

**ANALYSIS OF PLANNING
CROSS-LISTED IDX STOCK INDEX AS
AN UNDERLYING DERIVATIVE PRODUCT IN SGX;
A COMPARISON STUDIES BETWEEN JCI AND LQ 45**

THESIS

By

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THESIS ADVISER
RECOMMENDATION LETTER

This Thesis entitled “**Analysis of Planning Cross – Listed IDX Stock Index as an Underlying Derivative Product in SGX; A Comparison Studies between JCI and LQ 45**” prepared and submitted by AryantoHadisantoso in partial fulfillment of the requirements for Bachelor Degree in Economics Major in Management, has been reviewed and found to have satisfied the requirements for a thesis fit to be examined. We therefore recommend this thesis for Oral Defense.

Cikarang, Indonesia 21st December 2011

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APPROVAL SHEET

Herewith, the Panel of Examiners declare that the Thesis entitled **Analysis of Planning Cross – Listed IDX Stock Index as an Underlying Derivative Product in SGX; A Comparison Studies between JCI and LQ 45**, submitted by AryantoHadisantoso majoring in International Business Management, Faculty of Economics was assessed and proved to have passed the Oral Examination on 13th January 2012.

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DECLARATION OF ORIGINALITY

This Thesis entitled “**Analysis of Planning Cross – Listed IDX Stock Index as an Underlying Derivative Product in SGX; A Comparison Studies between JCI and LQ 45**” prepared and submitted by AryantoHadisantoso in partial fulfillment of the requirements for Bachelor Degree in Economics Major in Management has been reviewed and found to have satisfied the requirements for a thesis fit to be examined.

Cikarang, Indonesia, 21st December 2011

Researcher,

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ABSTRACT

This research is about the relationship between satellite market and home market, and the analysis of planning cross-listed IDX stock index as an underlying derivative product in SGX. People in the Indonesia Stock Exchange has inspired researcher to do this analysis study, and researcher found that, it is something new in financial market in Indonesia, and the idea was quite interesting, so in this research, researcher is well supported by the IDX.

There is still no derivative product in Indonesia Stock Exchange (IDX) as underlying stock index traded through cross-listing in other foreign market, so it is necessary to conduct a study analyzing of the potential benefits and risks when the derivative product or index listed in IDX would be traded in another foreign market.

Since the purpose of this research is simply finding out the benefits and potential risks of planning collaboration between IDX and SGX in terms planning of cross-listing of IDX underlying stock index to be listed in Singapore Exchange, and to identify what proper stock index that may be matched as an underlying derivative product to be listed in Singapore Exchange in the future, the researcher would like to use qualitative method as a useful tool to do the research.

The results of this feasibility study is to review the IDX's management to take any decision related to collaboration between IDX with SGX in terms of using U.S. denominated within IDX 45 futures and IDX 45 options as the underlying stock index LQ 45 at IDX. May in the future it will be created an advantageous relationship from cross-listed stock index between SGX and IDX.

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CHAPTER I

INTRODUCTION

1.1 Background of the study

The advanced of the financial markets in parts of the world, the growing integration of capital markets across the country, and many kinds of securities traded on the domestic country enable to conduct a trade toward foreign Exchange in another country. This concept is known as cross-listing that can be done in cash market and in derivatives market. The benefit of cross-listing will create a mutual benefit between both of countries that trade it.

The cross-listing concept in derivative market is basically a different concept with cross-listing in equity markets where cross-listing for derivative market does not aim to increase the capital for an issuer of securities but rather to aim at a market-making, improving the liquidity and price discovery. The mechanism of cross-listing in the derivative market itself is actually trading a future contract or option contract using a form of underlying such as index or any security that are traded on an Exchange in another country.

