong and the Philippines.

1.5 Organisation of the Study

The rest of the study is organised as follows: Chapter two explores the origin and the development of the stock market in Hong Kong. Chapter three first explores the origin and the development of the stock market in the Philippines and later presents a comparison between stock market developments in these two countries. Chapter four reviews the theoretical and empirical literature on macroeconomic factors of stock market development. Chapter five discusses the methodology of the study. It shows how the time-series techniques are used to analyse the macroeconomic determinants of stock market development in Hong Kong and the Philippines. Chapter six discusses the econometric analysis and the empirical findings from the study. Chapter seven concludes the study by providing the main findings, conclusions and policy recommendations.

CHAPTER TWO

STOCK MARKET DEVELOPMENT IN HONG KONG

2.1 Introduction

This chapter discusses stock market development experiences and trends in Hong Kong.¹ Section 2.2 traces the origin of the stock market in Hong Kong. Section 2.3 discusses stock market development in Hong Kong. This section is divided into four sub-sections, which include: structural development of the stock exchange, development of the second board (Growth Enterprise Market), regulatory development of stock market, and economic relations with Mainland China. Section 2.4 presents the growth of the stock market in Hong Kong, which encompasses the growth of the stock market in Hong Kong by key market indicators, and the growth of the stock market in Hong Kong in terms of its size and liquidity. Section 2.5 discusses the challenges facing stock market development in Hong Kong. Concluding remarks are presented in section 2.6.

2.2 The Origin of Stock Market Development in Hong Kong

Hong Kong has experienced more than 100 years of stock market development. Securities were informally traded in the early 19th century. Records of securities trading in Hong Kong dated back to 1866, after the first Companies Ordinance was passed in 1865, which allowed the formation of companies with limited liability (Schenk, 2001). Share trading was started in an organised stock exchange in the mid-1880s (Schenk, 2001; Tsang, 2004). The first formal stock exchange, the Association of Stockbrokers in Hong Kong, was formed in 1891. It was later renamed the “Hong Kong Stock Exchange” in 1914, at which time there were no Chinese members. It was not until 1921 that an all-Chinese stock exchange, the Hong Kong Shareholders’ Association, was incorporated [Hong Kong Exchanges and Clearing Limited (HKEx),

¹ Hong Kong was ceded to Britain in 1842 as its colony under the Treaty of Nanjing. The sovereignty of Hong Kong was returned to Mainland China on 1 July 1997, and the Hong Kong Special Administrative Region government was established. Hong Kong continues to adopt the existing economic and financial systems (see Tsang, 2004). It can be regarded as an individual economy. We use the term “Hong Kong” to represent the Hong Kong Special Administrative Region throughout the study.

2011a]. During the Second World War, the demand for stocks was low, the number of brokers declined, and stock prices fluctuated widely, which adversely affected investor confidence. After the Second World War, in 1947, the two exchanges merged to form the new Hong Kong Stock Exchange, in order to restore the stock market (Schenk, 2001).

The market activities of the Hong Kong Stock Exchange were generally regarded as insignificant during the 1950s and 1960s. During the 1950s, there were massive inflows of labour, capital and entrepreneurial skill from Mainland China. These inflows transformed the economy from an *entrepôt* to an industrial city (Krause, 1988). However, the manufacturing industry was not well-represented among public companies. During the period of 1957 to 1967, only 50 to 70 companies were listed; and less than 25 of them were involved in active trading activities (Uddin and Wong, 1998). The public companies were dominated by large service sector enterprises. According to Schenk (2001), of the capital raised from 1958 to 1966, 43 per cent was raised by the public utilities sector and 15 per cent by the sector of hotel, property and commercial enterprises. It revealed that equity financing through the stock exchanges was not a main source of capital for the industrialisation of Hong Kong.

Reassurance from Mainland China about the political future of Hong Kong in 1969 boosted the level of investor confidence, which witnessed the era of confidence and growth (Uddin and Wong, 1998). In addition, favourable factors such as the *laissez faire* policy adopted by the government, remarkable growth of the infrastructure, and the massive influx of cheap and skilled labour from Mainland China, led to increased activities in the financial sector (Jao, 2003). Furthermore, the global financial trend also created a favourable environment for financial market development in Hong Kong. In the 1970s, the global financial trend emphasised the Euro-Dollar market in a different time zone. This trend of international capital flows into Asia boosted financial activities in Hong Kong. In 1978, Hong Kong's status as the financial gateway to the east was further enhanced when China embarked on an open-door policy (Jao, 2003). This decade witnessed an influx of foreign banking and a growing number of non-bank financial institutions, which sought to share the economic growth miracle of the City (Schenk, 2001). As a result, the rapid growth of the Hong Kong economy led to the

establishment of three other stock exchanges. They were the Far East Stock Exchange, the Kam Ngam Stock Exchange and the Kowloon Stock Exchange, which were established in 1969, 1971 and 1972 respectively (Tsang, 2004).

2.3 Stock Market Development in Hong Kong

This section presents an overview of stock market development in Hong Kong from 1973 to 2013. It discusses the structural development of the stock exchange, followed by the development of the second board in the stock exchange. It also reviews the regulatory development of the stock market. Finally, it discusses the economic relationship with Mainland China and its impact on stock market development in Hong Kong.

2.3.1 Structural Development of the Stock Exchange

Since the 1970s, the stock market in Hong Kong has undergone a series of structural development changes in an effort to elevate it to international standards. The stock market crash in 1973 led to the establishment of the Commissioner for Securities and the Securities Commission to regulate and oversee the stock exchanges. The stock market crash also stressed the need to strengthen market regulation and unify the four exchanges. This prompted the establishment of the Hong Kong Stock Exchange in 1986 (Uddin and Wong, 1998; Nakagawa, 2007).

To achieve the unification of four stock exchanges, they agreed to standardise their trading sessions on January 1973. This unification was to avoid destructive competition among exchanges by establishing a unified listing regime. Later, the Stock Exchange Control Ordinance was introduced on February 1973 to control the establishment of further exchanges. In 1977, a working party to consider the unification of the four stock exchanges was formed. As a result, the proposed unified stock exchange, the Hong Kong Stock Exchange (HKSE), was formed in 1980. In March 1986, the four exchanges ceased business operations, and in April 1986 the HKSE commenced trading through a computer-assisted system. In fact, the HKSE was a limited company with the exclusive rights to establish, operate and maintain a stock

market. It was owned by its member brokers who have membership and trading privileges. In the same year, the HKSE received full membership from the International Federation of Stock Exchanges, which is now known as the World Federation of Exchanges (HKEx, 2011a).

The global stock market crash in 1987 accelerated the pace of stock market reform in Hong Kong. After the global stock market crash, the Securities Review Committee conducted an evaluation of the Hong Kong stock market. It was found that the listing procedures were abused and the settlement system was inefficient. It was reported that the stock exchange operated as a private club among broker members rather than a public entity for the benefit of all stakeholders. As such, a list of changes and reforms were introduced to bring the Hong Kong stock market up to international standards (Uddin and Wong, 1998).

One of the major changes was the establishment of the Securities and Futures Commission (SFC) in 1989. The SFC was set up to enforce regulations, propagate new legislation and supervise the stock exchange, the dealers and the clearing houses (Nakagawa, 2007; HKEx, 2011a). Further discussion regarding the SFC is in Section 2.3.3. Another change was the restructuring of the Council of the Hong Kong Stock Exchange in 1991. Both the number and the composition of council members were changed in order to accurately reflect the interests of the market participants. The number of members increased from 22 in 1988 to 31 in 1991. The composition of members also changed from purely individual members to individual, corporate and independent members (Uddin and Wong, 1998).

In March 1999, comprehensive reform on market structure of the securities and futures markets was introduced. The reform aimed to increase the competitiveness of Hong Kong in the globalised market. Under the reform, five recognised and approved market operators in Hong Kong were merged under a single holding company called the Hong Kong Exchanges and Clearing Limited (HKEx). They included the Stock Exchange, the Futures Exchange and their respective clearing houses (HKEx, 2013a). It achieved economies of scale through reducing operation costs. The required legislative provision for effecting the merger, including turning the Hong Kong Securities Clearing

Company into a company limited by shares and a wholly owned subsidiary of Hong Kong Exchanges and Clearing Limited, were provided through the passing of the Merger Ordinance in 1999 (HKEx, 2011a; 2013a).

Another major development in the stock market was the launch of the second board (Growth Enterprise Market) in the Hong Kong Stock Exchange in November 1999 (HKEx, 2005a; HKEx, 2011a). The Growth Enterprise Market (GEM) serves to provide start-up companies with a capital formation platform and an alternative market to the main board. Further discussion on the development of the GEM is in Section 2.3.2.

In 2000, three institutions – the Stock Exchange, the Futures Exchange and the Hong Kong Securities Clearing Company – were demutualised and merged to become wholly owned subsidiaries of Hong Kong Exchanges and Clearing Limited (HKEx, 2013a). According to the definition provided by Ghosh (2006),

demutualization is the process of commercialisation of a stock exchange, and includes a separating broker's right to deal on the exchange from the ownership and management of the exchange. In demutualising, a stock exchange is converted into a for-profit limited liability company, whose board and management are no longer simply accountable to brokers or the government, but are responsible to a wide range of shareholder. An exit mechanism for shareholders may be provided by the company listing on its own or on another exchange. Access to trading on the exchange is provided by the exchange entering into a contractual relationship with individual brokerage firms (Ghosh 2006, 123).

Demutualisation provides a means to address problems of languishing domestic securities market and intense international competition, and to upgrade the infrastructure of an exchange through investments in technology (Ghosh, 2006). In March 2000, the merger was completed and Hong Kong Exchanges and Clearing Limited went public on 27 June 2000 by way of introduction. It became one of the first stock exchanges in the world to go public (HKEx, 2011a).

After demutualisation, Hong Kong Exchanges and Clearing Limited (HKEx) became a unique enterprise that combines a number of roles and responsibilities (HKEx, 2004a). First, it is a commercial enterprise whose business is the operation of securities markets. It is responsible for providing quality, efficient and cost competitive financial products and services to customers. Second, it also acts as a public organisation to operate the securities and futures markets in Hong Kong. It is responsible for maintaining an open, secure, fair, orderly and transparent marketplace contributing to Hong Kong's status as an international financial centre and premier capital market for Mainland China. Third, it is also a front-line regulator of the primary market. It is responsible for monitoring the conduct of issuers and participants, and handling the regulatory incidents (HKEx, 2004a). Despite its statutory obligation to maintain an orderly, informed and fair market, the function of prudential regulation of stock exchange participants was transferred to the SFC after demutualisation (SFC, 2007).

The HKEx Group operates the only recognised stock markets and futures market in Hong Kong through its wholly-owned subsidiaries, the Stock Exchange and Hong Kong Futures Exchange Limited. It also operates three recognised clearing houses in Hong Kong: the Hong Kong Securities Clearing Company Limited, the Hong Kong Futures Exchange Clearing Corporation and the Stock Exchange of Hong Kong Options Clearing House Limited. These clearing houses provide integrated clearing, settlement, depository, and nominee activities to their participants. The HKEx Group also provides market data through its data dissemination entity, HKEx Information Service Limited (HKEx, 2014a).

The stock exchange of the HKEx Group is responsible for regulating listed issuers and administering listing activities, trading and clearing rules. It also provides services to the participant and the users of its exchange and clearing houses mainly at a wholesale level. This includes issuers and intermediaries such as investment banks or sponsors, securities and derivatives brokers, custodian banks and information vendors. The services provided comprise trading, clearing and settlement, deposit and nominee services, and information services across different products and assets classes (HKEx, 2014a).

To strengthen the linkage of stock market activities between Hong Kong and Mainland China, a joint venture by the Hong Kong Exchanges and Clearing Limited, the Shanghai Stock Exchange and the Shenzhen Stock Exchange was co-founded in October 2012. All three companies have equal shareholding in the joint-venture called the China Exchange Services Company Limited, which aims at developing financial product and related services (HKEx, 2014a). With the vision to build the HKEx into a leading global vertically-integrated multi-asset class exchange, it completed the acquisition of the London Metal Exchange in December 2012 as the Hong Kong Exchanges and Clearing Limited Group's first overseas member. In fact, the London Metal Exchange is the world's premier metal exchange since its founding in 1877. As a member of the HKEx Group, it remains focused on its core business of the contracts of the physical metals industry (HKEx, 2014a). According to the strategic plan of 2013 to 2015 of the HKEx Group, it continues to strive to be the global exchange of choice for corporations from Mainland China and international corporations seeking Chinese exposure (HKEx, 2014b). Table 2.1 summarises the structural development of the stock exchange in Hong Kong.

Table 2.1: Structural development of the stock exchange in Hong Kong, 1973-2012

Year	Event
1973	<ul style="list-style-type: none"> • Four stock exchanges agreed to standardise their trading sessions. • Stock Exchange Control Ordinance was introduced to control the establishment of further exchanges. • The establishment of the Commissioner for Securities and the Securities Commission to regulate and oversee the stock exchanges.
1977	<ul style="list-style-type: none"> • A working party to consider the unification of the four stock exchanges was formed.
1980	<ul style="list-style-type: none"> • HKSE was incorporated.
1986	<ul style="list-style-type: none"> • Four exchanges ceased business operations and HKSE commenced trading. • HKSE received full membership from the World Federation of Exchanges.

1987	<ul style="list-style-type: none"> • The Securities Review Committee conducted an evaluation of the Hong Kong stock market after the global market crash.
1989	<ul style="list-style-type: none"> • SFC was established.
1991	<ul style="list-style-type: none"> • The Council of the Hong Kong Stock Exchange was restructured with regard to the number and the composition of council members.
1999	<ul style="list-style-type: none"> • The second board (Growth Enterprise Market) was officially launched by the HKSE. • The passing of the Merger Ordinance. • A single holding company, Hong Kong Exchanges and Clearing Limited (HKEx), was established with the merger of the Stock Exchange, the Futures Exchange, and their respective clearing houses.
2000	<ul style="list-style-type: none"> • HKEx was demutualised and went public by way of introduction.
2012	<ul style="list-style-type: none"> • A joint venture of the HKEx, the Shanghai Stock Exchange and the Shenzhen Stock Exchange, called the China Exchange Services Company Limited, was co-founded. • HKEx completed the acquisition of the London Metal Exchange – the first overseas member of the HKEx Group.

Sources: HKEx Fact Book, various issues; Uddin and Wong, 1998; Nakagawa, 2007.

2.3.2 Development of the Second Board (Growth Enterprise Market)

As mentioned in Section 2.3.1, there was a comprehensive reform on market structure of the securities and futures markets introduced by the financial secretary of Hong Kong in 1999. One of the structural reforms in the stock market was the launch of the second board – called the Growth Enterprise Market (GEM) – by the Hong Kong Stock Exchange in November 1999. It served to provide start-up companies with a capital formation platform and an alternative market to the main board.

According to the Research and Planning Department of the HKEx (2005a), market development of the GEM can be described by three phases: (i) pre-GEM period from 1986-1996, (ii) preparation for GEM period from 1997-1999, and (iii) post-launch development of GEM from 1999 onward (HKEx, 2005a).

(i) Pre-GEM Period from 1986-1996:

Prior to the unification of the previous four stock exchanges into the Hong Kong Stock Exchange, which later became part of the Hong Kong Exchanges and Clearing Limited in 2000, there was no need for a second board. There were four exchanges with different listing requirements, competing among themselves for listing companies. It was perceived that the Hong Kong stock market had four boards at that time. The unification of four exchanges into one stock exchange represented a single board in Hong Kong from 1986 onward (HKEx, 2005a).

The first initiative for a second board was raised almost immediately after unification due to the decline in the number of issuers, the funding gap of small and medium enterprises, and the need to support the development of venture capital in Hong Kong. A proposal from the Hong Kong Stock Exchange to establish a second board for securities market was submitted to the Commissioner for Securities (forerunner of the present Securities and Futures Commission) in June 1987. The proposed entry requirements comprised: (i) a market capitalisation of HK\$ 20 million to HK\$ 50 million; (ii) a two-year trading record; (iii) the offering of new shares to the public; and (iv) a minimum public float of 15 per cent of issued capital. In the same month, a report was published by the Hong Kong Association of Banks recommending the establishment of a second market for securities to stimulate the venture capital industry, focusing specifically on the manufacturing industry (HKEx, 2005a).

However, the stock market crash in 1987 put the second board idea on hold. The Securities Review Committee conducted an evaluation of the Hong Kong stock market regarding the idea of a second board. The 1988 report found the market had divided opinions on this issue. In the report, the committee on one hand acknowledged the potential benefits of the venture capital on the manufacturing industry, and also the growth of China related companies, which would not have the requisite track record to meet the existing listing requirement. On the other hand, the committee noted equity was not the primary source of capital for the manufacturing industry. It was also concerned that the lower entry requirement of the second board would lead to the listing of lesser quality stocks (HKEx, 2005a).

The second initiative for the second board came when a Second Board Advisory Group was formed by the HKSE in October 1990. However, certain events eclipsed this initiative. For example, recognising the growth of China-related issuer activity in the market, the HKSE determined to promote capital-raising not only in Hong Kong, but also in Mainland China. As such, the Second Board Advisory Group was reconstituted as the China Study Group in 1991 (HKEx, 2005a).

During the early 1990s, many developed overseas exchanges were establishing new second markets, such as London's Alternative Investment Market and Paris' *Nouveau Marche*. International development encouraged the HKSE to review the need for a second board in Hong Kong. An informal consultation regarding the tentative proposal for a second board was conducted among a group of market practitioners in 1995, resulting in a mixed response. In 1996, the HKSE appointed a Working Group on New Market Development to explore the potential for a second board as well as for regional products. The focus, however, was mainly on the regional side. In the same year, the HKSE launched a consultation on market-making and other proposals to improve the market for second line stocks. However, there were few but diverse responses to the consultation, hence the initiative was shelved (HKEx, 2005a; HKEx, 2011a).

(ii) Preparation for the GEM period from 1997 to 1999

With the government's drive to support the development of technology industries, and small and medium-sized enterprises, it brought new impetus to the second board idea. In 1997, the HKSE commissioned two consultancy studies on the potential for a second board. The studies showed a positive demand among local companies. However, it raised the issues of liquidity of the market as well as the difficulties of obtaining a supply of quality issuers (HKEx, 2005a).

In May 1998, the stock exchange released a consultation paper on a proposed second market for emerging companies. The second market was to be an alternative market to the main board (HKEx, 2005a; HKEx, 2011a). Having considered the issues raised in the 1997 consultancy report, the proposed second market would target sophisticated investors by setting a high transaction minimum amount. The market would also adopt a "buyer-beware" approach, under the disclosure-based regime. The

consultation paper also included provisions enabling shareholders to vote on a resolution to wind up the company under special circumstances. In December 1998, the HKSE released details of the proposed second board to be named as the Growth Enterprise Market (GEM). The minimum transaction amount was HK\$ 50 000. There would be a two-year moratorium on the disposal of shares for management shareholders, and one year for strategic investors. News dissemination regarding the companies would be through the HKSE website or through press releases (HKEx, 2005a).

On 15 November 1999, the second board, Growth Enterprise Market, was officially launched by the HKSE to cater for companies that did not have the necessary profit track record to be listed on the main board of the stock exchange (HKEx, 1999; 2011a). The launch of the second board was expected to bring the following positives to the economy of Hong Kong (HKEx, 2005a):

- It would encourage more direct investment and venture capital into smaller enterprises;
- It would educate the smaller enterprises in Hong Kong, Mainland China and Taiwan in corporate governance;
- It would encourage investors to concentrate more on industrial companies instead of conglomerates and property companies;
- It would offer valuable economic benefits and secure Hong Kong's position as the pre-eminent home market for Mainland Chinese enterprises.

(iii) Post-launch development of the GEM from 1999 onward

The launch of the GEM soon caught up with the global technological boom. There was considerable growth in fast-evolving sectors such as e-businesses and i-businesses, both internationally and domestically, which benefited GEM. The first listing took place on 25 November 1999. As of the end of 2000, the market had attracted 47 listings with many engaging in the new business sector (HKEx, 2000). With the rule that was in line with international standards, GEM was recognised by the Securities and Exchange Commission of the United States as an offshore securities market in 2000 (HKEx, 2000).

The market not only attracted technological industries, but also Mainland Chinese enterprises. Because of the constraints on Mainland China's initial public offering market, especially for private enterprises, GEM became an attractive funding source to them. However, according to the guidelines issued by the China Securities Regulatory Commission (CSRC) in October 1999, Mainland Chinese companies needed to obtain approval from the CSRC before they applied to list on the GEM. Even foreign companies would have to seek CSRC approval or non-objection in respect of their Mainland Chinese assets (HKEx, 2005a).

Having gained some experience from the administration and operation of the GEM, the SFC and the HKSE reassessed the market to ensure that the rules continued to be relevant while providing adequate protection to investors. In 2001, the following major amendments to the GEM Listing Rules were made (HKEx, 2001; 2005a):

- The minimum period of active business pursuits was 24 months. However, for companies of substantial size and with a significant public following of HK\$ 500 million revenue and 300 shareholders, the minimum period was reduced to 12 months;
- A GEM issuer was not allowed to issue new securities within six months of listing, except if it acquired assets which complemented its focus line of business;
- The moratorium period for the disposal of shares by initial management shareholders was 12 months, and 6 months for those with less than 1 per cent holding;
- Certain requirements for share option schemes were amended and the related disclosures were tightened;
- The public float, not including employee shareholdings, was to be higher than 25 per cent and HK\$ 30 million. It was 20 per cent and HK\$ 1 billion for issuers with a market capitalisation of over HK\$ 4 billion at the time of listing.

In terms of internal management, initially a separate department within the HKSE's Listing Division was established with GEM with reference to the practise of the London

Stock Exchange on its second board. A separated GEM Listing Committee was also established. However, in order to improve the consistency in rules and decision-making between the main board and the GEM, the main board and GEM Listing Committee have operated as a combined unit for both boards since 2003. In 2004, the Listing Division was restructured into a single team to handle both boards. A common approach is adopted towards the operation and development of policy on the two boards, albeit the GEM admission requirements and a few disclosure provisions remain different from those of the main board (HKEx, 2005a).

In 2007, the revised Listing Rules of the GEM and the main board of the stock exchange with regard to the development of the GEM became effective. The GEM was re-positioned as a second board and a stepping stone towards the main board. As such, the transfer process was streamlined and the listing transfers from the GEM to the main board were encouraged (HKEx, 2013b). Since the end of 2013, a total of 74 listing companies have been transferred from GEM to the main board (HKEx 2013b). Table 2.2 summarises the major developments of the second board in Hong Kong.

Table 2.2: Major developments of the second board in Hong Kong, 1986-2013

Date	Event
1986	<ul style="list-style-type: none"> • Unification of four stock exchanges into the HKSE.
1987	<ul style="list-style-type: none"> • Reports on a “Second Market for Securities” were sent to authorities by the HKSE and the Hong Kong Association of Banks. • Second market idea was put on hold.
1988	<ul style="list-style-type: none"> • Securities Review Committee indicated reservations about the idea of a second board.
1990	<ul style="list-style-type: none"> • An advisory Group was formed by the HKSE to consider the idea of a second board. • HKSE reduced existing track record requirement from five to three years.
1991	<ul style="list-style-type: none"> • HKSE Advisory Group put emphasis on China, instead of a second board.
1995	<ul style="list-style-type: none"> • HKSE reviewed the potential for a second board. • Informal consultation on a second board was conducted by HKSE.

1996	<ul style="list-style-type: none"> • The Stock Exchange appointed a Working Group on New Market Development to explore the potential for a second board. • The Stock Exchange launched a consultation on market-making and other proposals to improve the market for second line stocks.
1997	<ul style="list-style-type: none"> • The Stock Exchange commissioned two consultancies studies regarding the potential for a second board.
1998	<ul style="list-style-type: none"> • HKSE released a consultation paper on a second market. • HKSE released a detailed plan of the second board.
1999	<ul style="list-style-type: none"> • The second board, known as the Growth Enterprise Market, was officially launched by the HKSE. • First GEM applicant was listed.
2000	<ul style="list-style-type: none"> • GEM was recognised as a designated offshore securities market by the US Securities and Exchange Commission.
2001	<ul style="list-style-type: none"> • HKSE and SFC jointly announced changes to Listing Rules of the GEM.
2004	<ul style="list-style-type: none"> • Revised Listing Rules on connected transactions became effective, which was in common with the main board. • Code on Corporate Governance Practices became effective, which was in common with the main board.
2007	<ul style="list-style-type: none"> • Revised List Rules of the GEM and the main board relating to development of the GEM became effective.
2013	<ul style="list-style-type: none"> • A total of 74 listing companies have been transferred from the GEM to the main board.

Sources: HKEx Fact Book, various issues.

2.3.3 Regulatory Development of the Stock Market

2.3.3.1 Overview of the Financial Regulatory System

Hong Kong's financial regulatory system operates under a sectoral structure through a "three-tier system". The first tier comprises the Financial Secretary, the Bureau of Financial Services, and the Treasury. The former is responsible for overall policy while the latter is responsible for translating policies into regulation. Falling under the second tier are the specialist regulatory agencies. They are responsible for the regulation and

supervision of financial services business. This tier includes the Hong Kong Monetary Authority, the Office of the Commissioner of Insurance, the Mandatory Provident Fund Scheme Authority, and the Securities and Futures Commission. They cooperate with each other to ensure proper conduct in the financial markets and to forestall financial crime and misconduct. The third tier comprises the self-regulatory organisations. They are responsible for overseeing the activities of their members (Arner et al., 2010). Table 2.3 shows the financial regulators in Hong Kong and their major functions.

Table 2.3: Financial regulators in Hong Kong and their major functions

Sector	Regulator	Major functions
Banking	The Hong Kong Monetary Authority	Regulates financial institutions and keeps the Hong Kong dollar stable through the management of the Exchange Fund and monetary policy operations.
Insurance	The Office of the Commissioner of Insurance	The Insurance Authority delegates power to the office to regulate insurance companies and intermediaries. Self-regulatory bodies also help with supervision.
Mandatory provident fund system	The Mandatory Provident Fund Scheme Authority	Regulates and supervises the operations of provident fund schemes.
Securities and futures	Securities and Futures Commission	Regulates the securities and futures markets.

Sources: Arner et al., 2010; SFC, 2014.

2.3.3.2 Regulatory Reforms and Development in the Stock Market

Similar to other financial centres, Hong Kong's financial regulatory system has developed gradually, and also to a large extent, in response to a range of financial crises, in particular the major international financial crises of 1973, 1987 and 1997

(Arner et al., 2010). For example, the stock market crash of 1973 led to the enactment of the Hong Kong government's first significant securities legislation – the Securities Ordinance, and the Protection of Investors Ordinance. The two ordinances were effective from March 1974 to give more protection to investors (HKEx, 2011a). Under the Securities Ordinance, a Stock Exchange Compensation Fund was established. The contributions to the fund were paid in proportion to their membership of the four stock exchanges. In the same year, part VI of the Securities Ordinance and the Securities Regulations became effective. It required all dealers, investment advisors and their representatives to register with the Commissioner for Securities (HKEx, 1999).

After the stock market crash in 1973, the Commissioner for Securities together with the Securities Commission, were established with an aim to regulate and oversee the four stock exchanges (Uddin and Wong, 1998). In fact, the Commissioner for Securities was appointed early in 1973 before the market crash. However, the commissioner did not have statutory power. Therefore, later in 1985, the Securities (Amendment) Ordinance was enacted by the government in order to strengthen the power of the Commissioner for Securities to enable the commissioner to monitor the financial viability of dealers (HKEx, 1999). Nevertheless, the legislation was administered on a part-time basis, which failed to provide sufficient resources to properly regulate the rapidly growing and changing securities and futures markets of Hong Kong.

The deficiencies of the regulatory structure became evident when the stock market crashed again in 1987. In response to the stock market crash, a Securities Review Committee was formed by the government to examine the regulatory structure and regime of the stock market in Hong Kong. Recommended by the Report on the Operation and Regulation of Hong Kong Securities Industry, a list of fundamental reforms was made to elevate the Hong Kong stock market to international standards (Uddin and Wong, 1998).

With the enactment of the Securities and Futures Commission Ordinance in May 1989, the Securities Commission and the Office of the Commissioner for Securities were

merged to form the Securities and Futures Commission (SFC). The ordinance defines the power and purposes of the SFC. Under the ordinance, the SFC is an independent statutory body to regulate the securities and futures markets in Hong Kong. It enforces regulations, propagates new legislations, and supervises the stock exchange, the dealers and the clearing houses (Arner et al., 2010; HKEx, 2011a).

Later, in 1997, the Asian financial crisis affected Hong Kong badly and triggered financial instability in the securities market. In response to the crisis, Hong Kong commenced a series of reforms in its securities regulatory regime. It aimed to restore investor confidence and also further strengthen its status as an international financial centre. During the crisis, the sharp swings of the markets caused some major corporate failures (SFC, 2007). It exposed the regulatory gaps in the supervision of share margin financing activities, which were not covered under the banking and securities legislation. To protect the interests of investors and prevent the contagious effect on the rest of market, legislation was established by the SFC to place share margin financing activities under its regulation (SFC, 2007).

In addition to responding to the financial crises, the government also recognised the need to further enhance the competitiveness and stability of the securities and futures market. Therefore, in March 1999, the government introduced a three-pronged market reform. This included: (i) the modernisation of the securities regulation and legislation; (ii) the demutualisation and listing of the stock and futures exchanges; and (iii) the enhancement of the financial infrastructure. The reform aimed to upgrade the regulatory regime in line with international standards, facilitate market innovation and completion, and upgrade the technology infrastructure to make Hong Kong one of the most efficient places to conduct business (HKEx, 1999; SFC, 2007; HKEx, 2011a).

There was a fundamental shift in financial regulation after the comprehensive reform. Before the reform, both the Securities and Futures Commission (SFC) and the Hong Kong Exchanges and Clearing Limited (HKEx) were responsible for regulating equity trading in Hong Kong. HKEx is recognised by the SFC as the operator of the Hong Kong Stock Exchange and is empowered to set rules to manage its clearing houses and members. After the reform, the function of prudential regulation of stock exchange

participants was transferred to the SFC. The primary responsibility for the routine inspection of the businesses of exchange participants, monitoring their compliance with conduct rules and liquid capital requirements, and ensuring that there are proper systems of management and control in place, was also transferred to the SFC (HKEx, 2011a). In addition, the role of the SFC as the main regulator of exchange participants was further confirmed when the regulatory functions underwent rationalisation in 2000. After the rationalisation process, the primary responsibility for the SFC became ensuring transparent and efficient security markets by laying down legislation and codes. The SFC oversees the operation of HKEx, subsidiaries of HKEx (Hong Kong Stock Exchange, Hong Kong Futures Exchange, and Hong Kong Securities Clearing Company), as well as the financial market intermediaries (Uddin and Wong, 1998).

Later, in 2003, the Hong Kong securities market underwent the most significant regulatory development with the enactment of the Securities and Futures Ordinance (SFO) (SFC, 2007). The SFO consolidated and modernised ten existing ordinances governing the securities and futures markets, which had been enacted over the past three decades. In particular, the SFO brought forth various regulatory improvements to the security market. First, it introduced a new dual-filing regime to ensure timely and accurate disclosure of information by listed companies. Second, SFO dealt with insider dealing and market manipulation. Any dissemination of false and misleading information can be pursued either by prosecution, or through the Market Misconduct Tribunal. Third, a single licencing system was established to improve cost effectiveness to licensed market practitioners. And fourth, an investor compensation scheme was provided to better protect the retail investors (SFC, 2007).

The SFO and its subsidiary legislation expanded its functions and powers to further develop the scope and depth of its regulatory capacity. Under the SFO, the role of SFC as the regulator of the securities and futures markets in Hong Kong was further enhanced. The main statutory objectives of SFC are to: (i) maintain and promote competitive, efficient, fair, orderly and transparent securities and futures markets; (ii) help the public understand the workings of the securities and futures industry; (iii) provide protection for the investing public; (iv) minimise crime and misconduct in the

market; (v) reduce systemic risks in the industry; and (vi) assist the government in maintaining Hong Kong's financial stability (Arner et al., 2010; SFC, 2012).

In addition, the SFO and its subsidiary legislation also clarified the regulatory role of the HKEx. Under the SFO and Companies Ordinance, HKEx has been vested with limited regulatory powers. The SFC's functions of vetting prospectuses relating to listing have been transferred to the HKEx. Therefore, HKEx is regarded as the frontline regulator of all listed and prospective listed companies while the SFC remains responsible for supervising, monitoring and regulating the activities of HKEx (Arner et al., 2010).

As a result of the modernisation of securities regulation and market infrastructure, Hong Kong was placed in an optimal position to tap the enormous opportunities from the capital market reform of Mainland China. For example, in 2004, the central government of Mainland China announced that it would utilise overseas capital markets and strengthen financial cooperation between Hong Kong and Mainland China. Mainland Chinese share reform, together with the suspension of domestic fund raising activities in 2005, reinforced Hong Kong's standing as the premier listing centre for Mainland Chinese enterprises. The financial integration is not limited to the stock market only. Hong Kong aspired to play a strategic role in the Mainland's financial reform and development. The SFC worked closely with market participants on the initiatives to encourage financial innovation (SFC, 2006). Further discussion regarding this is in Section 2.3.4.

With regard to the primary offering of securities, Hong Kong has gradually transformed from a merit-based to a disclosure-based regulatory system over the past few decades. Under the merit-based regime, the regulator assumes a direct role between the issuers and investors in protecting investors. The listing of securities is subject to the regulator's review of the merits of the investment. The approach was adopted at the earlier stages of capital market development in Hong Kong, when the level of investors' education was relatively low and the amount of funds raised on the market was relatively small (Ghosh, 2006).

The disclosure-based regulatory regime, on the other hand, is based on the principle that issuers and the intermediaries of the securities offering need to provide investors with sufficient and timely disclosure of relevant information about a company so that investors can make informed decisions. Under this regime, enforcement is delegated to self-regulatory bodies such as HKEx and profession associations. The role of the regulator, SFC, concentrates on overall enforcement of laws and regulations to ensure the investors are well protected and the market participants adhere to the standards and comply with the laws and regulations (Ghosh, 2006).

There are some advantages in transforming from a merit-based to a disclosure-based system. First, it makes the capital market more efficient by reducing the costs of approval and compliance for both issuers and regulators when the sophistication of financial market increases. Second, it raises the standard of disclosure, due diligence, corporate governance and accountability by promoters and directors of public companies and their advisers to investors. And third, it imposes greater market-driven discipline in the pricing and evaluation of securities (Ghosh, 2006).

Due to the advantages of a disclosure-based system over a merit-based system, the government worked towards a disclosure-based regulatory regime by taking several initiatives on improving information disclosure. One such initiative was the HKEx Electronic Disclosure Project in 2007. The pilot phase of this project started in June 2007 and lasted for six months. Under this phase, it was optional for a main board listed issuer to make a paid announcement in a newspaper, as long as it published a full announcement on its own website and on the HKEx website along with the newspaper notification. It is optional for GEM listed issuers to make paid announcements. In addition, both main board and GEM listed issuers were required to submit their disclosures to HKEx electronically through the e-submission system. Since December 2007, main board issuers who publish full announcements on their own websites are no longer required to publish notifications in newspapers (HKEx, 2007).

Another initiative was the launch of a bilingual (Chinese/English) website called HKExnews by the Hong Kong Stock Exchange in 2008. The website is a one-stop

platform for electronic disclosure of issuer’s information and is also a central issuer document archive that allows investors to access issuers’ information in a timely manner. It is a dedicated website created for the dissemination of issuer information provided directly by the listed issues, their major shareholders, and directors. It also provides regulatory information by HKEx about listed companies (HKEx, 2008; HKEx, 2011a).

Moreover, a joint pilot scheme by the SFC and HKEx commenced in 2008 to help provide a level playing field for institutional and retail investors in the receipt of the initial public offering (IPO) information prior to the public offer. The scheme required all new listing applicants to post a web proof information pack on the HKExnews or Growth Enterprise Market website prior to the issue of an initial public offering prospectus being introduced (HKEx, 2007; HKEx, 2011a).

With all the regulatory reforms and development, the regulatory regime is in line with international standards. It makes Hong Kong one of the most efficient places to conduct business. Table 2.4 summarises the major regulatory development on the stock market in Hong Kong during the period of 1973 to 2013.

Table 2.4: Major regulatory development of the stock market, 1973-2008

Date	Event
1973	<ul style="list-style-type: none"> • The Commissioner for Securities and the Securities Commission were established.
1974	<ul style="list-style-type: none"> • The Securities Ordinance and the Protection of Investor Ordinance were enacted. • A Stock Exchange Compensation Fund was established under the Securities Ordinance. • Part VI of the Securities Ordinance and the Securities Regulations came into effect. It required all dealers, investment advisors and their representatives to register with the Commissioner for Securities.

1985	<ul style="list-style-type: none"> • The Securities (Amendment) Ordinance was enacted to strengthen the power of the Commissioner for Securities to monitor the financial viability of dealers.
1988	<ul style="list-style-type: none"> • The government-appointed Securities Review Committee published the Report on the Operation and Regulation of the Hong Kong Securities Industry.
1989	<ul style="list-style-type: none"> • The Securities and Futures Commission Ordinance was passed by the government. • The Securities and Futures Commission (SFC) was formally established.
1998	<ul style="list-style-type: none"> • The SFC placed share margin financing activities under its regulation.
1999	<ul style="list-style-type: none"> • Hong Kong's financial secretary announced a comprehensive reform of the securities and futures markets, known as the three-pronged market reform.
2000	<ul style="list-style-type: none"> • The SFC became the main regulator of exchange participants when the regulatory functions underwent rationalisation.
2003	<ul style="list-style-type: none"> • The Securities and Futures Ordinance became effective together with a number of codes, guidelines and forms for its implementation.
2007	<ul style="list-style-type: none"> • The HKEx Electronic Disclosure Project commenced.
2008	<ul style="list-style-type: none"> • SFC and HKEx jointly commenced a pilot scheme regarding information disclosure of the initial public offering information prior to the public offer. • The launch of a bilingual website called HKExnews by the Hong Kong Stock Exchange.

Sources: Uddin and Wong, 1998; HKEx, 1999; SFC, 2007; HKEx, 2013b.

2.3.4 Economic Relations with Mainland China

Hong Kong was ceded to Britain in 1842 as its colony under the Treaty of Nanjing. It then started to develop its economic and financial systems under the *laissez-faire* policy adopted by the British government to become one of the freest capitalist economies in the world. In 1984, the Sino-British Joint Declaration on the future of Hong Kong was signed by the governments of the United Kingdom and Mainland China (Tsang, 2004; HKEx, 2011a). The sovereignty of Hong Kong was returned to China on 1 July 1997, and the Hong Kong Special Administrative Region government

was established. Under the principle of “one country, two systems”, Hong Kong continues to adopt the existing economic and financial systems to maintain its status as an international financial centre (Arner et al., 2010). The unique historical and economic development of Hong Kong gives her a privileged position on the financial reforms in China.

Regarding background information on Mainland China, its financial system was a closed and centralised one in 1978 (Lee and Wong, 2012; Zhang et al., 2012). The financial system consisted of only a banking sector with no financial markets. The first major financial reform was on the banking sector. Four commercial banks were established after 1978 and the People’s Bank of China was officially established as the central bank in 1984. Following this major evolution, the financial markets and infrastructure continued to develop. Two stock exchanges, the Shanghai Stock Exchange and Shenzhen Stock Exchange, were established in 1990 (Lee and Wong, 2012; Zhang et al., 2012).

In the 1990s, the stock market in Hong Kong started to benefit from the financial reforms adopted by Mainland China. The first Hong Kong-incorporated Mainland Chinese enterprise, Hai Hong Holdings Company, listed its shares through an initial public offering on the Hong Kong Stock Exchange in July 1992. It was also known as the red chip² in the HKSE. In the following year, the first Mainland-incorporated enterprise, also known as H-shares,³ the Tsingtao Brewery Company, commenced trading on the HKSE (HKEx 2011a). In the 2000s, the stock market continued to benefit from Mainland China’s economic and financial reforms, namely the share reform, the Qualified Foreign Institutional Investor (QFII) and the Qualified Domestic

² According to the definition of HKEx, red chips refer to companies with at least 30 per cent shareholding held in aggregate by the Mainland China entities, and / or indirectly through companies controlled by them, with the Mainland China entities single largest shareholders. Or, if the shareholding of the company held in aggregate directly and / or indirectly by the Mainland China entities is in the range of 20 per cent to 30 per cent and there is a strong influential presence of the Mainland China-linked individuals on the company’s board of directors. The Mainland China entities include state-owned enterprises, and entities controlled by provincial and municipal authorities (Lee and Chang, 2003).

³ According to the definition of HKEx, H-share companies refers to companies incorporated in Mainland China and approved by the China Securities Regulatory Commission for listing in Hong Kong. Shares of these Chinese enterprises are listed on the stock exchange of Hong Kong, and subscribed for and traded in Hong Kong dollars or other foreign currencies. The letter “H” stands for Hong Kong (Lee and Chang, 2003).

Institutional Investor (QDII) schemes, and the Closer Economic Partnership Agreement (CEPA).

2.3.4.1 Share Reform

There are two types of shares in Mainland Chinese enterprises. The first is the tradable share, and the second is the non-tradable share. The non-tradable share is a special class of share in the enterprise that is not listed and hence non-tradable. It is a special class of share entitling the holders to exactly the same rights as holders of an ordinary share, but cannot be publicly traded. About two-thirds of the shares are non-tradable and are owned by the government – called the “state shares” (SFC, 2006). The existence of non-tradable shares means the interests of major shareholders, minor shareholders and management sometimes differ. Therefore, problems in corporate governance may occur.

To better align the various interests of stakeholders, improve corporate governance and enhance investor confidence, share reform was carried out by the Mainland Chinese government in April 2005. During the listing of non-tradable shares in 2005, the Mainland China authorities, the China Securities Regulatory Commission, suspended all fund raising activities in the domestic markets for a one-year period (SFC, 2006). As a result, Hong Kong became the prime fund raising centre for Mainland Chinese companies during that period (SFC, 2006). For example, in June 2005, a Mainland-incorporated commercial bank (H-shares), the Bank of Communications, was first listed outside Mainland China. Later, in October 2005, the first of China’s four state-owned commercial banks, China Construction Bank Corporation, was listed in Hong Kong. Hence, all of its shares became freely tradable (see Turner et al., 2012). Through its initial public offering, HK\$ 71.6 billion of capital was raised, which was the largest amount in the history of Hong Kong (HKEx, 2011a). According to the SFC (2006), the total amount of funds raised on the Hong Kong stock market was HK\$ 302 billion during 2005, making Hong Kong the fifth largest fund raising market in the world and the largest in Asia during that period. Among the equity funds raised, HK\$ 159 billion was attributed to H-share companies, thereby contributing 53 per cent of the total funds raised in that year (SFC, 2006). It was

evident that the share reform in Mainland China played an important role in the development of the stock market in Hong Kong.

2.3.4.2 The Qualified Foreign Institutional Investor (QFII) and the Qualified Domestic Institutional Investor (QDII) Schemes

Because of the inconvertibility of the Chinese currency, the Renminbi (RMB), there are different arrangements in the financial system under the capital account in Mainland China. One of them is the multiple classes of shares adopted by Chinese listed firms: A-shares and B-shares. A-shares are shares that can be traded by domestic investors; B-shares are denominated in foreign currencies and reserved for foreign investors. The system of multiple classes was established in 1992 to allow foreign investors to participate in the stock market (SFC, 2006).

To develop the capital markets in Mainland China, two important policy initiatives were launched on a pilot scale: the Qualified Foreign Institutional Investor (QFII) in 2002, and the Qualified Domestic Institutional Investor (QDII) in 2006 (SFC, 2006; Yao and Wang, 2012; Craig et al., 2013). The schemes aimed at developing a critical mass of high quality financial intermediaries and a pool of professionals and informed institutional investors. Under the QFII programme, licensed foreign investors are allowed to buy and sell RMB denominated financial assets in China. Forming a mirror image of QFII, the QDII programme allows licensed domestic institutions to raise capital from Chinese investors to invest in foreign capital markets. The investor base initially included banks, mutual funds and also a wider range of fixed income products. In late 2007, the investor base was enlarged to allow the funds to be invested in foreign stock markets. It also allows retail investors to participate in the QDII scheme (SFC, 2006; Yao and Wang 2012; Craig et al., 2013).

The QDII scheme creates a win-win situation for both Mainland China and Hong Kong. It benefits Mainland China by allowing Mainland Chinese investors to enhance their returns and reduce risk through diversification of investment portfolios to global markets. In addition, the scheme exposes investors to a more advanced market that adopts a sound regulatory framework where intermediaries adhere to global best

practices and standards. After experiencing the benefits of adopting international standards and practices, they will be motivated and will demand the same standards and practices back home. It further improves the development of capital markets in Mainland China (SFC, 2006). At the same time, the QDII scheme brings benefits to Hong Kong by bringing new capital to Hong Kong. It serves as a platform for Mainland Chinese investors seeking to invest overseas. It also motivates the capital market in Hong Kong to become more competitive by offering more and better financial products and services to meet the various needs of different types of investors (SFC, 2006).

In fact, Hong Kong benefited from the extraordinarily high concentration of QDII funds despite the fact that the QDII scheme allows investors to invest in any overseas markets. One of the reasons for this is the “Hong Kong bias” effect (Yao and Wong, 2012). Due to its geographic proximity and cultural affinity between Hong Kong and Mainland China, the “Hong Kong bias” effect is similar to the “home bias” effect. “Home bias” can be driven by an investor’s perceived information advantage about the home market and a better understanding of the local rule of law. Another reason is the deficiency of the knowledge required of the QDII fund managers to invest in foreign capital markets and manage global portfolios (Yao and Wong, 2012). According to an estimation by Yao and Wang (2012), an average of 50 per cent of QDII funds was allocated to Hong Kong during the period of 2007 to 2011.

In recent years, Hong Kong has been established as a preferred centre for initial public offerings (IPOs) and other fund raising activities by Mainland Chinese enterprises. This is because Hong Kong can provide a sound regulatory environment, international visibility, and a broad institutional and international investor base. As a result, a growing number of Mainland companies have sought listing in Hong Kong in recent years (SFC, 2008). To name a few, the H-shares of China Railway Construction Corporation Limited were listed in March 2008. It was the largest initial public offering by the funds raised of the year. In July 2010, the Agricultural Bank of China was listed in Shanghai and Hong Kong with the largest funds, which amounted to more than US\$ 22 billion. It was the world’s largest IPO of the year. A first company for Mongolia, Mongolia Mining, was listed on the Hong Kong Stock Exchange in October 2010. It raised a total fund of HK\$ 5.8 billion through initial public offering. In December 2010,

the H-shares of the China International Marine Containers (Group) Limited were listed in Hong Kong. It was the first case in which Mainland-listed B-shares were converted into H-shares to be listed in Hong Kong. In 2012, the RMB-traded shares of Hopewell Highway Infrastructure Limited were listed on the Hong Kong Stock Exchange by way of placing. It was the first RMB-traded equity listed outside China (HKEx 2011a; HKEx, 2013b).

2.3.4.3 Closer Economic Partnership Arrangement

Another important step in opening up the markets of China was its commitments under its accession agreements to the World Trade Organisation in 2001. Due to the unique position of Hong Kong, preferential treatment was granted to Hong Kong by the Closer Economic Partnership Arrangement (CEPA) between Mainland China and Hong Kong. It was signed and became effective on 1 January 2004, which is a free trade agreement that offers Hong Kong products, companies and residents preferential access to the Chinese market (Harrison, 2004).

As a result, the securities industry in Hong Kong gained by the following CEPA measures (Harrison, 2004; HKEx, 2011a):

- the authorisation of HKEx's Beijing representative office. The office was opened in November 2004 and serves as a platform for promoting the Hong Kong securities market in China as a listing and trading centre;
- the recognition of Hong Kong securities professionals' qualifications for the purposes of practicing in China. The Security and Futures Commission and the China Securities Regulatory Commission announced mutual recognition at a regulatory level, while recognition of professional content rests with the respective industry associations;
- Mainland Chinese state-owned commercial banks and some shareholding commercial banks are supported in relocating their international and foreign exchange trading centres to Hong Kong;
- Mainland Chinese banks are supported in developing their network and business activities through acquisition;

- full utilisation of financial intermediaries in Hong Kong was supported by Mainland China during the process of reform, restructuring and development of China's financial sector;
- financial regulators from both sides will strengthen cooperation and information sharing;
- the listing in Hong Kong of eligible Mainland Chinese companies, including private companies, will be supported; and
- qualified Mainland Chinese securities and futures companies were permitted to establish branches in Hong Kong after signing the third phase of the closer Economic Partnership Arrangement (CEPA III) in October 2005.

The internationalisation of RMB under CEPA also benefits stock market growth in Hong Kong. For example, in 2011, a series of policies was established to promote closer economic cooperation between Mainland China and Hong Kong, and the internationalisation of RMB. These measures included: (i) introducing Mainland Chinese exchange-traded funds into Hong Kong stocks; (ii) developing channels to facilitate the circulation of RMB between Mainland China and Hong Kong; and (iii) the establishment of a RMB Qualified Foreign Institutional Investor scheme. In December 2013, the RMB Qualified Foreign Institutional Investor scheme was formalised when Mainland Chinese government and the Hong Kong government signed Supplement VIII to the Mainland China and Hong Kong Closer Economic Partnership Arrangement (HKEx, 2013b).

The closer cooperation between Mainland China and Hong Kong continued to gather momentum in shaping the regulatory and structural development of the Hong Kong stock market. In 2009, a Closer Cooperation Agreement with the Shanghai Stock Exchange and Shenzhen Stock Exchange was signed. This agreement showed the commitment of HKEx to work more closely with the exchanges in Mainland China towards the common goal of meeting the international and domestic fund raising need of Chinese enterprises (HKEx, 2011a). In December 2010, there were amendments to the Listing Rules for HKEx to adopt a framework for accepting Mainland Chinese accounting and auditing standards and Mainland Chinese audit firms for Mainland Incorporated Companies to be listed in Hong Kong. The framework also provides

reciprocity for the use of Hong Kong financial reporting standards and Hong Kong audit firms by Hong Kong companies listed in Mainland China (HKEx, 2011a). In 2012, a joint venture by Hong Kong Exchanges and Clearing Limited, the Shanghai Stock Exchange and the Shenzhen Stock Exchange – known as the China Exchange Services Company Ltd – was formed. All three companies have equal shareholding in the company, with the aim to develop financial products and related services. In 2013, HKEx announced that Hong Kong Securities Company Limited admitted China Securities Depository and Clearing Corporation Limited as the clearing agency participant to the Central Clearing and Settlement System (HKEx, 2013b).

2.4 The Growth of the Stock Market in Hong Kong

This section presents an overview of the stock market performance in Hong Kong. It first discusses the stock market activity in Hong Kong, measured by key market indicators. It proceeds to discuss the size and liquidity of the stock market in Hong Kong.

2.4.1 The Growth of the Hong Kong Stock Market in terms of Key Market Indicators

The stock market in Hong Kong is one of the most established in Asia. The Hong Kong Stock Exchange has been a full member of the World Federation of Exchanges since 1986. During the past two decades, Hong Kong has witnessed continuous growth in the stock market as measured by various key market indicators. They include: the number of listed companies; the share price index (Hang Seng Index); the number of shares traded; the value of shares traded; and the number of transactions.

In terms of the number of listed companies, Hong Kong has enjoyed significant growth during the past two decades. In 2013, Hong Kong was ranked the tenth in the world in terms of the number of listed companies (WFE, 2013). The total number of listed companies increased from 708 in 1999 to 1 135 in 2005. The number increased steadily from 1 173 in 2006 to 1 413 in 2010. At the end of 2013, there were a total of 1 643 companies listed either on the main board or the Growth Enterprise Market (GEM).

Since the launch of the GEM in 1999, there has been considerable growth in the technological industry, both internationally and domestically, which benefits the development of the GEM. It also attracts enterprises from Mainland China. In fact, because of the constraints on Mainland China's initial public offering market, especially for private enterprises, the GEM becomes an attractive funding source to them (HKEx, 2005a). The number of companies listed on the GEM increased from 7 in 1999 to its highest level of 204 in 2004. It then declined steadily and reached a low level of 169 in 2010. In 2013, there were 192 companies listed on the GEM. Table 2.5 shows the number of listed companies on the HKSE and the annual percentage changes during the period of 1999 to 2013.

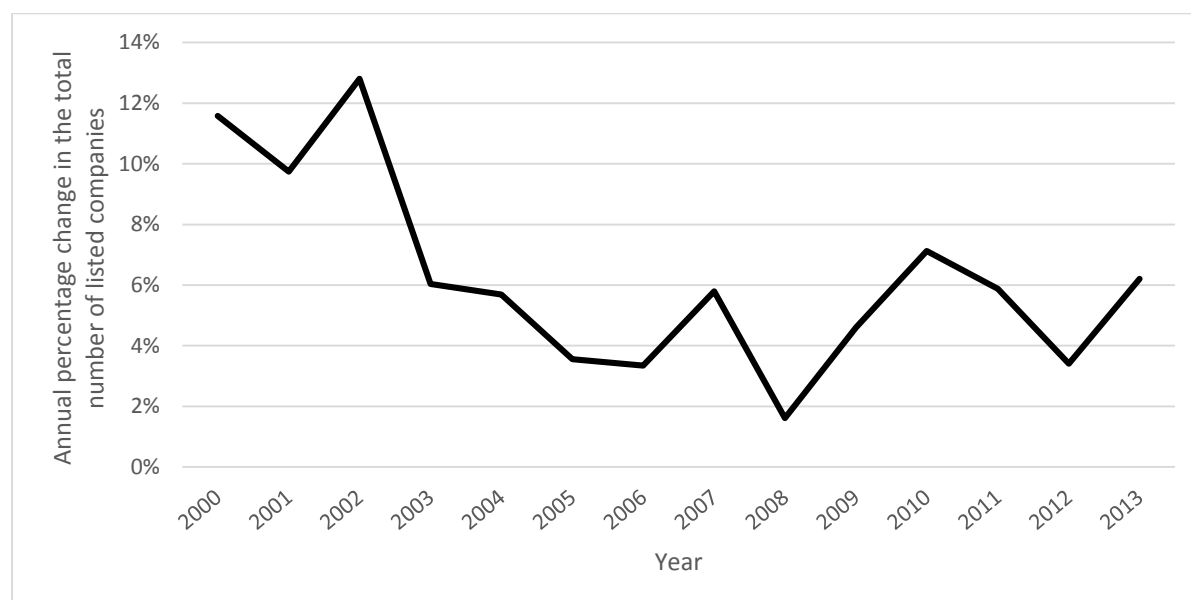
Table 2.5: The number of listed companies on the HKSE and the annual percentage changes, 1999-2013

End of Period	Number of Listed Companies			
	Main Board	GEM	Total	Annual Percentage Change of the Total
1999	701	7	708	na
2000	736	54	790	12
2001	756	111	867	10
2002	812	166	978	13
2003	852	185	1 037	6
2004	892	204	1 096	6
2005	934	201	1 135	4
2006	975	198	1 173	3
2007	1 048	193	1 241	6
2008	1 087	174	1 261	2
2009	1 145	174	1 319	5
2010	1 244	169	1 413	7
2011	1 326	170	1 496	6
2012	1 368	179	1 547	3
2013	1 451	192	1 643	6

Sources: HKEx Fact Book, various issues; annual percentage changes calculated by the author.

Table 2.5 shows that the number of listed companies in Hong Kong has enjoyed continuous growth during the past two decades, with an average of 6 per cent annual growth. There was even a double-digit annual percentage growth during the early 2000s. The growth started to slow down from its highest level of 13 per cent in 2002 to 3 per cent in 2006. After reaching its lowest level of 2 per cent growth in 2008, it gradually recovered to 7 per cent in 2010. In 2013, there was a 6 per cent growth in the number of listed companies. Figure 2.1 shows the annual percentage changes in the total number of listed companies from 1999 to 2013.

Figure 2.1: Annual percentage change in the total number of listed companies, 1999-2013



Source: Author's own calculation based on HKEx Fact Book, 2013.

Regarding the stock market activity measured by the share price index, the discussion is based on the Hang Seng Index (HSI). In fact, the HSI is a value-weighted index computed using a sample of representative stocks, which accounts for the majority of the total market capitalisation. The HSI was started as an in-house guide by the Hang Seng Bank in 1964, and was made public in November of the same year (Tsang, 2004; HKEx, 2011a). Because of the closer development in the stock market with Mainland China, the number of constituent stocks in the HSI increased from 33 to 39, with the inclusion of six H-shares during the period of 2006 to 2007. During the same period,

Hang Seng Index Limited announced a change in the compilation of the HSI. The full market capitalisation weighted formula gradually moved to a free float-adjusted market capitalisation weighted formula with a 15 per cent cap on individual stock weightings (HKEx, 2011a). In 2013, there were 50 constituent stocks in the HSI, accounting for 58.05 per cent of the total market capitalisation (HKEx, 2013b).

During the period of 1996 to 2013, the HSI indicated volatile and positive movement. In 1997, there was a major political event, namely the transfer of the sovereignty of Hong Kong from the United Kingdom to Mainland China and the establishment of the Hong Kong Special Administrative Region on 1 July. The transition went smoothly with the economy performing strongly in the real and external sectors [International Money Fund (IMF), 1998]. In the second half of the year, however, the economy was affected by the Asian financial crisis and the speculative attacks on the Hong Kong dollar. The HSI – measured at year end – decreased from 13 452 points in 1996 to 10 723 in 1997, and further declined to 10 049 points in 1998. After the short-lived recovery on the stock price index in 1999, it decreased from 16 926 points in 1999 to 9 321 points in 2002 owing to negative factors such as rising oil prices, disappointing corporate earnings and global disillusionment with technology stocks. The HSI decreased by 11 per cent to 15 096 points in 2000 (HKEx, 2000).

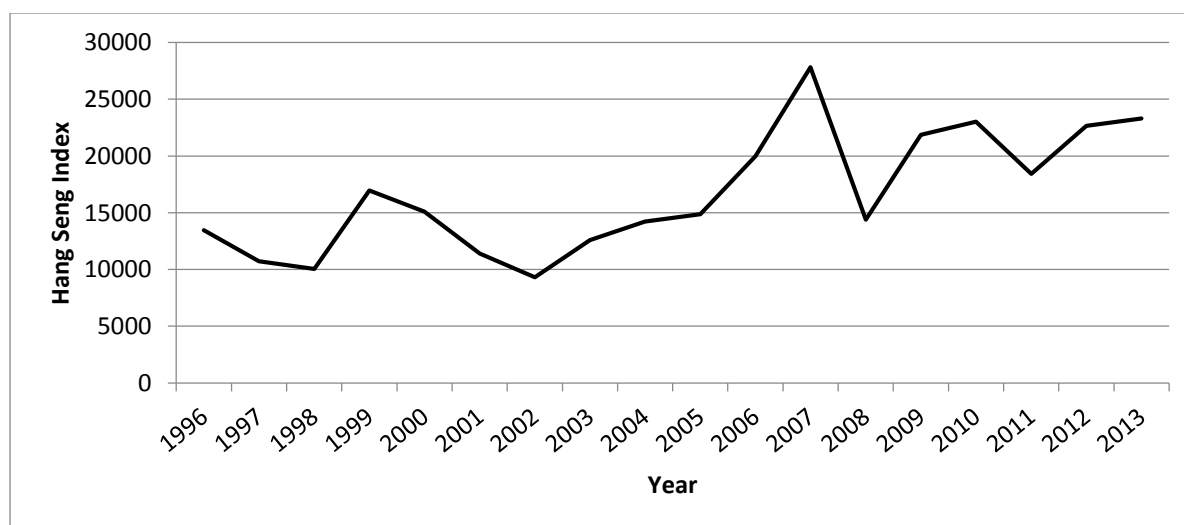
The Hong Kong stock market continued to weaken in 2001. The sharp slowdown of the economy in the United States as a result of the 11 September terrorist attacks, the domestic economic downturn, corporate downsizing and deflation in the economy, adversely affected stock market performance. As a result, the HSI ended at 11 397 points – 24 per cent below the year end of 2000 (HKEx 2001). In 2002, the trading performance of the stock market further weakened due to the historical peak of the unemployment rate, and the lethargy in both investment and consumer spending. As a result, the HSI fell by 18 per cent from the previous year, to end at 9 321 points in 2002 (HKEx 2002).

In 2003, the stock market rebounded distinctly with a 35 per cent increase to 12 576 points at the year end. This was because of the launch of the “individual-visit” scheme for Mainland China’s tourists, and the new economic ties with Mainland China under

the CEPA. The increase in the HSI reflected the recovery of the Hong Kong economy (HKEx, 2003). The Hong Kong economy made a strong recovery during the period of 2004 to 2007. It benefited from the supportive measures of Mainland China's government, such as strong inbound tourism, additional benefits from the CEPA with Mainland China, and the financial reforms adopted by Mainland China. The upturn of the economy also led to a strong performance on the stock market. The HSI increased from 14 230 points to a record high level of 27 813 points in 2007. There were 34 per cent and 39 per cent growth rates in 2006 and 2007 respectively (HKEx, 2004; 2007).

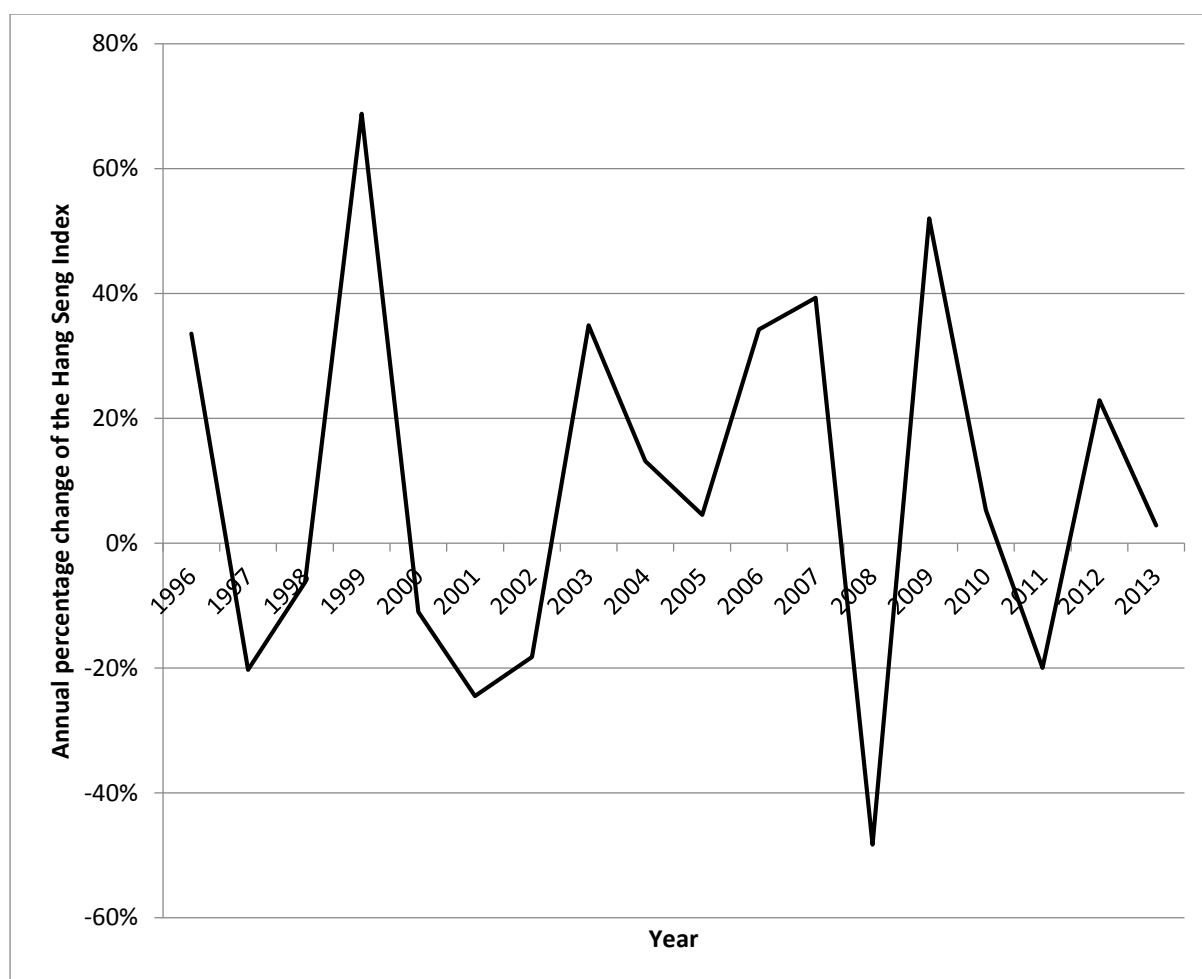
However, owing to the global financial crisis, the stock market suffered a significant downturn in 2008. The HSI declined sharply from its record high level of 27 813 in 2007 to 14 387 points in 2008 – 48 per cent lower than that of the previous year (HKEx, 2008). The market recovered quickly from the turmoil caused by the global financial crisis. The HSI reached 21 873 points in 2009, representing a 52 per cent annual increase (HKEx, 2009). It continued to recover in 2010. Owing to growing uncertainty in the global financial markets, the HSI was down by 20 per cent to 18 434 points in 2011 (HKEx, 2011). The market rebounded, however, and showed healthy signs of recovery in 2012 and 2013. The HSI closed the year at 23 306 points in 2013 (HKEx, 2012; 2013). Figure 2.2 shows the development of the Hang Seng Index and Figure 2.3 indicates its annual growth trend.

Figure 2.2: The development of the Hang Seng Index, 1996-2013



Sources: HKEx Fact Book, various issues; IMF, 1998.

Figure 2.3: Annual percentage change of the Hang Seng Index, 1996-2013



Sources: Author’s own calculation based on HKEx Fact Book, various issues; IMF, 1998.

Along with the growing number of listed company in the Hong Kong stock market, three other key indicators also increased significantly. They were the number of shares traded, the value of shares traded, and the number of transactions. For instance, the number of shares grew remarkably from 1 394 billion shares in 1999 to 34 440 billion shares in 2013. Also, the value of shares traded increased tremendously from HK\$ 1 920 billion in 1999 to HK\$ 15 265 billion in 2013. In addition, the number of transactions surged from 23 063 257 in 1999 to 229 470 737 in 2013. Table 2.6 shows the number of shares traded, the value of shares traded, the number of transactions, and their respective annual percentage changes during the period of 1999 to 2013.

Table 2.6: The number of shares traded, the value of shares traded, the number of transactions, and their respective annual percentage changes, 1999-2013

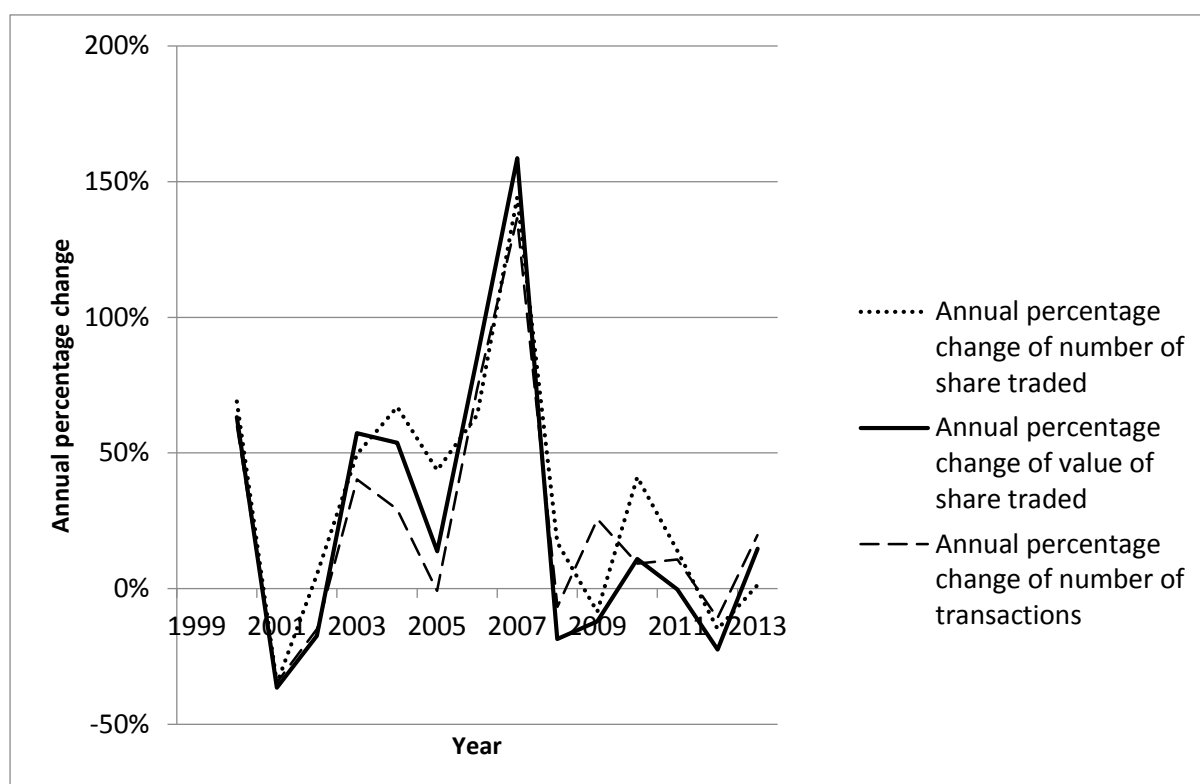
End of Period	Number of Shares Traded		Value of Shares Traded		Number of transactions	
	Total (Billion)	Annual Change (%)	Total (HK\$ billion)	Annual Change (%)	Total (Deals)	Annual Change (%)
1999	1 394	na	1 920	na	23 063 257	na
2000	2 355	69	3 132	63	36 871 325	60
2001	1 532	-35	1 990	-36	24 123 635	-35
2002	1 612	5	1 643	-17	20 536 648	-15
2003	2 410	50	2 584	57	28 803 397	40
2004	4 024	67	3 974	54	37 243 835	29
2005	5 780	44	4 520	14	36 956 081	-1
2006	9 481	64	8 376	85	64 077 041	73
2007	23 163	144	21 666	159	151 585 525	137
2008	27 104	17	17 653	-19	141 394 810	-7
2009	24 794	-9	15 515	-12	177 641 518	26
2010	34 991	41	17 210	11	193 940 737	9
2011	39 907	14	17 154	0	214 853 621	11
2012	33 968	-15	13 301	-22	191 608 513	-11
2013	34 440	1	15 265	15	229 470 737	20

Sources: HKEx Fact Book, various issues; annual percentage changes calculated by author.

It is worth noting that the growth trends of these indicators (the number of shares traded, the value of shares traded, and the number of transactions) show similar volatility patterns. All of them experienced negative growth during the period of 2001, 2008, 2009 and 2012. Since Hong Kong is a small open economy, the global financial environment certainly exerts great influence on its stock market. For example, there was negative growth in stock market activities in 2001 due to the collapse of the technology stock bubble in Hong Kong, together with the recession of the economy of the United States. The market recovered steadily and reached a peak of growth in 2007. However, it experienced a sharp decline in market activities during the period of 2008 to 2009 due to the global financial crisis. The slow recovery of the investment

sentiment, together with the growing uncertainty in the global financial market, led to another negative growth rate in 2012. Figure 2.4 shows the growth trends of the number of shares traded, the value of shares traded, and the number of transactions during the period of 1999 to 2013.

Figure 2.4: Growth trends of the number of shares traded, the value of shares traded, and the number of transactions, 1999-2013



Source: Author's own calculation based on HKEx Fact Book 2013.

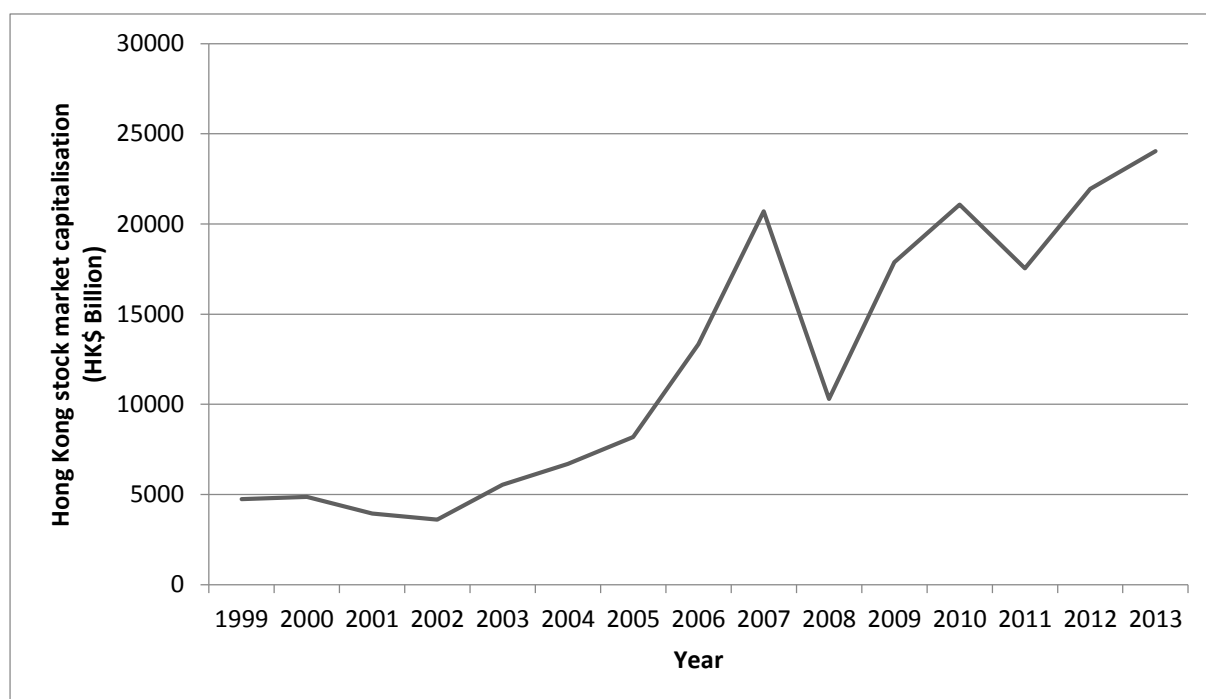
2.4.2 The Growth of the Hong Kong Stock Market in Terms of its Size and Liquidity

In the literature, it has been suggested that certain financial indicators reflect the multifaceted concept of stock market development. These are the market capitalisation ratio; the total value traded ratio, and the turnover ratio. The first indicator measures the size of the stock market, while the second and the third measure the liquidity of the stock market (see Levine and Zervos, 1996; 1998).

2.4.2.1 The Size of the Stock Market in Hong Kong

The absolute size of a stock market is measured by market capitalisation. Over the past two decades, market capitalisation in Hong Kong has increased dramatically from HK\$ 4 735 billion in 1999 to HK\$ 24 043 billion in 2013, with an average annual growth of over 11 per cent. Figure 2.5 shows the stock market capitalisation of the HKSE during the period of 1999 to 2013.

Figure 2.5: Stock market capitalisation of the HKSE, 1999-2013

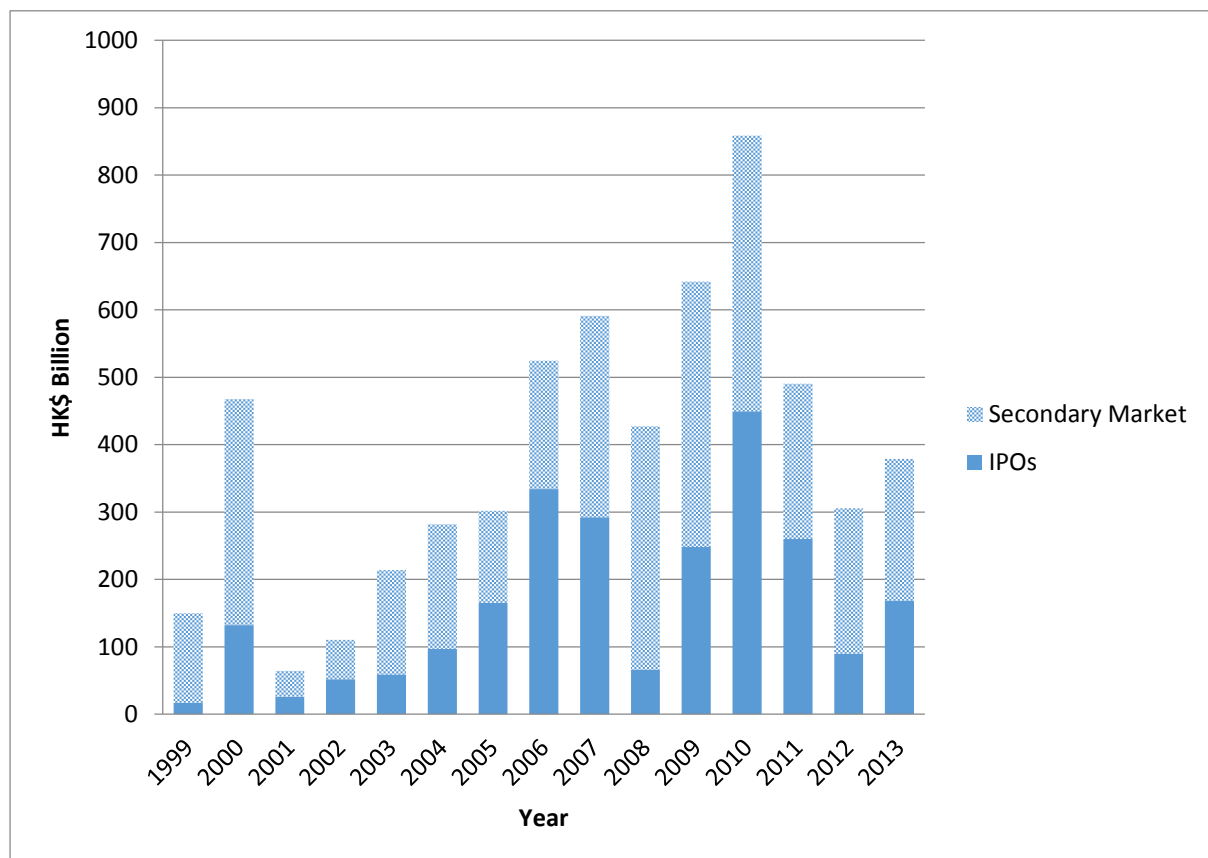


Source: HKEx Fact Book, 2013.

According to the World Federation of Exchanges (2014), the stock market in Hong Kong was ranked 13th in the world in 1999 in terms of market capitalisation. The ranking continued to rise from ninth in 2000 to eighth in 2005. In 2013, the Hong Kong stock market was established as the fifth largest stock market in the world, and the second largest in Asia (WFE, 2014). When compared with other Asian stock markets in terms of stock market capitalisation, Japan is the largest in the region, being 1.47 times the size of Hong Kong in 2013. In the same year, the stock market capitalisation of the Shanghai Stock Exchange, Shenzhen Stock Exchange and Singapore Exchange were, respectively, 0.81, 0.47 and 0.24 times the size of Hong Kong.

One of the major reasons for the impressive growth in market capitalisation is that Hong Kong has been established as a preferred centre for initial public offerings (IPOs) internationally. The amount raised by IPOs increased significantly from HK\$ 17.14 billion in 1999 to the highest level of 449.48 billion in 2010. In 2013, HK\$ 168.96 billion was raised through IPOs (HKEx, 2013b). Figure 2.6 shows the equity funds raised in the Hong Kong stock market through IPOs and the secondary market during the period of 1999 to 2013.

Figure 2.6: Equity funds raised in the Hong Kong stock market through IPOs and the secondary market in billion HK\$, 1999-2013

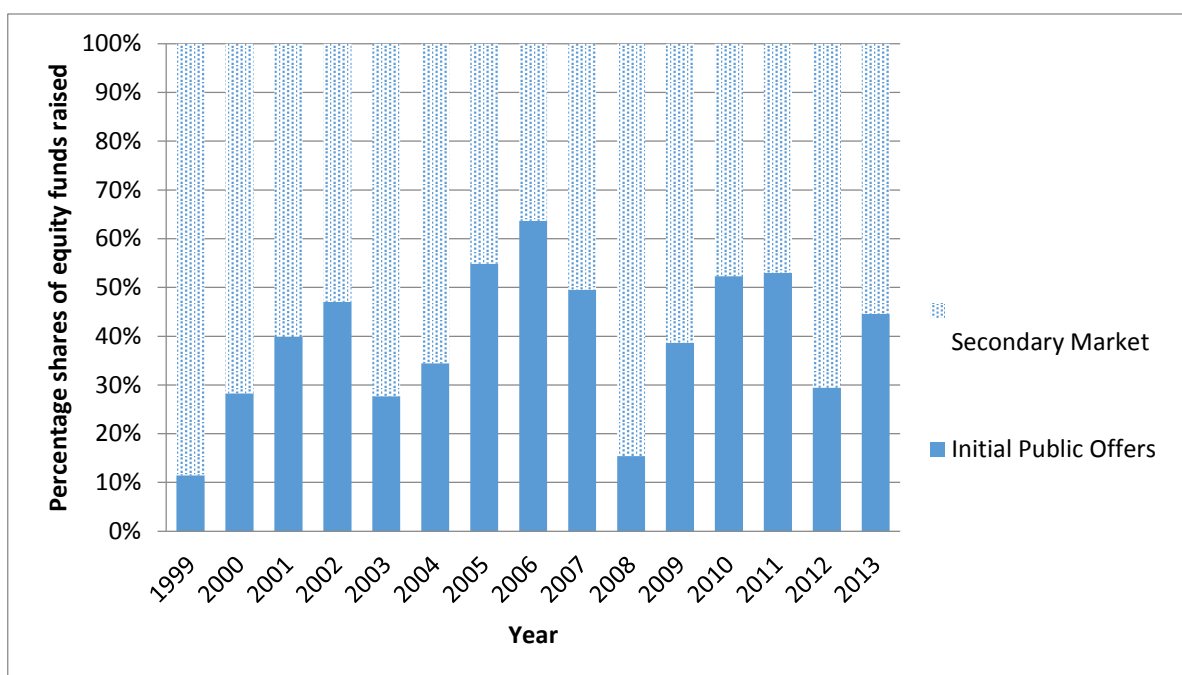


Source: HKEx Fact Book, 2013.

From 1999 to 2013, the annual average contribution of IPOs to the total equity funds raised was 39 per cent, thus reflecting the importance of IPOs in the market capitalisation of the stock market in Hong Kong. The percentage shares of IPOs

contributing to the total equity funds increased significantly from 11 per cent in 1999 to its highest level of 64 per cent in 2006. However, owing to the impact of the global financial crisis, it declined sharply to 15 per cent in 2008. Figure 2.7 shows the percentage shares of equity funds raised through IPOs and secondary market during the period of 1999 to 2013.

Figure 2.7: Percentage shares of equity funds raised through IPOs and the secondary market, 1999-2013

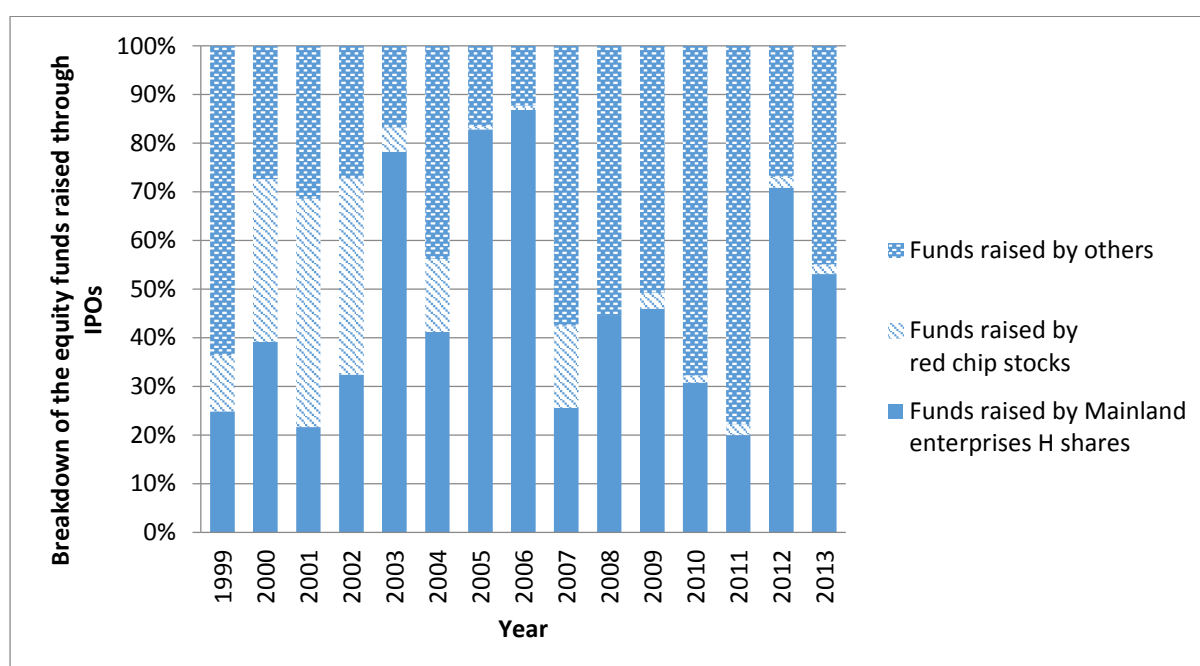


Source: Author's own calculation based on the HKEx Fact Book, 2013.

In recent years, the growth of Hong Kong as an IPO fund raising centre has been largely driven by the listing of Mainland Chinese companies. It has become a preferred place for overseas listings for Mainland Chinese enterprises, mainly because Hong Kong offers a number of advantages for these enterprises. Advantages include: (i) easy access to foreign exchange; (ii) a broader investor base; (iii) international visibility; (iv) a sound legal and regulatory environment; (v) a deep market with a wider product range, and liquidity provided by domestic and international institutional and retail investors; and (vi) access to the rest of the world, while benefiting from its proximity to Mainland China (Lee and Chang, 2003). Because of these advantages, a growing number of Mainland Chinese companies sought listing in Hong Kong. The

average percentage of funds raised by Mainland Chinese enterprises' H-shares and red chip stocks accounted for 59 per cent of the total funds raised through IPOs during the period of 1999 to 2013. It increased from 36 per cent in 1999 to the highest level of 88 per cent in 2006. In 2013, the funds raised by H-shares and red chips contributed 55% of the total equity funds raised through IPOs in Hong Kong (HKEx, various issues). Figure 2.8 shows the breakdown of the equity funds raised through IPOs during the period of 1999 to 2013.

Figure 2.8: Breakdown of the equity funds raised through IPOs, 1999-2013



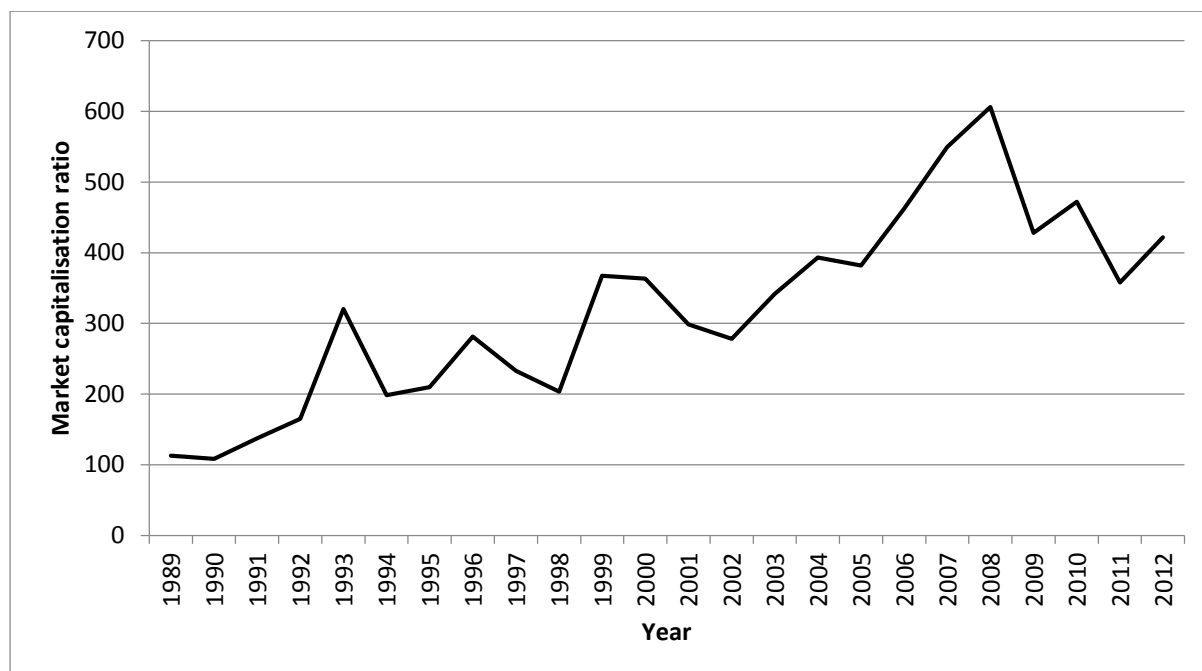
Source: Authors' own calculation based on the HKEx Fact Book, various issues.

Hong Kong has also become an international fund raising centre due to the benefits of its international exposure, and its understanding of and strong linkage with Mainland China. According to Ernst and Young (2013), the Hong Kong Stock Exchange was the second largest IPO fund raising centre in the world in 2013, just behind the New York Stock Exchange.

In addition to the absolute size of the stock market, the size of the stock market in Hong Kong can also be measured by market capitalisation as a percentage of the gross domestic product (GDP), which is the market capitalisation ratio. The market

capitalisation ratio in Hong Kong shows an increasing trend, with volatile movements from 1989 to 2012. It increased significantly from 113 per cent in 1989 to the first peak of 320 per cent in 1993. Owing to the Asian financial crisis, it fluctuated and reached its trough of 203 per cent in 1998. It subsequently rebounded to 367 per cent in 1999, and gradually reached its highest level of 606 per cent in 2008. Owing to the global financial crisis, in 2009 it declined to 428 per cent, and remained at the relatively low level of 422 per cent in 2012 (WDI, 2014). Figure 2.9 shows the market capitalisation ratio in Hong Kong during the period of 1989 to 2012.

Figure 2.9: Market capitalisation ratio in Hong Kong, 1989-2012



Source: WDI, 2014.

Over the past two decades, Hong Kong has experienced impressive performance internationally in terms of its market capitalisation ratio. According to the World Development Indicators (2014), Hong Kong had the fourth highest market capitalisation ratio in the world in 1989. The ranking continued to increase from the third in 1990 to the second in 1991. It was ranked as first in the world during the period of 1999 to 2012 (WDI, 2014). The high market capitalisation ratio in Hong Kong was mainly due to the following two reasons: (i) the listing of Mainland Chinese enterprises in Hong Kong; and (ii) the expansion of Hong Kong companies into overseas countries

(Lee and Poon, 2005). The first reason implies that the Hong Kong stock market effectively serves two economies: Hong Kong and Mainland China. For example, in 2013, Mainland Chinese enterprises accounted for 41 per cent of the total market capitalisation (HKEx, 2013b). The second reason is that many listed companies in Hong Kong have substantial investments and businesses in overseas countries. The sources of earning of these enterprises are outside Hong Kong, which do not necessarily have a direct relationship with the GDP in Hong Kong.