Singapore Exchange is one example which has been into the cross-listing for derivative products and it was expanded to conclude such as Japan, Hong Kong, Taiwan and India. Several types of products include the MSCI Taiwan Index futures contracts (MSCI-TW) are traded on the Singapore Exchange with TAIFEX futures contracts (TX-Fut) are traded on the Taiwan Stock Exchange (TWSE), SGX Nikkei 225 Index futures (SGX Nikkei) are traded on the Singapore Exchange with Nikkei 225 Index futures (OSE-Nikkei) are traded on the Osaka Stock Exchange, SGX CNX

Nifty Index futures (SGX-Nifty) are traded on the Singapore Exchange with S&P CNX Nifty Index futures (IND-Nifty) are traded on the National Stock Exchange (NSE) India.

Within the Indonesia Stock Exchange (IDX), there is still no derivative product traded by cross-listing in the foreign Exchange in another country. Therefore, through this feasibility study, it would analyze about the potential benefits and risks when derivative products in Indonesia Stock Exchange, in this case the IDX stock index contracts, traded in the Exchange of another country (SGX), and to know what proper stock index that may be matched as an underlying derivative product to be listed in Singapore Exchange as a planning in the future.

1.2 Problem Identification and Statement

Nowadays, there is nothing derivative product in Indonesia Stock Exchange (IDX) as underlying stock index traded through cross-listing in another foreign market. It is necessary to conduct a study analyzing the potential benefits and risks when the derivative product or index listed in IDX would be traded in another foreign market. It is possible to include Indonesia (IDX) considering it has a huge trading volume in domestic market. Therefore in this research, it may be stated in some questions form such as;

1. What is the benefit of planning in collaboration between IDX and SGX in terms of cross-listing of IDX underlying stock index to be listed in Singapore Exchange?
2. What is the potential risk of planning in collaboration between IDX and SGX in terms of cross-listing of IDX underlying stock index to be listed in Singapore Exchange?

3. What is the proper stock index that may be matched as an underlying derivative product to be listed in Singapore Exchange (JCI or LQ 45) as a planning in the future?

1.3 Research Scope and Limitation

In this research, it may be focused on the relationship between satellite market and home market in terms of evidence from cross listed Singapore futures contracts that facilitates the trading of numerous dual-listed financial derivatives. This research also shows the proper stock index that may be matched to be listed in SGX between JCI and LQ 45. Both of indexes are market capitalization indicators that show local economy's growth of Indonesia, so in this study, researcher is very supported by the Indonesia Stock Exchange. The limitation may include the distance factor to reach SGX to do some observations in Singapore. The scope also shows the depth of analysis that was pursued. This research may cause many difficulties for the researcher to accomplish, but the researcher had done with the best effort and contribution to have this research done effectively.

1.4 Research Objectives

1. To know the benefits of planning in collaboration between IDX and SGX in terms of cross-listing of IDX underlying stock index to be listed in Singapore Exchange.
2. To know the risks of planning in collaboration between IDX and SGX in terms of cross-listing of IDX underlying stock index to be listed in Singapore Exchange.
3. To compare what proper stock index that may be matched as an underlying derivative product to be listed in Singapore Exchange as a planning in the future.

1.5 Research Benefits

1. Giving additional information and beneficial for relevant parties, especially for Indonesia Stock Exchange.
2. Providing information and comparison to other researchers who are interested in the same issue.

1.6 Research Method

In this qualitative research – Analysis of Planning Cross-Listed IDX Stock Index as an Underlying Derivative Product in SGX; Comparison Studies between JCI and LQ 45, researcher really do the field research in order to get primary data. The IDX is being researched so that research can get primary data by using types of evidence instruments, which are:

- Inquires of the client
- Observation
- Documentation
- Confirmation

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1 About Home Market and Satellite Market

Regional integration can be full or partial. Full integration will entail a single market, possibly achieved through merger of existing individual markets, with uniform rules, equal access, equal treatment, and a common trading platform and clearing and settlement process. Partial integration may be in the form of cross-listing of stock index, interoperability, alliances, and joint ventures. In cross-listing index it has been known there are two strongholds, which are as home market (domestic market) and satellite market (foreign market).