2.4.2.2 The Liquidity of the Stock Market in Hong Kong

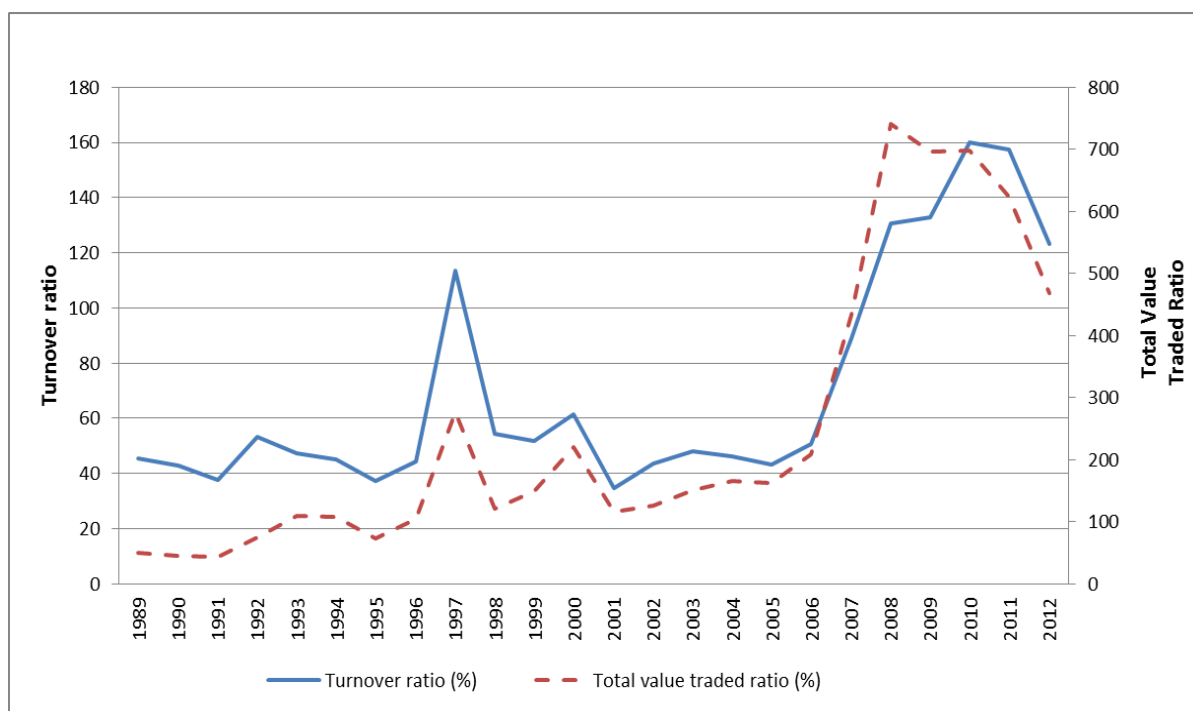
The liquidity of the stock market refers to the ease with which agents can buy and sell assets in a financial market at posted prices (Levine and Zervos, 1996). Two indicators are commonly used to measure the liquidity of the stock market, namely, the turnover ratio and the total value traded ratio. The first indicator equals the ratio of the total value of traded shares on the stock exchange divided by the market capitalisation. It measures the value of equity transactions relative to the size of the equity market. The second indicator is the ratio of the total value of shares traded on the stock exchange divided by the GDP. This measures the value of equity trading relative to the size of an economy (Levine and Zervos, 1996, 1998).

According to the World Development Indicators (2014), Hong Kong had the most liquid stock market in the world for six consecutive years during the period of 2008 to 2013, as measured by the total value traded ratio. It was also ranked as the seventh most liquid market globally in 2012 by the turnover ratio (WDI, 2014). Based on the measurements of the total value traded ratio and the turnover ratio, one could argue that Hong Kong has an extremely active stock market, with low transaction costs.

From 1989 to 2006, the turnover ratio fluctuated in the range of 35 per cent to 61 per cent. The first peak occurred in 1997, when the ratio increased to 113 per cent. Owing to the Asian financial crisis, it then decreased sharply to 53 per cent in 1998. Since 2007, the Hong Kong stock market has become increasingly liquid, as measured by the turnover ratio. It started to increase from 89 per cent in 2007 to its highest level of 160 per cent in 2010. It gradually declined to 123 per cent in 2012 (WDI, 2014).

It is worth noting that the development of the total value traded ratio exhibits a similar growth pattern to the turnover ratio. The ratio increased steadily from 50 per cent in 1989 to 104 per cent in 1996. It reached its first peak level of 276 per cent in 1997. Then, owing to the Asian financial crisis, the ratio fell to 122 per cent. It then started to increase significantly from 209 per cent in 2006 to 433 per cent in 2007 and reached its highest level of 742 per cent in 2008. The ratio declined gradually to 468 per cent in 2012. Figure 2.10 demonstrates the turnover ratio and the total value traded ratio during the period of 1989 to 2012.

Figure 2.10: The turnover ratio and the total value traded ratio in Hong Kong, 1989-2012



Source: WDI, 2014.

2.5 Challenges Facing Stock Market Development in Hong Kong

Despite the impressive growth in the various stock market indicators mentioned in the previous section, there are challenges facing Hong Kong's stock market. This section highlights some of the impediments to the future development of the stock market in Hong Kong. They include: (i) potential competition from the Shanghai Stock Exchange;

(ii) the shift of Hong Kong's role regarding the further liberalisation of the capital account in Mainland China; and (iii) the regulatory weaknesses in financial system

2.5.1 Potential Competition from the Shanghai Stock Exchange

The progressive opening of Mainland Chinese economy can be viewed as a double-edged sword. On one hand, it provides substantial long-term business opportunities to the Hong Kong stock market as discussed in the previous section. On the other hand, as Mainland China opens to the world directly, it has less need of Hong Kong as a provider of traditional gateway services in the financial sector (Harrison, 2004).

Over the past decade, Shanghai has aspired to become a financial centre and started to integrate into the global economy. Since the establishment of the Shanghai Stock Exchange (SSE) in 1990, it has developed remarkably to become the fifth largest stock market in the world based on stock market capitalisation. It was ahead of the Hong Kong Stock Exchange (HKSE) for five consecutive five years from 2007. Hong Kong started to overtake Shanghai only in the years of 2012 and 2013 (WFE, 2014).

In March 2009, China's State Council announced the objective of developing Shanghai into a major international financial centre by the year 2020 (Shanghai Daily, 2009). This news, together with the recent development of the Shanghai stock market, triggers concerns in Hong Kong that Shanghai may overtake Hong Kong as a pre-eminent financial centre within China.

However, the study by Lai (2012) reveals that Shanghai and Hong Kong can be viewed as parallel markets, being functionally different but relationally interdependent in their roles. Both stock exchanges offer different advantages that attract different types of companies with their specific stock market characteristics. In particular, the advantages of listing on the HKSE include: (i) the ease of raising more capital in a bigger and more liquid market with fully convertible currency; (ii) higher international reputation and increase of brand recognition for overseas expansions; (iii) a more stringent listing process, which helps to improve corporate governance and company

valuation; and (iv) a better option for a private company listing than competing with state-owned enterprises. On the other hand, the SSE offers different types of advantages to the enterprises. These encompass: (i) lower fees; (ii) shorter listing process; (iii) larger RMB capital market and established brand reputation, which may lead to better share price; and (iv) politically motivated choice for listing on Mainland China stock exchange.

Therefore, the SSE and HKSE provide different opportunities and advantages to Mainland Chinese enterprises, which seek public listing according to their regulatory environments, market characteristics and the objectives of the companies. Lai (2012) further shows that the types of companies listed on both exchanges reveal geographic and sectoral differences. The finding is that small and domestically oriented companies tend to list on the SSE, while the HKSE attracts relatively large and internationally oriented companies. In addition, firms listed on the SSE are largely primary and heavy industries, while those listed on HKSE are predominantly information and knowledge intensive industries. This strongly suggests that both stock markets exhibit complementarity rather than substitutability (Lai, 2012).

The complementarity roles of the two stock markets are further evident in the dual listing strategy of Chinese companies in both the SSE and HKSE.⁴ Through listing on the SSE first, they could have experience in public listing, improve corporate governance, information disclosure and accounting standards, and raise capital from domestic investors. All these enable them to meet higher regulatory standards and attract international investors through the HKSE (Lai, 2012). Similarly, McCauley and Chan (2009) argue that Hong Kong's status as an international financial centre will be strengthened when Shanghai returns as a competitive centre. They further argue that the development of an onshore international financial centre, such as Shanghai, could promote the development of a nearby offshore international financial centre, like Hong Kong.

⁴ They are, China Life, Sinopec, China Merchant Bank and the Industrial and Commercial Bank of China.

2.5.2 The Shift of Hong Kong's Role Regarding Further Liberalisation of Mainland China's Capital Account

Hong Kong is expected to shift its role from only capital formation to investment diversification and risk management across all asset classes as Mainland China gradually transforms from an importer of capital to an exporter of capital. According to the strategic plan of the HKEx Group 2013-2015, Hong Kong's cash equity strategy is prepared to better position itself to take advantage of further capital account liberalisation in Mainland China (HKEx, 2014b).

In terms of products development, Hong Kong strives to position itself as the primary offshore capital formation centre in conjunction with the Mainland Chinese authority. Recent developments include B-share to H-share conversion, and the easing of offshore listings by mainland regulators. To further prepare for the increasing participation of Mainland Chinese investors, Hong Kong continues to reach out to international issuers and enlarge the RMB product range. It needs to further develop the exchange-traded fund to facilitate RMB internationalisation and mutual access with Mainland Chinese markets (HKEx, 2014b).

In terms of trading and clearing, Hong Kong needs to implement further improvements in its secondary market microstructure, and to ensure the clearing houses comply with evolving international standards. In doing so, Hong Kong, together with its Mainland China counterpart, is expected to explore a feasible model for mutual market access. This will be a significant catalyst for structural change in Hong Kong's capital market and will position Hong Kong as in interface between the international and Chinese market environment (HKEx, 2014b).

2.5.3 Regulatory Weaknesses in the Financial System

The financial system in Hong Kong has suffered from various regulatory weaknesses in the context of relationships between regulators and supervision of activities of a cross-sectoral nature. The first regulatory weakness is the relationship between the Hong Kong Monetary Authority (HKMA) and the Security and Futures Commission (SFC) regarding the securities activities of banks (IMF, 2003). As discussed in the

previous section, Hong Kong's financial regulatory system performs under a sectoral structure, with delegated regulators being responsible for the regulation and supervision of financial services businesses in different sectors. Although HKMA retains its primary authorities concerning banking activities in the context of insurance and pension activities, the role of supervision of securities activities of banks is uncertain. It is divided between the SFC as the leading regulator for the security industry and the HKMA as the main supervisor of banks undertaking securities business (Arner et al., 2010).

The second weakness lies in the relationship between the SFC, HKEx and the Listing Rules. The Hong Kong Stock Exchange (HKSE) is empowered under the Security and Futures Ordinance to make rules for the listing of securities and the requirements to be met before securities can be listed. It is the responsibility of the HKSE to administer them. However, the Listing Rules operate on a contractual basis between the HKSE, the issuer and related parties. The rules are not laws and therefore do not have the force of law behind them. They only have statutory backing by the Securities and Futures (Stock Market Listing) Rules under the Securities and Futures Ordinance made by the SFC. It is recommended that the listing responsibilities should be transferred from the HKSE to the SFC. Moreover, the Listing Rules should receive further statutory backing to have stronger statutory sanctions to deal with instances of non-compliance. However, some argue that the non-statutory status of the Listing Rules is to preserve the flexibility of the stock market's development (Arner et al., 2010).

The third weakness is the cooperation and coordination between regulators. To better coordinate the area of banking, securities, insurance and pension businesses, a Cross-Market Surveillance Committee, which comprises representatives of the four regulators, was established to exchange market information and to formulate appropriate action, and to facilitate supervision of financial groups. In addition to the committee, various agencies and self-regulatory organisations entered into a series of Memoranda of Understanding to define the operational framework for cooperation, communication and coordination. Indeed, the presence of various Memoranda of Understanding revealed the regulatory gaps, overlaps in the roles of each of the

regulators, and that their roles are inadequately delineated in the context of financial market regulations (Arner et al., 2010).

2.6 Conclusion

This chapter discussed stock market development experiences and trends in Hong Kong. Section 2.2 outlined the origin of the stock market in Hong Kong. It was found that the first formal stock exchange in Hong Kong was formed in 1891. Section 2.3 discussed the stock market's development in Hong Kong, which covered the structural development of the stock exchange, development of the second board, regulatory development of the stock exchange, and economic relations with Mainland China. Then followed the growth of the stock market in Hong Kong in Section 2.4. In this section, it was found that Hong Kong's stock market had experienced significant growth during the period of 1989 to 2013. In terms of stock market size, Hong Kong had the largest stock market in the world during the period of 1999 to 2012, as measured by the stock market capitalisation ratio. In 2013, Hong Kong's stock market was the fifth largest in the world and second largest in Asia. It ranked number two globally through initial price offerings, just behind the New York Stock Exchange. Hong Kong was the tenth largest in the number of listed companies globally. In terms of market liquidity, it was ranked the seventh most liquid globally in 2012 as measured by the turnover ratio. Section 2.5 discussed three challenges facing stock market development in Hong Kong. They included: potential competition from the rapid development of the Shanghai Stock Exchange; the shift of Hong Kong's role regarding further liberalisation of Mainland China's capital account; and regulatory weaknesses in the financial system in the context of relationships between regulators and the supervision of activities of a cross-sectoral nature. Section 2.6 concludes this chapter.

CHAPTER THREE

STOCK MARKET DEVELOPMENT IN THE PHILIPPINES

3.1 Introduction

This chapter first reviews stock market development experiences and trends in the Philippines and later critically compares the stock market development in Hong Kong and the Philippines. Section 3.2 traces the origin of stock market development in the Philippines. Section 3.3 shows stock market development in the Philippines in terms of the structural development on the stock exchange, and regulatory development of the stock market. Section 3.4 presents the growth of the stock market in the Philippines in two sub-sections. The first discusses the growth of the stock market by key market indicators, while the second analyses the growth of the stock market in terms of its size and liquidity. Section 3.5 discusses the challenges facing stock market development in the Philippines. Section 3.6 compares the stock market development in Hong Kong and the Philippines and Section 3.7 concludes this chapter.

3.2 The Origin of Stock Market Development in the Philippines

The Philippine Stock Exchange is one of the oldest stock exchanges in Asia. The Manila Stock Exchange, Inc. (MSE) was established on 8 August 1927, during the American colonial period, by some American businessmen [Visda et al., 2013; Philippines Stock Exchange, Inc. (PSE), 2015a].⁵ They believed that the business atmosphere would be stimulated with an increase in trading activities. Therefore, they consolidated their plan and founded the MSE. Initially, the pioneer members gathered together in a brokerage firm during their leisure time to start trading securities. Later, in 1930, the MSE leased an office, operated a trading floor and promulgated rules (De los Angeles, 1995).

As public interest grew, the number of listed securities also increased, especially in the mining and oil exploration sectors. The MSE experienced a market boom in the

⁵ They were W. Eric Little, Gordon W. Mackay, John J. Russell, Frank W. Wakefield and W.P.G. Elliot (PES, 2015a).

1930s. In 1934, there was an indication of a bull market when the price of gold moved from US\$ 20 an ounce to US\$ 35 an ounce. The mining sector prospered, thereby attracting more mining companies to list their shares on the MSE. The over-issued stock of some mining companies prompted the MSE to seek government intervention. As a result, the Securities Act was enacted in October 1936. With the enactment of the Securities Act, the Securities and Exchange Commission (SEC) was established to safeguard the public interests in the stock market. It started to operate in November 1936 under the supervision of the Department of Justice (De los Angeles, 1995; PSE, 2015a).

In 1937, the MSE introduced the ticker transmitting service to cater for the increasing volume of transactions. This was a better and faster communication system for stock trading. In addition, it transmitted international business and industry news reports by the news services in Manila to the MSE (PSE, 2015a). By the end of 1945, there were 14 companies listed on the MSE. They could be categorised into the following sectors: banking, commercial and industrial, insurance, mining and sugars. In 1947 there were 33 brokers, of which 20 were active (Visda et al., 2013).

In 1958, the first performance index on the MSE, the Industrial Share Average, was introduced. It was an index to measure the movement of industrial issues by selecting active commercial and industrial shares. A Mining-Oil Index was also set up due to the importance of the oil industry in the country. Later, in 1969, the index was separated into the Mining Index and Oil Index (PSE, 2015a).

In May 1963, the second stock exchange – the Makati Stock Exchange – was organised by some businessmen.⁶ It started to operate on 16 November 1965 in Makati, where it was an emerging centre for finance (World Bank, 1992; PSE, 2012). Since the establishment of the Makati Stock Exchange, efforts have been made by the government to standardise the trading activities. For example, in 1973, two presidential decrees were passed to regulate the two stock exchanges in order to list and trade the same securities, which in practice was an automatic dual listing (World

⁶ They were Hermenegildo B. Reyes, Bernard Gaberman, Eduardo Ortigas, Aristeo Lat and Miguel Campos (PSE, 2015a).

Bank, 1992). The first one in particular, Presidential Decree 167, required automatic listing on all stock exchanges of securities that were approved for listing and trading (Visda et al., 2013). The second one, Presidential Decree 282, authorised stock transactions by members of an operating stock exchange through members of another stock exchange to execute customers' orders (PSE, 2015a). By doing so, it allowed cross-trading between the two exchanges via some kind of correspondent broker member relationships between the stock exchanges. Later, in 1975, the SEC implemented the uniformity of price fluctuations, board lots and trading symbols for the two stock exchanges (Visda et al., 2013).

The government also made efforts to improve the protection of investors. For example, in 1979 the Securities Investors Protection Fund Corporation was established to give more protection to public investors. Moreover, the Revised Securities Act was enacted in 1982 to provide a sophisticated disclosure mechanism of securities to the investors. Such a mechanism is vested on the sound jurisdiction and supervision of the SEC, as well as its control over corporations, partnerships and associations (PSE, 2015a).

Despite all these developments, the Philippine stock market could generally be regarded as insignificant and speculative in nature during the 1970s. The trading volume was small and many listed companies were inactive for a period of time. Listing companies mainly consisted of mining and oil issues, where purely speculative movements take place (World Bank, 1992). The listing of blue chips was limited. It mainly included well-established companies, namely, the San Miguel Corporation, Atlas Mines, and the Philippine Long Distance Telephone Company. More than half of the companies were listed on the small board. They were stocks of new mining and oil companies that were in the exploratory stage (Tan, 1981). In addition, the market during the 1970s was volatile and highly vulnerable to manipulation by large investors. According to Tan (1981), there was alleged manipulation of the trading, which caused wide fluctuations of stock prices, especially on the small board, and therefore substantial losses for misinformed investors. Furthermore, the market share for equity remained thin during the 1970s. In fact, the financial market in the Philippines was dominated by the commercial banks. For example, in 1974, the total assets of securities dealers accounted for only 1.2 per cent of the total assets of the financial

system, while commercial banks accounted for 56.7 per cent. The percentage of securities dealers remained low during the late 1970s. In 1978, it only accounted for 0.7 per cent of the total assets (Tan, 1981).

In the early 1980s, the securities market remained underdeveloped and provided an almost insignificant share of the total funds for private investment. In 1983, there were 184 companies listed on the stock exchanges. The total stock market capitalisation amounted to US\$ 800 million, which represented roughly 2 per cent the country's GDP. The size of the primary corporate listings on the stock market can also be judged from the low number of initial public offerings, with an average of thirty IPOs per year (Dohner and Intal, 1989).

There were a number of explanations for the limited development of the stock market in the Philippines during the above-mentioned period. First, it was due to the financial policy pursued by the government. The rediscounting facilities and the ceiling rates on deposits profited the banking institutions by providing them with cheaper sources of funds to their prime commercial borrowers, who were most likely to issue primary securities. Second, there was a lack of government support in terms of regulatory control for secondary trading on the stock market, which also hindered the growth of the stock market. Potential investors were discouraged by the speculative nature of stocks in the exchanges and also by the tendency of manipulation in market trading. Third, the listing of a company was limited by the tax advantages of loan financing, the reluctance of many family-controlled firms to relinquish any control to outsiders, and the lengthy disclosure requirements of interest both to investors and tax authorities to be listed on the stock exchanges (Tan, 1981; Dohner and Intal, 1989). Fourth, the cost of debt financing was relatively cheaper than issuing equity because of the high hurdle rates of equity financing (Tirole, 2006). Therefore, companies preferred debt to equity funding. And lastly, the high tendency towards relationship building in the country implied that it was procedurally easier to obtain debt funding via the relationship manager in the bank, than public style fund raising (i.e. equity funding), which was subject to the listing and disclosure process.

3.3 Stock Market Development in the Philippines

This section presents an overview of stock market development in the Philippines during the period 1975 to 2013. Section 3.3.1 reviews the structural development on the stock exchange. It includes: the unification of two stock exchanges, the demutualisation of the stock exchange, the development of stock market indices, and the development of stock trading systems. Section 3.3.2 traces the regulatory development of the stock market.

3.3.1 Structural Development of the Stock Exchange

3.3.1.1 Unification of Two Stock Exchanges

Since the establishment of the second stock exchange, namely, Makati Stock Exchange, government has made efforts to standardise trading activities. For example, in 1975, the Securities and Exchange Commission implemented the uniformity of price fluctuations, board lots and trading symbols for the two stock exchanges. In 1987, the two stock exchanges agreed to use a common set of index stocks and adopt the variable multiplier method. Although they were regarded as two separate entities, they were basically trading the same listed issues (World Bank, 1992; PSE, 2015a). However, the co-existence of two exchanges in one country caused confusion among prospective investors. This was because the two stock exchanges retained different policies, different members and, most importantly, different stock prices for the same listed stocks (PSE, 2015a). Therefore, there was a need to unite the two stock exchanges so that the new stock exchange would be professionally managed. Another reason for the unification of the two stock exchanges was to achieve economies of scale by reducing operation costs. Given the fact that the stock market was quite small nominally and relatively, it was more cost effective to consolidate the two exchanges. In fact, such operational practice of one exchange per country was also evident in other South East Asian stock exchanges.

In 1992, the idea came to realisation when the President Fidel V Ramos declared a government policy of consolidating the operations of both stock exchanges to develop a more efficient capital market. In July 1992, a unified stock exchange, the Philippine Stock Exchange (PSE), was realised. Later, in 1993, the executive management

teams of the two stock exchanges agreed to unify under the PSE. This movement further consolidated logistics, significantly reduced the technology costs involved in software, hardware, licences and related maintenance, and improved development towards a more efficient capital market (PSE, 2015a). On 4 March 1994, the PSE was granted a licence by the SEC to operate as a securities exchange in the country, stating that “a unified stock exchange is vital in developing a strong capital market and sustainable economic growth” (PSE, 2015a).

The unification of the two stock exchanges was beneficial to stock market development in the Philippines. It ensured a level playing field for all investors by eliminating different policies and different stock prices for the same listed stocks from the previous two stock exchanges. In addition, it boosted the trust and confidence of both foreign and domestic investors in the stock market. Since the unification of the two exchanges in 1992, market capitalisation grew by 355 per cent, the value of transactions by 385 per cent, and foreign portfolio investment by almost 300 per cent during the period of 1992 to 1994 (De los Angeles, 1995).

In 1995, the PSE was accepted as the 37th fully-fledged member by the World Federation of Exchanges. In the same year, the Philippine Stock Exchange Foundation was incorporated. Later, in November 1999, the PSE was conferred membership of the Association of National Numbering Agencies in New York, the United States. Hence, the PSE became the National Numbering Agency for the country (PSE, 2015a).

3.3.1.2 Demutualisation of the Stock Exchange

Another fundamental structural change was the demutualisation of the stock exchange. It took place during the early 2000s when the PSE decided to change the business model and restructure itself in order to remain competitive in global development trends of the stock exchanges. During the early 2000s, there was a rapid advancement and innovation in technology, which facilitated an alternative trading system such as electronic communication networks. In addition, the cross-border listing and portfolio flow also induced increased market competition and integration.

All these developments reduced the significant role played by the physical national stock exchanges and the trading floors, thereby paving the way for the demutualisation of the PSE (Akhtar, 2002).

Working towards the demutualisation of the PSE, the Securities Regulation Code was enacted in 2000, which affected the structure and operation of the exchange. In particular, Section 33.2 (a) of the code prescribed the restructuring of the PSE as a stock corporation by August 2001. In the same month, the provision to increase the membership of non-brokers in the PSE became effective. There was a selection of five non-brokers in addition to the existing three non-brokers on the management board of the exchange, which consisted of 15 persons on the board in total (Akhtar, 2002; PSE, 2015a).

Upon demutualisation, the exchange experienced a series of changes in terms of ownership structure, trading rights, corporate governance, business of the PSE and its statutory regulatory role. Regarding the ownership structure, demutualisation was the conversion of a member organisation into a stock corporation. Unlike the experience of the Australian Stock Exchange (ASX) and the Hong Kong Stock Exchange (HKEx), the PSE did not adopt the two-step demutualisation process of conversion into a stock corporation and subsequent listing of the stock exchange. This was mainly due to the strict timetable and the lack of stable revenue streams. Under the conversion plan, each of the 184 member-brokers was allowed to buy 50 000 shares in the PSE. This conversion resulted in a shareholder-based company, which was wholly owned by brokers (Akhtar, 2002).

After the demutualisation of the PSE, its subsequent listing happened in December 2003, when PSE shares were listed by way of introduction. The share price was 100 Philippine Peso (PHP) per share and reached its peak of PHP 252.5 before settling at PHP 200 at the end of the year. In January 2004, the PSE sold 16.5 per cent of its authorised capital stock to strategic investors by way of private placement (PSE, 2015a). Under the Securities Regulation Code, shareholders could have a maximum of only 5 per cent of the voting rights for individuals and individual companies, and 20 per cent for industry groups after demutualisation (Akhtar, 2002).

Demutualisation also brought about changes to trading rights. The ownership of shares in the PSE and access to the trading facilities of the PSE had been separated since the demutualisation of the PSE. In recognising the existing 184 seat ownerships by members, one trading right was conferred to each of the members entitled to subscribe to shares. Trading rights could be acquired through a purchase from an existing trading participant. Moreover, there was a policy of a moratorium on the issuance of new trading rights. After considering the prevailing market conditions, the PSE decided that the existing 184 trading rights were sufficient to meet its business objectives. Therefore, a temporarily moratorium on the new issuance of new trading rights was imposed (Akhtar, 2002; Alinsunurin, 2002).

In addition, there was a series of reforms in the corporate governance of the PSE after demutualisation. For example, changes were made in the board structure and composition in compliance with the one prescribed in section 33.2 (f) and (g) of the Securities Regulation Code. Less than 50 per cent of the voting rights to the broker members were granted to gradually reduce broker influence on the board. Of the 15 members of the board, eight were non-brokers while seven were brokers. The president of the PSE was also a non-broker. Moreover, the overall organisation was restructured to reflect the strategic directions of the PSE. It aspired to rebuild integrity, commercialise the corporation, provide the best resources for current business, and expand the services to diversify revenue sources. Besides, there were the most significant changes during this transition period in the committee structure. Under the new structure, the primary role of the committees shifted from line management decision-making responsibilities to provide external audit and appeal mechanisms to the investors, as well as professional guidance and advice to the new executive team of the PSE (Alinsunurin, 2002).

Furthermore, the demutualisation brought about changes in the business of the PSE. Since it had transformed to a for-profit corporation, it sought opportunities to improve returns and minimise costs in the short-run and long-run strategic directions to enhance productivity and profitability. The experiences from the ASX and HKEx showed that the bulk of their revenues were derived from the clearing and settlement

of listed companies. Therefore, efforts were made to increase market activities by the development of new services such as clearing and settling transactions of retail managed funds, commodity contracts, and short-term money market instruments. In 2002, the PSE owns 51 per cent of Securities Clearing Corporation of the Philippines (Alinsunurin, 2002).

However, unlike the experiences of other Asian stock exchanges upon demutualisation, there was concern over the financial viability of the PSE. The net income of other Asian stock exchanges, such as the ASX, increased from A\$ 16.7 million in 1998 to A\$ 59.1 million in 2002 after demutualisation. The net income of HKEx also improved from HK\$ 521 million in 1999 to HK\$ 740 in 2001. The Singapore Stock Exchange and the Tokyo Stock Exchange also experienced an improvement in financial viability upon demutualisation (Akhtar, 2002). Contrary to that, the PSE net income declined significantly from PHP 70 million in 2000 to PHP 18.3 million in 2001 after demutualisation (PSE, 2000; 2001). It only started to improve its situation after 2005 when the net income surged from PHP 22.2 million in 2004 to PHP 119.8 million in 2005 (PSE, 2004, 2005).

In general, the reduction in net income could be explained by growing competition and technology that reduced the charges and fees that the stock exchange could gain. Also, there was a loss of some sources of income due to the on-going structural transforming and migration of business. In the presence of a virtual stock exchange, a demutualised structure did not guarantee a profitable result. In fact, the alternative trading system and electronic communication networks drove down the transaction fee on trading, which had been a major source of revenue for the stock exchange. Moreover, the costs of the stock exchange might increase to provide existing and additional services in order to meet international standards (Akhtar, 2002).

After demutualisation, risk management became one of the important business functions of the PSE. Several measures were implemented by the Securities Clearing Corporation of the Philippines to protect its own financial position and the market participants. They included: (i) reduction of settlement date from T+4 to T+3; (ii) continuous evaluation of the Comprehensive Trade Guaranty Fund; (iii) imposition of

Mark to Market Collateral Deposit; and (iv) establishment of *Guidelines for Cash Payment, Early Delivery and Special Isolated Immediate Settlement*. In addition, daily monitoring of trading activity per broker and per issue was established to monitor those actively traded issues (Alinsunurin, 2002).

Lastly, demutualisation brought about changes to the statutory regulatory role of the PSE. In fact, the regulatory responsibilities of the PSE were defined under the Security Regulation Code, which included implementation of the rules and regulations. The code defined the role of the exchange as a front-line market regulator, as well as its power over the listed companies. In addition, the organisational structure was enhanced to solve potential conflicts of interest. The aim was to separate the regulatory activities from commercial activities while centralising regulatory activities with independent oversight from the SEC. In order to enhance the brand image of the PSE regarding the integrity of the market, one or two high level executives on an operational and policy level were added. Moreover, there was a need to define the roles and functions between the PSE and the SEC to allow the PSE to operate independently as a self-regulatory organisation without comprising the monitoring function of the SEC. Therefore, Memoranda of Understanding were signed to delineate the responsibilities between the PSE and the SEC (Alinsunurin, 2002).

3.3.1.3 Development of Stock Market Indices

The computation of stock market indices in the Philippines has undergone major changes since the 1990s. For example, in 1990, the computation of the indices was changed from a price-weighted to a full market capitalisation-weighted method in order to measure the relative changes in market capitalisation of common stocks. Later, in 1994, the PSE Composite Index underwent major revision. The calculation was made with its own set of components, which was independent of different sectors. The number of component-stock also increased to 30. At the same time, there was a revision of the main index with the introduction of Property Index. The index was set at 100 as the initial base value (PSE, 2015a).

In 1996, two stock indices were introduced by the PSE. The first was the Banking and Financial Services Index. It was introduced with the aim to better reflect the financial environment of the country. The second was the All Shares Index, which included all listed companies. The base value of the two stock indices was set at 1 000 to align with the Composite Index. In the same year, the Property Index was also realigned to a level of 1 000 to properly reflect the impact of the property sector on the overall market environment (PSE, 2015a).

In 2005, a new industry classification of listed companies was introduced by the PSE. Under this new classification, listed companies were categorised according to major sources of revenue (Visda et al., 2013). Later, in 2006, the number of sectors increased from five to six. Two new sector indices were introduced, namely, the Holding Firms Index and the Services Index, while the Mining Sector Index and the Oil Sector Index were combined to form one index. As a result, the PSE had eight constituent indices. They included: All Shares Index, PSE Index (previously known as the Composite Index), Financials Index, Holding Firms Index, Industrial Index, Mining and Oil Index, Property Index, and Services Index (Visda et al., 2013).

There were changes made in the computation of the Composite Index. For example, in 2005, a new criterion, known as the tradability of the listed companies, was included in the Composite Index. Under this new criterion, shares of companies had to be traded in at least 95 per cent of the total trading days during a period of one year. Later, in 2006, the PSE revised its criteria for selecting companies to be included in this index. They included a minimum of 10 per cent on a free float level, an average daily trading value of at least PHP 5 million, a minimum of 95 per cent of tradability of shares, and at least 10 per cent of turnover ratio. In the same year, the Composite Index was renamed as the PSE Index. In 2006, the PSE shifted the use of full market capitalisation of listed stocks to the free float market capitalisation in computing the index. This change aimed to provide investors with a more reliable measurement of trading activities and market performance (PSE, 2015a).

In addition to the improvement of the stock market indices in the PSE, cross-country collaboration occurred during the 2000s. In 2005, the PSE, FTSE International Limited

and Association of Southeast Asian Nation (ASEAN) stock exchanges, Jakarta Stock Exchange, Bursa Malaysia Berhad, Singapore Exchange Securities Trading Limited, and Stock Exchange of Thailand signed a memorandum of agreement to create the FTSE / ASEAN index.⁷ In this index, the PSE accounted for 12 representative listed companies from a total of 180 listed companies. Later, in September 2006, the FTSE / ASEAN 40 exchange-traded fund was launched by listing on the Singapore Exchange. The fund was aimed at tracking the 40 largest companies across five stock markets within the ASEAN region (PSE, 2015a).

3.3.1.4 Development of Stock Trading Systems

Over the past two decades, technology has played an important role in the transformation of the stock market in the Philippines. In January 1993, trading at the Manila Stock Exchange was improved by the fully computerised match trading system, namely, the Stratus Trading System with Equicom. Later, in June 1993, the Makati Stock Exchange also launched its automated trading system known as the MakTrade System. After the unification of the two exchanges, the Unified Trading System was launched in November 1995. It was a single-order-book system based on the MakTrade System to post and match all orders on one computer (PSE, 2015a).

In 1996, the Communication Front-End System went online. It served to provide a gateway that allowed the member brokers to directly connect their own private trading systems to the MakTrade System. Later, in 1997, the PSE advanced into scriptless trading after the conversion of 293 active issues into its book-entry settlement system by the Philippine Central Depository. In 1999, it implemented the International Securities and Identification Numbering System on the MakTrade System (PSE, 2015a).

⁷ The Association of Southeast Asian Nations (ASEAN) was established in 1967 with the signing of the ASEAN Declaration by the founding countries of Indonesia, Malaysia, Philippines, Singapore and Thailand. Later on, five other countries also joined this association. They are Brunei Darussalam, Vietnam, Lao PDR, Myanmar and Cambodia, making up ten member states of ASEAN. It is a regional economic integration that aims to increase the potential of bargaining in the world and share resources among members in the region (ASEAN, 2015).

The Securities Clearing Corporation of the Philippines began to operate in 2000. Later, in 2004, it became a wholly-owned subsidiary of the PSE and a new Clearing and Settlement System was acquired in the same year (PSE, 2015a). According to the IMF (2004), the market structure of the stock market in the Philippines was built around the Philippine Stock Exchange, with the support of the Philippine Central Depository and the Securities Clearing Corporation of the Philippines for clearance and settlement of trading activities.

In 2005, the PSE implemented the Online Disclosure System, which provided online system access for the submission and announcement of all types of disclosures. In the same year, the PSE signed a memorandum of agreement with an electronic billboard operator, Globaltronics, to post and display the advertisement of the PSE in Manila through a video display system. A year later, the Securities Clearing Corporation of the Philippines migrated from trade-for-trade processing to a multilateral netting system, with the establishment of the Central Clearing and Central Settlement System (PSE, 2015a).

Further collaboration with the world's largest exchange operation was accomplished in 2008 when the PSE entered into a memorandum of understanding with the New York Stock Exchange (NYSE) Euronext. It signed the new trading system licence, implementation and maintenance agreements with NYSE Euronext Technology SAS, which is a wholly-owned subsidiary of NYSE Euronext, to prepare for the launch of a new trading system. In 2010, this new trading system, known as PSEtrade, was launched to replace the Maktrade System (PSE, 2015a). Later, in 2014, the PSE selected NASDAQ OMX as its new service provider for the exchange trading system to replace the PSEtrade. This trading system was widely adopted by over 100 marketplaces across the globe including Indonesia, Malaysia and Singapore. It went live in 2015 to enhance trading capacity, and increase risk management parameters to cater for new products and services to be introduced by the PSE (PSE, 2014; Rappler, 2016).

In addition to the improvement on the trading platform, PSE also launched the mobile trading application to enhance stock trading. At the end of 2013, a portal for the new

disclosure system, known as Electronic Disclosure Generation Technology, was implemented. It was a disclosure system co-developed with the Korea Stock Exchange to replace the PSE Online Disclosure System. It was a fully automated system to facilitate the efficient processing, validation, submission and distribution of disclosure reports submitted to the PSE. It also standardised the disclosure reporting process of the listed companies, and therefore enhanced the transparency of overall issuers in the stock market. Along with the implementation of the new disclosure system, there was also a mobile platform in the form of a dedicated website where relevant information of listed companies could be accessed. The mobile application gave investors easier access to the disclosures of issuers (PSE, 2013). Later, in 2014, the mobile application for trading – the PSETradex mobile – was launched. It served to provide investors with easy access to the stock market and to empower them to conveniently trade Philippine stocks by always staying connected to the stock market (PSE, 2014).

In addition to technological advancements in the trading systems, there were other reforms that improved stock trading. One of them was the extension of trading hours. In 2012, the PSE implemented the extension of trading hours into the afternoon until 3:30pm. With the extended trading hours, the market adopted international best practice and attracted more opportunities for foreign investment. Investors from Europe and the Middle East could participate in trading on the market on the same day that their markets were about to open for trading. As a result, the market easily broke previous records in trading activities, leading to a rise of the benchmark PSE Index to record closing levels (PSE, 2013).

Another reform was the implementation of a new listing board structure. In 2013, the PSE rolled out its three-year strategic plan, which aimed at introducing a wider range of products and services to the market. Therefore, a new listing board structure was adopted. It changed from a three-board structure to a two-board structure, which consisted of the main board and the second board called the Small, Medium and Emerging Board. The listing requirements were also revised to make listing easier (PSE, 2013). The consolidation of the listing boards was aligned with international best practice on dual-trading boards of exchanges in the region. It also provided a clearer

classification of listed stocks that helped investors to evaluate the business of companies belonging to their respective listing boards (PSE, 2013).

3.3.2 Regulatory Development of the Stock Market

After the establishment of the Manila Stock Exchange, investors were generally protected by the Blue Sky Law against speculative schemes, the sales of stock by fly-by-night concerns, and fraudulent oil and mine exploitations. However, the Blue Sky Law was not adequate enough to regulate the stock market in other aspects such as the over-issuance of stocks, price manipulations, and an artificial market caused by false information. It also failed to make provision for a specialised regulatory agency to monitor trading activities and enforce securities laws (De los Angeles, 1995).

In 1936, the government therefore enacted the Securities Act to regulate the securities trading activities and also establish a Securities and Exchange Commission (SEC) to enforce the regulations (World Bank, 1992). The Securities Act was the first securities law to be enacted mainly to: (i) prevent exploitation of the public by the sale of fraudulent securities through misrepresentation; (ii) provide adequate information for investors to make informed decisions; and (iii) protect honest enterprises seeking capital through valid presentation. However, the Securities Act required the disclosure of only certain information in the original registration statement that was filed with the SEC. It failed to require the disclosure of all material facts related to an offering. In addition, penalties imposed for violations of the Securities Act were low (De los Angeles, 1995).

To remedy the flaws in the Securities Act, the Revised Securities Act was enacted by the Philippine Congress in 1982 (World Bank, 1992). The Revised Securities Act contained provisions to: broaden the definition of “securities”; increase disclosure requirements of listed companies; expand the rule-making authority of SEC; and contain anti-fraud clauses to counter insider trading and “short swing” profits. It also contained a number of provisions that aimed at strengthening overall regulatory enforcement. In addition, it provided for criminal, civil and administrative sanctions in the case of violation of any of its provisions (De los Angeles, 1995).

The enforcement of the securities law fell under the responsibility of the SEC. Regarding the SEC, it is among the oldest of regulatory bodies in Asia. It was established in 1936 to safeguard public interest during the first local stock market boom in the country (Field and Hanna, 1999). It acted as the primary regulatory authority over capital markets and their participants. During that time, the major functions of the SEC included: the registration of corporations; partnerships record keeping; registration of securities; analysis of registered securities; evaluation of financial situations of applicants for security issue; screening of licence applications of brokers or dealers; and the supervision of security brokers as well as the stock exchange. During the Second World War, the SEC was abolished and replaced by the Philippine Executive Commission. It was not until the restoration of the Philippine Commonwealth in 1947 that the SEC was reactivated (SEC, 2015a).

During the 1970s and 1980s, there were structural and power changes in the SEC to accommodate the changing business environment. Originally, the SEC was placed under the direction of a commissioner appointed by the president. However, in 1975, it was restructured as a collegial body composed of a chairman and two associate commissioners. Later, in 1981, expansion of the SEC took place. Two additional associate commissioners and two departments were included. One was responsible for prosecution and enforcement, while the other was responsible for supervision and monitoring (De los Angeles, 1995).

The principal laws administered by the SEC were: the Investment Company Act 1960, the Financing Company Act 1969, the Corporation Code 1980, the Revised Security Act 1982, and the Presidential Decree 902A. The Investment Company Act 1960 provided for the licensing and supervision of leasing companies, and the Financing Company Act 1969 provided for those of mutual funds. The Corporation Code 1980 provided basic rules for the establishment and governance of companies. The Revised Securities Act 1982 provided for the registration of securities, and licensing and regulation of stock market intermediaries. And the Presidential Decree 902A granted quasi-judicial powers to the SEC. It covered the investigation and prosecution of fraud, adjudication of corporate disputes, and interpretation of laws administered by the SEC

(World Bank, 1992). Based on these laws, the main responsibilities of the SEC entailed: registration of companies; registration of stock that would be offered to the public; authorisation for listing stock on the stock exchange; authorisation and regulation of the stock exchange, securities brokers and dealers; adjudication of corporate disputes; examination of annual financial statements of listed companies; and investigation and prosecution of breaches of the related laws (World Bank, 1992).

Given the responsibilities mentioned above, the SEC was pre-occupied with the enactment of rules and regulations and the performance of its quasi-judicial functions, instead of enforcing securities rules and developing the stock market. Therefore, it was time for the SEC to grant the status of a Self-Regulatory Organization (SRO) to the PSE in 1996. Initially, the SRO status was granted on a temporary basis. It was not until June 1998 that the SRO status was permanently conferred by the SEC (SEC, 2015a). In line with this status, policies of the SEC were adopted by the PSE. Rules were incorporated in an effort to discipline the member-brokers effectively. By closely monitoring and supervising the stock market, the PSE established an image of a fair stock market. At the same time, the SEC could take a supportive role to ensure the enforcement of the Revised Securities Act 1982 by the PSE and devote more time to developing the stock market (De los Angeles, 1995).

Despite all these regulatory initiatives, there was a need for organisational change and capacity building to enable the SEC to function effectively. According to recommendations by the World Bank (1992), the effectiveness of the SEC would be significantly improved if it divested itself of recourse-intensive tasks and received sufficient assistance with staff training and management re-organisation. In line with these recommendations, the year 2000 witnessed a fundamental shift in the SEC with the enactment of the Securities Regulation Code (SRC). The SEC's mandate shifted from focusing on company registration and monitoring, and the performance of its quasi-judicial functions, towards the goal of developing a transparent, efficient and fair capital market (IMF, 2004; SEC, 2015a).

Under the SRC, several reforms were implemented to strengthen the SEC's role in capital market development and regulation. The first reform was the transfer of the

SEC's power, such as the resolution of intra-corporate disputes and corporate recovery cases, to the courts. The second was the reorganisation of the SEC to streamline its structures and operation, and upgrade its human resources. The third was the determination of qualification standards and position classification of the SEC, so as to retain and attract qualified individuals. And the last reform was the granting of a self-funding authority to the SEC to retain and utilise PHP 100 million from its annual income. These new organisational changes and capacity building were important to allow the SEC to start functioning effectively under the SRC (IMF, 2004; SEC, 2015a).

The first major step towards reorganisation prescribed by the SRC was successful. Shortly after it was enacted, the SEC started to transfer over a thousand cases of intra-corporate disputes to regular courts. Meanwhile, a Reorganisation Committee was established to facilitate the streamlining process of the new organisational structure. It also enhanced the SEC's core functions of capital market development and regulation. Under the new structure, the number of departments was reduced from 10 to 8, and all ad hoc departments were abolished. The number of divisions was brought down from 36 to 26, and the extension offices were reduced from 11 to 7. At the same time, two special offices, namely, the Office of the General Counsel and the Office of the General Accountant, were created to better enable the commission to perform functions in relation to the expertise of law and accounting principles (SEC, 2015a). To further support the new mandate of the SEC, a five-year Information Strategic System Plan was established to provide a framework for utilising information technology to deliver services related to capital market development. It aimed at freeing up more staff from routine transactions and duties in order to focus on developing the capital market (SEC, 2015a).

Since the reorganisation of the SEC under the SRC, the SEC has been rewarded by major accomplishments in the areas of rule-making, compliance monitoring, enforcement, investor education, and the delivery of services to the public. With regard to rule-making, the SEC actively pursued policy reforms to address the changing demands arising from globalisation, financial liberalisation, and e-commerce. It actively participated in congressional deliberations on a number of capital market development bills, such as the Anti-Money Laundering Act, and the Special Purpose

Vehicle Act. In addition, the SEC also took the initiative to draft the Implementing Rules and Regulations of the Special Purpose Vehicle Act, which was approved in 2003. In response to the dynamics of the capital market, several memorandum circulars and new rules and guidelines were issued. They included the issuance of circulars that promoted corporate governance principles, the promulgation of the Code of Corporate Governance, and the adoption of international standards in accounting and auditing (SEC, 2015a).

In terms of compliance monitoring, the SEC intensified its efforts to enhance the integrity of the capital market. For example, the SEC was audited by the PSE through the conduct of thematic audits. It also conducted joint thematic audits with the PSE to check compliance with the implementation of the rules of the Securities Regulation Code. Audits of other market participants were also conducted. In 2003, the SEC installed market surveillance software, known as the Advance Warning and Control System, to protect the integrity of the market from fraud and abusive trading practices, especially price manipulation associated with security trading (SEC, 2015a).

With regard to the enforcement of accounting rules, the SEC started to closely monitor compliance with those rules to enhance the development of a credible and transparent capital market. For example, the SEC has reviewed the financial statements of listed companies since 2001, with the support of the College of Business Administration at the University of the Philippines. In addition, there was a great improvement in compliance with the full disclosure rules by publicly held companies, through the stricter monitoring of compliance with requirements and the imposition of penalties. As a result, the certificates of registration of more than 240 000 corporations registered during the period of 1936 to 1995 were revoked by the SEC due to the failure to submit their annual reports of compliance with Section 141 of the Corporation Code (SEC, 2015a).

The SEC has developed an effective enforcement mechanism to deal with the proliferation of pseudo-investment scams. Since 2001, the SEC has actively participated in the campaign against operators that engage in offering foreign penny stocks to foreigners. As a result, several big operators that engaged in pseudo-

investment and fraudulent securities transactions were closed. In addition, the SEC has actively pursued investigative and enforcement action against issuers and brokers for suspected insider trading violations. Furthermore, in order to strengthen coordination with other regulatory and enforcement agencies, the SEC has signed a Memorandum of Agreement with some government departments, such as the National Bureau of Investigation, the Department of Trade and Industry, and the central bank of the Philippines known as the *Bangko Sentral ng Pilipinas*. With the partnership of the Integrated Bar of the Philippines, which provides free legal aid to investors who suffered losses in pseudo-investment schemes, it speeded up the disposition of cases filed against pseudo-investment firms by the Department of Justice (SEC, 2015a).

Along with determined enforcement, the SEC intensified efforts to provide investors with the necessary information to make intelligent investment decisions. A series of Investor Information Seminars, which intended to promote the importance of informed investment, were held nationwide. The SEC also prepared investment guidebooks, such as the *Citizen's Manual*, and the *Citizen's Investment Alert*, to outline the SEC's processes and other important information. In 2003, the SEC launched a hotline service, which provides an automated response to the most frequently asked questions as well as an option to speak with an SEC representative during office hours (SEC, 2015a).

There was also a noticeable improvement in the delivery of services to the public after reorganisation. The major areas of improvement included: (i) the registration of corporations and partnerships, and amendments of articles of incorporation; (ii) procedures for registration, licensing, and application by firms; (iii) procedures for licensing investment houses or underwriters of securities; (iv) the release of comment letters on registration statements submitted to the SEC; (v) access to corporate records at the Public Reference Unit; (vi) microfilming of corporate records; and (vii) the review of contracts for goods and services (SEC, 2015a).

In fact, the major achievements brought about by the reorganisation of the SEC and the SRC were also confirmed by the assessment conducted by the IMF on the principles of security regulation. The report revealed that the country performed very

well against various principles of the International Organization of Securities Commission. First, the principles relating to the regulator were fully implemented. The SRC has transformed the SEC to be a more effective regulator with clear objectives and procedures. Given that its duties were narrowed, the SEC was better empowered with resources to enforce the law (IMF, 2004). Second, the principles for cooperation in regulation were implemented satisfactorily. The SEC was given the authority to disseminate public and non-public information to both domestic and foreign counterparts, provided that the Memorandum of Understanding was signed with willing counterparts. The rules of confidentiality of information in this regard were sound. In addition, the Anti-Money Laundering Act was implemented in 2002 to overcome obstacles created by the Bank Secrecy Law (IMF, 2004). Third, the principles for issuers were implemented with the high standards of the disclosure regime. The SEC played a significant role in ensuring the minority shareholder was well-protected, despite the strong hindrance created by robust founder family ownerships. And lastly, the principles for market intermediaries were also implemented, with clear eligibility criteria and procedures of registration. Model Internal Supervision, and Control and Compliance Procedures were clearly established. The procedures to deal with the failure of market intermediaries were sound (IMF, 2004).

With all the above accomplishments, the SEC was ranked 21st in the 2000 Executive Outlook Survey conducted by the Makati Business Club. It had been ranked in the list of top ten performing government agencies in the country from 2001 to 2003 (SEC, 2015a). The success of the SEC's reorganisation could be attributed to several critical factors. The first factor was the intensive organisational study before the reorganisation process, with the consideration of the changing mandate under the SRC. The second was the intensive effort to streamline the structure and functions of the SEC, which enabled it to function more efficiently and effectively. The third was the development and implementation of the Information Strategic System Plan that modernised the delivery of services by the SEC. And the last factor was the improvement in the hiring and selection process of the SEC that attracted a cadre of highly-qualified professionals (SEC, 2015a).

After the major achievements brought about by the SRC, it continued to develop a transparent, efficient and fair capital market. Various regulatory initiatives were implemented in the 2000s to improve stock trading in the country. For example, in 2004, the PSE re-imposed the collection of the transaction fee of 0.5 basis points on the gross value of every buy and sell transaction made. In the same year, the PSE amended the rule on minimum commission that placed a minimum rate on all trades regardless of the amount of transaction. This new minimum commission rate helped to create a level playing field for all trading parties, especially on large volume trades (PSE, 2015a). In addition, the Governance Committee was replaced by the Market Integrity Board. This board was established to oversee compliance with the rules governing the market transactions of trading participants in the PSE, through the surveillance system monitored by the Market Regulation Division. Later, in 2007, the PSE acquired the Advanced Warning and Control System, which was a computerised surveillance system designed to improve the integrity of the stock market (PSE, 2015a).

Later, in September 2008, a circuit breaker rule was implemented by the PSE. It was a 15-minute trading halt in the event that the PSE Index dropped by more than 10 per cent of the previous day's closing index value. It provided investors with sufficient time to digest the negative impact of an unusual market drop and helped to restore stability in the stock market. In October 2008, a republic act known as the Credit Information System Act was enacted. It aimed at enhancing the reliability of credit information and facilitates credit investigation and rating in the country (PSE, 2015a).

In 2010, the PSE revised various rules on listing by way of introduction. The amendment included the following requirements: (i) a fair opinion and valuation report by a third party financial institution regarding the pricing of a company's securities to be listed in accordance with the Guidelines for Fairness Opinions and Valuation Reports; (ii) the enhanced lock-up provisions; and (iii) a lifting of the trading band on the listing date of the stocks. In addition, the *Corporate Governance Guidebook* was launched by the PSE in 2010 to promote good governance among listed companies. It consisted of 10 guidelines based on the principles of good practice, internationally recognised corporate governance codes, and best practices. Furthermore, the

Amended Minimum Public Ownership Rule became effective in the same year. It was a continuing listing requirement for the listed companies, which requires them to maintain a minimum of 10 per cent of their issues and outstanding shares by the public, excluding any treasury shares (PSE, 2015a).

Other regulatory initiatives were carried out in the 2010s to further promote stock market development in the country. For example, the PSE revised its policy on managing the PSE Index in September 2011 so as to improve the quality of the PSE Index and reflect corporation action in a timely manner. Under the amended policy, three criteria should be met for the listed companies to be qualified in the PSE Index. First, there should be a minimum level of 12 per cent free float of the company. Second, it must be ranked among the top 25 per cent in terms of median daily value in 9 out of the 12-month period. And lastly, it must be ranked among the highest in terms of full market capitalisation (PSE, 2015a).

In addition, rules were made effective to improve the liquidity of the stock market. In January 2012, the SEC declared that the Amended Minimum Public Ownership Rule had become effective. Under the rule, all the listed companies must comply with the PSE's 10 per cent minimum public ownership requirement. This change was in line with the Philippine Capital Market Development Plan, which aimed at providing an efficient means for price discovery and addressing liquidity issues in the stock market. With the imposition of this rule, not only were more shares provided to be traded in the market, but it also enhanced corporate governance when the companies became more democratised in the process (PSE, 2012).

Furthermore, in order to improve corporate governance across the market, the Capital Markets Integrity Corporation was established in 2012. It aimed at overseeing the behaviour of market participants and for being responsible for market surveillance. It was a separate and independent company from the PSE, governed by independent directors. It was also a self-regulatory organisation that reported directly to the SEC. By spinning-off the regulatory functions over trading participants to the independent company, it enhanced the transparency and independence of the PSE (PSE, 2012). Later, in May 2012, it launched its new surveillance system called Total Market

Surveillance, which was acquired from the Korea Stock Exchange. The system enhanced the monitoring of stock market transactions by providing detection rules, statics analysis models, and pattern recognition logics (PSE, 2015a).

3.4 The Growth of the Stock Market in the Philippines

This section presents an overview of the stock market's performance in the Philippines. Market activity of the Philippines' stock market is discussed by key market indicators. It follows with a discussion on the size and liquidity of the stock market in the country.

3.4.1 The Growth of the Philippines Stock Market in terms of Key Market Indicators

Structural and regulatory development brought major accomplishments to the stock market in the Philippines. For example, in 2012, the PSE was cited as one of the best performing stock markets in the world by the World Federation of Exchanges (PSE, 2012). The growth momentum in the stock market continued in 2013. The country achieved an important milestone in 2013 when it attained an upgrade in credit rating to investment grade status from the three biggest international rating agencies – Fitch, Standard and Poor's and Moody's (PSE, 2013). In addition, the PSE was recognised as the Best Stock Exchange in 2013 in Southeast Asia by a financial magazine, *Alpha Southeast Asia* (PSE, 2013). Behind the major accomplishments in the stock market, this section traces the growth in the stock market as measured by various key market indicators. They include: the share price index (PSE Index); the number of listed companies; and the concentration ratios of the top ten listed companies.

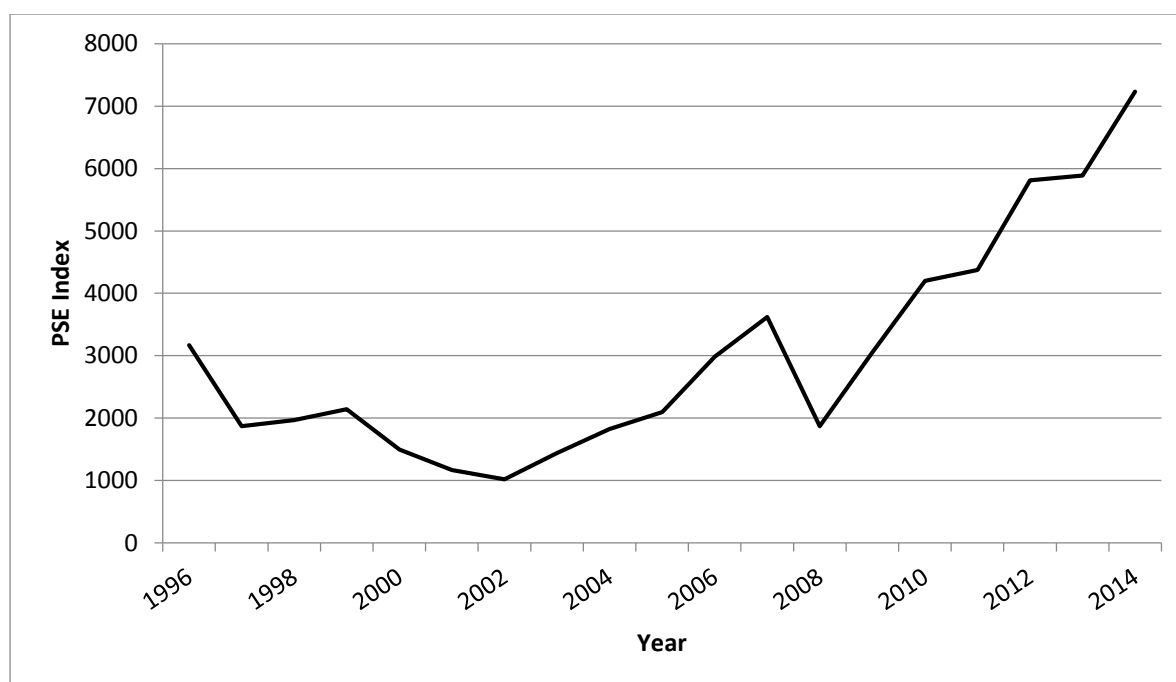
A common measure of stock market activity is the share price index. In the case of the PSE, this is the PSE Index (PSEi), which was originally known as the Composite Index. The PSEi showed a general upward trend with three troughs during the period of 1996 to 2013. The first happened in 1997 with the onset of the Asian financial crisis. Stock markets in the region, including the Philippines, suffered significant losses during the crisis. The PSEi dropped 41 per cent from 3 171 points in 1996 to 1 869 points in 1997,

measured at year end (PSE, 2000). When the market seemed to have recovered, there was a setback by the political upheaval against President Joseph Estrada of the Philippines, as well as the September 11 terrorist attack in the United States during the early 2000s. The Estrada trial seemed to have a long-lasting negative impact on stock market investors. They anticipated that the stock market might suffer from the alleged stock price manipulation of the listed companies that were linked to Estrada and his allies, which led to massive losses for investors. As such, the PSEi dropped further from 2 143 points in 1999 to 1 018 points in 2002, which was the lowest level in the period of discussion (PSE, 2000; 2002; Visda et al., 2013).

The stock market recovered slowly from its troubles and experienced growth along with most of the other stock markets from 2003 to 2007. The PSEi increased from 1 442 points in 2003 to 3 622 points in 2007. However, the market path was derailed by the subprime crisis in the United States, which set off a chain reaction on global stock markets. The depressed global market sentiment during the period of the global financial crisis in 2008 caused a plunge in the PSEi from 3 622 points in 2007 to 1 873 points in 2008, representing a 48 per cent fall in a year (PSE, 2003, 2007, 2008).

While the road to recovery was sluggish in most Western countries, the Philippine economy proved to be hardened by the Asian financial crisis in the late 1990s. After bottoming out in 2008, the stock market began unprecedented growth to become one of the best performing emerging markets. The PSEi soared from 1 873 points in 2008 to 7 230 points in 2014 (Visda et al., 2013; PSE, 2014). During the period of 2009 to 2014, the PSE was one of only two out of the 64 member-exchanges of the WFE that had experienced continuous growth for six consecutive years (PSE, 2014). Indeed, the PSEi had grown by 286 per cent in total during this period. Figure 3.1 shows the performance of the PSEi during the period 1996 to 2014.

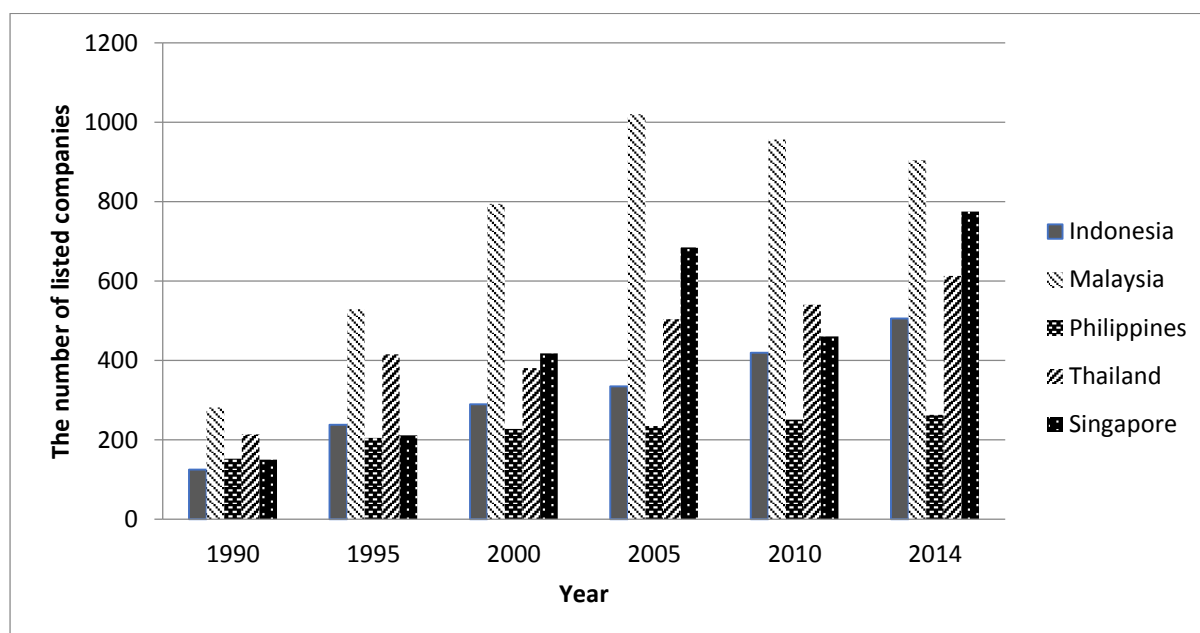
Figure 3.1: The performance of the PSE Index, 1996-2014



Sources: PSE Annual Reports, various issues.

The growth of the stock market can also be measured by the number of listed companies. It gives some insight into how broadly accessible the stock market is for firms seeking to raise funds. The number had remained low in the country since 1988. It increased from 141 in 1988 to only 263 in 2014, with an average annual growth rate of 2.5 per cent (WDI, 2015; WFE, 2015). The study observed that despite nearly 800 000 companies registered and licensed by the SEC to do business in the country in 2012, only 268 companies listed their shares publicly on the PSE, which contributed to an insignificant 0.034 per cent of the total. Therefore, the Philippines had the smallest number of listed companies in the previous two decades when compared with the other ASEAN-5 countries. On the other hand, Malaysia, having the largest number among them, had experienced significant growth during 1990s and early 2000s. The second largest was Thailand, showing steady growth in the number, while the growth pattern was more volatile in Singapore. The fourth was Indonesia, which also demonstrated subtle growth in the previous two decades. Figure 3.2 shows the number of listed companies on the ASEAN-5 stock exchanges during the period of 1990 to 2014.

Figure 3.2: The number of listed companies on the ASEAN-5 stock exchanges, 1990-2014



Sources: WDI, 2015; WFE, 2015.

The small number of listed companies in the Philippines could be attributed to several factors. The first factor was the prevalent culture of “family corporation” that hindered the decision of opening up to a more diversified ownership structure through public listing. In fact, most Filipino owners preferred maintaining close control of enterprises within the family group. It was also alleged that the control of a firm allowed more flexibility in avoiding corporate taxation by structuring its financial records. The second was concern over costs incurred when a firm raised capital through the stock market. Unlike equity financing, debt financing had generally been readily available and provided beneficial tax treatment (Dohner and Intal, 1989; World Bank, 1992). And the final factor was the general lack of understanding of how the companies could benefit from the stock markets in various ways (Visda et al., 2013).

In addition to the number of listed companies, the quality of the listed companies is also important to show the performance of the stock market. According on the Top 1000 Corporations in the Philippines reported by the SEC in 2011, only 93 listed companies were included when they were measured in terms of total revenues. There were 28 of them in the top 100 corporations. This provided some insight into the overall

quality of the listed companies in the country. However, it should be noted that the top two in the rankings, which were Petron Corporation and Manila Electric Company, were listed companies. It at least revealed that the shares of stock of the most profitable firms in the country were publicly listed and traded (Visda et al., 2013).

Apart from the number of listed companies, another indicator that measures how accessible the stock market is to firms is the concentration ratio. The standard concentration ratio can be measured by two indicators. The first is the proportion of stock market capitalisation accounted for by a country's top ten listed companies. The second indicator is the proportion of trading accounted for by a country's top ten listed companies. Similar to most of the East Asian countries, much of the stock market in the Philippines was accounted for by relatively few large firms. The concentration ratio of the Philippines was 57 per cent as measured by the first indicator and 53 per cent as measured by the second indicator in 1999. There was an improvement in the ratios in that they reduced to 38 per cent and 46 per cent respectively in 2013 (WFE, 2015). However, it still indicated relatively high concentration ratios when compared with those developed markets such as the United States and Japan. Table 3.1 presents concentration ratios of selected countries in 1999 and 2013.

Table 3.1: Concentration ratios of selected countries in 1999 and 2013

Economy	1999		2013	
	Top 10 concentration ratio (in market capitalisation) Per cent	Top 10 concentration ratio (in trading) Per cent	Top 10 concentration ratio (in market capitalisation) Per cent	Top 10 concentration ratio (in trading) Per cent
Indonesia	58	53	43	38
Hong Kong	68	42	35	26
Malaysia	35	18	36	43

Philippines	57	53	38	46
Singapore	59	35	27	29
Thailand	48	31	41	32
Memorandum				
Japan	30	25	18	19
United States	23	17	15	44

Source: WFE, 2015.

3.4.2 The Growth of the Philippines Stock Market in Terms of its Size and Liquidity

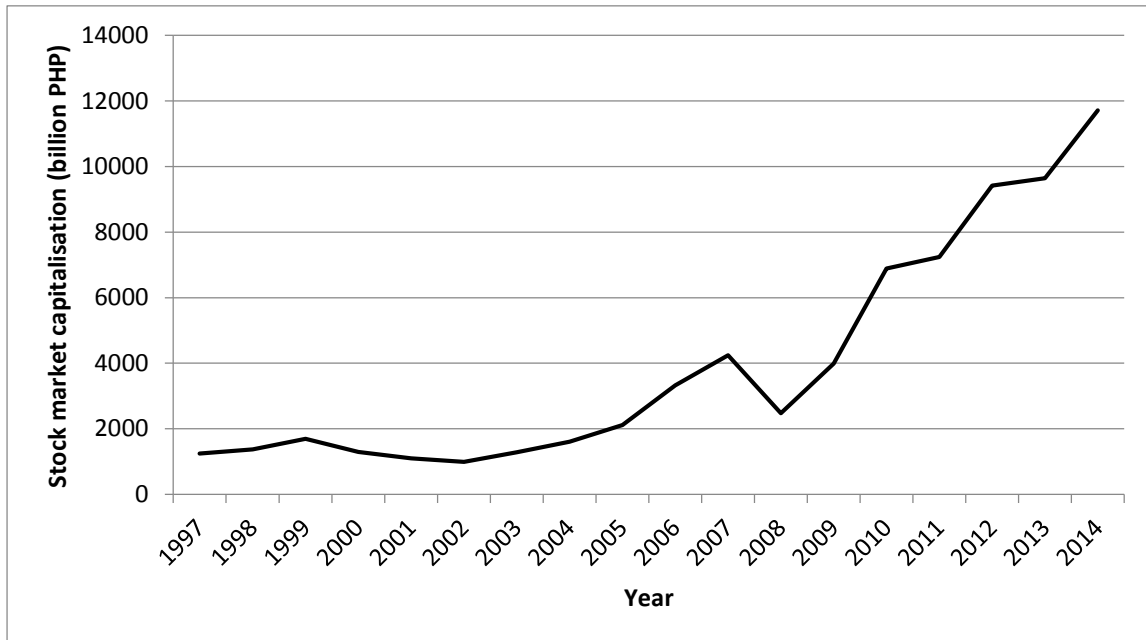
Apart from the key market indicators the study mentioned in the previous section, some other financial indicators have been suggested in the literature to reflect the multifaceted concept of stock market development. They are the market capitalisation ratio, the total value traded ratio, and the turnover ratio (Levine and Zervos 1996; 1998).

3.4.2.1 The Size of the Stock Market in the Philippines

The absolute size of the stock market is usually gauged by market capitalisation. It often reflects how effective the market is in performing its role of intermediately savings and investment. Larger financial markets are more likely to be deeper and more liquid than smaller markets (Gochoco-Bautista and Remolona, 2012). In the case of the Philippines, market capitalisation had grown significantly from PHP 1 251 billion in 1997 to PHP 4 245 billion in 2007. Despite the impact of the global financial crisis in 2008, it recovered swiftly from PHP 2 474 billion in 2008 to PHP 11 713 billion in 2014 (WFE, 2015). During the period 1997 to 2014, market capitalisation had expanded with an average of over 13 per cent on an annual basis. In particular, when we consider domestic market capitalisation by the sector in 2014, the holding firms sector and industrial sector attracted more funding from the stock market than the other six sectors (PSE, 2014). Figure 3.3 shows stock market capitalisation of the PSE during

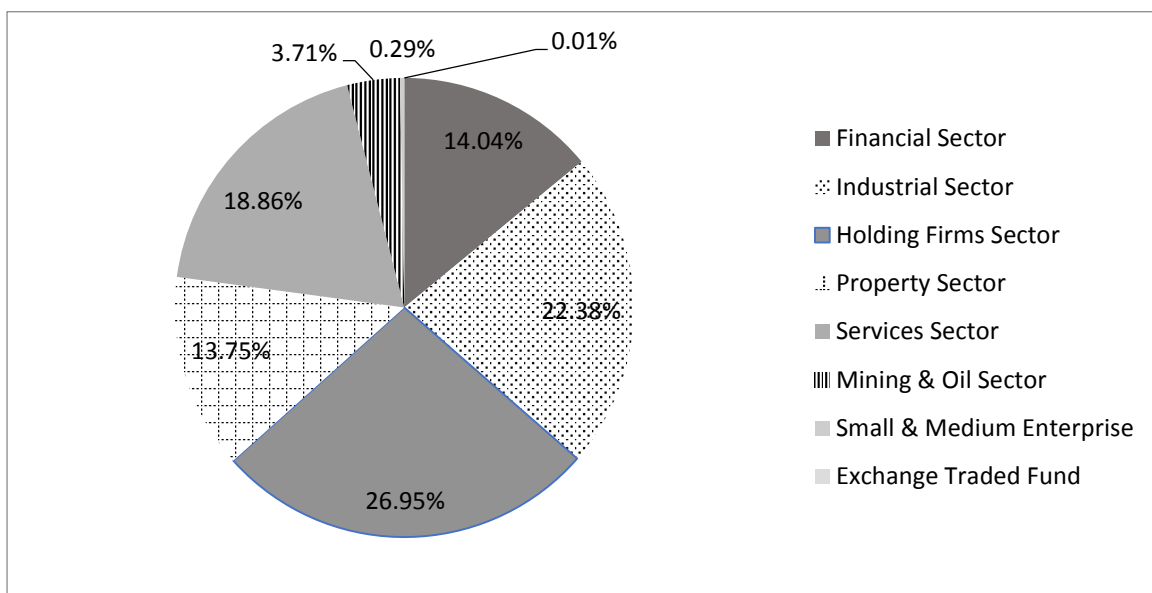
the period 1997 to 2014, and Figure 3.4 shows domestic market capitalisation by the sector in 2014.

Figure 3.3: Stock market capitalisation of the PSE in billion Pesos, 1997-2014



Source: WFE, 2015.

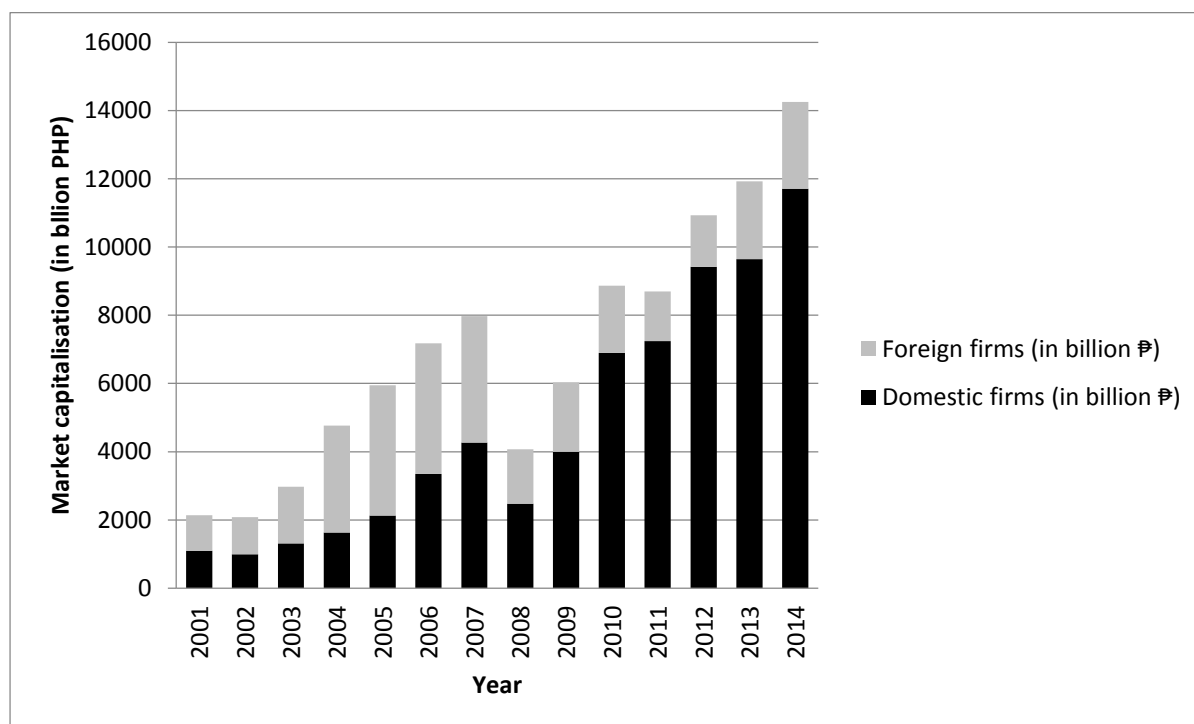
Figure 3.4: Domestic market capitalisation by the sector in 2014



Source: PSE, 2014.

It is worth noting that the market capitalisation of domestic companies had grown steadily while that of foreign companies showed a more volatile growth pattern. The market capitalisation of domestic companies had increased, thereby reducing the shares contributed by foreign companies. The shares of domestic firms increased steadily from 51 per cent in 2001 to 82 per cent in 2014, with the highest level of 86 per cent in 2012. Since 2010, the local-foreign ratio has remained at 80:20 levels (PSE, various issues). This dominant trend of domestic firms could be explained by the higher valuation of domestic companies. For example, when the Sun Life Financial Corporation and Manulife Corporation listed on the PSE in 1999 and 2000 respectively, these two companies had contributed 50 to 60 per cent of the total market capitalisation for several years. In fact, the emergence of various conglomerates, together with the mergers and acquisitions, led to the creation of mega domestic companies of higher value. In addition, the improved net income performances also pushed for higher valuations of domestic companies (Visda et al., 2013). Figure 3.5 shows the market capitalisation of domestic companies and foreign listed companies in billion Pesos during the period of 2001 to 2014.

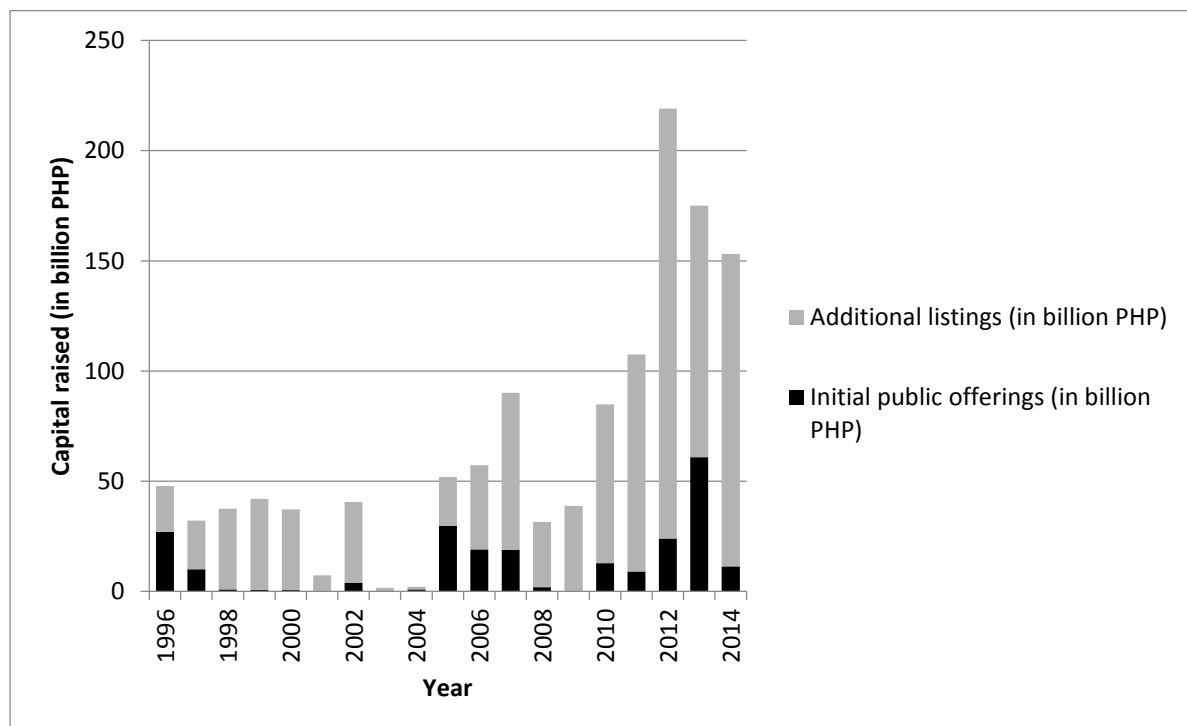
Figure 3.5: Market capitalisation of domestic and foreign listed companies, 2001-2014



Sources: PSE Annual Reports, various issues.

In terms of capital-raising activities, the total amount raised annually was generally volatile and followed prevailing market sentiment. During the period of 1996 to 2014, it fluctuated from a low of PHP 1.7 billion in 2003 to a high of PHP 219 billion in 2012. It had shown growth momentum from 2009 when the total capital raised jumped from PHP 38.8 billion in 2009 to PHP 153.1 billion in 2014 (PSE, various issues). When we considered the capital raised by different categories during the period of 1996 to 2014, we found some interesting observations. First, the historical levels of IPOs were more volatile than the additional listings. There were negligible amounts of IPOs whenever there were market downturns. This was because the listed companies preferred to get the most value of the sales of shares. Another reason was that it became very difficult to price new issues during volatile periods (see Visda et al., 2013). Second, the trend showed that there were increasing amounts of listed companies undertaking additional listings. This indicated that the firms saw value in continuously utilising the stock market to raise funds for their projects, instead of the typical “one-and-done” listing behaviour (Visda et al., 2013). Figure 3.6 shows the capital raised by different categories during the period of 1996 to 2014.

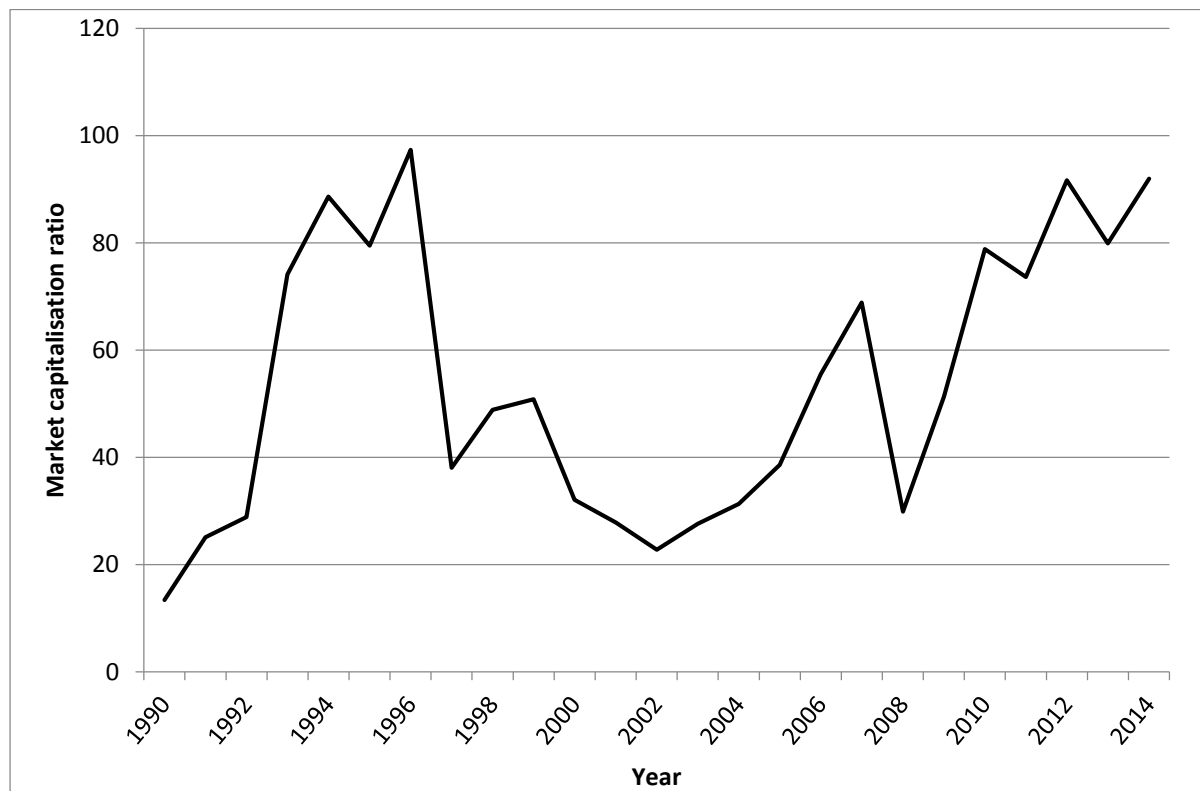
Figure 3.6: Capital raised by different categories, 1996-2014



Sources: PSE Annual Reports, various issues.

Apart from measuring the absolute size of the stock market, the size of the stock market can also be measured by the market capitalisation as a percentage of the GDP, namely, the market capitalisation ratio. The market capitalisation ratio of the Philippines showed an increasing trend, with volatile movements from 1990 to 2014. The ratio increased significantly from 13 per cent in 1990 to 92 per cent in 2014, with an average annual growth of 8 per cent. The ratio was high in the early 1990s, reaching the first peak of 97 per cent in 1996. Then it plunged to the lowest level of 38 per cent in 1997 due to the lingering effects of the Asian financial crisis. After some fluctuations, it remained at a relatively low level. It gradually reached another high level of 69 per cent in 2007. Owing to the global financial crisis in 2008, it declined to 30 per cent. Nonetheless, it subsequently rebounded to 48 per cent in 2009, and continued to demonstrate growth momentum in early 2010 (WDI, 2015). Figure 3.7 shows the market capitalisation ratio of the PSE during the period of 1990 to 2014.

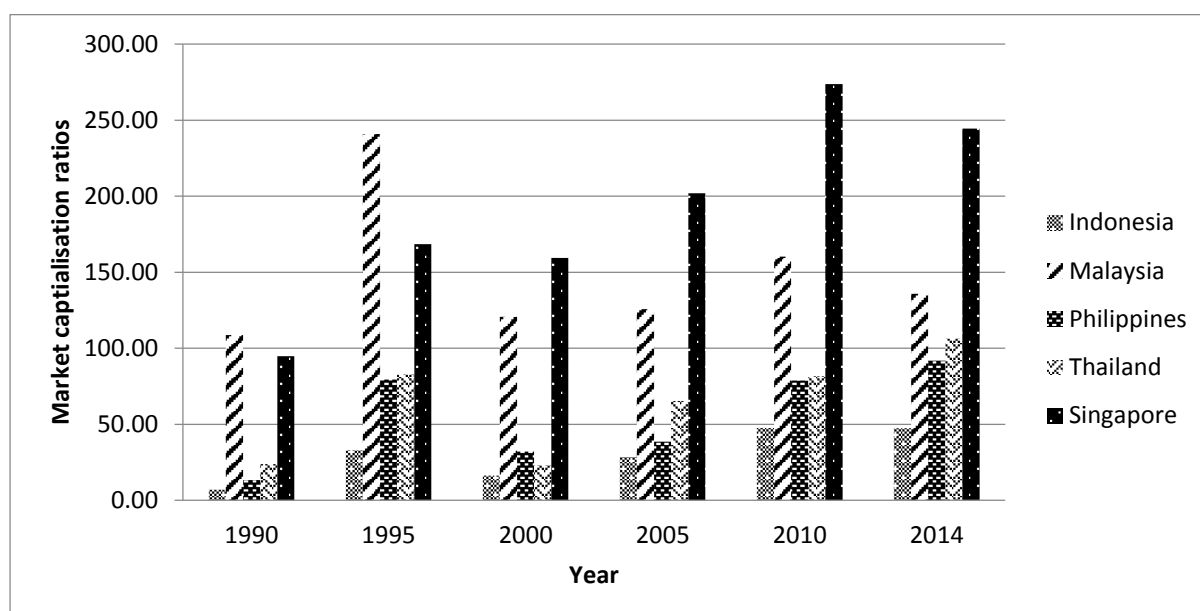
Figure 3.7: Market capitalisation ratio of the PSE, 1990-2014



Source: WDI, 2015.

When compared with the other ASEAN-5 stock exchanges, Malaysia and Singapore had enjoyed the largest sized stock markets in terms of market capitalisation ratio during the previous two decades. The PSE was ranked as the second lowest among them. Despite the low ranking in the ASEAN-5 countries, there had been phenomenal growth in the global ranking as measured by the market capitalisation ratio. According to the WDI (2015), the global ranking of the PSE increased from 55th in 2005 to 44th in 2009. Later on, there was a substantial improvement in ranking to 29th in 2010. In 2014, the PSE was ranked 12th largest in the world (WDI, 2015). Figure 3.8 shows the market capitalisation ratios of the ASEAN-5 stock exchanges during the period of 1990 to 2014.

Figure 3.8: Market capitalisation ratios of the ASEAN-5 stock exchanges, 1990-2014



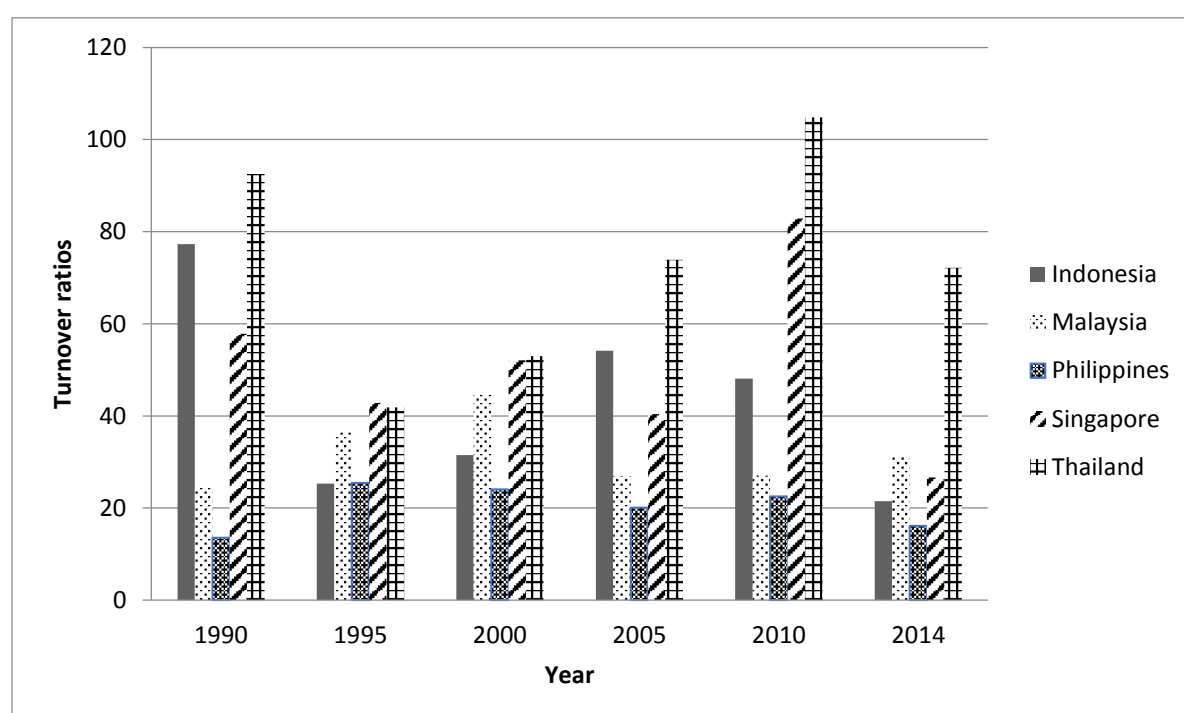
Source: WDI, 2015.

3.4.2.2 The Liquidity of the Stock Market in the Philippines

The growth of the stock market can also be gauged by the liquidity of the stock market. This refers to the ease with which agents can buy and sell assets in a financial market at posted prices (Levine and Zervos, 1996). Two indicators are used to measure the liquidity of the stock market, namely, the turnover ratio and the total value traded ratio. According to the WDI (2015), the Philippines had experienced low liquidity in the stock market during the previous two decades. From 1989 to 1998, the turnover ratio fluctuated in the range of 14 per cent to 37 per cent. It reached its peak of 51 per cent

in 1999, and immediately slumped to its lowest level of 9 per cent in 2001. It started to improve in 2004 and reached another peak of 34 per cent in 2007. The ratio gradually declined to 16 per cent in 2014 (WDI, 2015). In a regional comparison with other ASEAN-5 countries, the Philippines had the least liquid market in terms of turnover ratio during the previous two decades. Conversely, Thailand had the most liquid market among them, despite its relatively small market size. Figure 3.9 shows the turnover ratios of the ASEAN-5 stock exchanges during the period of 1990 to 2014.

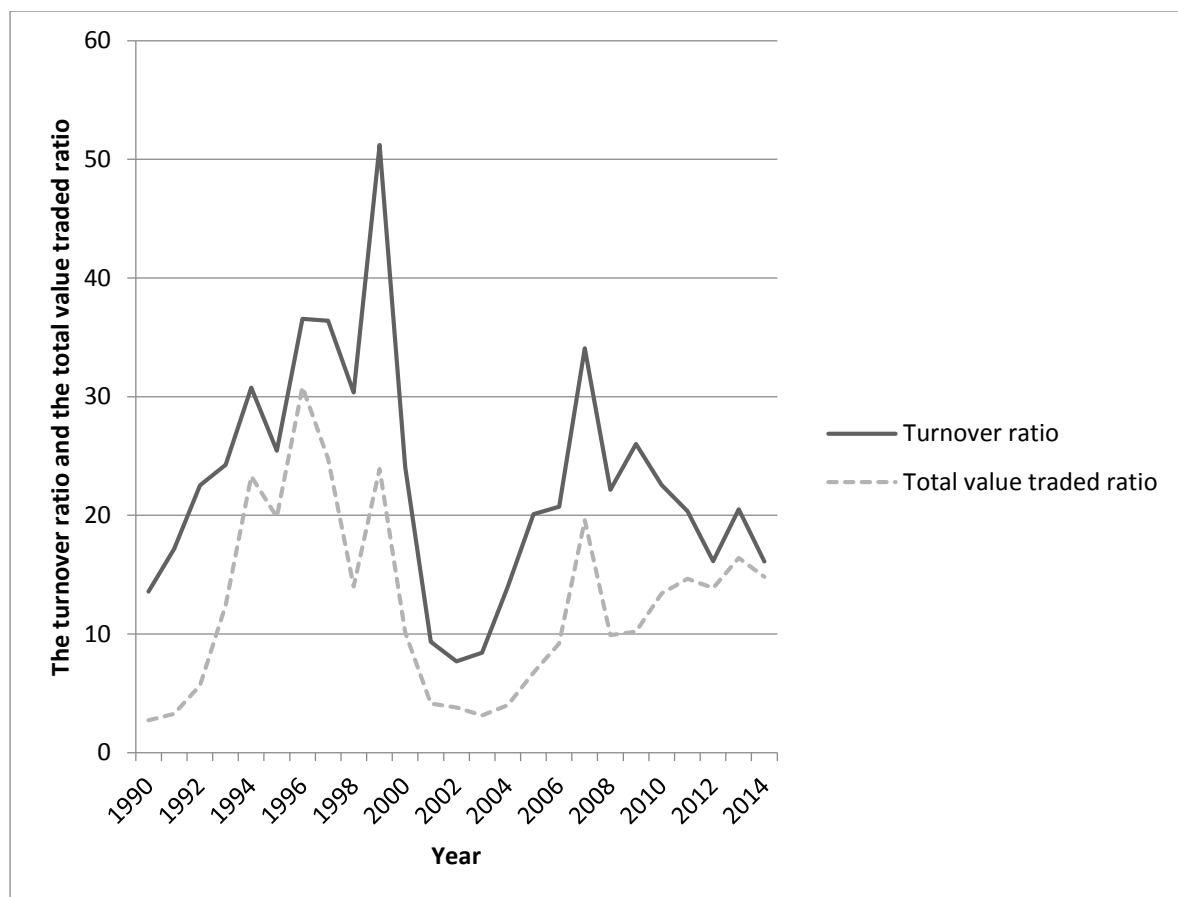
Figure 3.9: Turnover ratios of the ASEAN-5 stock exchanges, 1990-2014



Source: WDI, 2015.