The creation and trading of index futures have become commonplace in the modern financial markets. While most index futures contracts are based domestically (i.e. on indices containing shares from only that country, with a contract multiplier in the same currency as the underlying shares, and traded in that country), some contracts have an international dimension and are dual-listed in an onshore and offshore market with simultaneous trading hours. Most studies of cross-listed to date tend to focus solely on the competition between the foreign and domestic markets with the most common topics being price discovery and information transmission (see Shyy and Lee, 1995; Booth, Lee and Tse, 1996; Ding, Harris, and McInish, 1999; Roope and Zurbruegg, 2002; Chou and Lee, 2002; Chen et al., 2002; Covrig, et al., 2004; and Hsieh, 2004).

Other researchers compare the futures trading volume, price volatility and components of the intraday bid ask spreads (e.g. Huang 2002, 2004a and 2004b; and Webb, Muthuswamy and Segara, 2007). More recently, the expiry day effects were

analyzed by Chung and Hseu (2008). However, no studies thus far have examined the simultaneous relationship amongst the trading volume of the relevant Exchanges for cross-listed index future. One of the first cross-listed derivatives to be traded simultaneously is the Nikkei 225 Index futures.¹ Since then, other dual-listed index futures that have concurrent trading hours, like the MSCI Taiwan and CNX Nifty (India) Index Futures have been established (see Board and Sutcliffe, 1996) and the analyses of these derivatives have captured the interest of many practitioners, regulator, and academics.

Intuitively, the cross-listings of an index future contract in a foreign market are regarded naturally as a competitor, since these new offerings are perceived to cannibalize existing trade orders. However, contrary to this common perception, the literature on cross-listing financial products have provided evidence that on average, trading activities post-listing increases for both the domestic market and overall which suggest that a mutually beneficial relationship exists between cross-border Exchanges.

Consistent with this trading, Hargis (1997), Smith and Sofianos (1997) found that cross-listing have resulted in a “win-win” situation for Exchanges with volume and liquidity improving in the domestic market even though the foreign market might dominate trading. Hargis and Ramanlal (1998) also documented the same finding and provide further evidence (using a theoretical model) that cross-listing has a positive effect on the liquidity and trading activities of the local market. Domowitz et al. (1998) extended the study of order flow to Mexican securities cross-listed in the United States and observed that 2 out of 3 cross-listed stocks in their sample experienced large increases in post-cross-listing volume. In a review of the literature, Karolyi (1998) also concluded that the cross-listing of securities in a foreign is beneficial for the local market. It was observed that liquidity tend to improve from

¹ This index future was first launched in the Singapore Exchange derivatives market on the 3rd Sep, 1986 and subsequently introduced on the Osaka Stock Exchange (OSE) on the 3rd Sep, 1988.

the additional listing and that on average, total post-listing (and domestic) trading volume increases.

The order flow diversion hypothesis was specifically tested by Lau and McInish (2002) using securities cross-listed in Singapore and Malaysia. They document that contrary to the popular argument that a foreign listing cannibalize local orders, volume in the domestic market (Malaysia) fell 42.9%² when the foreign (Singapore) market are closed for holidays. Furthermore, they observe that the introduction of regulations to cease offshore trading does not increase the trading volume of the domestic market. Khoury and Fisher (2002) extended the study of trading flow into dual-listed derivatives examining the interlisting Montreal options on the US markets. Interestingly, they observed that trading volume shifts to the option market where trading in the underlying security is concentrated, irrespective of the location where the option was first introduced.

Consistent with these findings, Baruch et al. (2007) suggest that orders may also migrate from the foreign market to the domestic market if the returns of the cross-listed securities are highly correlated with the returns of others securities on the domestic market as cross-listing generates large interest from foreign traders, and the domestic market competes effectively for orders. Despite these advances in the financial cross-listing literature, no studies thus far have examined how the trading activities of the domestic markets are affected by the additional listing of a similar index future in a foreign market.