It is worth noting that the development of the total value traded ratio exhibited a similar growth pattern to the turnover ratio. The total value traded ratio increased steadily from 3 per cent in 1990 to 23 per cent in 1994. It reached its highest level of 31 per cent in 1996 and came down to a level of 14 per cent in 1998. It rebounded to 24 per cent in 1999 and gradually came down to its lowest level of a single digit in the early 2000s. It gradually improved to 20 per cent in 2007 and remained at a low level of 15 per cent in 2014 (WDI, 2015). Figure 3.10 shows the turnover ratio and the total value traded ratio of the PSE during the period of 1990 to 2014.

Figure 3.10: The turnover ratio and the total value traded ratio of the PSE, 1990- 2014



Source: WDI, 2015.

The low liquidity in the stock market could be attributed to two main factors. The first factor was the high transaction costs involved in trading activities. According to Ghosh (2006), the transaction costs comprise explicit and implicit costs. The explicit costs include: commissions, settlement fees, and taxes. The implicit costs comprise the following: the costs of delaying or not executing a trade when the conditions are not appropriate; the expected cost of failure to complete the trade due to physical infrastructure failure; and any premium due to the market illiquidity. A market with high transaction costs will tend to have less trading, hence affecting the liquidity of the market. Ghosh (2006) further revealed that the total explicit trading costs, comprising price, commissions, fees, and market impact, was 94.1 basis points in the Philippines. The total explicit trading costs, on the other hand, were 68.1 basis points in Indonesia, 55.9 basis points in Malaysia, 56.9 basis points in Thailand, 44.3 basis points in Hong Kong, and 14.5 basis points in Singapore. Evidence showed that the stock market in

the Philippines experienced the highest total explicit trading costs among the selected Asian countries. In addition, another study involving 12 stock exchanges also revealed that the PSE suffered from the high transaction costs of stock trading, which included a trading fee, a clearing fee, broker's commission, and stock transaction tax. In terms of the total transaction costs, the PSE ranked fifth highest among these 12 stock exchanges, with 77 basis points per side of the transaction (SEC, 2015b).

The second factor was the limited size and diversity of the investor base. It has been argued that a diversity of investors with different risk appetites, leading to a divergence of views, will foster trading activities. In the case of the Philippines, despite the fact that the investors' base had been growing, the size remained small. For example, in 2012, the overall investor base consisted of only 525 850 investor accounts, which represented a half per cent of the estimated 100 million population. Of the total investor accounts, 96.4 per cent was classified as retail accounts while the remaining were considered as institutional accounts. It may indicate that stock market investment continued to be confined to those who had a high level of annual income and the well-educated (PSE, 2015b).

3.5. Challenges Facing Stock Market Development in the Philippines

Despite the improvement in the various stock market indicators mentioned in the previous section, there were some challenges that continued to deter further development of the stock market. This section highlights some of them, which include: the shallow and less diversified investor base; high transaction costs associated with trading on the PSE; lack of competitiveness of the PSE; weak corporate governance of the PSE; and weak legal framework for financial sector development.

3.5.1 The Shallow and Less Diversified Investor Base

Historical data indicate that while the PSE has been growing, it has not expanded at a pace to match its Asian counterpart markets. According to the Stock Market Investor Profile conducted by the PSE, in 2012 there were only 525 850 investor accounts out of a total of 100 million Filipinos. The overall investor base of a half per cent of the

estimated total population indicated that there was not widespread participation in the local market. In particular, out of the total accounts, 96.4 per cent was classified as retail accounts while the remaining were considered to be institutional accounts. Local players dominated the PSE with 98.5 per cent of the total accounts, while foreign investors covered only 1.5 per cent of total accounts (PSE, 2015b).

There were various factors that contributed to the low participation rate in the stock market. The first factor was the low awareness and negative perception of investing in the stock market. The possible reason for this perception may be because of past events of stock price manipulation that hindered investors from stock market investing. The second factor was the lack of understanding of how the stock market works in terms of returns and the associated risks. This pushed the public either towards safer channels such as bank deposits, or to unrealistic investment vehicles that promised high levels of returns but eventually ran away with the investors' money. The third factor was the lack of products in the stock market that offered limited investment options to the general public (Visda et al., 2013).

In order to foster a more diversified investor base, the reform shall pursue developing the contractual savings industry, that is, the insurance and pension industry (Ghosh and Revilla, 2007). Historical data showed that the insurance fund assets were still relatively small, with the proportion of the premium to the country's GDP being only 1.1 per cent in 2008. In 2010, only 13.9 per cent of the Philippine population had private life insurance coverage. The reasons for low insurance coverage were the lack of priority placed on insurance products and also the low level of financial knowledge among low income households [Philippine Development Plan (PDP), 2011].

Recently, the PSE has made efforts to foster a larger and more diversified investor base. In 2014, the PSE partnered with various institutions and individuals to promote the expansion of the country's investor base by providing financial market education for Filipinos. To achieve this aim, various initiatives were implemented. They were the financial literacy road shows, the launch of the PSE stock market 101 webinar, stock market 101 seminars, programmes for young investors, a certified securities specialist

course, provincial run of the PSE advanced stock market course, financial literacy competitions, and industry exposition (PSE, 2014).

In addition, in order to promote further development of institutional investors, the government needed to pursue measures that facilitated cross-border investments and financial integration. In particular, the government had to consider some specific reform strategies. They included: liberalised financial products and services; further liberalised capital account; support for the regional capital market development; harmonised payment and settlement system; and strengthen regional monitoring and surveillance initiatives (PDP, 2011).

3.5.2 High Transaction Costs Associated with Trading on the PSE

In addition to the narrow investor base, the PSE also suffered from high transaction costs associated with trading activities (SEC, 2015b). A study involving 12 stock exchanges revealed that the PSE suffered from high transaction costs of equity trading. The PSE was ranked fifth highest in terms of transaction costs among the 12 countries (SEC, 2015b). Table 3.2 shows the total transaction costs on secondary trading of equity securities per jurisdiction.

Table 3.2: The total transaction costs on secondary trading of equity securities per jurisdiction in selected countries

Exchange	Stamp Duty	Stock Transaction Tax	Commission	Clearing Fee	Trading Fee	Total per side (in BP)	Total per side Excluding Commission (in BP)
Bursa Malaysia	10 BP	None	Fully negotiable	3 BP of transaction value	70 BP	83.00	83.00
Ho Chi Minh Stock Exchange	None	10 BP	Maximum of 45 BP	No data	No data	55.00	10.00
Hong Kong Stock Exchange	10 BP on the value of the transaction	0.3 BP per transaction	Fully negotiable	None	0.5 BP	10.80	10.80
Indonesia Stock Exchange	None	1.8 BP of the value per transaction	Maximum of 130 BP	0.9 BP of transaction value	3 BP	135.70	5.70

Korea Stock Exchange	None	30 BP	Fully negotiable	0.04446 BP of trade value	0.22763 BP of trade value	30.27	30.27
National Stock Exchange India	None	10 BP per transaction	Maximum of 250 BP	US\$ 0.0331	Estimated at about 0.33 BP	260.33	10.33
Philippine Stock Exchange	None	50 BP	25 BP to 150 BP	1 BP	1 BP	77.00	52.00
Shanghai Stock Exchange	10 BP of the traded value	None	No data	No data	No data	10.00	10.00
Shenzhen Stock Exchange	100 BP of the traded value for seller	6.96 BP of the traded value per transaction	Maximum of 30 BP	No data	No data	136.96	106.96
Singapore Stock Exchange	None	None	Fully negotiable	4 BP on the value of the contract	0.75 BP on the value of the contract	4.75	4.75
Stock Exchange of Thailand	None	None	20 BP or 25 BP ¹⁵	0.1 BP	0.5 BP	20.60	0.60

Source: SEC, 2015b.

To address this challenge, a study was conducted to rationalise non-tax transaction costs relating to equity securities transactions in primary and secondary markets. These costs included underwriting, registration, listing, clearing, depository, and transfer agent fees and brokers' commission. In addition, the Financial Sector Tax Neutrality Act was proposed to abolish the IPO tax and lower the stock transaction tax to 0.25 basis points of the gross selling price or gross values in money of the share of stock sold (SEC, 2015b).

3.5.3 Lack of Competiveness of the PSE

Another challenge was that the PSE was still less competitive when compared with its regional counterparts. When the regional comparison was drawn, the PSE had the smallest number of listed companies during the previous two decades among the ASEAN-5 countries (WDI, 2015; WFE, 2015). In terms of market capitalisation ratio,

the PSE was ranked as the second lowest among the ASEAN-5 countries during the previous two decades (WDI, 2015). In terms of turnover ratio, the PSE had the least liquid stock market among the ASEAN-5 countries during the previous two decades (WDI, 2015).

In order to increase the size of the stock market, the PSE laid down plans to develop new products in order to enable issuers to easily raise funds using various methods (SEC, 2015b). To achieve this goal, the three-year strategic plan of 2013 to 2015 was implemented. Under this plan, the PSE introduced a wider range of products and services to the stock market. For example, in November 2013, the co-branded SGX-PSE MSCI Philippines Index Futures was listed on the Singapore Stock Exchange. Later, in December 2013, a first exchange traded fund, First Metro Philippine Equity Exchange Traded Fund, was listed on the PSE. In the same month, an initiative to expand the PSE into Islamic Finance was taken, of which Shariah-compliant securities were listed (PSE, 2015a). However, there was concern over the SEC about its overly conservative attitude towards approving or disapproving various products and services, which had already presented in its regional counterparts. This continued to be a major challenge in hindering the development of the Philippines' capital market.

3.5.4 Weak Corporate Governance of the PSE

In addition to the above challenges, corporate governance of the PSE was weak. In fact, corporate governance is a significant determinant of stock market efficiency. A lack of transparency prevents market discipline from working effectively. There was a strong need to increase transparency in the country (Guinigundo, 2005). According to the study of Ghosh and Devilla (2007), the general corporate governance scores of the Philippines were low among Asian countries. In terms of rules and regulations of the country, Philippines scored the second lowest. It showed that efforts were required to pursue well-defined rights that could protect minority shareholders from the actions of controlling shareholders, and regulations that safeguarded the equal treatment of all shareholders. The enforcement of the rules was considered to be problematic, with a score of 3.1. It also revealed that in order to strengthen the regulations pertaining to shareholder rights, the key challenge lay in the implementation and enforcement of

the existing regulations. In terms of the corporate governance culture, which revealed the degree to which institutional and retail investors were engaged in promoting corporate governance, Philippines' score was also low among Asian counterparts. There was room for further improvement. Table 3.3 shows corporate governance scores of selected Asian countries, with the score ranges from the highest (10) to the lowest (0).

Table 3.3: Corporate governance scores of selected Asian countries

Economy	Rules and Regulations	Enforcement	Political and Regulatory	International Generally Accepted Accounting Principles	Corporate Governance Culture	Economy Score
Indonesia	5.3	2.7	3.8	6.0	2.7	4.0
Hong Kong	6.6	5.8	7.5	9.0	4.6	6.7
Malaysia	7.1	5.0	5.0	9.0	4.6	6.0
Philippines	5.8	3.1	5.0	8.5	3.1	5.0
Singapore	7.9	6.5	8.1	9.5	5.8	7.4
Thailand	6.1	3.8	5.0	8.5	3.5	5.3

Source: Ghosh and Revilla, 2007.

Regarding the financial governance framework, there was a need to coordinate the regulation and supervision of the financial system including banking, securities and insurance. Rapidly changing market conditions had given rise to new business structures and “hybrid” products that no longer fitted with the traditional regulatory authorities. This created significant space for regulatory arbitrage that encouraged the development of conglomerated financial organisations (Guinigundo, 2005). Indeed, conglomerates were an important feature in the country. According to the IMF (2010), about 60 per cent of banks' assets and 75 per cent of effective market capitalisation belongs to conglomerates. Therefore, it was important that the regulatory and

supervisory authorities strived to ensure that their mandates were aligned with international standards and also applicable to the changing domestic environment. In addition, the country was governed under a regime of multiple regulators where the authorities had to ensure consistency and comparability across their respective governance structures. To achieve this, it required either legislative intervention or a workable relationship between regulators and regulated entities (PDP, 2011).

The PSE recognised its low corporate governance scores among its regional counterparts, and the crucial role of corporate governance in the overall development of the stock market. As such, in 2014, a corporate governance committee was established in the PSE. It aspired to align the PSE's corporate governance practices with internationally accepted standards by assisting with issues related to the performance of the PSE, the performance of the president and his management team, a compensation package, succession planning, the overall governance of the PSE, and market governance (PSE, 2014). In addition, the PSE Corporate Governance Office was established to assist the corporate governance committee to carry out the fundamental functions of corporate governance. The office also provided support to the PSE by elevating corporate governance standard in the PSE through various market initiatives, and partnerships with regulators, corporate governance advocates and other stakeholders (PSE, 2014). These corporate governance initiatives were similar to the ones implemented by the other ASEAN countries. For instance, the ASEAN Corporate Scorecard was jointly developed by the Asian Development Bank and the ASEAN Capital Market Forum. It provided a rigorous methodology benchmarked against international best practices to assess the corporate governance performances of listed companies of the participating countries, including the Philippines (SEC, 2015c).

3.5.5 Weak Legal Framework for Financial Sector Development

The final challenge faced by the Philippines was that its weak legal framework for financial sector development. Critical financial sector reforms could only be implemented by the financial regulators with legislative support to provide the necessary legal and regulatory environment for the reforms. Therefore, it was

imperative to have close coordination with congress and active participation in the legislative process. The policy and structural issues were known to most of the stakeholders. The challenge was to develop a holistic framework that linked them to a common strategic plan. It also required orderly execution and commitment among stakeholders to adhere to the plan (PDP, 2011).

In light of this challenge, the Capital Market Development Plan (2011-2016) was implemented to enhance the institutional capacity of regulators. To achieve this aim, various strategies were designed. First, the SEC pursued an organisational review and formulated an overall reorganisational plan for the agency. Second, there was the pursuit of activities and strategies to increase the manpower capacity and performance of the SEC. Third, the head office of the SEC was transferred to enable the agency to accommodate a bigger clientele and provide adequate space for its expanding workforce. Finally, the SEC sought to secure a congressional grant of fiscal autonomy (SEC, 2015b).

3.6 Comparison between Stock Market Development in Hong Kong and the Philippines

This section provides a comprehensive comparison between stock market development in Hong Kong and the Philippines. It includes: the origin of stock market development, structural development of stock markets, regulatory development of stock markets, stock market growth by various indicators and the challenges facing the stock exchanges. In addition, a summary of major events leading to the development of these stock markets is provided in Appendix A1.

3.6.1 Origin of Stock Market Development

Regarding the origin of stock market development, Hong Kong has experienced more than 100 years of development, with the establishment of the first stock exchange in 1891. In the early period, the market activities of the Hong Kong Stock Exchange were generally regarded as insignificant. Although Hong Kong underwent rapid industrialisation during the 1950s and 1960s, evidence has shown that equity financing through the stock exchanges was not a main source of capital for the industrialisation process. The stock market started to grow only during the 1970s due to a number of

favourable factors such as the growth of infrastructure, massive influx of skilled labour from Mainland China, international capital flows into Asia, and the opening up of the Mainland Chinese economy. As a result, three other stock exchanges were established between 1969 and 1972.

Similarly, the Philippines also has one of the oldest stock exchanges in Asia, which was established in 1927. The practice of establishing more than one exchange in a country also took place in the Philippines, with the establishment of the second stock exchange in 1963. Unlike the experience in Hong Kong, the Philippines stock market could generally be regarded as insignificant and speculative in nature for a long period. There were a number of unfavourable factors such as the government's financial policy, lack of regulatory control and high cost of equity financing that hindered the development of the stock market.

3.6.2 Stock Market Development

3.6.2.1 Structural Development of the Stock Exchange

The stock market in Hong Kong has undergone a series of structural development changes since the 1970s in an effort to elevate it to international standards. For example, the regulator made the effort to standardise the trading activities of four stock exchanges in 1973. Later, in 1980, a unified stock exchange, namely the Hong Kong Stock Exchange, was formed and the unification process was completed in 1986. Similarly, the Philippines has undergone structural development in the stock market. The regulator also endeavoured to standardise the trading activities of two stock exchanges in the 1970s. Later, in 1992, the unification of the two stock exchanges was realised with the aim to develop a more efficient stock market.

In terms of demutualisation of the stock exchange, Hong Kong carried out its fundamental structural change in 2000 by merging the Stock Exchange, the Futures Exchange and their respective clearing houses into a single holding company called Hong Kong Exchanges and Clearing Limited (HKEx). The HKEx was demutualised and went public by way of introduction in the same year. In the Philippines, the stock exchange has undergone a similar structural change by demutualisation of the Philippine Stock Exchange (PSE) in 2000. However, unlike the experience of the

HKEx, the PSE did not adopt the two-step demutualisation process of conversion into a stock corporation and subsequent listing of the stock exchange at the same time. Its subsequent listing happened later in 2003. This was mainly due to the strict timetable and the lack of stable revenue streams. In addition, unlike the experience of HKEx upon demutualisation, there was concern over the financial viability of the PSE. The net income of HKEx improved from HK\$ 521 million in 1999 to HK\$ 740 million in 2001. Contrary to that, the PSE net income declined significantly from PHP 70 million in 2000 to PHP 18.3 million in 2001 after demutualisation.

Concerning the cross-border collaboration, in Hong Kong a joint venture by the HKEx, the Shanghai Stock Exchange and the Shenzhen Stock Exchange was co-founded in 2012 to strengthen the linkage of stock market activities between Hong Kong and Mainland China. In the same year, the HKEx completed the acquisition of the London Metal Exchange as the first overseas member of HKEx. In the Philippines, the cross-country collaboration that occurred during the 2000s was mainly with the ASEAN countries. For example, in 2005, the PSE, FTSE International Limited and ASEAN stock exchanges, Jakarta Stock Exchange, Bursa Malaysia Berhad, Singapore Exchange Securities Trading Limited, and Stock Exchange of Thailand signed a memorandum of agreement to create the FTSE / ASEAN index. Later, in 2006, the FTSE / ASEAN 40 exchange-traded fund was launched by listing on the Singapore Exchange.

3.6.2.2 Regulatory Development of the Stock Exchange

As far as the legislation on investors' protection is concerned, the government in Hong Kong made an effort by enacting ordinances in this regard. For example, the Securities Ordinance and the Protection of Investor Ordinance were enacted in 1974 to provide more protection to investors. Later, in 1985, the Securities (Amendment) Ordinance was enacted to strengthen the power of the Commissioner for Securities to monitor the financial viability of dealers. Later, in 1998 after the Asian financial crisis, the regulator placed share margin financing activities under its regulation. In the Philippines, an effort was also made by the government to protect investors. For example, as early as 1936, the government enacted the Securities Act to regulate the securities trading activities and also established the Securities and Exchange

Commission (SEC) to enforce the regulations. Later, in 1982, the Revised Securities Act was enacted by the Philippine Congress to remedy the flaws in the Securities Act.

Apart from the legislations that protected the investors, there were regulatory developments that enhanced the capacity of the stock market regulator. In 1973 in Hong Kong, the Commissioner for Securities and the Securities Commission were established to regulate the stock exchange. Later in 1989, the Securities and Futures Commission (SFC) was established as an independent statutory body to regulate the securities and futures markets. The role of SFC – being the main regulator of exchange participants – was further confirmed when the regulatory functions underwent rationalisation in 2000. Later, in 2003, the Securities and Futures Ordinance was enacted to consolidate and modernise ten existing ordinances governing the securities and futures markets. A similar regulatory development has also been experienced in the Philippines. The Securities and Exchange Commission (SEC) was established in 1936 to act as the primary regulatory authority over capital markets and their participants. Although the regulatory body was established long before the one in Hong Kong, the effectiveness of SEC as a market regulator was diluted by non-regulatory tasks. To focus on enforcing securities rules, those non-regulatory tasks were transferred from SEC to the PSE in 1996 by granting the status of a Self-Regulatory Organisation to the PSE. In 2000, with the enactment of the Securities Regulation Code, the SEC shifted from focusing on company registration and monitoring, and the performance of its quasi-judicial functions, towards the goal of developing a transparent, efficient and fair capital market.

Concerning legislation on the stock exchange, Hong Kong focused on the information disclosure by the stock exchange, with the aim to work towards a disclosed-based regulatory regime. For example, the government launched the HKEx Electronic Disclosure Project in 2007. Later, in 2008, SFC and HKEx jointly commenced a pilot scheme regarding information disclosure of the initial public offering information prior to the public offer in 2008. In the same year, a bilingual (Chinese/English) website called HKExnews was launched by the stock exchange. On the other hand, legislation on the stock exchange in the Philippines put emphasis on stock trading. For example, in 2004, the PSE amended the rule on minimum commission that placed a minimum

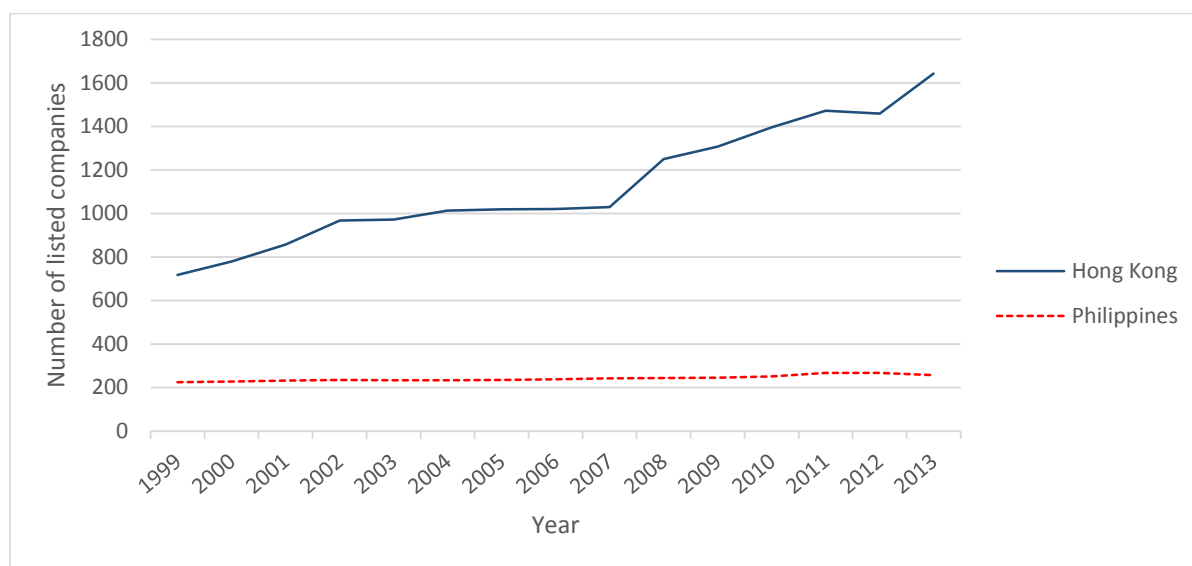
rate on all trades – regardless of the amount of transaction – to create a level playing field for all trading parties. In 2007, the PSE acquired the Advanced Warning and Control System to improve the integrity of the stock market. Later in 2010, the PSE revised various rules on listing by way of introduction.

3.6.3 Stock Market Growth in Hong Kong and the Philippines

The stock market in Hong Kong is one of the most established in the world, while the one in the Philippines is considered to be an emerging one with growth potential. In terms of international recognition, the Hong Kong Stock Exchange received full membership from the World Federation of Exchanges in 1986, while the Philippines became a full member of the World Federation of Exchanges in 1995.

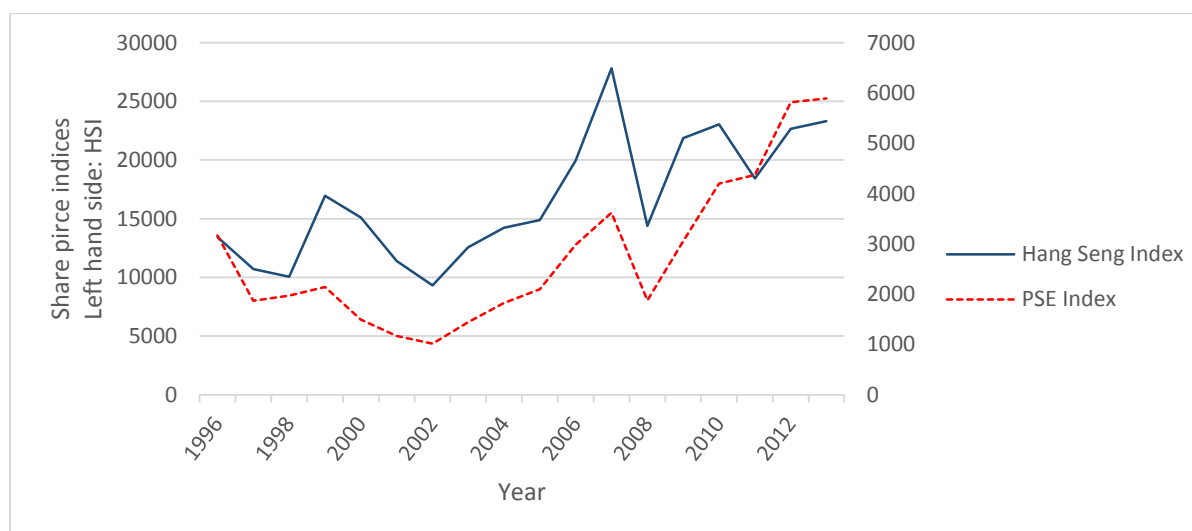
The growth in the stock markets in these countries can be measured by the number of listed companies and the share price index. In terms of the number of listed companies, Hong Kong has enjoyed significant growth during the past two decades. The total number of listed companies increased from 717 in 1999 to 1 643 in 2013. On the other hand, the number of listed company in the Philippines has remained low since 1999. It increased from 225 in 1999 to only 257 in 2013. In terms of share price indices, the Hang Seng Index (HSI) indicated volatile and positive movement. It increased from 13 452 in 1996 to 23 306 in 2013. Although the share price index of the Philippines, namely the PSEi, was lower compared with the HSI, it showed a similar volatile pattern. It reflected that the stock markets in both countries were affected by the global economic environment, such as the Asian financial crisis in 1997 and the global financial crisis in 2008. Figure 3.11 shows the number of listed companies on stock exchanges in Hong Kong and the Philippines. Figure 3.12 shows the performance of the share price indices in both countries.

Figure 3.11: The number of listed companies on stock exchanges in Hong Kong and the Philippines, 1999-2013



Sources: HKEx Fact Book, various issues; WDI, 2015; WFE, 2015.

Figure 3.12: The performance of share price indices in Hong Kong and the Philippines, 1996-2013

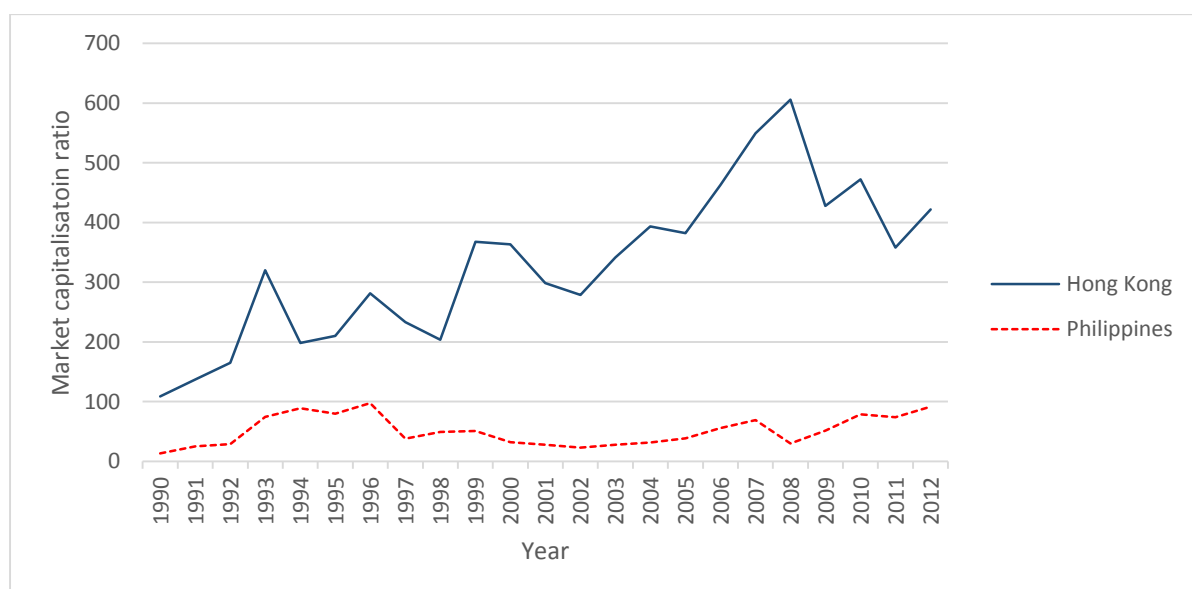


Sources: HKEx Fact Book, various issues; IMF, 1998; PSE Annual Reports, various issues.

In addition, the growth of the stock market can be measured by its size and liquidity. In this study, market capitalisation ratio is used to measure the size while the total value traded ratio and the turnover ratio are used to measure the liquidity of the stock

market. Over the past two decades, Hong Kong had experienced impressive performance internationally in terms of its market capitalisation ratio. It increased from 108 in 1990 to 422 in 2012. It was ranked third globally in 1990 and first during the period of 1999 to 2012. In the case of the Philippines, the improvement in the international ranking was substantial from 55th in 2005 to 12th in 2014. The ratio increased from 13 in 1990 to 92 in 2012. Figure 3.13 shows the market capitalisation ratio of stock markets in Hong Kong and the Philippines.

Figure 3.13: The market capitalisation ratio of stock markets in Hong Kong and the Philippines, 1990-2012

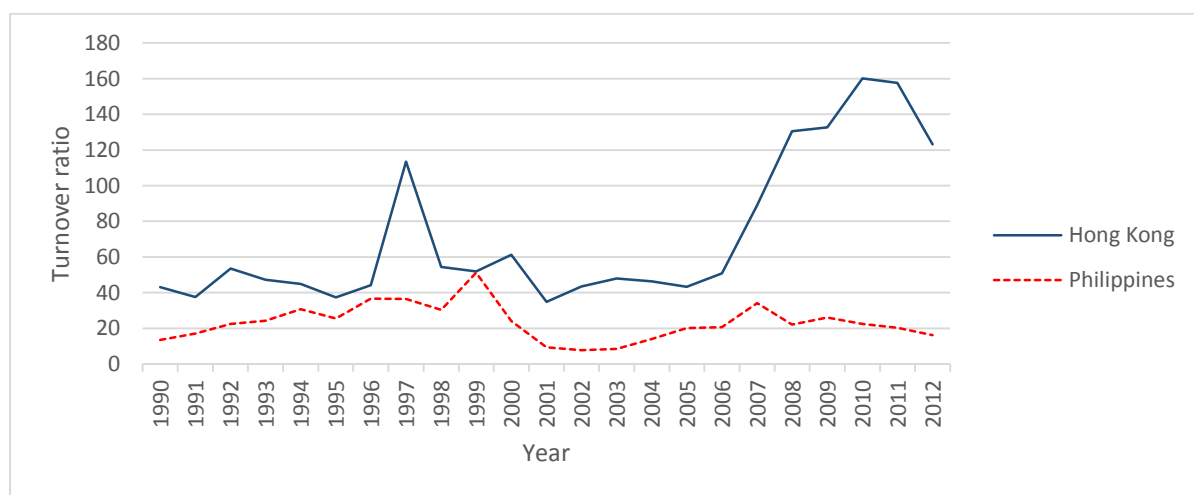


Sources: WDI, 2014; 2015.

When the liquidity of the stock market is considered, Hong Kong has a very liquid and active stock market by international standards. When it is measured by the total value traded ratio, it had the most liquid stock market in the world for six consecutive years during the period of 2008 to 2013. The ratio improved tremendously from 45 in 1990 to 468 in 2012. In addition, the country was also ranked as the seventh most liquid market globally in 2012 by the turnover ratio, with the ratio increasing from 43 in 1990 to 123 in 2012. Conversely, the stock market in the Philippines was considered as illiquid with high transaction costs. In a regional comparison with other ASEAN-5 countries, it had the least liquid market in terms of turnover ratio during the previous two decades. The ratio improved slightly from 14 in 1990 to 16 in 2012, with volatile

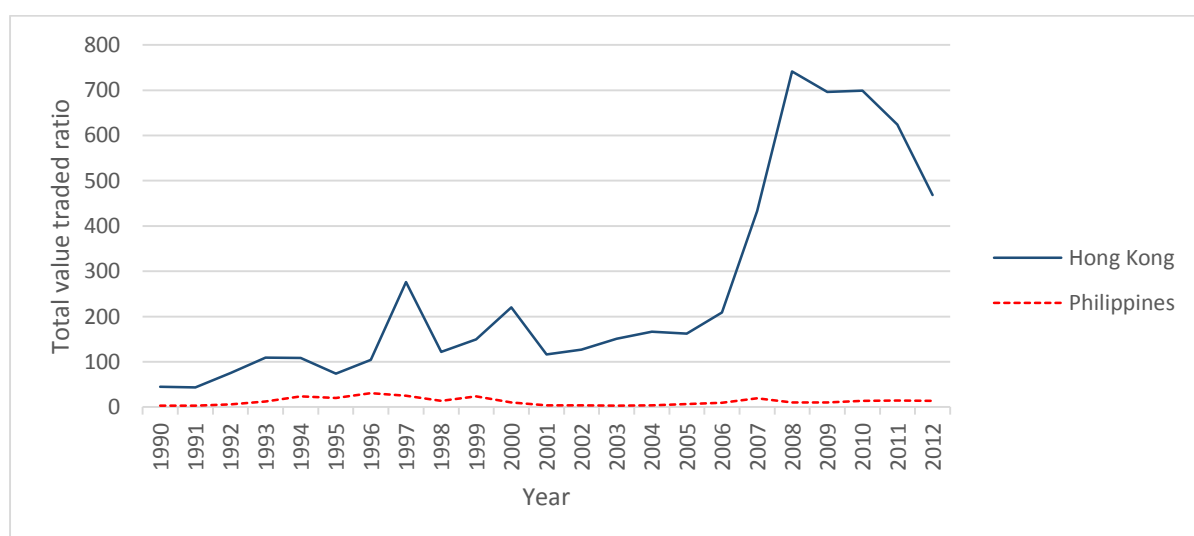
movements. In addition, the total value traded ratio also exhibited a similar volatile pattern to the turnover ratio, with an improvement from 3 in 1990 to 14 in 2012. Figure 3.14 shows the turnover ratio of stock markets in Hong Kong and the Philippines. Figure 3.15 shows the total value traded ratio of stock markets in Hong Kong and the Philippines.

Figure 3.14: The turnover ratio of stock markets in Hong Kong and the Philippines, 1990-2012



Source: WDI, 2014; 2015.

3.15: The total value traded ratio of stock markets in Hong Kong and the Philippines, 1990-2012



Source: WDI, 2014; 2015.

3.6.4 Challenges Facing the Stock Markets in Hong Kong and the Philippines

Despite the growth in the various stock market indicators mentioned in the previous section, both countries still face challenges for future growth. The first one common to both stock markets is the competition from regional counterparts. In Hong Kong, the HKEx faces potential competition from the Shanghai Stock Exchange (SSE). As Mainland China continued to open its economy to the rest of the world, the need for Hong Kong as a provider of the traditional gateway in the financial sector decreased over time. Since the development of the SSE, it has developed remarkably to become the fifth largest stock market in terms of market capitalisation, and has been ahead of HKEx since 2007. Therefore, there were concerns in Hong Kong that Shanghai may overtake Hong Kong as a preeminent financial centre within China. In the Philippines, the PSE faces competition from its regional counterparts. Evidence shows that the PSE has been less competitive when compared with ASEAN-5 countries. For example, during the past two decades, it had the smallest number of listed companies among them. In addition, it had the second lowest market capitalisation ratio and the least liquid stock market among them.

The second challenge is regulatory weakness in the financial market. In Hong Kong, the regulatory weakness lies in the relationship between regulators and the supervision of cross-sectoral activities. For example, there is regulatory uncertainty between the Hong Kong Monetary Authority and the Security and Futures Commission regarding the securities activities of banks. In addition, there is regulatory weakness in the SFC and HKEx over the listing rules of companies. Furthermore, the financial market suffered from the weak cooperation and coordination between regulators. In the Philippines, the legal framework in the financial market is too weak to promote financial sector development. There is a need to have closer coordination between congress and the financial regulators in the legislative process, so that critical financial reform could be implemented.

Apart from the challenges common to both countries, there are country-specific challenges due to the difference in the level of stock market development. In Hong Kong, the stock market is expected to shift its role from only capital formation to investment diversification and risk management across all asset classes as Mainland

China gradually transforms from an importer of capital to an exporter of capital. Hong Kong needs to prepare its cash equity strategy to better position itself to take advantage of further capital account liberalisation in Mainland China.

In the Philippines, one of the challenges is the shallow and less diversified investor base. Historical data indicate that while the PSE has been growing, it has not expanded at a pace to match its Asian counterpart markets. Another challenge is the high transaction cost associated with trading on the PSE. A study involving 12 Asian stock exchanges revealed that the PSE suffered from the high transaction costs of equity trading. The PSE was ranked fifth highest in terms of transaction costs among the 12 countries, while the HKEs was the second lowest.

3.7 Conclusion

This chapter first explored stock market development experiences and trends in the Philippines, and later critically compared the salient features of stock market development in Hong Kong and the Philippines. Section 3.2 traced the origin of stock market development. It was found that the first formal stock exchange in the Philippines was formed in 1927. Section 3.3 discussed the stock market development in terms of the structural development and regulatory development of the stock exchange. It then followed with the growth of the stock market in the Philippines in Section 3.4. In this section, it was found that the PSE has experienced significant growth in various indicators during the past two decades. For example, the PSE was cited as one of the best performing stock markets in the world in 2012 by the WFE. Also, the PSE was one of only two out of the 64 member-exchanges of the WFE that experienced growth in stock market indices for six consecutive years during the period of 2009 to 2014. In addition, the PSE was recognised as the Best Stock Exchange in Southeast Asia in 2013 by a financial magazine, *Alpha Southeast Asia*. According to the WDI (2015), the ranking of the PSE increased from 55th in 2005 to 29th in 2010. In 2014, the PSE was ranked 12th largest in the world. Although the Philippine stock market has developed substantially over the years, it still faces a wide range of challenges. In Section 5, challenges facing stock market development were discussed. They included the shallow and less diversified investor base; high transaction costs associated with trading on the PSE; lack of competitiveness of the PSE; weak

corporate governance in the capital market; and the weak legal framework for financial sector development. In Section 6, comparisons between stock market development in Hong Kong and the Philippines were presented. The study critically compared the similarities and differences in various aspects of stock market development in these two countries.

CHAPTER FOUR

THE DETERMINANTS OF STOCK MARKET DEVELOPMENT: THEORETICAL AND EMPIRICAL LITERATURE REVIEWS

4.1 Introduction

A well-functioning financial system is essential to the development of an economy. As part of the financial system,⁸ the stock market plays a crucial role in economic development. Therefore, the question of which factors determine stock market development, becomes important. This chapter discusses both the theoretical and empirical literature on the determinants of stock market development. The chapter is divided into four sections. Section 4.2 reviews the theoretical literature on the determinants of stock market development and Section 4.3 reviews the empirical evidence on determinants of stock market development. Finally, Section 4.4 presents some concluding remarks.

4.2 The Determinants of Stock Market Development: Theoretical Framework

There are a number of asset pricing theories in the literature attempting to determine the fundamental value of assets, including stocks. These are mainly micro-based theories. Asset pricing theories are relevant to the study of stock market development because stock market development is gauged by market capitalisation, and market capitalisation is linked to the market value of individual shares. Since the fundamental values of stocks are critical to the existence of stock markets, this study explores these asset pricing theories. In addition to these micro-based asset pricing theories, the study also reviews the extent to which macro-based theories attempt to establish the determinants of stock market development.

⁸ According to Garcia and Liu (1999), a financial system can be broadly divided into (i) financial intermediaries, which include banks, insurance companies, and pension funds, and (ii) markets, which consist of bond and stock markets.

4.2.1 The Efficient Market Hypothesis

Fama (1965) proposes the efficient market hypothesis, which states that a market is efficient if prices always fully reflect all the available information. In an efficient stock market, stock prices should always be equal to the fundamental value of the stock, which is determined by all the available information in the market. In order for the stock market to be efficient, three sufficient conditions must be satisfied. First, there must be no transaction costs for stock trading. Second, all information must be available for all market participants at zero cost. And third, all market participants must have consensus on the implication of the information on current and future prices and dividends (Fama, 1965; Malkiel and Fama, 1970).

Malkiel and Fama (1970) also show that there are three forms of efficiency in the market: weak, semi-strong, and strong forms of efficiency. The main difference in these forms lies in the set of information being incorporated into asset prices. The weak form of efficiency relies only on past information on returns and prices. The semi-strong form of efficiency relies on all publically available information in addition to past information. The strong form of efficiency uses all the information available including private information. This implicitly assumes that all market participants adopt rational expectations, in which they use all the available information to formulate those expectations (also see Campbell et al., 1997).

The efficient market hypothesis demonstrates that the fundamental value of a stock is determined by the rate of return and the expected future dividends. The expected future dividends are discounted by the expected rate of return to give the present value of all expected future dividends. Therefore, it is also called the present value model.

In addition, Fama (1970) constructs a more restrictive version of the efficient market hypothesis, known as the Random Walk Model. The model assumes that the successive price changes of an asset are independent of each other. The model also assumes that these successive price changes are identically distributed. If the expected dividends are constant, then a higher dividend and lower appropriate return will increase the price of an asset. However, if the expected dividends grow at a fixed rate, then the asset price will not only be affected by the current level of dividend, but

also the expected growth of the dividend (see Gordon, 1962). This is also known as the Gordon Growth Model.

4.2.2 The Capital Asset Pricing Model

The Capital Asset Pricing Model (CAPM) developed by Sharpe (1964) and Lintner (1965) is a single factor equilibrium model for asset pricing. It is based on utility maximisation and a given set of portfolio opportunities. The basis of the CAPM is the portfolio theory with a risk free asset and unlimited short sales.⁹ Unlike the portfolio theory where the price of an asset is exogenously determined, the asset prices (or equivalent expected asset returns) are determined within the model by the supply of and demand for assets.

The CAPM demonstrates that the expected asset return is linearly determined by the covariance of the asset with the market portfolio. The covariance is the measure of risk for an individual asset. The total risk of an asset consists of the unsystematic risk and the systematic risk. The first is an asset specific risk, which can be lowered by holding a portfolio. The second is about the variation of the market that cannot be reduced by diversification. Therefore, the covariance of the asset in an efficient portfolio will contain only the systematic risk associated with an individual asset (Sharpe, 1964). Since there is a linear relation between the expected asset return and the relative risk of an asset, the asset price of a risky asset depends on the market risk. The more volatile the market is, the higher the asset price needs to be to compensate the investors.

4.2.3 The Arbitrage Pricing Theory

Ross (1976) presents the Arbitrage Pricing Theory (APT) as an alternative to the CAPM. The CAPM and the APT differ in a number of ways. For example, while the CAPM aims at finding the market equilibrium by holding an optimal portfolio based on the portfolio theory, the APT aims at finding the market equilibrium by ruling out the possibility of arbitrage. In addition, the CAPM builds on a utility function that is based

⁹ For a detailed discussion on the portfolio theory, see Markowitz (1959) and Tobin (1958, 1965).

on mean and standard deviations, whereas the APT is based on the statistical characterisation of stocks that tend to move together. Specifically, Ross (1976) argues that similar type of stocks, such as a similar price to book ratio, or similar industries, demonstrate a common factor in price movement. Furthermore, unlike the CAPM, which aggregates all risks into a single risk factor of market risk, the APT also includes other factors in the model. In addition to the market risk, the APT allows other sources of risk, such as industry specific factors or country specific factors, to influence the asset returns (see Ross, 1976). In fact, there are a number of studies that have identified a set of factors affecting asset returns using the APT. These factors can be classified as macroeconomic factors and portfolio characteristic factors. The first group includes: inflation, industrial production, interest rates, foreign exchange, and oil prices. The second group includes: book to market relations, dividends or earnings, the company size, and the variance of returns on assets.

4.2.4 The Intertemporal Capital Asset Pricing Model

The models of asset pricing discussed so far share one common feature: they are all static. This means that the amount of investment in assets is fixed for a given time period and the amount of investment in each asset is also fixed. In addition, it is assumed that the investors consume their wealth only at the end of a certain time period. To build a more realistic model, the Intertemporal Capital Asset Pricing Model (ICAPM) was developed by Merton (1973) to extend the CAPM to a dynamic setting. The ICAPM allows investors to change the amount of investment in each asset. It also allows investors to withdraw a fraction of their investment for immediate consumption. Furthermore, the amount of investment in each asset and also the portion of wealth invested in assets can be determined in the model.

The ICAPM shows that, in addition to the market risk (or systematic risk), the risk of an unfavourable shift in the state variable is required to compensate the investors to invest in the asset. When a comparison is drawn between the ICAPM and the APT, studies show that the results derived from the ICAPM are similar to those of the APT (see Cox et al., 1985; Merton, 1990). The ICAPM has only a fixed risk factor from the market portfolio. However, in the APT, the only source of risk is the common factors,

because the market portfolio is perfectly diversified. If all portfolios are completely diversified, together with the state variables being equal to the common factors, then the ICAPM will collapse to the APT. As such, the APT could be considered as a special case of the ICAPM (see Fama, 1996). Therefore, the APT and the ICAPM are often treated alike, even though they have different theoretical foundations (see Cochrane, 2005).

4.2.5 The Consumption-based Capital Asset Pricing Model

When the model attempts to explain the behaviour of asset prices, the ICAPM faces the challenge of identifying the relevant state variables. This is because the theory does not explain how to select the relevant state variables. To address this shortcoming, Breeden (1979) develops the Consumption-based Capital Asset Pricing Model (CCAPM) by aggregating the risks into a single variable, namely consumption, based on the same theoretical framework of ICAPM. In the CCAPM, the risk of an unfavourable shift in the state variables, which determine excess returns in the ICAPM, is aggregated into a single risk factor – known as the aggregate consumption. In other words, all the risks factors that can influence current and future consumption are aggregated under this factor. This factor is therefore known as the market price of consumption risk. The model shows that as consumption volatility increases, investors worry about the low future state of consumption, thereby increasing the amount of precautionary savings. As a result, the real interest rate is lowered and the asset prices are affected (see Cuthbertson and Nitzsche, 2005). Under this model, asset prices are affected by all the risk factors that influence the state of current and future consumption.

4.2.6 The International Capital Asset Pricing Model

The asset pricing models discussed so far implicitly assume that all investors are located in the same country and that only domestic assets are considered. To cater for the reality that investors come from various countries and they invest their wealth overseas, the International Capital Asset Pricing Model was constructed by Stulz (1981a, 1981b). In the International CAPM, the impacts of exchange rates, different

consumption preferences across countries, and foreign investment barriers are studied when determining the asset pricing.

In Stulz (1981a), the study extends the CCAPM by allowing preferences in consumption to differ among investors. The International CAPM shows that differences in preferences in consumption across countries do not affect the allocation of assets or their real expected returns. Therefore, the findings of the International CAPM are similar to those of the CCAPM.

In another study, Stulz (1981b) constructs an international asset pricing model with international investment barriers. These barriers include transaction tax and the costs of obtaining additional information when domestic investors invest in foreign assets. The International CAPM demonstrates that more assets will be traded if the tax is low. If the tax is high, then those foreign assets that have small covariances with the world market portfolio will not be held by domestic investors. This is because their expected returns are too low to cover the costs involved. In addition, the model shows that foreign assets that have covariances similar to those of domestic assets will not be preferred by domestic investors. This is because these assets can easily be replaced by other domestic assets without incurring extra costs. As a result, it is likely that domestic investors will hold more domestic assets. To sum up, the International CAPM shows that the exchange rates and barriers to foreign investment do affect the determination of asset prices.

4.2.7 The Production-based Asset Pricing Model

The previous models such as CCAPM and ICAPM only model the consumption side and take the production side of the economy as a given. To model the production side of the economy while taking consumption side as a given, Cochrane (1991) developed the Production-based Asset Pricing Model (PAPM). The PAPM shows that the expected returns on assets are equal to the expected return on investment. It further demonstrates the positive relationship between the assets returns and the growth rate of GDP. Higher expected GDP growth will raise the investment return, thereby increasing the expected assets returns. Then, the high expected returns in the near

future will lead to a rise in asset prices. Therefore, factors from the production side such as the returns on investment, economic growth, and interest rate, are important factors in affecting asset pricing.

4.2.8 The Calderon-Rossell Model

In addition to the micro-based theories demonstrating the determination of asset pricing, the macro-based theories of Calderon-Rossell (1990, 1991) examine the link between stock market development and economic activity by developing a partial behavioural structural model on the development of the stock market. This model demonstrates that economic growth and stock market liquidity are the major determinants of stock market development. In other words, stock market development is the consequence of the joint effect of economic growth and stock market liquidity on both prices of stocks and the number of stock listings.

In terms of economic growth, two channels that influence stock market capitalisation are identified. The first channel works on the supply side of shares through the value of companies. Economic growth induces an increase in the income stream of revenues and profits of companies, and therefore increases stock prices. As a result, increases in stock prices encourage companies to issue additional shares. The second channel is that economic growth works on the demand side for shares. It provides investors with more resources, which in turn leads to an increase in demand for shares. Therefore, economic growth exhibits a positive impact on both the supply of and the demand for shares (El-Wassal, 2005).

The second channel, stock market liquidity, has two opposite effects on the stock market. On one hand, a more liquid market induces additional listings, which may positively affect stock market capitalisation. On the other hand, keeping other factors constant, additional listing may reduce the average price of stock, thereby reducing the average value of companies (El-Wassal, 2005). Based on the above argument, it is expected that both the stock prices and liquidity are expected to have a positive impact on the supply of stock. Conversely, stock prices are positively affected by economic growth, but negatively affected by additional listings.

Despite the fact that the Calderon-Rossell (1990; 1991) model is the first attempt to examine the link between stock market and economic activity by developing a partial behavioural structural model of stock market development, it has its own limitations by incorporating only two macroeconomic variables into the model. As such, El-Wassal (2005) extends the Calderon-Rossell (1990; 1991) model by including more explanatory variables to explain stock market development. These variables are economic growth, foreign portfolio investment, financial liberalisation policies, and country risk. Later on, Yartey (2010) also built on the Calderon-Rossell (1990; 1991) model by introducing more variables to it. These variables include: income level, banking sector development, gross domestic investment, private capital flows, stock market liquidity, and institutional factors.

4.2.9 Macroeconomic Determinants of Stock Market Development

Before this study reviews the literature on macroeconomic determinants of stock market development, it is important to define the concept of stock market development. The literature shows that stock market development is a multifaceted concept that can be gauged by various indicators, which include the size, liquidity, degree of international integration, concentration, and volatility of the stock market (see Demirgüç-Kunt and Levine, 1996; Demirgüç-Kunt and Maksimovic, 1996; and Levine and Zervos, 1996; 1998). In this study, the size of stock development proxied by the market capitalisation ratio is used to indicate the level of stock market development. Due to the important role played by the stock market in fostering economic growth, an increasing number of macro-based studies have been found in the literature that explore factors affecting the development of the stock market. These factors include: economic development, banking sector development, inflation rate, interest rate, exchange rate, private capital flows and trade openness (see Ho and Iyke, 2017b).

4.2.9.1 Economic Development

Theoretical literature shows the general consensus that real income levels and economic growth have a positive influence on financial market development, including stock market development (See Hicks, 1969; North, 1981; Greenwood and Jovanovic, 1990; Greenwood and Smith, 1997; Boyd and Smith, 1998; Garcia and Liu, 1999; El-Wassal, 2005; Yartey, 2008).

When investigating the impact of economic growth on the stock market, most of the early studies focus on the financial system in general, which include both the stock market and the banking sector (see Hicks, 1969; North, 1981; Greenwood and Jovanovic, 1990; Greenwood and Smith, 1997; Boyd and Smith, 1998). For example, in modelling the impacts of the level and growth rate of income on the financial system, including the stock market, some models such as those of Hicks (1969), North (1981), and Greenwood and Jovanovic (1990) assume that there is a significant fixed cost associated with the formation of financial intermediaries. As the economy develops, the importance of this fixed cost falls and more people can afford to participate in financial activities. As a result, more people can benefit from the financial services and products. At the same time, the formation of financial intermediaries enhances economic growth by allowing capital to gain a higher rate of return. Specifically, in the model demonstrated by Greenwood and Jovanovic (1990), both the rate of economic growth and the extent of financial intermediation are endogenously determined in the model.

A similar view is shared by Greenwood and Smith (1997), who argue that there are significant fixed costs involved in the formation of financial markets, including the stock market. Thus, the growth in the size of a financial market will reduce the costs to each individual when participating in the market. This implies that a certain financial market may not be active until the economy has reached the stage where the financial market can sustain enough activities to become cost effective. Therefore, there are “threshold effects” in the formation of a financial market.

To further investigate the relationship between financial market formation and economic development, Greenwood and Smith (1997) presented two models with

regard to endogenous market formation. The first focuses on the role played by both the banking sectors and stock markets in allocating funds to the highest valued used in the economy. The second model examines the role of financial markets in supporting specialisation in economic activities. They reach three important conclusions from these two models. First, the significant fixed costs of financial market formation require that market formation follows some period of economic development. Second, financial market formation fosters economic growth by promoting capital allocation to its highest return uses; changing the composition of savings and promoting specialisation in economic activities. Third, competition among financial market service providers enables markets to be created in an efficient way.

Boyd and Smith (1998) constructed a growth model where the accumulation of capital is financed through a mixture of debt and equity. The model demonstrates why a stock market may grow faster as an economy develops. It suggests that, as an economy develops with more capital accumulation, the relative price of capital will decrease. Since investment projects produce capital whereas state verification consumes final goods and services, it implies that the relative monitoring costs rise as an economy grows. As a result, investors may employ relatively more observable return capital production technology to economise on verification, as an economy develops. Because the use of observable return technology is generally accompanied by equity issues, it shows that economic growth is associated with increased activity in the stock market.

Garcia and Liu (1999) argue that there is a high correlation between real income and stock market size. A high volume of stock market transactions causes high real income growth, while high income growth in turn enhances development in the stock market. In particular, there are two ways in which real income growth induces stock market development. First, as income increases, its cyclical components will have an impact on the stock market size and its price index. Second, higher income is usually associated with better defined property rights, better education, and a better business environment. Therefore, it will have a positive effect on the stock market size.

El-Wassal (2005) and Yartey (2008), following the line of a demand-following hypothesis, argue that the development of an economy will induce new demands for financial products and services. Such an increase in demand will enhance the development of larger and more sophisticated financial institutions. In particular, economic growth positively affects the stock market by increasing confidence in the economy, which in turn creates new demand for financial services and products both domestically and internationally. However, El-Wassal (2005) points out that economic growth alone cannot fully explain the formation of different stock markets after the initial stage of stock market development. Furthermore, economic growth cannot fully explain the different levels of stock market performance.

There are some areas that warrant further attention as suggested by Levine (1997). He points out that there are other ways that economic growth may affect the financial system – which include the stock market – that deserve further investigation. For instance, as the economy develops from an agricultural-based economy to a manufacturing-based economy, and later to a service-oriented economy, the costs and skills required to evaluate production technologies and monitor managers may differ. Such economic development may have an impact in shaping the financial system, and hence the development of the stock market.

4.2.9.2 Banking Sector Development

The literature on the links between the banking sector and the stock market is inconclusive. Some economists stress that the banking sector and the stock market are substitutes for each other, whereas others argue that they should be viewed as components of the overall financial system, or even viewed as complementing each other as they develop.

Regarding the substitutability between the banking sector and the stock market, some economists argue that the former performs better than the latter in providing financial functions to the whole economy. These functions are: information acquisition about firms, corporate governance, and intertemporal risk sharing (see Grossman and Hart,

1980; DeAngelo and Rice, 1983; Stiglitz, 1985; Bhidé, 1993; Jensen, 1993; Allen and Gale, 1997, 2000; Chakraborty and Ray, 2006; Levine, 2005).

On acquiring information about firms, Stiglitz (1985) argues that there is a free-rider problem in the stock market-based environment. He points out that a well-developed stock market may quickly disseminate information to the public, thus discouraging individual investors from devoting resources to evaluating the firm. It implies that the greater the stock market development, the larger the disincentives for identifying innovative projects that enhance economic growth. However, this free rider problem can be mitigated by the banking sector, which privatises the information they acquire and establish long-run relationships with firms. This creates incentives for them to research the firm and the market condition, which positively affect resource allocation and economic growth.

Regarding corporate governance, some literature suggests that market-based systems do not monitor managers effectively for various reasons (see Levine, 2005). The first reason is that a takeover threat may fail to become an effective corporate governance control device because insiders usually have more information than outsiders (Stiglitz, 1985). The second reason is that there exists a free-rider problem in the takeover threat. If an outsider spends a lot of resources in obtaining information about the firm, other market participants will wait for the result of this research. This will induce other participants to bid for shares at a higher price. As a result, the original outsider who has spent resources in acquiring information must pay a higher bidding price for the shares of the firm. Therefore, the rapid public dissemination of costly information about the firm lowers the incentive to obtain information for an effective takeover bid, and effective corporate control (Grossman and Hart, 1980). The third reason is that existing managers often take action to deter a takeover threat, thereby weakening the market to perform under an effective disciplining device (DeAngelo and Rice, 1983). The last reason is that the excessively close relationship between boards of director and management may hinder the shareholder control management through the board of directors (Jensen, 1993). However, Chakraborty and Ray (2006) examined bank-based and market-based financial systems in an endogenous growth model. In their growth-theoretic analysis, they demonstrate that banks can partially

resolve the tendency of exploitation of private benefits of control by insiders, which prevails in the stock market.

Regarding intertemporal risk sharing, some literature suggests that the greater a stock market development, the more adverse the effect on resource allocation through an increase in stock market liquidity. This is because a liquid stock market may encourage a myopic investment environment by allowing investors to sell their shares easily, so that they may have a lower incentive to exercise careful corporate governance control (Bhide, 1993). Similarly, Allen and Gale (1997, 2000) argue that the banking sector may provide better intertemporal risk sharing services than the stock market, and hence it improves resources allocation.

On the other hand, there are studies that argue the stock market-based system is more conducive to economic growth than the bank-based system (see Hellwig, 1991; Rajan, 1992; Dewatripont and Maskin, 1995; Black and Moersch, 1998; Weinstein and Yafeh, 1998; Morck and Nakamura, 1999; Allen and Gale, 2000; Rajan and Zingales, 2003; Levine, 2005).

For example, according to Levine (2005), a bank-based system may involve financial intermediaries with huge influence over firms, which may negatively affect the economy. Once banks have obtained substantial inside information, they can easily extract rents from the firms, while firms are tempted to pay to banks for the benefit of greater access to capital. Moreover, powerful banks are able to extract more of the expected future profits from a firm than in the market-based system (Hellwig, 1991). The ability to extract rent from a potentially profitable investment may hinder a firm from undertaking further innovation and profitable projects (Rajan, 1992).

Moreover, a bank-based system may have a tendency towards prudence when it comes to lending decisions, thereby affecting innovation and long-term growth (Morck and Nakamura, 1999). In the same vein, Weinstein and Yafeh (1998) also argue that when the firms have close ties to a “main bank” that allows them greater access to capital, those firms may adopt relatively conservative growth plans, use a more capital intensive process, and produce lower profits.

In addition, Allen and Gale (2000) point out that even though banks are relatively more effective at reducing duplication of information acquisition and processing under normal circumstances, banks may be ineffective in gathering and processing information in new and uncertain environments that involve innovative products and processes. Similarly, when Dewatripont and Maskin (1995) model loan regenerations, they show that banks will be reluctant to credibly commit to not renegotiating contracts in a concentrated banking environment. Banks, in direct contrast, can credibly commit to imposing tighter budget constraints under a market-based system. They suggest that a concentrated banking system may be more suited to the funding of mature and less risky firms, whereas a market-based system is more conducive to the growth of newer and riskier industries.

Another concern over the efficacy of bank-based systems is their ability to exert corporate governance over firms, and the corporate control of banks themselves. Regarding corporate governance over firms, Rajan and Zingales (2003) argue that when adverse shocks affect the economy unevenly, bank managers are reluctant to bankrupt the firms with which they have long-term and complex ties. As such, banks indeed weaken the corporate governance of firms and the efficiency of resource allocation. In contrast, a market-based system is relatively more effective in identifying, isolating and bankrupting financially distressed firms and in preventing them from affecting the entire economy than bank-based system. In terms of corporate control over banks, Black and Moersch (1998) argue that bankers act in their best own interests, which may not necessarily align with the best interests of all creditors or the economy at large. Some bankers may collude with firms against other creditors. For example, banks may prevent outsiders from removing inefficient managers if these managers are generous to the bankers.

Finally, market-based system proponents believe that the stock market is able to provide a wider range of risk management tools to allow greater flexibility in customising risk amelioration instruments. While a bank-based system may provide standard risk management services for standardised situations in an inexpensive

fashion, a market-based system can provide greater customisation to tailor-made products (Levine, 2005).

However, some literature criticises the debate on the relative importance of a bank-based versus a market-based financial system. They contest that the focus should be on the importance of the overall financial development of the economy (see Merton and Bodie, 1995, 2004; Levine, 1997). Instead of viewing the banking sector and the stock market as substitutes for each other, Levine (2005) argues that the two may provide complementary growth-enhancing financial services to the economy. He stresses that stock markets may enhance economic growth even if only a limited amount of capital is raised through them. In particular, stock markets play a prominent role in facilitating tailor-make risk management services and boosting market liquidity. Moreover, he argues that a stock market may complement a banking sector's development. For instance, a stock market can spur competition for corporate control and provide an alternative means of financing investment, thereby reducing the potential harmful effects of influential banks.

4.2.9.3 Inflation Rate

Theoretical literature points out that higher inflation rates are found in smaller and less liquid stock markets. In addition, it also shows that the relationship between inflation rate and financial market development is non-linear. This implies that there are several inflation thresholds that characterise the relationship between inflation and financial sector conditions (see Azariadas and Smith, 1996; Choi et al., 1996; Huybens and Smith, 1998; 1999; Boyd et al., 2001)

Huybens and Smith (1998, 1999) point out that the theories illustrate mechanisms that even a predictable and permanent increase in the inflation rate will affect the ability of the financial system to allocate resources effectively. In particular, these theories emphasise how information asymmetries interfere with the allocation of savings and investment in the financial market. In their models, they demonstrate how increases in the inflation rate exacerbate financial market frictions, interfere with the performance of banks and stock markets, and therefore hinder long-run growth.

Boyd et al. (2001) show that these theories share the common feature that there exists informational friction, the severity of which is endogenous. Given such a feature, an increase in the inflation rate reduces the real rate of return on money and all other assets. Lower real rates of return reduce agents' incentives to lend and increase their incentives to borrow. As a consequence, it reduces the availability of credit and encourages lower quality borrowers into the credit seeking pool. The reduction of available loanable funds, together with the diminished quality of the borrowers, leads to an increase in credit market friction.

Furthermore, Choi et al. (1996), and Huybens and Smith (1999) point out that credit market frictions lead to the rationing of credit; the latter becomes more severe when the inflation rate rises. As a result, fewer loans are made in the financial sector, resources allocation becomes less efficient, and financial intermediation activities reduce, which adversely influence capital formation. The reduction in capital investment negatively affects both the long-run economy activity and stock market performance, where claims to capital ownership are transacted.

According to Azariadas and Smith (1996) and Choi et al. (1996), existing models also stress the significant role of the informational frictions when the inflation rate exceeds critical rates. They stress that when inflation is at a very low rate, credit market frictions may not be binding, and inflation may not interfere with the information flow or distort the resource allocation and economic growth. However, once the inflation rate exceeds the critical level, credit market frictions become binding, and thereby credit rationing may cause a significant drop in financial sector performance. In particular, these models predict there is more than one threshold level. Once inflation exceeds the second critical level, there is endogenous oscillation in all variables under perfect foresight dynamics, and so inflation will be highly correlated with the variability of inflation and the volatility of asset return (see also Boyd et al, 2001).

Furthermore, Huybens and Smith (1998, 1999) show that the related models argue that there exists a third inflation threshold level. In their argument, once the inflation rate exceeds this threshold level, perfect foresight dynamics drive an economy to

converge towards a steady state of an underdeveloped financial system or a low level of real activity. When this happens, any further increase in the inflation rate will have no additional harmful effect on the financial system. In other words, once the inflation rate reaches a certain critical level, all possible damage to the financial system has already been done. Any further increases in inflation will do no additional harm to the financial sector's performance or economic growth because all the possible damage has been done (see also Boyd et al. 2001).

4.2.9.4 Interest Rate

Literature suggests that the interest rate plays an important role in affecting the formation of a financial market and the stock market price. Concerning the formation of a financial market, which includes the stock market, Cooley and Smith (1992) show that the level of interest rate may affect the existence of a financial market for endogenous reasons, even when the formation of a financial market is costless. Such a scenario occurs when the interest rate is lower than the economic growth rate in the absence of a financial market. If interest rates are too low, there will be insufficient incentive for agents to specialise. The lack of incentive is due to non-specialisation, which may lead to income being earned at a relatively later stage in life. Such an outcome will become less attractive as interest rates increase. Therefore, when interest rates are too low, agents may fail to specialise, leading to the absence of potential borrowers from specialised entrepreneurs. At the same time, low interest rates also affect potential lenders to remain invest autarkically. Such a result is an internally consistent situation with no demand for or supply of services provided by the financial market.

Regarding the relationship between interest rates and stock prices, literature shows conflicting views. Conventional wisdom indicates a negative relationship between these two (see Gordon and Shapiro, 1956; Spiro, 1990; Mok, 1993), whereas some studies demonstrate a positive relationship between them (see Shiller, 1988; Asprem, 1989; Barsky, 1989).

The rationale for the negative relationship between interest rates and stock prices is that higher interest rates reduce the value of equity as shown by the dividend discount model (see Gordon and Shapiro, 1956), thereby making fixed income securities more attractive to investors than holding stocks. A similar argument is made by Mok (1993), which points out that an increase in interest rates reduces the present value of future dividend incomes, thereby depressing stock prices. Moreover, higher interest rates may reduce the propensity of investors to borrow and invest in the stock market. It also raises the costs of doing business by increasing the costs of capital. Alternatively, a drop in interest rates results in the lower opportunity costs of borrowing. It also stimulates investment and other economic activities, which then foster higher stock prices. In the same vein, the argument is also supported by Spiro (1990), who indicates that people may prefer to invest in banks rather than stock markets when there is an increase in the interest rate.

In contrast, some studies show that the relationship between interest rates and stock prices is positive. According to Shiller (1988), the changes in stock prices reflect changes in the expectations of investors about the future value of certain economic variables, which in turn have a direct impact on the pricing of stocks. For example, a decrease in interest rates leads investors to expect further declines in interest rates. Such expectations will have a negative impact on the stock prices because fixed-income securities will appreciate if interest rates continue to drop. In this case, the relationship between interest rates and stock prices is positive. Asprem (1989) shows that a positive relationship could exist in small and illiquid financial markets where the credit flows have been strictly regulated. Barsky (1989) demonstrates in a general equilibrium model that there may be a positive relationship between interest rates and stock prices based on the change in risk premium.

However, Wu et al. (2014) indicate that interest rate cuts affect the stock prices in two opposing ways. First, they support the argument made by Shiller (1988) that a decrease in interest rates leads investors to expect further declines in interest rates. Such expectations will have a negative impact on the stock and therefore the relationship between interest rates and stock prices is positive. Second, a decrease in interest rates lowers the costs of capital of enterprises and investors, and hence

stimulates stock prices. In this case, the relationship between interest rates and stock prices is negative. Therefore, the net effect of interest rates on stock prices depends on which effect is dominant.

Wu et al. (2014) further argue that the relationship between interest rates and stock prices varies during economic development. The studies point out that the relationship is positive in emerging markets. Emerging markets usually provide higher returns than mature markets. As a result, foreign portfolio managers are drawn to invest in these markets despite the high interest rates. Investors are expected to achieve higher investment returns through capital gains. Conversely, the relationship between interest rates and stock prices in developed economies may be negative. This is because when interest rates increase in developed economies, investors may prefer to invest in risk-free assets than stocks, as stock returns may not be attractive to them.

4.2.9.5 Exchange Rate

The classical economic theory suggests that there is a sound association between stock market performance and exchange rate behaviour. Theoretical links between stock prices and exchange rates have taken two forms: stock market performance is affected by exchange rate movements (see Dornbusch and Fisher, 1980), and exchange rate movements are influenced by stock market performance (see Branson, 1983; Frankel, 1983; Gavin, 1989). In addition, literature also shows that stock prices may or may not be negatively affected by the exchange rate risk under different models (see Ross, 1976; Adler and Dumas, 1983; Jorion, 1991).

For example, Dornbusch and Fisher (1980) show that movements in the stock market may be affected by exchange rate fluctuations. In their “flow oriented” models of exchange rate determination, they illustrate how the transmission mechanism works from the exchange rate fluctuations to stock market performance. They argue that currency movements change international competitiveness and the balance of trade position of a country. As a result, the real output of the country will be affected, which in turn affects the current and future cash flows of companies and their stock prices.

This implies that currency appreciation can adversely affect stock prices, whereas currency depreciation can positively affect stock prices.

At the same time, some literature demonstrates that movements in the stock market may also affect the behaviour of exchange rates. According to Gavin (1989), equities – often viewed as part of wealth – may affect exchange rate behaviour through money demand. In the same vein, Branson (1983) and Frankel (1983) proposes “stock-oriented” models of exchange rates, in which the exchange rates are determined by equating the demand for and supply of assets such as stocks. In their model, capital account plays a vital role in the determination of exchange rate dynamics. Since the financial assets values depend on the present values of all future cash flows, expectations of relative currency values have an important impact on stock price movements. Therefore, movements in stock price may also be influenced by exchange rate fluctuations.

Gavin (1989) shows that the association between stock prices and real exchange rates can be negative or positive under different conditions. In his model, there is an open economy in which stock prices substitutes for the real interest rates in aggregate demand determination. By including the stock market in this model, an anticipated fiscal expansion can lead to an expansion in output, provided the anticipation time of such fiscal expansion is short enough. This is because the anticipated expansion leads to an increase in current stock prices by generating a future period of high profits. This leads to an expansion in aggregate demand and output due to an investment boom. However, if aggregate demand shocks are unanticipated, such disturbances can create a negative association between stock prices and real exchange rates. Yet, if the time between announcement and execution of fiscal policy disturbances is long enough, a positive association can be generated between stock prices and real exchange rates.

Literature also shows that stock prices may or may not be negatively affected by the exchange rate risk under different models. The modern portfolio theory shows that investors are unwilling to pay a premium to firms for hedging policies if the exchange rate risk can be diversifiable. Therefore, the diversifiable exchange rate risk should

have no effect on the cost of capital or value to the firm. This implies that stock prices will not be negatively affected by exchange rate risk. This argument is supported by Jorion (1991), who investigates the pricing of exchange rate risk in the US stock market by using unconditional two-factor and multi-factor arbitrage pricing models. The empirical results show that exchange rate risk is not priced in the stock market.

Conversely, the arbitrage pricing theory by Ross (1976) claims that if the economy is characterised by a small number of factors, investors will be willing to pay a premium if these factors are well-priced. In this case, hedging policies by financial managers will affect the cost of capital if the exchange rate is one of those factors. However, Adler and Dumas (1983) argue that when foreign exchange risk is priced across the stock market and the foreign exchange market, hedging may reduce the cost of capital for the firm, but the overall risk-adjusted value of the firm remains unchanged after ex-ante costs and transaction costs have been considered. As a result, hedging policies will be welcomed by investors only if foreign exchange risk is priced in the stock market, as well as if some form of market segmentation across the stock market and the foreign exchange market occurs. Under these circumstances, stock market prices are negatively affected by exchange rate risk.

4.2.9.6 Private Capital Flows

Private capital flows comprise syndicated bank loans, foreign direct investment and portfolio investment. The composition of capital flows has changed dramatically over time. During the 1970s and 1980s, private capital flows were mainly in the form of bank lending. However, in the 1990s, bank lending was replaced by foreign direct investment, and later by portfolio investment, which comprise bonds and equity (Claessens et al., 2001). In particular, equity portfolio flows can take place in various forms. They include: direct stock purchases by investors in the host stock markets; investment through country funds; issue of rights on stock held by depository institutions such as American Depository Receipts and Global Depository Receipts; and direct foreign equity offerings (Claessens and Rhee, 1993). The following section discusses the impact of foreign direct investment and the impact of portfolio investment on stock market development.

The existing literature shows two opposing views on the relationship between foreign direct investment and stock market development. Some claim that foreign direct investment is a substitute for domestic stock market development (see Hausmann and Fernández-Arias, 2000a; 2000b), while others argue that foreign direct investment complements it (see Claessens et al., 2001).

The first view illustrates that foreign direct investment is negatively correlated to stock market development. According to the observations of Hausmann and Fernández-Arias (2000a, 2000b), there is more foreign direct investment in countries that have risky economies, underdeveloped financial markets, and weak institutions. In those countries, foreign direct investment becomes an alternative to underdeveloped financial markets for both debt and equity financing. Therefore, according to this view, foreign direct investment is negatively correlated with stock market development.

The second view, as suggested by Claessens et al. (2001), argues that foreign direct investment is complementary to rather than a substitute for stock market development. They claim that foreign direct investment tends to flow to countries with sound institutions and economic fundamentals, thereby fostering the development of domestic financial markets. In particular, foreign direct investment can foster stock market development through different channels. For example, foreign direct investment may improve the participation of firms in capital markets. This is because foreign investors may want to finance some of their investment projects with external capital. Others may want to recover their investment by selling stocks on stock markets. In addition, foreign direct investment may boost the liquidity of stock markets when foreign investors invest by purchasing existing equities. Therefore, the total value traded of domestic stocks may increase if the purchases take place domestically.

Regarding foreign portfolio investment, literature suggests that it has a positive long-term impact on capital markets. According to Claessens and Rhee (1993), equity portfolio flows can benefit the efficiency of domestic capital markets by promoting further liberalisation and development of domestic securities markets. It then further

improves the mobilisation and allocation of domestic resources. In addition, equity portfolio flows can improve risk sharing between domestic and foreign investors because the repayments are indexed on the performance of the particular firms. Furthermore, it promotes the development of a capital structure that increases managerial incentives, thereby increasing the value of the firms.

4.2.9.7 Trade Openness

The literature suggests that trade openness benefits financial market development, including the stock market, in two different ways, which can be described as the “supply-side” and “demand-side” roles (Niroomand et al., 2014). The former states that trade openness is conducive to the development of financial markets through the supply side of financial markets (see Rajan and Zingales, 2003; Braun and Raddatz, 2005). The latter role argues that trade openness fosters the development of financial markets by raising the demand of financial services and products (see Newbery and Stiglitz, 1984; Svaleryd and Vlachos, 2002; and Vazakidis and Adamopoulos, 2009).

On the supply side, Rajan and Zingales (2003) focus on the role of interest groups. They demonstrate that trade openness has a positive impact on financial market development through the effect of trade openness on the behaviour of the interest groups. This is because trade openness weakens the incentives of incumbent financial intermediaries or interest groups who want to slow down financial market development so as to reduce entry and therefore competition. As a result, trade openness tends to induce investment and banks' lending, thereby fostering general development of the financial market. A similar view is shared by Braun and Raddatz (2005), who show that countries experience an improvement in the financial market when there is trade liberalisation. This is because trade liberalisation reduces the power of groups who are most interested in preventing financial market development.

On the demand side, Newbery and Stiglitz (1984) point out that trade openness increases price elasticity, as well as income volatility and uncertainty. As a result, it increases the demand for insurance products, thereby fostering financial market development. In the same vein, Svaleryd and Vlachos (2002) and Vazakidis and

Adamopoulos (2009) study the role of risk diversification. They argue that trade openness increases a country's exposure to external shock and foreign competition. The increase in risk associated with trade openness therefore triggers the demand for new financial services and products to diversify such risks. These studies demonstrate the effects of trade openness on financial market development that primarily work through the demand side.

To sum up, under the micro-based asset pricing models, existing studies find that there are two broad categories of factors that will have effects on stock prices. The first category is macroeconomic factors, including: economic growth, foreign exchange, inflation, industrial production, interest rates, oil prices, stock market volatility (or market risk), liquidity of stock market, returns on investment, and the risk factors that influence the state of current and future consumption. The second category is portfolio characteristic factors such as dividends or earnings, book to market relations, company size, the rate of return, and the variance of asset returns. In addition to the asset pricing models, the macro-based Calderon-Rossell (1990; 1991) model suggests that economic growth and stock market liquidity are important determinants of stock market development, while the extended version of the Calderon-Rossell (1990; 1991) model includes other factors. These factors would include financial liberalisation policies, foreign portfolio investment, country risk, banking sector development, gross domestic investment, private capital flows, and institutional factors as the key determinants of stock market development. Apart from the Calderon-Rossell model, there is a large volume of literature studying the association between stock market development and macroeconomic factors. The macroeconomic factors being identified by the literature are economic development, banking sector development, inflation rate, interest rate, exchange rate, private capital flows, and trade openness.

4.3 The Determinants of Stock Market Development: Empirical Evidence

Based on theoretical literature, a large volume of studies has empirically investigated the various determinants of stock market development. Some of the studies have directly examined the key determinants of stock market development, whereas others

have examined the relationship between the individual macroeconomic variable and stock market development. In fact, there are a fairly limited number of studies that have directly examined the key determinants of stock market development. These include: Garcia and Liu (1999), El-Wassal (2005), Ben Naceur et al. (2007), Yartey (2007, 2010), Billmeier and Massa (2009), Cherif and Gazdar (2010), Kurach (2010), Law and Habibullah (2009), El-Nader and Alraimony (2013), Şükrüoğlu and Nalin (2014), and Bayar (2016). The remaining studies reviewed in this section have examined the relationship between the individual macroeconomic variable and stock market development. The empirical studies are reviewed under three broad categories: (i) studies on developing countries; (ii) studies on developed countries; and (iii) studies on a mixture of both developing and developed countries. The study classifies countries based on the levels of income with reference to the World Bank's (2016) classification of countries. Developed countries are considered to be those in the high-income group (i.e. 2015 gross national income per capita of US\$ 12 476 or above), while developing countries are those considered to be within the low to upper middle-income groups (i.e. 2015 gross national income per capita of US\$ 12 475 or below).

4.3.1 The Determinants of Stock Market Development in Developing Countries

Due to the important role played by the stock market in promoting economic growth, there are an increasing number of studies exploring factors that drive its development in developing countries. In general, these factors encompass real income level and economic growth, banking sector development, saving rate, gross domestic investment, inflation rate, foreign direct investment and foreign portfolio investment. For instance, Kutan and Aksoy (2003) examined the relationship between inflation and equity returns in Turkey for the period December 1986 to March 2001, using monthly data in an asymmetric generalized autoregressive conditional heteroskedasticity (GARCH) model. The study finds that average equity returns, measured by composite stock index and an index of industrial stock, are unrelated to inflation measured by changes in the CPI lagged by one, two and three months.

El-Wassal (2005) aims at understanding the growth of emerging stock markets by investigating the relationship between stock market development and various determinants that include economic growth, financial liberalisation policies, foreign portfolio investment and country risk. The study focuses on 40 emerging economies during the period 1980-2000. In order to moderate the effect of endogeneity between the stock market variable and output growth, a two-stage least square combined with fixed effect approach is used. The empirical results suggest that economic growth, financial liberalisation policies, and foreign portfolio investment are important and favourable factors contributing to emerging stock market growth.

Adjasi and Biekpe (2006) study the relationship of stock market development and economic growth of 14 African countries in a dynamic panel data setting. Their findings show a positive relationship between stock market development and economic growth of the group of African countries. In particular, based on the level of economic development and stock market capitalisation, the findings reveal that the positive influence of a stock market on economic growth is only significant for upper middle income countries.

Ben Naceur et al. (2007) examine the role of various macroeconomic variables on stock market development in 12 Middle Eastern and North African (MENA region) countries, by employing both fixed and random effects specifications for estimation. To cater for the endogeneity problem, last year's income level, last year's savings or investment rates in the regression are utilised. They find that saving rate, stock market liquidity, and financial intermediary development have a positive impact on stock market growth, whereas macroeconomic instability has a negative impact on stock market growth. However, they find that last year's income has no significant impact on market capitalisation. It implies that economic growth does not promote stock market development due to the small size of the stock markets in the MENA region.

Yartey (2007) examines the determinants of stock market development in Africa using a panel dataset of 13 countries for the period 1991 to 2001. The study employs panel data techniques in estimating the empirical model. To avoid the causality problem, last year's GDP per capita, last year's savings and investment, and last year's institutional

quality are used. There are three major findings in the study. First, it finds that income level, domestic savings and investment, financial intermediary development, and stock market liquidity are vital determinants, which have a positive impact on stock market development in Africa. Second, by examining the impact of financial intermediary development on stock market development, it confirms that the relationship between financial intermediaries and stock market are complementary in nature. Third, it finds that institutional quality is an important determinant in fostering stock market development in Africa.

Adam and Tweneboah (2009) investigate the impact of foreign direct investment on stock market development in Ghana during the period of 1991Q1 to 2006Q4. By employing multivariate cointegration and an error correction model, they find that there is a long-run relationship between foreign direct investment, nominal exchange rate and stock market development. In addition, they also find that foreign direct investment has a significant positive impact on stock market development in Ghana.

Akinlo and Akinlo (2009) examine the long-run impact of stock market development on economic growth in seven sub-Saharan African countries. By employing the autoregressive distributed lag bounds test approach, their results show that stock market development has a positive and significant long-run impact on economic growth.

Billmeier and Massa (2009) assess the macroeconomic and institutional determinants of stock markets in 17 emerging markets in the Middle East and Central Asia from 1995 to 2005. In addition to traditional macroeconomic variables, they include an institutional variable and remittance among the explanatory variables. Moreover, as the sample countries include hydrocarbon-rich economies and countries without a significant resource of wealth, they aim at investigating whether the effect of institutions and remittance on stock market development differ between these two groups of countries. By employing fixed-effect panel regression, the study has several findings. First, both institutions and remittance have a positive and significant impact on stock market capitalisation. Second, both institutions and remittance matter –

especially in countries without a sizeable hydrocarbon sector. Third, stock market capitalisation is primarily driven by oil prices in resource-rich countries.

Rhee and Wang (2009) empirically examine the relationship between FDI and stock market liquidity in Indonesia during the period of 1 January 2002 to 31 August 2007. By employing the Granger causality test, the findings suggest foreign ownership has a negative impact on stock market liquidity in Indonesia after controlling for trading activities, stock characteristics, and persistence in liquidity. They find that a 10 per cent increase in foreign institutional ownership in the current month is associated with around a 2 per cent increase in the bid-ask spread, a 3 per cent decrease in market depth, and a 4 per cent rise in price sensitivity in the stock market.

Agbloyor et al. (2013) explore the links between FDI and the stock market in 16 African countries for the period 1970 to 2007. By using a Two Stage Least Square panel instrument variable approach, the results show a positive and significant effect of FDI on stock market development, which means higher FDI levels lead to the growth of the stock market. Furthermore, they also examine the causal links between FDI and the stock market development of these countries. The results show significant complementarities and feedback between stock markets and FDI in Africa. This implies that countries with better developed stock markets find it easier to attract more FDI, and FDI flows can foster the development of domestic stock markets.

El-Nader and Alraimony (2013) investigate the impact of macroeconomic determinants of stock market development in Jordan during the period of 1990 to 2011. By employing a multivariate cointegration and variance decomposition analysis, they find that banking sector development, stock market liquidity, investment, and inflation are beneficial to stock market development. In addition, they also find that income level and net remittances inhibit stock market development in Jordan.

Malik and Amjad (2013) investigate the impact of FDI on stock market development in Pakistan for the period of 1985 to 2011, both in the aggregate stock market and sector-wise development. By using the Granger causality test, they find a positive and statistically significant relationship between FDI and aggregate market capitalisation.

Therefore, the study shows the complementary role of FDI in the development of Pakistan's stock market.

Nyasha and Odhiambo (2015) investigate the causal relationship between stock market development and economic growth in South Africa from 1980 to 2012, based on a multivariate Granger-causality model. Using the ARDL bounds test approach, they find a distinct unidirectional causal flow from stock market development to economic growth both in the short run and the long run.

Raza et al. (2015) examine the impact of foreign capital inflows and economic growth on stock market development in Pakistan during the period of 1976 to 2011. By using the autoregressive distributed lag (ARDL) bound testing cointegration approach, the error correction model, and the rolling window estimation techniques, they find that foreign direct investment and economic growth have positive and significant impacts on stock market development both in the long run and short run.

Recently, Bayar (2016) examines the major macroeconomic determinants of stock market development in Turkey, covering the period 2005Q1 to 2015Q3. Using the autoregressive distributed lag (ARDL) bounds test approach, the study finds that, in the long run, economic growth and the liquidity of the stock market exert positive impacts on stock market development. In addition, the study finds that inflation has a negative influence on the development of the stock market in the long run. Table 4.1 shows studies on the determinants of stock market development in developing countries.

Table 4.1: Studies showing the determinants of stock market development in developing countries

Author(s)	Region/ Country	Measure(s) of stock market development	Independent Variables	Method	Results
Kutan and Aksoy (2003)	Turkey	<ul style="list-style-type: none"> • Composite stock index • Index of industrial stock 	<ul style="list-style-type: none"> • Changes in the CPI lagged by one, two and three months 	Asymmetric GARCH model	No association between inflation and equity returns.
El-Wassal (2005)	40 emerging economies	<ul style="list-style-type: none"> • Market capitalisation ratio • Trading value ratio • Number of listed companies 	<ul style="list-style-type: none"> • FDI / GDP • Export plus import / GDP • Portfolio investment liabilities / GDP • Composite political, financial and economic risk-rating from International Country Risk Guide (ICRG) 	Fixed effects of panel data analysis	Economic growth, financial liberalisation policies, and foreign portfolio investment have positive impacts on stock market growth.
Adjasi and Biekpe (2006)	14 African countries	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • Market capitalisation / GDP • Total value of shares traded / GDP • Turnover ratio • Gross domestic fixed capital formation • Sum of exports and imports / GDP 	Dynamic panel data modelling	Positive association between economic growth and stock market development.
Ben Naceur et al. (2007)	12 Middle Eastern and North African (MENA)	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • Last year's income • Last year's saving rate • Last year's investment rate • Credit to private sector / GDP 	Fixed and random effects of panel data analysis	Saving rate, stock market liquidity, and financial intermediary development have positive impacts on stock market growth.

	region) countries		<ul style="list-style-type: none"> • M3 • Last year's turnover ratio • Inflation change 		Macroeconomic instability has a negative impact on stock market growth.
Yartey (2007)	13 African countries	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • Last year's GDP per capita • Last year's saving rate • Last year's investment rate • Credit to private sector / GDP • Last year's turnover ratio • Real interest rate • Last year's inflation rate • Current inflation rate • Political risk index from ICRG 	Fixed and random effects of panel data analysis	Income level, domestic savings and investment, financial intermediary development, stock market liquidity, and institutional quality have positive impacts on stock market development.
Adam and Tweneboah (2009)	Ghana	<ul style="list-style-type: none"> • Stock market index 	<ul style="list-style-type: none"> • Nominal exchange rate • Net FDI inflow 	Multivariate cointegration and error correction model	FDI has a positive impact on stock market development.
Akinlo and Akinlo (2009)	Seven countries in sub-Saharan Africa	<ul style="list-style-type: none"> • Market capitalisation ratio • Total value traded ratio 	<ul style="list-style-type: none"> • Total value traded ratio • Market capitalisation ratio • Discount rate • Openness ratio 	ARDL bounds test	Positive association between economic growth and stock market development.
Billmeier and Massa (2009)	17 emerging markets	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • Heritage Foundation's Index of Economic Freedom • Net amount of workers' remittance / GDP • Lagged real GDP • Lagged investment 	Fixed and random effects of panel data analysis	Both institutions and remittance have positive and significant impacts on stock market capitalisation.

			<ul style="list-style-type: none"> • Second difference of the CPI level • Domestic credit to the private sector / GDP • Total value traded ratio • Oil price index • US Federal fund rate 		
Rhee and Wang (2009)	Indonesia	<ul style="list-style-type: none"> • Daily holdings of free-float portion of the total shares • Daily stock trading summary 	<ul style="list-style-type: none"> • Foreign ownership of individual stocks 	Granger causality test	Foreign ownership has a negative impact on stock market liquidity.
Agbloyor et al. (2013)	16 African countries	<ul style="list-style-type: none"> • Market capitalisation ratio • Turnover ratio 	<ul style="list-style-type: none"> • Bank credit / GDP • Private credit / GDP • M2 / GDP • Inflation • Telephone lines • Trade openness • Financial openness • Civil liberties index • Deposit interest rate • Lending interest rate • Interest rate spread 	Two Stage Least Square panel instrument variable approach	FDI has a positive and significant effect on stock market development.
El-Nader and Alraimony (2013)	Jordan	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • GDP • M2 / GDP • Total value traded ratio • Gross capital formation / GDP • Net remittances • CPI 	Multivariate cointegration and variance decomposition analysis	Banking sector development, stock market liquidity, investment and inflation have positive impacts on stock market development, while GDP

			<ul style="list-style-type: none"> • Domestic credit to private sector / GDP 		and net remittances have negative impacts.
Malik and Amjad (2013)	Pakistan	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • Market capitalisation ratio • Exchange rate • GDP 	Granger causality test	Positive relationship between FDI and aggregate market capitalisation.
Nyasha and Odhiambo (2015)	South Africa	<ul style="list-style-type: none"> • Index of stock market development 	<ul style="list-style-type: none"> • Index of bank-based financial development • Index of stock market development • Investment / GDP • Savings / GDP 	ARDL bounds test	A unidirectional causal flow from stock market development to economic growth.
Raza et al. (2015)	Pakistan	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • FDI • Workers' remittances • Economic growth 	ARDL bounds test Rolling window estimation techniques	FDI, workers' remittances and economic growth have positive and significant impacts on stock market development.
Bayar (2016)	Turkey	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • Growth rate of real GDP • Inflation rate • (Export + Import) / GDP • Domestic credits to private sector / GDP • Turnover ratio 	ARDL bounds test	Economic growth and stock market liquidity have positive impacts on stock market development, while inflation has a negative impact.