Given that futures trading contribute a sizeable amount towards the trading activities of an Exchange, the study of futures order flow is of interest to operators of stock Exchanges as their revenues are highly correlated to trading volumes. Further, the market quality of local Exchanges can be adversely affected if sufficient orders flow overseas. Policymakers in the domestic markets are similarly concerned about order

² Covrig, V., Ding, D., and Low, B-S., 2004, 'The Contribution of a Satellite Market to Price Discovery: Evidence from the Singapore Exchange', *Journal of Futures Markets* 24, pp 981-1004

migration of this kind as they seek to enact a balanced legislation to ensure a fair and efficient market while preventing capital outflow diversion hypothesis on cross-listed index futures and examine the volume relationship between the domestic markets and foreign markets.

The Singapore Exchange (SGX) provides an ideal experimental setting for examining the relationship between cross-border Exchanges as it is as satellite hub that facilitates the trading of numerous dual-listed financial derivatives. These include the frequently traded Nikkei 225, MSCI Taiwan and CNX Nifty Index futures. As these SGX traded cross-listed derivatives have concurrent trading hours with the domestic markets, it provides a natural experimental setting to directly examine the order flow diversion hypothesis. For the purpose of this finding, we utilize the Taiwanese securities to test out main hypothesis and provide supporting results from the Nikkei 225 and Nifty Index futures.

Our results show that there is a positive and statistically significant relationship between the turnover of the SGX-listed index futures and those of the domestic Exchanges. Specifically, we find that an increase in the turnover of the SGX-listed index futures is associated with a corresponding increase in the trading activities of the domestic index futures and components stocks. These findings confirm the findings of prior studies that the additional listing of a financial product on a foreign market increases the trading volume of the home markets and that a mutually beneficial relationship exists between the cross-border Exchanges.

Noronha et al. (1996) posit that cross-listing stocks will lead to a rise in the trading volumes of both the domestic and foreign markets as informed trading increases. Consistent with this theory, using a sample of 126 NYSE/AMEX that were subsequently listed on the London Stock Exchange (LSE) and the Tokyo Stock Exchange (TSE), they observed that the trading volume of stocks that were cross-listed in the LSE experienced a simultaneous increase in both trading volumes of the

domestic and foreign markets. However, for TSE cross-listed stocks, only the onshore market activities documented for the offshore market.

2.2 Market Co-Integration Theory (Correlation between Regional Stock Market Indices Stock Market in Indonesia)

The JCI's movements are little influenced by international economic movements. During the Asian financial crisis of 1997, some studies have shown that weekly returns of stock market in Korea, Thailand, and Indonesia had a close correlation (Abhimanyu, 2000; Fratzscher 1999). The majority of the stock market decreased significantly after the crisis hit Thailand in July 1997. The similarity of this index movement indicates a contagion effect that moves from one country to another. Another example has been shown in July 2007 when European and Asian markets fell after the issue of U.S. Subprime Mortgage then JCI (IHSG) stock index fell from 2211.4 points to 1908.63 or 13.69% on August 16, 2007³. At the time, the DJIA fell 2.95% from 13,236.53 points to 12,845.63⁴ points. This problem has been globalized and increased the failure rate among mortgage holders in United States, which triggered and arised consideration of recession in the world economy.

The study of Lillian Cheung, Laurence Fung and Chi-Sang Tam have measured the interdependence between capital market in the United States and the EMEAP (Executives' Meeting of East Asia-Pacific), including central bank and monetary authority in Australia, China, Hong Kong, Indonesia, Japan, Korea, Malaysia, New Zealand, Philippines, Singapore and Thailand. This research explains the dependence between EMEAP capital market and the United States is important. This research also explains the rising trend since 2006 and increased sharply following the bankruptcy of Lehman Brothers in September 2008, and the contagion occurred when

³ *Review of Economic Studies*
<http://asia.advfn.com/StockExchanges>

⁴ *Review of Economic Studies*
<http://asia.advfn.com/StockExchanges>

the correlations through cross-country increased during the crisis period related to the correlation during the Tranquil⁵ (Forbes and Rigobon, 2002). The results of this study show no significant impact of contagion between EMEAP region and the United States, but more toward the contagion in EMEAP region.

Another study by Adwin Surge Atmadja⁶ examining the dynamic interaction of stock price index of five ASEAN countries, such as Indonesia, Malaysia, Philippines, Singapore and Thailand in financial crisis on 1997. By using the price index time series, the vector error correction model (VECM) is used to empirically test the interaction among variables. The result, those five ASEAN stock market index price are integrated with two co-integration vector during the period of sampling, and the analysis shows interactions between short run dynamic among stock markets. The important impact for that case is the diversifications of portfolio in the five ASEAN stock markets do not reduce the investment risk because of high financial integration in this market.

In this study, the closing price of stock index on the last trading day of each month in the five ASEAN countries where JCI (Indonesia), KLSE (Malaysia), PSE (Philippines), STI (Singapore) and SET composite (Thailand) are used in the measurement of monthly movement of the stock market.

The purpose of this study is to observe the dynamic interactions between the five ASEAN stock price during the period of financial crisis in Asia (1997). There are two co-integration vectors among the five ASEAN stock price index, it is a fully integrated stock price index during this period. This study reveals that Indonesia is the only market that reacts to disequilibrium both of the co-integration vectors. All market responded one co-integration vector only.

⁵ The study shows that contagion from the EMEAP region had no significant impact on the United States, but that contagion from the US did impact on the EMEAP region

⁶ Adwin Surge Atmadja :The Author of “Analysis of The Value Exchange Rate Against Dollar America After Implementation System Policy Exchange Rates Float Free in Indonesia”

The first vector takes more than a year to produce equilibrium, while the second vector takes less than 1 year. The forecast error variance decomposition analysis shows that the largest proportion of forecast error variance of a country's stock index because of their each of stock. Stocks in Thailand significantly affect the error variance index of Singapore and the Philippines. The percentage of error variance of stock index Malaysia affected Singapore stock index significantly compared to stock index of other countries. Meanwhile, the equilibrium between Indonesia, Singapore and Thailand in the second co-integration vector requires more than five periods to achieve long-term equilibrium. Shocks in Thailand significantly affect the error variance index of Singapore and the Philippines.

The five ASEAN stock index is highly integrated, so the stock index of each country affect each other and move together toward a long-term equilibrium. The decreasing of stock index will be followed by other index since the majority of ASEAN markets, except Singapore, is still not well developed, because the their stock index are widely fluctuated impact to the high returns and high risks for investors. Therefore, the portfolio diversifying in the ASEAN markets still be risky since the high integration in this market.

Another study by Lim L.K. is testing a dynamic interdependence of the five founding members of ASEAN 5 (Indonesia, Malaysia, Philippines, Singapore and Thailand). The stock markets in this region are expected more transparent and interdependent for establishing the economy in ASEAN countries, especially after the Asian financial crisis in 1997.

In this study, three different time series methods are used to test convergent trends and the relationships among markets in Southeast Asia. The first method uses a Granger causality between returns in two countries and the group country with a vector auto-regression. The second method uses a simple statistical test to examine

the trend of index movements, and the third method uses a unit root test and co-integration analysis for the market index series.

Testing the return of ASEAN-5 indicates the average return is higher and the correlation with post-crisis period. The Granger causality results the increasing of integration among ASEAN-5 markets after the financial crisis with micro changes in the direction of Granger causality. The return of the United States market was found having the significant influence on the return of ASEAN-5. Among the ASEAN-5 markets, Indonesia and Singapore are two diverging countries, where the rest are converging using the statistical test for the convergence trend.

However, the ASEAN-5 showed some converging signs which are same with United States market in the post-period crisis. There is no market ASEAN-5 which has a long-term co-integration with the United States, besides Indonesia. Overall, there was occurrence of increasing level within integration and interdependence among the ASEAN-5 after the financial crisis.