4.3.2 The Determinants of Stock Market Development in Developed Countries

In addition to the studies on developing countries, there are other studies that examine the determinants of stock market development in developed countries. In general, most of them focus on the causal relationship between economic growth and stock market development. For example, Arestis and Demetriades (1997) empirically investigate the relationship between financial development and economic growth in Germany, South Korea, and the United States by employing Johansen's cointegration analysis. Using quarterly data of the stock market capitalisation ratio and the stock market volatility index for the period 1979Q1 – 1991Q4, they find strong evidence of bidirectional causality between stock market development and economic development in the United States.

Hondroyannis et al. (2005) assess the relationship between the banking sector's development of the banking system and the stock market, and economic performance in Greece during the period of 1986 to 1999. Using vector autoregressive (VAR) models, the findings suggest that there is bidirectional causality between stock market development and economic growth in the long run.

Athanasios and Antonios (2012) examine the causal relationship between stock market development and economic growth for Greece during the period of 1978 to 2007. By employing the Vector Error-correction Model (VECM), the results of the Granger-causality tests show evidence of unidirectional causality from economic growth to the development of the stock market.

Cheng (2012) investigates the impact of financial institutions on economic growth in Taiwan using quarterly data over the period of 1973 to 2007. The results show bidirectional long-run causal relations between economic growth and the financial system. In particular, they find bidirectional causality between the GDP growth rate and the turnover ratio.

Ho and Odhiambo (2012) use the ARDL bounds test approach to examine the relationship between stock market development and economic growth for Hong Kong over the period of 1980 to 2010. The empirical results show that the direction of

causality between stock market development and economic growth is sensitive to the proxy used to measure the level of stock market development. When the turnover ratio is used, there is evidence of a causal flow from economic growth to stock market development both in the short run and the long run.

Marques et al. (2013) employ the Vector Autoregressive technique to test the relationship between the stock market and economic growth in Portugal for the period of 1993 to 2011. The findings show that stock market development causes economic growth. Moreover, there is also evidence of feedback that economic growth promotes the development of the stock market. Table 4.2 shows studies on the determinants of stock market development in developed countries.

Table 4.2: Studies showing the determinants of stock market development in developed countries

Author(s)	Region / Country	Measure(s) of stock market development	Independent Variables	Method	Results
Arestis and Demetriades (1997)	Germany, South Korea and the US	<ul style="list-style-type: none"> • Market capitalisation ratio • Index of stock market volatility 	<ul style="list-style-type: none"> • Market capitalisation ratio • Index of stock market volatility • Ratio of M2 to nominal GDP • Ratio of domestic bank credit to nominal GDP 	Johansen cointegration analysis	A bidirectional causality in the US between stock market development and economic growth.
Hondroyannis et al. (2005)	Greece	<ul style="list-style-type: none"> • Total stock market capitalisation 	<ul style="list-style-type: none"> • Total stock market capitalisation • Total bank credit to the private sector 	Time-series methodology of the VAR model	A bidirectional causality between stock market development and economic growth.
Athanasios and Antonios (2012)	Greece	<ul style="list-style-type: none"> • Stock market index 	<ul style="list-style-type: none"> • Stock market index • Interest rate 	Time-series; Vector Error-correction Model (VECM)	A unidirectional causal flow from stock market development to economic growth.
Cheng (2012)	Taiwan	<ul style="list-style-type: none"> • Turnover ratio • Stock market volatility 	<ul style="list-style-type: none"> • Turnover ratio • Stock market volatility • Ratio of liquid liabilities of the financial intermediaries to market value of domestic shares 	Time-series VAR model	A bidirectional causality between stock market development and economic growth.
Ho and Odhiambo (2012)	Hong Kong	<ul style="list-style-type: none"> • Market capitalisation ratio • Total value traded ratio 	<ul style="list-style-type: none"> • Market capitalisation ratio • Total value traded ratio • Turnover ratio 	ARDL bounds test	A causal flow from economic growth to stock market

		<ul style="list-style-type: none"> • Turnover ratio 			development when turnover ratio is used.
Marques et al. (2013)	Portugal	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • Stock market capitalisation ratio • Total domestic credit ratio • Investment ratio • Consumer price index 	Time-series VAR model	A bidirectional causality between stock market development and economic growth.

4.3.3 The Determinants of Stock Market Development in both Developed and Developing Countries

In order to gain a comprehensive picture of the determinants of stock market development, there are a number of studies available that explore these determinants in a sample, which cover a wider range of both developed and developing countries. In general, these factors include real income level and economic growth, banking sector development, saving rate, gross domestic investment, inflation rate, foreign direct investment, foreign portfolio investment, and institutional factors. For example, Atje and Jovanovic (1993) look at 40 countries for the period 1980 to 1988, to determine whether stock market development affects the level and the growth rate of economic activities. By using different cross-country growth regression frameworks, they conclude that there is a positive relationship between stock market development, and the level and growth rate of economic activities.

Boyd et al. (1996) examine the relationship between inflation and stock market activities in 51 countries for the period 1970 to 1993. The study finds two statistically significant and economically meaningful results. First, they observe that at low-to-moderate long-run inflation rates, there is a pronounced negative correlation between inflation and the volume of trading in equity markets. Also, there is a pronounced negative relationship between inflation and measures of stock market liquidity. Second, the relationship between inflation and stock market development is highly nonlinear. In particular, as inflation increases, the relationship between inflation and the volume of stock market activities “flattens-out”. This relationship eventually vanishes once inflation exceeds a critical level.

In addition to stock market performance, Boyd et al. (1996) also examine the relationship between inflation and nominal stock returns. They find that inflation and nominal stock returns are strongly and negatively correlated. Furthermore, they observe that at low-to-moderate long-run inflation rates, there is a strong negative correlation between inflation and real equity returns. However, this relationship dissipates in countries with a higher level of inflation.

Levine and Zervos (1996) assess the association between stock market development and economic growth in 41 countries over the period 1976 to 1993, using stock market capitalisation, turnover ratio and total value traded as proxies for stock market development. Pooled cross-country, time-series regressions suggest that stock market development is positively associated with economic growth.

In another study, Levine and Zervos (1998) utilise cross-country regressions for 47 countries for the period 1976 to 1993 to examine whether measures of stock market liquidity and size robustly correlate with measures of real economic activity. They demonstrate that stock market liquidity and size are positively correlated with current and future rates of economic growth. This association is particularly strong for developed countries. In the same vein, Minier (2003), using the data of Levine and Zervos (1998), finds that there is evidence of a positive association between stock market development and economic growth in countries with high levels of market capitalisation.

Barnes et al. (1999) investigate the relationship of inflation on equity returns. In the study, inflation is proxied by percentage change in the consumer price index, current and lagged by one quarter, and the equity returns are proxied by changes in the country's major stock exchange index. The study focuses on 25 countries for the period 1957Q2 to 1996Q3 by employing quarterly time-series regressions. The majority of regression results (15 out of 25 countries) show that the current inflation rate was negative related to the nominal equity returns in low inflation countries. However, four countries that have the highest inflation rates in the sample show a positive relationship between current inflation and nominal equity returns.

Garcia and Liu (1999) investigate various macroeconomic determinants of stock market development in a sample of 15 industrial and developing countries from 1980 to 1995, by employing the fixed effect of panel data analysis. These determinants include real income, saving rate, stock market liquidity, financial intermediary development, and macroeconomic volatility. To cater for the problem of endogeneity, they use last year's income level and growth rate, and last year's savings or investment rates in the regression. They find that the real income level, saving or investment rate,

financial intermediary development, and stock market liquidity are important determinants of stock market capitalisation. They all have a positive and significant impact on stock market capitalisation. In addition, they find that macroeconomic stability does not prove to be significant.

Boyd et al. (2001) empirically investigate the relationship between inflation and stock market development as proxied by the stock market capitalisation ratio, total value traded ratio, turnover ratio, and a measure of return volatility. By employing cross-sectional regressions for 48 countries during the period 1970 to 1995, they find that inflation is negatively and significantly associated with each of these stock market measures. Furthermore, they find that the relationship is nonlinear for all these relationships, except for the one between inflation and stock market volatility. On the other hand, the study finds inflation and stock market volatility has a positive and linear relationship.

Furthermore, Boyd et al. (2001) examine the relationship between inflation and nominal stock returns for 49 countries. In a simple linear regression, inflation is positively related with nominal stock returns, with elasticity greater than one. However, the finding also indicates a non-linear relationship in the inflation-equity return relationship. For those countries with an average annual inflation rate of lower than 15 per cent, there is no significant relationship between inflation rate and nominal equity returns. Once the average annual inflation rate has reached 15 per cent, an increase in inflation is matched by greater than one-for-one increases in nominal stock returns.

In addition to the impact studies of economic growth on stock market development, there are some causality studies showing that economic growth is important to promote stock market development. For instance, Shan et al. (2001) assess the relationship between financial development and economic growth for nine Organization for Economic Cooperation and Development (OECD) countries as well as China by using a Granger-causality procedure based on the time-series approach within a Vector Autoregressive framework. While using the stock market index as one of the indicators for financial development, they find evidence of economic growth leading to financial development in the case of Italy and the United States.

Later on, Shan and Morris (2002) examine the relationship between financial development and economic growth, using quarterly data from 19 OECD countries and China over the period of 1985 to 1998. When they use the stock market index as one of the proxies of financial development, they find evidence that economic growth leads to financial development in the case of Japan and South Korea.

Jeffus (2004) examines the nature of the association between the FDI and the stock market in four Latin American countries, which include Argentina, Brazil, Chile and Mexico for the period 1988 to 2002, by employing multivariate regression equations. The estimation results support the fact that stock market development and FDI are highly and positively correlated. The study further suggests that FDI seems to be a predictor for stock market growth. This is because as firms enter a market, they may raise additional capital through their domestic stock market, thereby enhancing stock market development.

Law and Habibullah (2009) study the impact of institutional quality, trade openness and financial liberalisation on financial market development, including stock market development. The study covers 27 economies consisting of the G-7, East Asia and Latin America during the period 1980 to 2001. Using a dynamic panel data technique, the study finds that real income per capita and institutional quality are statistically significant determinants that exert positive impacts on stock market development. In addition, the study finds financial liberalisation proxied by domestic financial sector reforms to have a statistically positive and significant influence on stock market development.

Kurach (2010) empirically verifies the importance of a set of potential determinants on the development of 13 Central and Eastern Europe (CEE) economies during the period 1996 to 2007. By employing panel data methodology, the study confirms that GDP growth, banking sector development, fiscal balance, market liquidity, and European Union membership exert a positive influence on the stock market development of these countries.

Cherif and Gazdar (2010) provide new insight on the impacts of macroeconomic and institutional factors on stock market development of 14 Middle East and North Africa (MENA) countries covering the period 1990 to 2007. By employing both panel data and instrumental variable techniques, they find that saving rate, income level and stock market liquidity have positive impacts on stock market development, while interest rate has a negative impact. In addition, they find that the institutional factor proxied by a composite policy risk index does not have a significant influence on stock market development in these countries.

Yartey (2010) examines the macroeconomic and institutional determinants of stock markets of 42 emerging economies during the period 1990 to 2004. By using the Generalized Method of Moments methodology, the empirical analysis finds three interesting results. First, income level, banking sector development, gross domestic investment, private capital flows, and stock market liquidity are important determinants that positively affect the development of stock markets in emerging economies. Second, the study shows that banking sector development and stock market development are non-monotonic. This implies that the banking sector and stock market complement each other in the early stages of development. However, the relationship between the two changes to substitution once they have developed and started to compete as vehicles for financial investment. Third, institutional factors such as law and order, political risk, democratic accountability, and bureaucratic quality are favourable determinants of stock market development because they promote the viability of external financing.

Şükrüoğlu and Nalin (2014) study the effects of macroeconomic variables on the development of stock markets in 19 European countries during the period 1995 to 2011. By employing a dynamic panel data estimation technique, they find that income, monetisation ratio, stock market liquidity, saving rate and inflation are important determinants of stock market development. In particular, they find that income, saving rate stock, and market liquidity have a positive influence on stock market development, whereas monetisation ratio and inflation have a negative influence. Table 4.3 shows studies on the determinants of stock market development in both developed and developing countries.

Table 4.3: Studies showing the determinants of stock market development in both developed and developing countries

Author(s)	Region/ Country	Measure(s) of stock market development	Independent Variables	Method	Results
Atje and Jovanovic (1993)	40 countries	<ul style="list-style-type: none"> • Total valued traded ratio 	<ul style="list-style-type: none"> • GDP per adult in 1985 • Growth rate of the working age population • Investment / GDP • Percentage of the working-age population in secondary schools • Total valued traded ratio • Claim on the private sector by the monetary authority and the deposit money banks / GDP 	Cross-country growth regression frameworks	Positive association between economic growth and stock market development.
Boyd et al. (1996)	51 countries	<ul style="list-style-type: none"> • Market capitalisation ratio • Total value traded ratio • Turnover ratio • Stock return volatility • Measure of international integration 	<ul style="list-style-type: none"> • Average monthly rate of growth of the nominal stock market price index • Inflation • Log of initial real per capita GDP • Number of revolutions and coups • Log of secondary school enrolment • Black market exchange rate premium • Government spending / GDP 	Cross-sectional regression	<p>On stock market development, they find non-linear relationships between inflation and stock market liquidity and trading volume.</p> <p>On stock returns, inflation and real return on equity are negatively correlated.</p>
Levine and Zervos (1996)	41 countries	<ul style="list-style-type: none"> • Stock market development index 	<ul style="list-style-type: none"> • Stock market development index 	Pooled, cross-country instrumental	Positive association between economic

		<ul style="list-style-type: none"> • Market capitalisation ratio • Total value traded ratio • Turnover ratio 	<ul style="list-style-type: none"> • Initial real per capita GDP • Secondary school enrolment rate • Number of revolutions and coups • Government consumption expenditure / GDP • Inflation rate • Black market exchange rate premium • Market capitalisation ratio • Total value traded ratio • Turnover ratio • International trade / GDP • Liquid liabilities of the financial intermediaries / GDP 	variable regressions	growth and stock market development.
Levine and Zervos (1998)	47 countries	<ul style="list-style-type: none"> • Market capitalisation ratio • Total value traded ratio • Turnover ratio • Measure of stock return volatility • Arbitrage pricing theory measure of stock market integration • International capital asset pricing model measure of stock market integration 	<ul style="list-style-type: none"> • Real per capita capital stock growth • Capital stock growth • Private savings / GDP • Market capitalisation ratio • Total value traded ratio • Turnover ratio • Measure of stock return volatility • Bank credit to the private sector / GDP • Arbitrage pricing theory measure of stock market integration 	Cross-country regressions	Positive association between economic growth and stock market development.

			<ul style="list-style-type: none"> • International capital asset pricing model measure of stock market integration 		
Barnes et al. (1999)	25 countries	<ul style="list-style-type: none"> • Changes in the country's major stock exchange index 	<ul style="list-style-type: none"> • Percentage change in the consumer price index 	Time-series regressions	<p>Negative relationship between current inflation and nominal equity returns in low inflation countries.</p> <p>Positive relationship between current inflation and nominal equity returns in high inflation countries.</p>
Garcia and Liu (1999)	15 industrial and developing countries	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • Last year's income • Last year's saving rate • Last year's investment rate • Credit to private sector / GDP • Liquid liability / GDP • Last year's turnover ratio • Inflation change • Dummy variable for structural change • Income growth rate 	Fixed effects of panel data analysis	Real income level, saving rate, financial intermediary development, and stock market liquidity have positive impacts on stock market capitalisation.
Boyd et al. (2001)	48 countries	<ul style="list-style-type: none"> • Market capitalisation ratio • Total value traded ratio • Turnover ratio • Stock return volatility 	<ul style="list-style-type: none"> • Inflation • Initial (1970) real per capital GPD • Initial (1970) secondary education 	<p>Cross-sectional regressions</p> <p>Generalized Method of Moments</p>	On stock market development, inflation is negatively associated with stock market measures in a nonlinear fashion.

			<ul style="list-style-type: none"> • Number of coups and revolutions • Black market currency premium • Measure of the government's fiscal deficit 		On stock returns, inflation is positive related to nominal stock returns in a nonlinear fashion.
Shan et al. (2001).	9 OECD countries and China	<ul style="list-style-type: none"> • Stock market prices 	<ul style="list-style-type: none"> • Bank credit / GDP • Total factor productivity • Trade openness • CPI • Investment ratio • Stock market prices 	Time-series methodology of VAR model and Granger causality test	There is causality from growth to financial development in Italy and the US.
Shan and Morris (2002)	19 OECD countries and China	<ul style="list-style-type: none"> • Stock market index 	<ul style="list-style-type: none"> • Total credit • Interest rate spread • Measures of financial development • Productivity • Investment • Trade openness • CPI • Stock market index 	Toda and Yamamoto (1995) causality testing procedure	There is causality from growth to financial development in Japan and South Korea.
Minier (2003)	47 countries	<ul style="list-style-type: none"> • Turnover ratio 	<ul style="list-style-type: none"> • Bank credit • Turnover ratio • Log initial GDP • Log secondary school enrolment rate • Number of revolutions and coups • Government • Inflation rate 	Regression tree techniques	Positive association in countries with high levels of market capitalisation.

			<ul style="list-style-type: none"> • Black market exchange rate premium 		
Jeffus (2004)	Argentina, Brazil, Chile and Mexico	<ul style="list-style-type: none"> • Stock market capitalisation • Turnover ratio 	<ul style="list-style-type: none"> • Stock market capitalisation • Investability index • Turnover ratio 	Multivariate regressions	Stock market development and FDI are positively correlated.
Law and Habibullah (2009)	27 economies	<ul style="list-style-type: none"> • Stock market liberalisation 	<ul style="list-style-type: none"> • Real GDP per capita • Institutional quality • Trade openness • Full liberalisation • Domestic financial sector liberalisation • Stock market liberalisation • Capital account liberalisation 	<p>Generalized Method of Moments</p> <p>Pooled Mean Group Estimation</p>	Trade openness, institutional quality, and financial liberalisation have positive impacts on stock market development.
Cherif and Gazdar (2010)	14 MENA economies	<ul style="list-style-type: none"> • Turnover ratio • Value trade ratio 	<ul style="list-style-type: none"> • Real GDP • Gross saving / GDP • Gross fixed capital / GDP • Domestic credit to private sector • M3 / GDP • Turnover ratio • Value trade ratio • Real interest rate • Inflation • Institutional factor 	Panel data analysis	Saving rate, banking sector development, stock market liquidity, and income have positive impacts while interest rate has a negative impact on stock market development.
Kurach (2010)	13 CEE economies	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • GDP per capita • M3 / GDP • Liquidity ratio • Turnover ratio • CPI 	Panel data analysis	GDP growth, banking sector development, market liquidity, fiscal balance, and EU membership have

			<ul style="list-style-type: none"> • Budget balance • Saving rate • EU accession 		positive impacts on stock market development.
Yartey (2010)	42 emerging economies	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • Lagged stock market capitalisation ratio • Log GDP per capita • Credit to private sector / GDP • Square to credit to private sector / ratio • Value traded / GDP • Gross domestic investment / GDP • Gross domestic savings / GDP • Real interest rate • Inflation • FDI / GDP • Net private capital flows / GDP • Political risk index from ICRG 	Generalized Method of Moments	Income level, gross domestic investment, banking sector development, private capital flows and stock market liquidity have positive impacts on stock market development.
Şükrüoğlu and Nalin (2014)	19 European countries	<ul style="list-style-type: none"> • Market capitalisation ratio 	<ul style="list-style-type: none"> • GDP per capita • Turnover ratio • Monetisation ratio • Saving rate • Inflation rate 	Dynamic panel data analysis	Income, stock market liquidity and saving rate have positive impacts on stock market development. Monetisation ratio and inflation rate have negative impacts.

4.4 Conclusion

This chapter presented the theoretical literature as well as the empirical literature on the determinants of stock market development. In the theoretical literature, the study observed that in the asset pricing models, there were two broad categories of factors influencing stock prices. The first category was macroeconomic factors, including: economic growth, foreign exchange, inflation, industrial production, interest rates, oil prices, stock market volatility (or market risk), liquidity of stock market, returns on investment, and the risk factors that influenced the states of the current and future consumption. The second category was the portfolio characteristics. These characteristics were: dividends or earnings, book-market relations, the size of company, the rate of return, and the variance of asset returns. In addition to the asset pricing models, the macro-based Calderon-Rossell model has identified economic growth and stock market liquidity as important determinants of stock market development. The extended version of the Calderon-Rossell model added other factors such as financial liberalisation policies, foreign portfolio investment, country risk, banking sector development, gross domestic investment, private capital flows, and institutional factors as the other determinants of stock market development.

Apart from the micro-based asset pricing models and the macro-based Calderon-Rossell model, there is a large volume of studies linking stock market development to various macroeconomic factors. Generally, the findings of these theoretical studies are inconclusive. The studies suggested that economic development can foster stock market development. The banking sector, however, can be viewed either as a substitute for the stock market, or complementary. Inflation rate was negatively related to stock market growth in a non-linear fashion. Interest rates can have a negative or positive relationship with stock prices. Exchange rate movement was negatively associated with stock market development. In particular, currency appreciation can adversely affect stock prices. Private capital flows can have either a positive or negative impact on stock market. Trade openness contributed positively to stock market growth.

Against this highly debatable theoretical background, the study found that there was a growing amount of literature trying to empirically explore the impact of these macroeconomic factors on stock market development. The empirical studies can be

broadly classified into three categories: developing countries, developed countries, and a mixture of both. In summary, the existing empirical evidence indicated that some macroeconomic determinants such as real income level, saving rate, gross domestic investment, private capital flows, financial intermediary development, and foreign portfolio investment, were important determinants of stock market development, which had positive impacts on stock market growth. Also, the study found that macroeconomic instability can negatively affect the development of a stock market.

CHAPTER FIVE

METHODOLOGY OF THE STUDY

5.1 Introduction

This chapter discusses the methodology the study is going to use to identify the macroeconomic determinants of stock market development in Hong Kong and the Philippines. It is divided into four sections. Section 5.2 presents the empirical model specification, which encompasses the general empirical model, specification for cointegration testing, and specification for unit root testing. In Section 5.3, the study presents the source of data, description and justification of variables. Section 5.4 concludes this chapter.

5.2 The Empirical Model Specification

The main objective of this study is to examine the macroeconomic determinants of the development of the stock markets in Hong Kong and the Philippines. To do this, the study first has to specify the empirical model, then, it has to deal with estimation issues. The study presents the empirical model in Section 5.2.1 and the estimation issues in Section 5.2.2 and Section 5.2.3.

5.2.1 The General Empirical Model

To examine the impact of the macroeconomic determinants of the development of the stock markets in Hong Kong and the Philippines, the study specifies a modified version of the empirical model used by other studies such as those of Garcia and Liu (1999), El-Wassal (2005), Ben Naceur et al. (2007), Yartey (2007; 2010), and Billmeier and Massa (2009). The modified model is specified as follows

$$\begin{aligned} \ln MCR_t = & \alpha_0 + \alpha_1 \ln BNK_t + \alpha_2 \ln INF_t + \alpha_3 \ln REERI_t + \alpha_4 \ln RGDPG_t + \alpha_5 \ln OPEN_t \\ & + \alpha_6 \ln TOR_t + \mu_t \end{aligned} \quad (5.1)$$

where $\ln MCR$ is the natural logarithm of stock market development, $\ln BNK$ is the natural logarithm of banking sector development, $\ln INF$ is the natural logarithm of the

inflation rate, $\ln REERI$ is the natural logarithm of the exchange rate, $\ln RGDPG$ is the natural logarithm of the real GDP growth, $\ln OPEN$ is the natural logarithm of the trade openness, $\ln TOR$ is the natural logarithm of stock market liquidity, α_0 is a constant, $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ and α_6 are the respective coefficients, μ is the white noise error term, and t denotes time period. This study takes the natural logarithm of the variables to smooth the trend in time series variables. It can also measure the elasticities of stock market development with respect to the change in independent variables. Nevertheless, this study does not take the natural logarithm of inflation rate (INF) and real GDP growth (RGDPG) in Hong Kong due to a number of negative observations during the study period.

5.2.2 Specification for Cointegration Testing

The variables in equation 5.1 are likely to be non-stationary, which means that the variables can move together in the long run if they drift apart in the short run. Because of this, the study needs to test for cointegration. The study uses the autoregressive distributed lag (ARDL) bounds testing procedure suggested by Pesaran et al. (1996), Pesaran and Shin (1999), and Pesaran et al. (2001) to investigate the long-run relationships between the development of a stock market and its set of determinants.

This procedure is preferred to other procedures such as those of Engle and Granger (1987), the Full-Maximum Likelihood Test of Johansen (1988; 1991), and Johansen and Juselius (1990), because of the following considerations. First, unlike other procedures, the ARDL bounds testing approach does not impose the restrictive assumption that all the variables under study must be integrated of the same order. Instead, it can be applied on the time-series which are integrated of order zero, one, or a mixture of both. Second, while other cointegration tests are sensitive to the size of the sample, the ARDL bounds test is suitable even when the sample size is small. Thus, it has better finite sample properties in comparison to the Johansen and Juselius (1990) cointegration test (see Pesaran et al., 1996; Pesaran and Shin, 1999; and Pesaran et al., 2001). Therefore, the ARDL approach is considered to be suitable for the study.

The ARDL bounds testing procedure requires that the study employs the following general ARDL equation in terms of our variables:

$$\begin{aligned}
\Delta \ln MCR_t = & \gamma_0 + \sum_{i=1}^n \gamma_{1i} \Delta \ln MCR_{t-i} + \sum_{i=0}^n \gamma_{2i} \Delta \ln BNK_{t-i} + \sum_{i=0}^n \gamma_{3i} \Delta \ln INF_{t-i} \\
& + \sum_{i=0}^n \gamma_{4i} \Delta \ln REERI_{t-i} + \sum_{i=0}^n \gamma_{5i} \Delta \ln RGDPG_{t-i} + \sum_{i=0}^n \gamma_{6i} \Delta \ln OPEN_{t-i} \\
& + \sum_{i=0}^n \gamma_{7i} \Delta \ln TOR_{t-i} + \delta_1 \ln MCR_{t-1} + \delta_2 \ln BNK_{t-1} + \delta_3 \ln INF_{t-1} \\
& + \delta_4 \ln REERI_{t-1} + \delta_5 \ln RGDPG_{t-1} + \delta_6 \ln OPEN_{t-1} + \delta_7 \ln TOR_{t-1} \\
& + \varepsilon_t
\end{aligned} \tag{5.2}$$

where ε , γ , and δ are, respectively, the white-noise error term, the short-run coefficients, and the long-run coefficients of the model, and Δ is the first difference operator. In addition, t denotes time period and n is the maximum number of lags in the model. Furthermore, the maximum number of lags in the model is based on the Schwarz Criterion (SC).

The ARDL bounds testing for cointegration is applied for the two countries using equation 5.2 as follows. In the first stage, the null hypothesis of no cointegration relationship:

$$H_0 : \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = \delta_6 = \delta_7 = 0$$

is tested against the alternative hypothesis of the existence of a cointegration relationship:

$$H_1 : \delta_i \neq 0$$

According to equation 5.2, there are cointegrating relationships between the series if at least one of the δ s is significantly different from zero. Otherwise, the study can reject the evidence of cointegration between stock market development and its determinants because any other possible evidence of cointegration will not be relevant to the study.

The second stage is to consider the F-statistic. The study notes that the ARDL bounds testing procedure for cointegrating relationships follows a non-standard asymptotic F-

distribution. There are two sets of critical values that have been constructed by Pesaran et al. (2001) under this null hypothesis. The first set of critical values are constructed assuming that variables in the ARDL model are integrated of order zero, $I(0)$. The second set of critical values are constructed assuming that variables in the ARDL model are integrated of order one, $I(1)$. The study does not reject the null hypothesis of no cointegration relationships when the F-statistic falls below the lower-bound values. Similarly, the study rejects the null hypothesis of no cointegration when the calculated F-statistic is greater than the upper-bound values. However, when the F-statistic falls between the lower and upper bounds, the test is inconclusive.

If the variables are found to be cointegrated, the standard approach is to estimate an error correction model. The error correction model can be formulated as follows:

$$\begin{aligned} \Delta \ln MCR_t = & \gamma_0 + \sum_{i=1}^n \gamma_{1i} \Delta \ln MCR_{t-i} + \sum_{i=0}^n \gamma_{2i} \Delta \ln BNK_{t-i} + \sum_{i=0}^n \gamma_{3i} \Delta \ln INF_{t-i} \\ & + \sum_{i=0}^n \gamma_{4i} \Delta \ln REERI_{t-i} + \sum_{i=0}^n \gamma_{5i} \Delta \ln RGDPG_{t-i} + \sum_{i=0}^n \gamma_{6i} \Delta \ln OPEN_{t-i} \\ & + \sum_{i=0}^n \gamma_{7i} \Delta \ln TOR_{t-i} + \delta ECM_{t-1} + \varepsilon_t \end{aligned} \quad (5.3)$$

where δ is the coefficient of the error-correction term, ECM_{t-1} . δ is expected to have a negative sign. It means that when the variables drift away from the equilibrium levels in the short run, they can quickly adjust back to their equilibrium levels. This error correction model is run for each of the two countries.

5.2.3 Specification for Unit Root Testing

As a preliminary analysis, prior to examining the nature of the relationship between stock market performance and its determinants, the study examines their stationary properties. This is important because the ARDL approach of cointegration testing works on the basis that variables are integrated of orders of not more than one. To do this, the study utilises two unit root tests, which include: (i) the Dickey-Fuller Generalized Least Squares (DF-GLS) proposed by Elliot et al. (1996); and (ii) the Perron (PPURoot) test developed by Perron (1997).

The study uses the DF-GLS test to circumvent the limitations of the conventional ADF and PP tests. The ADF and PP tests are found to frequently reject the null hypothesis of unit roots if the underlying series has a large and negative moving average component, even when there is a unit root (see Schwert,1986; Caner and Killian, 2001).

The DF-GLS test is based on the Dickey-Fuller test equation in the following form:

$$\Delta y_t = \alpha + \beta y_{t-1} + \delta t + \sum_{i=1}^k \rho_i \Delta y_{t-i} + \epsilon_t \quad (5.4)$$

where y_t is the time-series; α , β , δ and ρ are the coefficients of the Dickey-Fuller test equation, i is the number of lags to be included, Δ is the first difference operator, t is the time subscript, and ϵ is the white-noise error term.

The DF-GLS is different from the Dickey-Fuller test in the sense that it is performed on GLS-detrended data. The DF-GLS tests the null hypothesis that $H_0: \beta = 0$ (that is y_t is non-stationary) against two possible alternatives. The first is that y_t is stationary with a linear trend; the second is that y_t is stationary with no linear trend and a non-zero mean.

Macroeconomic time-series, such as those used in the study (stock market capitalisation ratio, real GDP growth, domestic credit to GDP, inflation rate, real effective exchange rate index, trade openness, and turnover ratio) may contain structural breaks. The presence of structural breaks has been found to distort the statistical power of the stationary tests that we have discussed. According to Perron (1989), the standard unit root tests often fail to reject the null hypothesis of unit roots in the series in the presence of structural breaks, even when there are clear indications of no unit roots. Since this discovery, some unit root tests have been developed to capture structural breaks in the underlying series. In this study, we utilise the Perron (PPURoot) test developed by Perron (1997), as a robust alternative for examining

stationarity properties of the underlying series. This test is able to detect structural breaks in the transition parameter of the time-series process.

The Perron (PPURoot) test, which was originally derived by Perron (1989) and later modified by Perron (1997), proceeds by fitting the following Augmented Dickey-Fuller (ADF) regression with shifts in the mean and the trend:

$$\Delta y_t = \alpha + \beta y_{t-1} + \sum_{i=1}^k \rho_i \Delta y_{t-i} + \mu_t + \epsilon_t \quad (5.5)$$

where $\mu_t = \mu_0 + \mu_0^s d_{tTB} + \mu_1 t + \mu_1^s (t - T_B) d_{tTB}$ are potential deterministic terms, and T_B is the break date. The test contains three null hypotheses. The first is that y_t is non-stationary, with a structural break in the intercept. The second is that y_t is non-stationary, with a structural break in the trend. And the third hypothesis is that y_t is non-stationary, with a structural break in both the intercept and trend.

5.3 Source of Data, Description and Justification of Variables

5.3.1 Source of Data and Choice of Country

This study utilises quarterly time-series data for Hong Kong and the Philippines. The data sources come from: the Census and Statistics Department of Hong Kong, Hong Kong Exchanges and Clearing Limited (HKEx), Hong Kong Monetary Authority (HKMA), International Financial Statistics of the International Monetary Fund (IFS), and World Federation of Exchanges (WFE).

In the case of Hong Kong, the data cover the period 1992Q1 to 2016Q3. The covering period of this country in the study is mainly due to data availability. The quarterly data on the market capitalisation ratio (MCR) are calculated by the author. It measures the market capitalisation of domestically listed companies as a percentage of GDP. The quarterly data on the market capitalisation of domestically listed companies are

sourced from Hong Kong Exchanges and Clearing Limited (HKEx, 2015)¹⁰ and the World Federation of Exchanges (WFE, 2017), while quarterly data on GDP are obtained from the Census and Statistics Department of Hong Kong (2017).¹¹ The quarterly data on domestic credit as a percentage of GDP (BNK) are calculated by the author. Data on domestic credit made to the private sector by the banking sector are sourced from the Hong Kong Monetary Fund (HKMA, 2017),¹² while the GDP is obtained from the Census and Statistics Department of Hong Kong (2017). The quarterly data on the inflation rate (INF) are calculated by the author using the consumer price index provided by International Financial Statistics (IFS, 2017). The quarterly data on the real effective exchange rate index (REERI) are also gathered from International Financial Statistics (IFS, 2017). The quarterly data on real GDP growth (RGDPG) are obtained from the Census and Statistics Department of Hong Kong (2017). The quarterly data on trade as a percentage of GDP (OPEN) are calculated by the author using data provided by the Census and Statistics Department of Hong Kong (2017). They are defined as the total value of exports and imports of goods and services divided by GDP. Lastly, the quarterly data on the stock market turnover ratio are calculated by the author. They measure the total value of stock trading divided by the stock market capitalisation. The total value of stock trading is obtained from Hong Kong Exchanges and Clearing Limited (HKEx, 2015) and the World Federation of Exchanges (WFE, 2017); the stock market capitalisation is obtained from the same sources.

In the case of the Philippines, the data cover the period 2001Q4 to 2016Q4. The covering period of this country in the study is solely dictated by the data availability. The quarterly data on market capitalisation ratio (MCR) are calculated by the author. The quarterly data on the market capitalisation of domestically listed companies are sourced from the World Federation of Exchanges (WFE, 2014; 2017), while the quarterly data on GDP are obtained from International Financial Statistics (IFS, 2017).

¹⁰ The data are available online from the official website of the Hong Kong Exchanges and Clearing Limited at <<http://www.hkex.com.hk/eng/stat/statrpt/factbook/factbook2010/fb2010.htm>>.

¹¹ The data are available online from the official website of the Census and Statistics Department of Hong Kong at <<http://www.censtatd.gov.hk/hkstat/sub/sp250.jsp?subjectID=25&tableID=032&ID=0&productType=8>>.

¹² The data are available online from the official website of the Hong Kong Monetary Authority at <<http://www.hkma.gov.hk/eng/market-data-and-statistics/economic-and-financial-data-for-hong-kong.shtml#7>>.

The quarterly data on domestic credit as a percentage of GDP (BNK) are calculated by the author. Domestic credit to the private sector made by the banking sector and the GDP are sourced from International Financial Statistics (IFS, 2017). The quarterly data on inflation rate (INF) are calculated by the author using the consumer price index provided by International Financial Statistics (IFS, 2017). The quarterly data on the real effective exchange rate index (REERI) are also gathered from International Financial Statistics (IFS, 2017). The quarterly data on real GDP growth (RGDPG) are calculated by the author based on the information obtained from IFS (2017). The quarterly data on trade as a percentage of GDP (OPEN) are calculated by the author using data provided by IFS (2017). Finally, the quarterly data on stock market turnover ratio are calculated by the author. The total value of stock trading is obtained from the World Federation of Exchanges (WFE, 2014; 2017); stock market capitalisation is obtained from the same sources.

In terms of the choice of countries, Hong Kong and the Philippines were selected for the study based on the following considerations. Hong Kong was chosen to be studied because its stock market is considered well-developed according to international standards. The stock market in Hong Kong is one of the largest stock markets in the world in terms of key market indicators: the number of listed companies; the share price index (Hang Seng Index); the number of shares traded; the value of the shares traded; and the number of transactions. In addition, the growth in the size and liquidity of the Hong Kong stock market during the period of 1989 to 2014 was impressive. It was found that Hong Kong had the largest stock market in the world in 2014, as measured by the stock market capitalisation ratio (WDI, 2016). It also had the most liquid market in terms of the total value traded ratio in 2014 (WDI, 2016). Furthermore, to the best of our knowledge, there is no similar study on the determinants of stock market development in Hong Kong in the existing literature.

The Philippines was chosen to be studied because the Philippine stock market has experienced phenomenal growth recently. The ranking of the Philippine Stock Exchange (PSE) substantially improved from 44th in 2009 to 12th in 2014, as measured by the market capitalisation ratio (WDI, 2016). The PSE has been cited by the World Federation of Exchanges (WFE) as one of the best performing stock markets. During the period of 2009 to 2014, the PSE was one of only two out of the

64 member-exchanges of the WFE, which had experienced continuous growth for six consecutive years (PSE, 2014). In addition, to the best of our knowledge, there is no similar study on determinants of stock market development in the Philippines in the existing literature. Because of these, it seems to be very appealing to investigate the determinants of stock market development in Hong Kong and the Philippines.

5.3.2 Description and Justification of Variables

To assess the macroeconomic determinants of stock market development, the study needs: (i) a measure of stock market development; and (ii) measures of macroeconomic variables.

The study first looks at the measure of stock market development. The literature shows that stock market development is a multifaceted concept that can be measured by various indicators, such as the size, liquidity, degree of international integration, concentration, and volatility of the stock market (see Demirgüç-Kunt and Levine 1996; Demirgüç-Kunt and Maksimovic 1996; and Levine and Zervos 1996, 1998). In this study, the size of stock development is used to indicate the level of stock market development. In particular, the market capitalisation ratio is used as a proxy to measure the size of the stock market. The market capitalisation ratio is defined as the value of listed domestic shares on a domestic exchange divided by GDP. This proxy is used in the study due to the following considerations. First, the level of market capitalisation, which measures the size of the stock market, is a good indicator reflecting the ability of the stock market in mobilising capital and diversifying risk (see Demirgüç-Kunt and Levine, 1996). Second, this indicator has been widely used as a measure of stock market development in other empirical studies (see Levine and Zervos, 1996, 1998; Arestis and Demetriades, 1997; Garcia and Liu, 1999; Boyd et al., 2001; El-Wassal, 2005; Adjasi and Biekpe, 2006; Ben Naceur et al., 2007; Yartey, 2007, 2010; Billmeier and Massa, 2009; Akinlo and Akinlo, 2009; Şükrüoğlu and Nalin, 2014). Third, despite the fact that there are various indicators of stock market development, Demirgüç-Kunt and Levine (1996) argue that all of these stock market indicators are significantly correlated. Against these considerations, the study prefers the market capitalisation ratio as a measure of stock market development in Hong Kong and the Philippines.

As shown in equation 5.1, there are six macroeconomic determinants in our model. They are banking sector development, inflation rate, exchange rate, economic development, trade openness and stock market liquidity.

According to the theory in the literature, some economists stress the fact that the banking sector and the stock market are substitutes, whereas others argue that they should be viewed as complementary to each other as they develop. The study uses domestic credit to GDP to measure the banking sector development, which is defined as the private credit by deposit money banks and other financial institutions to GDP. This measure is preferred to M2 as a ratio of nominal GDP, because the latter reflects only the extent of transaction services provided by the banking system rather than the ability to channel funds from depositors to investment. Conversely, domestic credit to GDP is a preferable proxy because the private sector is able to utilise funds in a more efficient and productive manner than those in the public sector. Therefore, the exclusion of credit to the public sector may better reflect the extent of efficient resource allocation (Ang and Mckibbin, 2007). In addition, the domestic credit to GDP has been used by other studies to measure banking sector development. They include: Levine et al. (2000), Boyd et al. (2001), Jalilian and Kirkpatrick (2002), Levine (2005), Beck et al. (2007), Hamori and Hashiguchi (2012), and Sehrawat and Giri (2016).

Concerning the relationship between stock market development and inflation rate, theories illustrate that inflation rate adversely affects the development of a stock market. In our study, the inflation rate is measured by the consumer price index, which is defined as the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at yearly intervals (WDI, 2016). This proxy has also been used in other studies to measure the inflation rate such as those by Shan et al. (2001), Boyd et al. (2001), Shan and Morris (2002), and Marques et al. (2013), among others.

When the study examines the relationship between exchange rate and stock prices, literature shows that stock price may or may not be negatively affected by the exchange rate risk under different models. To measure the exchange rate movement, the study uses the real effective exchange rate index. It is defined as the nominal

effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs (WDI, 2016). This measure has also been used in other studies such as those by Calvo et al. (1993), Abdalla and Murinde (1997), and Chou (2000), among others.

Regarding the relationship between the stock market development and economic development, the theoretical literature shows the general consensus that economic development has a positive impact on financial market development, including stock market development. The study uses GDP growth (annual percentage) to measure economic development. This measure has also been used in other studies such as those by Levine and Zervos (1998), Deb and Mukherjee (2008), Carp (2012), to measure the development of the economy.

Regarding the relationship between trade openness and stock market development, theories suggest that trade openness exerts a positive impact on stock market development. To measure trade openness, the study uses the trade as a percentage of GDP. It is defined as the sum of the exports and imports of goods and services measured as a share of GDP (WDI, 2016). There are other studies using the trade as a percentage of GDP to measure trade openness (see Shan et al., 2001; Shan and Morris, 2002; El-Wassal, 2005; Adjasi and Biekpe, 2006; Akinlo and Akinlo, 2009).

Regarding the relationship between stock market liquidity and stock market development, empirical studies such as those by Garcia and Liu (1999), Ben Naceur et al. (2007), Yartey (2007, 2010), Cherif and Gazdar (2010), Kurach (2010), El-Nader and Alraimony (2013), Şükrüoğlu and Nalin (2014), and Bayar (2016), find that stock market liquidity has a positive influence on stock market development. The liquidity of a stock market can be measured by two related measures. The first is the turnover ratio, which equals the value of the trades of domestic shares on domestic exchange divided by the value of listed domestic shares. This ratio measures the volume of domestic shares traded on domestic exchanges relative to the size of the stock market. The second measure is the total value traded ratio, which equals the value of trades of domestic shares on domestic exchanges divided by GDP. It measures trading volume as a share of economic output, thereby positively reflecting the liquidity

of a stock market on any economy-wide basis (see Levine 1991; Bencivenga et al., 1996; Levine and Zervos, 1998).

The study uses turnover ratio to measure stock market liquidity due to the following reasons. First, the turnover ratio will not be influenced by the price effect. Levine and Zervos (1998) point out that the total value traded ratio may be affected by the “price effect” of stock prices. This is because a rise in stock prices, accompanied by no change in the number of transactions or a fall in transaction costs, will increase the total value traded ratio. Conversely, the turnover ratio will not be influenced by the price effect because stock prices enter the numerator and denominator of the turnover ratio. Second, the turnover ratio has been widely used in the literature to measure stock market liquidity and development. These studies include those of Levine and Zervos (1996, 1998); Garcia and Liu (1999); Boyd et al. (2001); Minier (2003); Jeffus (2004); Adjasi and Biekpe (2006); Ben Naceur et al. (2007); Yartey (2007); and Billmeier and Massa (2009), among others. Owing to these arguments, the study uses turnover ratio to measure stock market liquidity in Hong Kong and the Philippines.

5.4 Conclusion

This chapter discussed the methodology the study used to identify the macroeconomic determinants of stock market development in Hong Kong and the Philippines. The study presented the empirical models’ specifications, which encompassed: the general empirical model; testing for cointegration; and specification for unit root testing. Later, the source of data and choice of country, description, and justification of variables used were discussed in the study.

CHAPTER SIX

ECONOMETRIC ANALYSIS AND EMPIRICAL FINDINGS

6.1 Introduction

This chapter discusses the econometric analysis and the empirical findings of the study of Hong Kong and the Philippines, using the empirical model and methodology discussed in the previous chapter. The study employs the ARDL bounds testing procedure to investigate the long-run relationships between the development of a stock market and its macroeconomic determinants. In the empirical model, stock market development (MCR) is regressed on six variables, namely: banking sector development (BNK), inflation rate (INF), exchange rate (REERI), economic growth (RGDPG), trade openness (OPEN), and stock market liquidity (TOR). The chapter is divided into three sections. Section 6.2 presents and analyses the empirical findings for Hong Kong and the Philippines, and Section 6.3 concludes the chapter.

6.2 The Empirical Findings and Analyses for Hong Kong and the Philippines

6.2.1 Descriptive Statistics

The key highlights of stock market development and macroeconomic determinants of the stock market in Hong Kong are shown in Table 6.1. The table summarises the basic statistical features of the data under consideration including the mean, minimum and maximum values, standard deviation, kurtosis, skewness, and Jarque-Bera test for the data. These descriptive statistics provide a historical background for the behaviour of the data. For instance, in the study, stock market development is measured by the market capitalisation ratio (MCR). The market capitalisation ratio is 7 028.70 on average over the sample period of 1992Q4 to 2016Q3. It implies that the size of the stock market is 70.28 times its GDP on average. The extremely high market capitalisation ratio is mainly due to two reasons: the listing of Mainland Chinese enterprises in Hong Kong; and the expansion of Hong Kong companies into overseas countries (see Lee and Poon, 2005). The maximum market capitalisation ratio recorded for the period was 16 058.20 in 2015Q2, while the minimum market capitalisation ratio was 1 649.30 in 1993Q4. Table 6.1 shows the basic statistical

features of stock market development and macroeconomic determinants of the stock market in Hong Kong. It includes market capitalisation ratio (MCR), banking sector development (BNK), inflation rate (INF), real effective exchange rate index (REERI), real GDP growth (RGDPG), trade openness (OPEN) and liquidity of the stock market (TOR).

In the case of the Philippines, Table 6.2 provides the key highlights of stock market development as well as macroeconomic determinants of the country's stock market. These descriptive statistics provide a historical background for the behaviour of the data during the period of 2001Q4 to 2016Q4. For example, the market capitalisation ratio is 681.28 on average over the sample period. It implies that the size of the stock market is about 6.81 times its GDP on average. The maximum market capitalisation ratio recorded for the period was 1 231.21 in 2015Q1, while the minimum market capitalisation ratio was 253.21 in 2002Q4. Table 6.2 shows the basic statistical features of stock market development and its set of macroeconomic determinants of the stock market in the Philippines. It encompasses market capitalisation ratio (MCR), banking sector development (BNK), inflation rate (INF), real effective exchange rate index (REERI), real GDP growth (RGDPG), trade openness (OPEN) and liquidity of stock market (TOR). Table 6.1 shows the basic statistical features of stock market development and macroeconomic determinants of the stock market in Hong Kong. Table 6.2 shows the basic statistical features of stock market development and macroeconomic determinants of the stock market in the Philippines.

Table 6.1: Statistical features of stock market development and macroeconomic determinants of the stock market in Hong Kong

Hong Kong	LNMCRR	LNBANK	INF	LNREERI	RGDPG	LNOPEN	LNTOR
Mean	8.632	7.933	1.194	4.757	3.715	5.802	1.729
Median	8.553	7.996	1.208	4.724	3.950	5.850	1.699
Maximum	9.684	8.335	4.114	5.055	12.100	6.102	2.548
Minimum	7.408	7.502	-2.597	4.479	-8.300	5.345	1.018
Std. Dev.	0.698	0.270	1.708	0.151	3.751	0.206	0.364
Skewness	-0.046	-0.190	-0.154	0.359	-0.895	-0.328	0.203
Kurtosis	1.481	1.465	2.234	1.962	4.159	1.791	2.380
Jarque-Bera	9.554	10.319	2.841	6.639	18.935	7.880	2.267
Probability	0.008	0.006	0.242	0.036	0.000	0.019	0.322
Sum	854.572	785.320	119.437	475.706	371.500	580.167	171.156
Sum Sq. Dev.	47.807	7.146	288.897	2.262	1 393.107	4.199	12.981
Observations	99	99	99	99	99	99	99

Note: Std. Dev. and Sum Sq. Dev. denote standard deviation and sum of squared deviations respectively.

Table 6.2: Statistical features of stock market development and macroeconomic determinants of the stock market in the Philippines

Philippines	LNMCRR	LNBNK	LNINF	DLNREERI	LNRGDPG	LNOPEN	LNTOR
Mean	1.813	4.828	0.395	0.004	1.593	4.347	0.465
Median	1.861	4.814	0.423	0.006	1.727	4.324	0.486
Maximum	2.511	5.154	1.447	0.053	2.188	4.723	1.139
Minimum	0.929	4.619	-1.401	-0.048	-0.658	3.943	-0.663
Std. Dev.	0.477	0.143	0.524	0.024	0.508	0.222	0.366
Skewness	-0.199	0.455	-0.701	-0.129	-2.346	0.049	-0.593
Kurtosis	1.652	2.347	4.330	2.286	9.522	1.759	3.610
Jarque-Bera	5.023	3.188	9.495	1.443	164.061	3.936	4.523
Probability	0.081	0.203	0.009	0.486	0.000	0.140	0.104
Sum	110.576	294.505	24.080	0.261	97.150	265.139	28.362
Sum Sq. Dev.	13.675	1.224	16.497	0.035	15.483	2.958	8.035
Observations	61	61	61	61	61	61	61

Note: Std. Dev. and Sum Sq. Dev. denote standard deviation and sum of squared deviations respectively.

6.2.2 Unit Root Tests for Variables in the Empirical Model

After discussing the basic statistical features of the data in Hong Kong and the Philippines, this section examines the stationary properties of the variables. The variables for Hong Kong and the Philippines are tested for stationarity using the Dickey-Fuller Generalized Least Squares (DF-GLS) test proposed by Elliot et al. (1996) and the Perron (PPURoot) test developed by Perron (1997). In these two tests, the results are reported under two categories: without trend and with trend. The detailed results of stationary tests for all the variables of Hong Kong are presented in Table 6.3, while the detailed results of stationary tests for all the variables of the Philippines are presented in Table 6.4.

Table 6.3: Stationarity tests of all variables of Hong Kong

Dickey-Fuller Generalized Least Squares (DF-GLS) Test				
Variable	Stationarity of all variables in levels		Stationarity of all variables at first differences	
	Without trend	With trend	Without trend	With trend
InMCR	-0.088	-3.140**	-8.311***	-10.062***
LnBNK	-1.603	-1.943	-4.140***	-6.737***
INF	-0.904	-1.592	-6.130***	-6.919***
InREERI	-0.569	-1.224	-5.822***	-5.771***
RGDPG	-3.006***	-3.558**	-	-
InOPEN	1.143	-0.875	-4.167***	-7.541***
InTOR	-3.538***	-4.514***	-	-
Perron (PPURoot) Test				
Variable	Stationarity of all variables in levels		Stationarity of all variables at first differences	
	Without trend	With trend	Without trend	With trend
InMCR	-4.240	-3.807	-11.775***	-11.016***
InBNK	-4.209	-4.102	-15.732***	-15.732***
INF	-4.108	-3.100	-6.736***	-5.943***
InREERI	-3.514	-2.508	-7.617***	-6.858***
RGDPG	-5.539**	-5.388***	-	-
InOPEN	-3.973	-3.925	-13.253***	-13.253***
InTOR	-5.165*	-4.833**	-	-

Note: *, ** and *** denote significance at 10%, 5% and 1% respectively; - denotes not applicable.

Table 6.4: Stationarity tests of all variables of the Philippines

Dickey-Fuller Generalized Least Squares (DF-GLS) Test				
Variable	Stationarity of all variables in levels		Stationarity of all variables at first differences	
	Without trend	With trend	Without trend	With trend
InMCR	-0.346	-3.647**	-5.133***	-2.914*
InBNK	-0.751	-0.893	-3.050***	-3.750***
InINF	-2.856***	-3.233**	-	-
InREERI	-0.332	-1.665	-4.762***	-5.409***
InRGDPG	-3.037***	-3.371**	-	-
InOPEN	-1.288	-1.771	-2.537**	-3.591**
InTOR	-2.038**	-3.303**	-	-
Perron (PPURoot) Test				
Variable	Stationarity of all variables in levels		Stationarity of all variables at first differences	
	Without trend	With trend	Without trend	With trend
InMCR	-4.017	-4.357	-5.645**	-6.458***
InBNK	-3.097	-4.055	-21.313***	-20.614***
InINF	-4.252	-4.263	-5.607**	-5.434**
InREERI	-4.446	-3.624	-7.308***	-7.214***
InRGDPG	-5.171*	-3.713	-8.251***	-5.456***
InOPEN	-3.253	-3.151	-14.213***	-12.911***
InTOR	-5.012*	-5.705**	-	-

Note: *, ** and *** denote significance at 10%, 5% and 1% respectively; - denotes not-applicable.

Overall, the results of Tables 6.3 and 6.4 show that some variables are stationary in levels while some variables are stationary at first differences. For example, in the case of Hong Kong, RGDPG and InTOR are stationary in levels as shown by the results of the Dickey-Fuller Generalized Least Squares test and the Perron test. Other variables such as InMCR, InBNK, INF, InREERI and InOPEN are stationary at first differences as indicated by the results of the Dickey-Fuller Generalized Least Squares test and the Perron test.

In the case of the Philippines, $\ln\text{TOR}$ is stationary in levels as suggested by the results of the Dickey-Fuller Generalized Least Squares test and the Perron test. Other variables such as $\ln\text{MCR}$, $\ln\text{BNK}$, $\ln\text{REERI}$ and $\ln\text{OPEN}$ are stationary at first differences as shown by the results of the Dickey-Fuller Generalized Least Squares test and the Perron test. For the variables such as $\ln\text{INF}$ and $\ln\text{RGDPG}$, the Dickey-Fuller Generalized Least Squares test shows that they are stationary in levels, while the Perron test suggests that they are stationary at first differences. Nonetheless, all the variables are integrated of orders not more than one as indicated by the two unit root tests mentioned above.

Although the ARDL bounds testing procedure does not require the pre-testing of variables, the unit roots test is important because the ARDL approach of cointegration testing works on the basis that the variables are integrated of orders not more than one. Having established that the variables for Hong Kong and the Philippines are integrated of either order zero $I(0)$ or one $I(1)$, the study can proceed to test the long-run relationships between the development of the stock markets and their macroeconomic determinants, using the ARDL bounds testing procedure.

6.2.3 Empirical Analysis Using the ARDL Bounds Testing Procedure

To examine the impact of macroeconomic determinants on the development of the stock markets in Hong Kong and the Philippines, the study specifies a modified version of the empirical model used by other studies such as those by Garcia and Liu (1999), El-Wassal (2005), Ben Naceur et al. (2007), Yartey (2007; 2010), and Billmeier and Massa (2009). The study uses the autoregressive distributed lag (ARDL) bounds testing procedure suggested by Pesaran et al. (1996), Pesaran and Shin (1999), and Pesaran et al. (2001). The results of the ARDL bounds test for cointegration are reported in Table 6.5 for both Hong Kong and the Philippines. The calculated F-statistics for Hong Kong and the Philippines are 4.770 and 3.586 respectively. The calculated F-statistics are higher than the critical value reported by Pesaran et al. (2001) in Table CI (iii) Case III. Therefore, the results show that the variables used are cointegrated in both countries.

Table 6.5: Bounds test F-test for cointegration

Country	Dependent Variable	Function	F-statistic	Cointegration Status		
Hong Kong	lnMCR	F(lnMCR lnBNK, INF, lnREERI, RGDPG, lnOPEN, lnTOR)	4.770***	Cointegrated		
Philippines	lnMCR	F(lnMCR lnBNK, lnINF, lnREERI, lnRGDPG, lnOPEN, lnTOR)	3.586*	Cointegrated		
Asymptotic critical value (k=6)						
Pesaran et al. (2001), p.300, Table CI(iii) Case III	1%		5%		10%	
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
	3.15	4.43	2.45	3.61	2.12	3.23

Note: * and *** denote significance at 10% and 1% respectively.

Having found that lnMCR, lnBNK, lnINF, lnREERI, lnRGDPG, lnOPEN, and lnTOR are cointegrated, the study estimates the model using the ARDL bounds test approach. The first step is to determine the optimal lag length for the model in this study's countries using the Schwarz Criterion (SC). The optimal lag length selected based on SC is ARDL(2, 0, 0, 0, 1, 3, 0) and ARDL(2, 1, 0, 3, 0, 1, 0) for Hong Kong and the Philippines respectively. The long-run and short-run results of the selected models are reported in Table 6.6.

Table 6.6: The long-run and short-run results of the selected models

Hong Kong – Panel A: Long-run results				
Dependent variable is lnMCR				
Regressor	Coefficient	Standard Error	T-ratio	Probability
lnBNK	0.776**	0.307	2.527	0.013
INF	-0.214**	0.080	-2.657	0.010
lnREERI	-1.874***	0.700	-2.677	0.009
RGDPG	0.051***	0.018	2.888	0.005
lnOPEN	2.513***	0.300	8.388	0.000
lnTOR	0.164	0.210	0.780	0.438

Hong Kong – Panel B: Short-run resultsDependent variable is $\Delta \ln \text{MCR}$

Regressor	Coefficient	Standard Error	T-ratio	Probability
$\Delta \ln \text{MCR}(-1)$	-0.255***	0.089	-2.867	0.005
$\Delta \ln \text{BNK}$	0.546**	0.216	2.524	0.014
$\Delta \ln \text{INF}$	-0.050*	0.029	-1.706	0.092
$\Delta \ln \text{REERI}$	-0.861*	0.451	-1.910	0.060
ΔRGDPG	0.027***	0.005	5.053	0.000
$\Delta \ln \text{OPEN}$	-0.275	0.289	-0.950	0.345
$\Delta \ln \text{OPEN}(-1)$	-1.104***	0.311	-3.555	0.001
$\Delta \ln \text{OPEN}(-2)$	-0.927***	0.282	-3.290	0.002
$\Delta \ln \text{TOR}$	-0.019	0.040	-0.464	0.644
C	-0.783***	0.152	-5.162	0.000
ECM	-0.243***	0.045	-5.405	0.000
R-squared	0.497	Mean dependent var	0.019	
Adjusted R-squared	0.424	S.D. dependent var	0.145	
S.E. of regression	0.110	Akaike info criterion	-1.451	
Sum squared resid	1.005	Schwarz criterion	-1.103	
Log likelihood	82.632	Hannan-Quinn criter	-1.310	
F-statistic	6.831	Durbin-Watson stat	2.121	
Prob(F-statistic)	0.000			

Philippines – Panel A: Long-run resultsDependent variable is $\ln \text{MCR}$

Regressor	Coefficient	Standard Error	T-ratio	Probability
$\ln \text{BNK}$	0.311	0.582	0.534	0.596
$\ln \text{INF}$	-0.205	0.176	-1.164	0.251
$\ln \text{REERI}$	-2.001	1.912	-1.047	0.301
$\ln \text{RGDPG}$	0.105	0.086	1.219	0.229
$\ln \text{OPEN}$	-2.336**	1.142	-2.045	0.047
$\ln \text{TOR}$	0.059	0.233	0.252	0.802

Philippines – Panel B: Short-run resultsDependent variable is $\Delta \ln \text{MCR}$

Regressor	Coefficient	Standard Error	T-ratio	Probability
$\Delta \ln \text{MCR}(-1)$	0.335***	0.095	3.538	0.001
$\Delta \ln \text{BNK}$	1.104***	0.349	3.161	0.003
$\Delta \ln \text{INF}$	-0.030	0.033	-0.909	0.368
$\Delta \ln \text{REERI}$	1.440***	0.416	3.462	0.001
$\Delta \ln \text{REERI}(-1)$	-0.082	0.464	-0.177	0.860
$\Delta \ln \text{REERI}(-2)$	1.303**	0.505	2.582	0.013
$\Delta \ln \text{RGDPG}$	0.001	0.025	0.032	0.975

$\Delta \ln \text{OPEN}$	0.078	0.206	0.381	0.705
$\Delta \ln \text{TOR}$	0.045	0.032	1.385	0.173
C	4.239***	0.969	4.376	0.000
ECM	-0.176***	0.040	-4.362	0.000
R-squared	0.808	Mean dependent var	0.016	
Adjusted R-squared	0.751	S.D. dependent var	0.140	
S.E. of regression	0.070	Akaike info criterion	-2.280	
Sum squared resid	0.214	Schwarz criterion	-1.783	
Log likelihood	80.121	Hannan-Quinn criter	-2.086	
F-statistic	14.235	Durbin-Watson stat	1.840	
Prob(F-statistic)	0.000			

Note: *, ** and *** denote 10%, 5% and 1% significant levels respectively; Δ = first difference operator. Results are obtained using eViews version 9.0.

In the case of Hong Kong, the long-run regression results show that the key macroeconomic determinants of stock market development are: banking sector development, inflation rate, exchange rate, economic growth and trade openness. For banking sector development, the results show that the coefficient of banking sector development is positive and statistically significant. Specifically, in the long run, a percentage increase in banking sector development leads to an increase in stock market development by 0.776 per cent. In fact, the positive relationship between the banking sector and stock market is well-documented, both theoretically (see Merton and Bodie, 1995, 2004; and Levine, 1997, 2005) and empirically (see Garcia and Liu, 1999; Ben Naceur et al., 2007; Yartey, 2007, 2010; Kurach, 2010; and El-Nader and Alraimony, 2013).

Regarding the impact of inflation rate on stock market development, the long-run regression results show that the coefficient of the inflation rate is negative and statistically significant. In the long run, a unit increase in inflation rate leads to a decline in stock market development by approximately 21.4 per cent. The negative relationship between the inflation rate and stock market development found in this study is supported by other studies, both theoretically (see Azariadas and Smith, 1996; Choi et al., 1996; Huybens and Smith, 1998, 1999; and Boyd et al., 2001), and empirically (see Boyd et al., 1996, 2001; Barnes et al., 1999; Ben Naceur et al., 2007; Şükrüoğlu and Nalin, 2014; and Bayer 2016).

Regarding the exchange rate, the long-run regression results show that the coefficient of exchange rate is negative and statistically significant. In particular, a percentage increase in the real effective exchange rate index leads to a decline in stock market development by approximately 1.874 per cent in the long run. This negative relationship between the exchange rate and stock market performance found in the study is consistent with the literature both theoretically (see Ross, 1976; Dornbusch and Fisher, 1980; Adler and Dumas, 1983; Gavin, 1989; and Jorion, 1991), and empirically (see Ma and Kao, 1990; and Wu, 2000).

Regarding economic growth, the long-run regression results show that the coefficient is positive and statistically significant. One-unit increase in economic growth promotes stock market development by 5.1 per cent in the long run. The finding is consistent with most of the studies, which document a positive association between stock market development and economic growth (see for example, Atje and Jovanovic, 1993; Levine and Zervos, 1996, 1998; Minier, 2003; Adjasi and Biekpe, 2006; Cherif and Gazdar, 2010; Kurach, 2010; Şükrüoğlu and Nalin, 2014; Raza et al., 2015; and Bayar, 2016).

In terms of trade openness, the long-run regression results show that the coefficient of trade openness is positive and statistically significant. In the long run, a percentage increase in trade openness promotes stock market development by approximately 2.513 per cent. This positive influence of trade openness on financial market development, including stock market development, is well-documented in the literature (see Newbery and Stiglitz, 1984; Svaleryd and Vlachos, 2002; Rajan and Zingales, 2003; Braun and Raddatz, 2005; Law and Habibullah, 2009; Vazakidis and Adamopoulos, 2009; and Niroomand et al., 2014).

The short-run regression results, on the other hand, show that the key macroeconomic determinants of stock market development in Hong Kong are: banking sector development, inflation rate, exchange rate, economic growth and trade openness. Similar to the long-run results, the short-run results show that banking sector development and economic growth have positive and statistically significant impacts on stock market development, whereas inflation rate and exchange rate have negative and statistically significant impacts on stock market development. In addition, trade

openness has a negative impact on stock market development in the short run, while it has a positive impact in the long run.

Regarding banking sector development, the growth of banking sector development by 1 per cent enhances the stock market development by 0.546 per cent in the short run. With regard to the inflation rate, the results show that the coefficient of inflation rate is negative and statistically significant in Hong Kong. It means that a unit increase in the inflation rate hinders stock market development by 5 per cent in the short run. In terms of the exchange rate, the results show that it has a negative and significant impact on stock market development. In particular, a percentage increase in the exchange rate inhibits stock market development by 0.861 per cent in the short run. Concerning economic growth, the results show that the coefficient of economic growth is positive and statistically significant. In particular, a percentage increase in economic development will enhance stock market development by 2.7 per cent. In terms of trade openness, the results show that trade openness has a negative and significant impact on stock market development in Hong Kong at different lags. In terms of the liquidity of the stock market, the short-run regression results show that there is no significant impact on stock market development, which is consistent with the long-run results.

In addition, the short-run regression results show that the coefficient of the error correction term is negative and statistically significant. Following a shock, 0.243 per cent of disequilibrium is corrected every quarter.

In the case of the Philippines, the long-run regression results show that the key macroeconomic determinant of stock market development is trade openness. The results show that the coefficient of trade openness is negative and statistically significant. In particular, a percentage increase in trade openness hurts stock market development by approximately 2.336 per cent in the long run. The negative relationship between trade openness and stock market development is found in studies such as those by Jin (2006) and Kim et al. (2011).

In addition, the short-run regression results show that the key macroeconomic drivers of stock market development are banking sector development and the exchange rate. Regarding banking sector development, the results show that the coefficient of

banking sector development is positive and statistically significant. A percentage increase in banking sector development promotes stock market development by 1.104 per cent in the short run. In terms of the exchange rate, the results show that it has a positive and significant impact on stock market development. A 1 per cent increase in exchange rate benefits stock market growth by 1.440 per cent in the short run.

Furthermore, the short-run regression results show that the coefficient of the error correction term is negative and statistically significant. Specifically, when the variables drift away from the equilibrium level by 1 per cent in the short run, they correct by 0.176 per cent every quarter towards the equilibrium level.

When comparing the macroeconomic determinants of stock market development in Hong Kong to those in the Philippines, the study finds some interesting results. As far as the long-run results are concerned, the study finds that banking sector development, economic growth, and stock market liquidity have positive impacts on stock market development in both countries. In contrast, inflation rate and real exchange rate are found to have negative impacts on stock market development of both countries in the long run, even though the coefficients are not significant in the case of the Philippines. Generally, these findings indicate that the macroeconomic determinants exert similar impacts on the development of stock markets in both countries.

The only difference in the results between the two countries is the impact of trade openness on stock market development in the long run. The study finds that while trade openness exerts a positive and significant impact on stock market development in Hong Kong, the impact is reversed in the Philippines. The difference in the impact of trade openness on stock market development in the two countries could be explained by the differences in their economic fundamentals. This is the case since the comparative advantage in trade of a country can influence the country's level of financial development and trade pattern, resulting in an impact on its demand for external finance (Do and Levchenko, 2007).

Hong Kong has a long-established track record as a leading international financial centre in Asia. It has provided financial services to the rest of the world since the 1980s

(Reed, 1981), and its prominent service sector relies heavily on the equity finance through the stock market. The sector has accounted for over 30 per cent of total market capitalisation in the Hong Kong stock market during the period 1998 to 2013 (see HKEx, 2002; 2004; 2008; 2013). Hence, as the main export sector relied heavily on external finance obtained through the stock market, trade openness exerted a positive impact on stock market development in Hong Kong.

For the Philippines, the electrical components and equipment sectors have been the country's main exports since the 1970s. In 2014, they accounted for 47 per cent of the total exports of the country (see Frederick and Gereffi, 2016). However, these dominant export sectors accounted for only 0.3 per cent of the total market capitalisation in the stock market in 2014 (PSE, 2014). It is evident that these sectors have not depended heavily on external finance through the stock market. The study finds that trade openness exerts a negative impact on stock market development in the case of the Philippines. This is congruent with the argument made by Do and Levchenko (2007), where it is claimed that countries that mainly export goods which do not rely heavily on external finance, will experience a slower pace of stock market development.

Concerning the short-run results, the study finds that banking sector development has a positive and significant impact on stock market development in both countries. The results also show that economic growth exerts a positive impact on stock market development in both countries, even though the coefficient is not significant in the Philippines. Additionally, the study finds that inflation has a negative influence on stock market development in both countries, although the coefficient is not significant in the Philippines. Furthermore, the results show that there is no significant impact of trade openness and stock market liquidity on stock market development in both countries. The results broadly imply that the impacts of the macroeconomic determinants on stock market development in the short run are similar in both countries.

The only opposing short-run impacts are those associated with the real exchange rate. The study finds that the real exchange rate has a negative and significant impact on stock market development in Hong Kong, while the impact is reversed in the Philippines. Such opposing impacts could be explained by the difference in the level

of stock market development in these countries. Hong Kong's stock market is highly developed and serves as a preferred centre of initial public offerings for international companies. From 1999 to 2013, the annual average contribution of IPOs to the total equity funds raised was 39 per cent, thus reflecting the importance of IPOs in the market capitalisation of the stock market in Hong Kong. Hence, real appreciation of the Hong Kong dollar would have cost implications for international companies considering listing on the Hong Kong stock exchange. This may possibly explain why the real exchange rate has a negative and significant impact on stock market development in Hong Kong. In contrast, the Philippines stock market is still at the developing stage. The market is dominated by local investors with 98.5 per cent of the total accounts owned by them, while foreign investors covered only 1.5 per cent of total accounts (PSE, 2015b). Real appreciation of the local currency benefits local investors, thereby incentivising them to invest more in the stock market. Table 6.7 summarises the results of the impact of macroeconomic variables on stock market development in Hong Kong and the Philippines.

Table 6.7: A summary of results of determinants of stock market development in Hong Kong and the Philippines

Variable	Hong Kong						Philippines					
	Positive Impact		Negative Impact		No Impact		Positive Impact		Negative Impact		No Impact	
	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run
BNK	√	√					√					√
INF			√	√							√	√
REERI			√	√			√					√
RGDPG	√	√									√	√
OPEN		√	√							√	√	
TOR					√	√					√	√

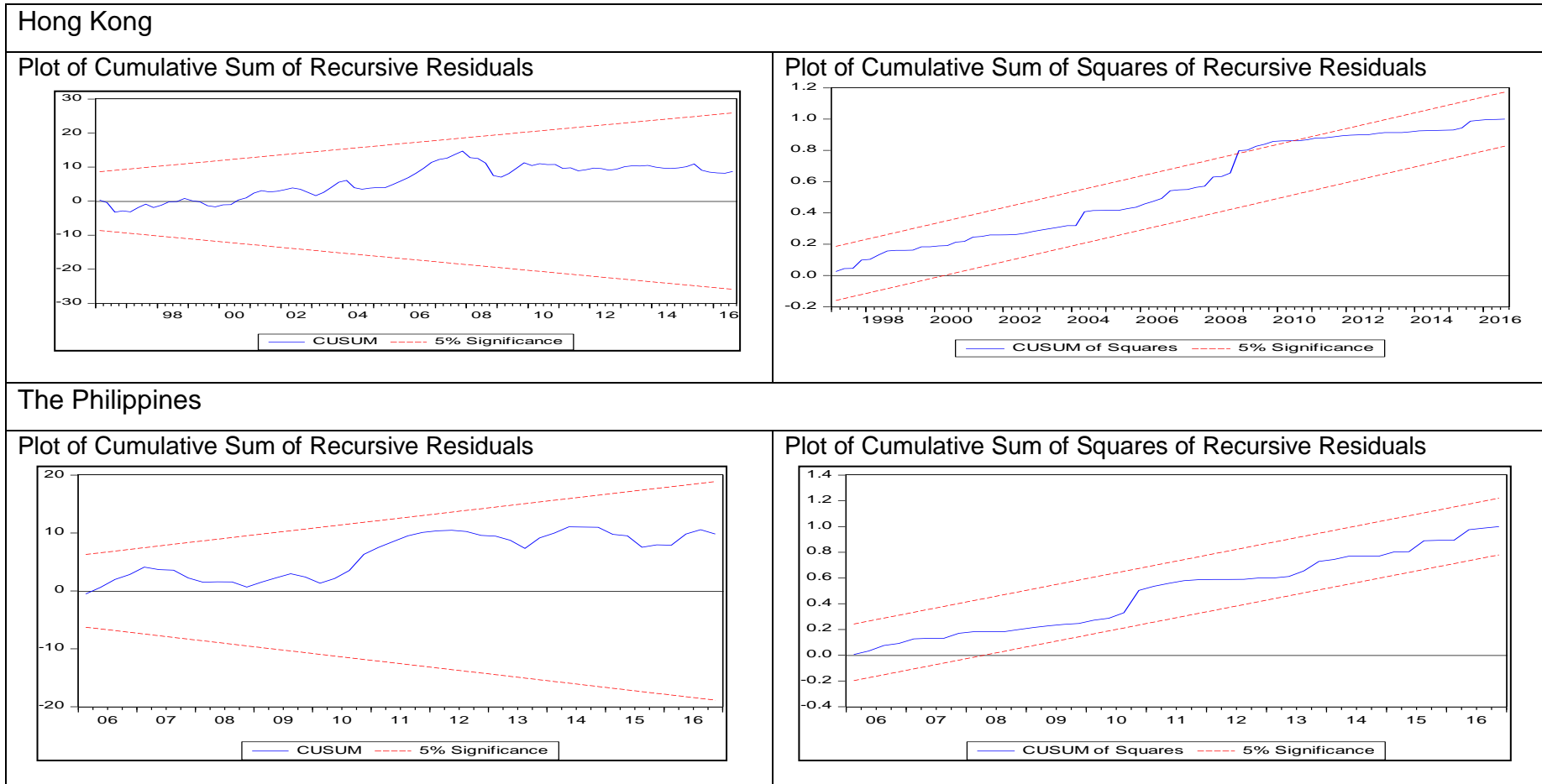
Regarding the diagnostic tests, the result displayed in Table 6.8 show that, in both of these countries, the models pass all the diagnostic tests performed for serial correlation, functional form, normality and heteroscedasticity.

Table 6.8: Results of diagnostic tests

Hong Kong		
Test	Test - statistic	P-value
Serial Correlation: CHSQ(2)	1.105	0.576
Functional Form: F(1,82)	0.208	0.650
Normality: CHSQ (2)	0.428	0.807
Heteroscedasticity: CHSQ (3)	5.466	0.141
The Philippines		
Test	Test - statistic	P-value
Serial Correlation: CHSQ(2)	1.178	0.555
Functional Form: F(1,43)	1.555	0.219
Normality: CHSQ (2)	0.735	0.693
Heteroscedasticity: CHSQ (1)	0.360	0.549

Figure 6.1 shows the plot of the cumulative sum of recursive residual (CUSUM) and the cumulative sum of squares of recursive residual (CUSUMSQ) of the model in Hong Kong and the Philippines respectively. The reported CUSUM and CUSUMSQ show that the model is stable and confirms the stability of the long-run coefficients of regressors in the Philippines. In the case of Hong Kong, the CUSUM passes the stability test. Although the CUSUMSQ slightly deviates from the upper bound, it returns to well within the critical bounds later on.

Figure 6.1: Plot of cumulative sum of recursive residual (CUSUM) and cumulative sum of squares of recursive residual (CUSUMSQ) of the model in Hong Kong and the Philippines



Note: The straight lines represent critical bounds at 5% significant level.

6.3 Conclusion

This chapter empirically examined the macroeconomic determinants of stock market development in Hong Kong and the Philippines. In particular, the study investigated the impact of banking sector development, inflation rate, exchange rate, economic growth, trade openness, and stock market liquidity on the development of the stock market using the ARDL bounds testing approach. The first part of Section 6.2 discussed the descriptive statistics of all the variables in both countries. The second part of Section 6.2 showed the results of the unit root tests that all the variables were either stationary in levels or stationary at first differences. Therefore, the study proceeded to test the long-run relationships between the development of the stock market and its determinants using the ARDL bounds testing procedure. The results showed that the variables used were cointegrated in both countries. The long-run regression results were found to vary from country to country and over time. For instance, in the case of Hong Kong, the long-run regression results found that banking sector development, economic growth and trade openness were found to have a positive and significant influence on stock market development. Conversely, the inflation rate and exchange rate exerted negative and significant impacts on stock market development. In the case of the Philippines, the study found that only trade openness exerted a negative and significant impact on stock market development in the long run. Regarding the short-run regression results, in the case of Hong Kong, banking sector development and economic growth were found to have positive and significant impacts on stock market development. In addition, inflation rate, exchange rate, and trade openness were found to have negative and significant impacts on stock market development. In the case of the Philippines, the study found banking sector development and exchange rate to have positive and significant impacts on the Philippine's stock market development in the short run. Furthermore, the study found that the error correction terms for both countries were negative and significant.

CHAPTER SEVEN

CONCLUSION AND POLICY RECOMMENDATIONS

7.1 Introduction

This chapter concludes the study, provides policy recommendations that are deduced from the results in the previous chapters, and suggests areas for future research. Section 7.2 outlines a brief summary of the study; Section 7.3 provides the key findings of the study; Section 7.4 presents the policy recommendations of the study; and finally, Section 7.5 points out the limitations of the study and suggests possible areas for future research.

7.2 Summary of the Study

In this study, key macroeconomic determinants of stock market development were examined. In order to achieve that, this study sought to fulfil four primary objectives. First, the study critically assessed the dynamics of stock market development in Hong Kong and the Philippines. Second, it empirically investigated the long-run macroeconomic determinants of stock market development in Hong Kong and the Philippines. Third, it empirically investigated the short-run macroeconomic determinants of stock market development in Hong Kong and the Philippines. And finally, it empirically assessed the dynamic relationship between the determinants of stock market development in Hong Kong and the Philippines.

To achieve the first objective, this study critically assessed stock market development in Hong Kong and the Philippines. It outlined the stock market development experiences and trends in the studied countries. In particular, it explored the origin of stock markets, discussed the development of stock markets in terms of structural reforms and regulatory reforms. It also discussed the stock market's performance during the recent decades, measured by key market indicators, the size and liquidity of the stock markets. In addition, it presented the key challenges facing stock market growth in the studied countries. Finally, it critically compared the similarities and the differences between stock market development in these two countries.

In the study, Hong Kong was chosen to be one of the studied countries due to the phenomenal growth in its size and liquidity of the stock market in recent decades. It was found that Hong Kong had the largest stock market in the world in 2014, as measured by the stock market capitalisation ratio (WDI, 2016). Hong Kong also had the most liquid market in terms of the total value traded ratio in 2014 (WDI, 2016). Similarly, the Philippines was chosen to be one of the studied countries due to the impressive development of its stock market in recent decades. According to WDI (2016), the global ranking of the Philippine Stock Exchange (PSE) substantially improved from 44th in 2009 to 12th in 2014, as measured by the market capitalisation ratio. Therefore, this study aimed at unveiling the key macroeconomic drivers of the fast growing stock markets in these two countries. In addition, to the best of our knowledge, this is the first study examining the macroeconomic determinants of stock market development in these two countries.

This study also explored the theoretical and empirical literature that investigated the factors leading to the growth of the stock market. It found that the macroeconomic factors being investigated in the literature encompassed economic development, banking sector development, interest rate, inflation rate, exchange rate, private capital flows, trade openness and stock market liquidity. The study found that the relationship between these factors and the development of the stock market were highly debatable in the literature. Therefore, the study enriched the literature by conducting an empirical investigation on the relationship between a set of macroeconomic variables and stock market development in Hong Kong and the Philippines.

To examine the impact of macroeconomic determinants of the development of the stock markets in Hong Kong and the Philippines, the study specified a modified version of the empirical model used by other studies such as those by Garcia and Liu (1999), El-Wassal (2005), Ben Naceur et al. (2007), Yartey (2007; 2010), and Billmeier and Massa (2009). In this model, stock market development was regressed on six variables, which were banking sector development, inflation rate, economic growth, exchange rate, trade openness, and stock market liquidity.

The study utilised the Dickey-Fuller Generalized Least Squares test, and the Perron (PPURoot) test to measure the stationarity of the variables used in the study. The results of these tests showed that all the variables were integrated of orders not more than one. The study then continued to investigate both the long-run and short-run relationships between the development of the stock market and its set of determinants in the studied countries by using the ARDL bounds testing procedure. This procedure was utilised throughout the study because of its favourable characteristics.

7.3 Summary of the Empirical Findings

The empirical findings revealed a number of interesting results. In the case of Hong Kong, the long-run regression results showed that the key macroeconomic determinants of stock market development were: banking sector development, inflation rate, exchange rate, economic growth and trade openness. In particular, the results found that banking sector development, economic growth and trade openness exerted a positive and significant influence on stock market development. Conversely, the inflation rate and exchange rate exerted negative and significant impacts on stock market development.

In addition, the short-run regression results showed that the key macroeconomic determinants of stock market development in Hong Kong were: banking sector development, inflation rate, exchange rate, economic growth and trade openness. Similar to the long-run results, the short-run results showed that banking sector development and economic growth had positive and statistically significant impacts on stock market development, whereas inflation rate and exchange rate had negative and statistically significant impacts on stock market development. In addition, trade openness had a negative impact on stock market development in the short run, while it had a positive impact in the long run.

In the case of the Philippines, the long-run regression results showed that the key macroeconomic determinant of stock market development was trade openness. The results showed that the coefficient of trade openness was negative and statistically significant. Contrary to the expectation of this study, there was a negative relationship

between trade openness and stock market development. Such a relationship, however, is consistent with previous studies such as those by Jin (2006) and Kim et al. (2011).

In addition, the short-run regression results showed that the key macroeconomic drivers of stock market development included banking sector development and the exchange rate. The results revealed that banking sector development and the exchange rate had positive and significant impacts on stock market development in the short run.

7.4 Recommendations for Policy

Based on the above findings, five main policy recommendations can be made in the case of Hong Kong, and three main policy recommendations are suggested in the case of the Philippines. In the case of Hong Kong, first of all, the positive and significant impact of banking sector development on stock market development, found both in the long and short run, indicated the complementary nature of these two sectors in the financial system. Hong Kong has been known as a financial center in the Asian region over the past few decades. In particular, it has a long-established track record as a leading international banking center in Asia (see Reed, 1981). The continuous growth in both international and domestic banking activities in Hong Kong not only further strengthens her role as an international financial center, but also benefits the growth of the stock market. Therefore, policymakers should pursue policies that promote the growth of the banking sector in order to further enhance stock market development. Policies such as the launch of Hong Kong's Renminbi banking business, and the development to become the global offshore Renminbi business hub, will be beneficial to the development of the banking sector in Hong Kong, thereby promoting stock market development.

Second, the study found the inflation rate to have a negative and significant impact on Hong Kong's stock market development both in the long run and the short run. During the study period, the monetary authority was effective in bringing down the inflation rate of over 4 per cent in 1992Q1 to 1.33 per cent in 2016Q3. The monetary

authority should continue to maintain its monetary policy to stabilise the inflation rate at low levels in order to continue to promote stock market development.

Third, the study found a significant negative impact by the exchange rate on stock market development both in the long and short run. It indicated that policies for stabilising exchange rate fluctuations were conducive to the development of the stock market in Hong Kong. It appeared that the monetary authority in Hong Kong made an appropriate decision by adopting the linked exchange rate system in 1983 [Hong Kong Monetary Authority (HKMA), 2016]. Since then, the Hong Kong dollar has been linked to the US dollar at an exchange rate of HK\$ 7.8 to US\$ 1. Policymakers may consider linking the Hong Kong dollar to the Chinese Renminbi in the future due to the increasing economic and financial ties between these two economies.

Fourth, economic growth was found to have a positive and significant impact on Hong Kong stock market development in the long and short run. During the study period, the real GDP growth rate was moderate (i.e. at an average of 3.72 per cent). Therefore, policymakers should strive to pursue growth enhancing policies, which will in turn benefit the development of the stock market in the country.

Fifth, the study found that trade openness had a positive and statistically significant long-run impact on stock market growth in Hong Kong. Hong Kong has been known to have a small and open economy. Its average trade openness was maintained at the high level of 336.91 per cent during the study period. Therefore, policymakers in the country should continue to pursue the policies that enhance trade openness so as to further promote stock market growth.

In the case of the Philippines, three policies are recommended as informed by the empirical findings. First, the study found that trade openness exerted a negative and significant impact on the development of the stock market in the long run. The main export sectors, such as the electrical components and equipment sectors, accounted for only 0.3 per cent of the total market capitalisation in the stock market in 2014. Such low reliance on external equity finance of the exporting industries slows down the development of the stock market. Therefore, policymakers of the country should consider the policies that promote the use of equity financing in the production of

main exports. Such policies will increase the demand of equity financing from those exporting industries, thereby benefitting the long-term development of the stock market.

Second, the study found that banking sector development exerted a positive and significant impact on the development of the stock market in the short run. This finding was supported by the recent development of the banking sector. As measured by the domestic credit to GDP ratio, the ratio increased from 134.04 in 2001 to 165.60 in 2016. It was evident that financial deepening in the banking sector grew alongside the development of the Philippine stock market during the study period. Therefore, policymakers should continue to pursue policies that promote banking sector development so as to foster the growth of stock market.

Third, the study also found that exchange rate exerted a positive and significant impact on the development of the stock market in the short run. During the period of 2001Q4 to 2016Q4, the real effective exchange rate index increased mildly from 85.53 to 111.05. Such an increase was found to be beneficial to stock market growth. Therefore, policymakers of the country should strive to maintain the stability of its domestic currency in order to further promote the growth of stock market development.

7.5 Limitations and Suggested Areas for Future Research

In spite of the efforts made to ensure that this study is empirically defensible, it may still be limited in some ways. The first limitation is the narrow and different time spans of the two studied countries. The choice of the time span was dictated by the availability of the macroeconomic data. The study strived to source the data from different reliable sources, such as the Census and Statistics Department of Hong Kong, Hong Kong Exchanges and Clearing Limited (HKEx), the Hong Kong Monetary Authority (HKMA), International Financial Statistics of the International Monetary Fund (IFS), and the World Federation of Exchanges (WFE). Despite all these efforts, the quarterly data of the Philippines is available only for the period of 2001Q4 to 2016Q4. Although the use of the ARDL bounds test is suitable even when the sample size is small, a longer time span of the dataset might produce more consistent

estimates. Perhaps, as data become available in the future, researchers could revisit this study in order to assess the consistency of the estimates.

Second, although efforts have been made to include as many macroeconomic variables as possible, the model could not include all of them due to the narrow time span and data limitation. The current model includes six macroeconomic variables. Other macroeconomic variables such as portfolio investment and FDI, and institutional variables such as the Heritage Foundation's Index of economic freedom, could have been included in the model. However, this was not feasible due to the short time span and data limitation. Nevertheless, the study has tried to give a comprehensive picture of how the macroeconomic variables affect stock market development in the studied countries as much as possible. Therefore, it will be interesting to consider including those variables in future research and to see whether there is a fundamental difference in the empirical findings.

Finally, in this study, stock market development is measured by the market capitalisation ratio as suggested by many other studies (see Arestis and Demetriades, 1997; Garcia and Liu, 1999; Boyd et al., 2001; El-Wassal, 2005; Ben Naceur et al., 2007; Yartey, 2007, 2010; and Billmeier and Massa, 2009). However, stock market development is a multifaceted concept that can be measured by other indicators such as the liquidity, degree of international integration, concentration, and volatility of the stock market (see Demirgüç-Kunt and Levine, 1996; Demirgüç-Kunt and Maksimovic, 1996; and Levine and Zervos, 1996; 1998). Therefore, future studies could be pursued by using these indicators to measure stock market development.

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APPENDIX

A1: Major events leading to the stock market development in Hong Kong and the Philippines

Year	Hong Kong	The Philippines
1891	The Hong Kong Stock Exchange was established.	
1927		The Manila Stock Exchange was established.
1936		<ul style="list-style-type: none"> • The Securities Act was enacted. • The Securities and Exchange Commission (SEC) was established.
1963		The Makati Stock Exchange was established.
1969	The Far East Stock Exchange was established.	
1971	The Kam Ngam Stock Exchange was established.	
1972	The Kowloon Stock Exchange was established.	
1973	<ul style="list-style-type: none"> • Four stock exchanges agreed to standardise their trading sessions. • The establishment of the Commissioner for Securities and the Securities Commission to regulate the stock exchanges. 	Two presidential decrees were passed to regulate the two stock exchanges.
1974	<ul style="list-style-type: none"> • The Securities Ordinance and the Protection of Investor Ordinance were enacted. • Part VI of the Securities Ordinance and the Securities Regulations came into effect. 	
1975		The SEC implemented the uniformity of price fluctuations, board lots and trading symbols for the two stock exchanges.
1979		The Securities Investors Protection Fund Corporation was established.
1982		The Revised Securities Act was enacted.
1986	<ul style="list-style-type: none"> • Unification of four stock exchanges into the Hong Kong Stock Exchange (HKSE). • HKSE received full membership from the World Federation of Exchanges. 	
1987		The two stock exchanges agreed to use a common set of index stocks and adopt the variable multiplier method.

1989	The Security and Futures Commission (SFC) was established.	
1990		The computation of the stock market indices was changed from a price-weighted to a full market capitalisation-weighted method.
1992	The first Hong Kong-incorporated Mainland Chinese enterprise listed its shares through an initial public offering on the HKSE.	Unification of two stock exchanges into the Philippine Stock Exchange (PSE).
1993	The first Mainland-incorporated enterprise commenced trading on the HKSE.	
1994		The PSE Composite Index underwent major revision.
1995		The PSE received full membership from the World Federation of Exchanges.
1996		The SEC grants the status of a Self-Regulatory Organization to the PSE.
1999	<ul style="list-style-type: none"> • The second board (Growth Enterprise Market) was officially launched by the HKSE. • A single holding company, Hong Kong Exchanges and Clearing Limited (HKEx), was established. 	
2000	<ul style="list-style-type: none"> • The HKEx was demutualised and went public by way of introduction. • The SFC became the main regulator of exchange participants. 	<ul style="list-style-type: none"> • The Securities Regulation Code was enacted. • The PSE was demutualised.
2003	The Securities and Futures Ordinance became effective.	<ul style="list-style-type: none"> • The PSE went public by way of introduction. • The SEC installed the Advance Warning and Control System to protect the integrity of the stock market.
2004	Preferential treatment was granted to Hong Kong by the Closer Economic Partnership Arrangement (CEPA) between Mainland China and Hong Kong.	The PSE amended the rule on minimum commission that placed a minimum rate on all trades regardless of the amount of transaction.
2005		The PSE, FTSE International Limited and Association of Southeast Asian Nation (ASEAN) stock exchanges, Jakarta Stock Exchange, Bursa Malaysia Berhad, Singapore Exchange Securities Trading Limited, and Stock Exchange of Thailand signed a memorandum of agreement to create the FTSE / ASEAN index.

2006		The FTSE / ASEAN 40 exchange-traded fund was launched by listing on the Singapore Exchange.
2007	The HKEx Electronic Disclosure Project commenced.	
2008	The launch of a bilingual (English and Chinese) website called HKExnews by the HKSE.	<ul style="list-style-type: none"> • The PSE implemented a circuit breaker rule. • The Credit Information System Act was enacted.
2009	A Closer Cooperation Agreement with the Shanghai Stock Exchange and Shenzhen Stock Exchange was signed.	
2010		The PSE revised various rules on listing by way of introduction.
2011		The PSE revised its policy on managing the PSE Index.
2012	<ul style="list-style-type: none"> • A joint venture of the HKEx, the Shanghai Stock Exchange and the Shenzhen Stock Exchange, called the China Exchange Services Company Limited, was co-founded. • HKEx acquired the London Metal Exchange to be the first overseas member of the HKEx Group. 	<ul style="list-style-type: none"> • The Amended Minimum Public Ownership Rule became effective. • The Capital Markets Integrity Corporation was established. • The PSE launched its new surveillance system called Total Market Surveillance.
2013	<ul style="list-style-type: none"> • The RMB Qualified Foreign Institutional Investor scheme was formalised. • Hong Kong Securities Company Limited admitted China Securities Depository and Clearing Corporation Limited as the clearing agency participant to the Central Clearing and Settlement System. 	The country attained an upgrade in credit rating to investment grade status from the three biggest international rating agencies.

Sources: Author's own compilation.