2.3 Cross Listing Derivative Product in Other Countries

One of the studies by Frino and Harris, examining the relationship between the MSCI Taiwan Index futures contract (MSCI-TW) traded in Singapore Exchange (SGX) using the component stocks listed in Taiwan Stock Exchange (TSE) and TAIFEX futures contract (TX- Fut.) The study tested whether the presence of domestic market could affect the demand from domestic to foreign market. By using the basic system of structural equations to estimate the daily turnover effects, they observed that on average 5-year study period, there was increasing 10% in MSCI-TW turnover and 0.78% in the stock components, and 1.63% for TX- Fut.⁷

⁷ Working Paper of University of Sydney, 2006.
The relationship between satellite market and home market volumes

The further assessment is cross-listing other future contracts such as the Nikkei 225 and Nifty Index futures, providing evidences of a positive and significant relationship among stock trading cross boundary turnovers. The result indicates that despite of the existence competition between onshore and offshore markets, the volume of a mutually beneficial relationship existing between them. The author argues that the trade arbitration and expansion of investor base through cross-listing is the exact reason for the establishment of relations between those two markets.

One of the first cross-listed derivatives traded at the same time is the Nikkei 225 Index futures. The index future was first launched on the SGX derivatives market (formerly known as SIMEX) and then it introduced in Osaka Stock Exchanges (OSE). Since then, the others dual-listed index future contracts that have same trading hours, such as the MSCI Taiwan and the CNX Nifty (India) Index Futures were going to be established.

Based on this study, there is a mutually beneficial relationship between the overseas market and domestic market related to securities traded simultaneously. According to the author, the relationship in future contracts and stock components is due mainly of arbitration and the relationships by market participants. The market also allows the addition of offshore listings that can increase the (potential) investor.

2.4 Business Analysis

2.4.1 SWOT Analysis

The SWOT matrix theory helps visualize this analysis study. When executing this analysis it is important to understand how these elements works together. When an organization matched internal strengths to external opportunities, it creates core competencies in meeting the needs of its customers. In addition, an organization should act to convert internal weaknesses into strengths and external threats into

opportunities. In order to set this study, researcher is going through SWOT analysis. To know industry`s strengths, weaknesses, opportunities and threats. the SWOT-landscape grabs different managerial situations by visualizing and foreseeing the dynamic performance of comparable objects according to findings by Brendan Kitts, Leif Edvinsson and Tord Beding (2000).

SWOT analysis groups key pieces of information into two main categories:

- Internal factors – The *strengths* and *weaknesses* internal to the organization.
- External factors – The *opportunities* and *threats* presented by the external environment to the organization.

Strengths : attributes of the organization that is helpful to achieving the objective.

Weaknesses : attributes of the organization that is harmful to achieving the objective.

Opportunities: external conditions that is helpful to achieving the objective.

Threats: external conditions which could do damage to the business's performance.

2.4.2 PEST Analysis

Before PEST, Arnold Brown for the Institute of Life Insurance (in the US) organized the ‘STEP’ (Strategic Trend Evaluation Process) as a way to organize the results of his environmental scanning. In the 1980s, several other authors including Fahey, Narayanan, Morrison, Renfro, Boucher, Mecca and Porter are prefer to call it as PEST, until nowadays the PEST call has proven to be more popular than STEP.

By this PEST Analysis, researcher is helped through the analyzing the political, economic, social, technological, legal and environmental factor in Indonesia as a local market and Singapore as a satellite market.

Political changes relate to changes in government influence and can have huge significance for companies. Political changes are closely tied up with legal changes. Laws are continually being updated in a wide range of areas, e.g. consumer protection legislation, environmental legislation, health & safety and employment law, etc.

Economic changes are closely related to social ones. The economy goes through a series of fluctuations associated with general booms and slumps in economic activity.

Social factors relate to pattern of behaviour, tastes, and lifestyles. An understanding of social change gives business a better feel for the future market situation.

Technological things have also become particularly significant in the post-millennium world. This is particularly true in terms of modern communication technologies. Organisations need to be aware of the latest relevant technologies for their business and to surf the wave of change.

CHAPTER III

METHOD OF DATA PROCESSING AND COMPANY'S EXISTING CONDITION

This chapter will cover the methodology and procedures of the research. The methodology and procedures will be used in determining the sampling design, selecting respondent and determining research instrument. In order to do this research, there are a couple of steps that need to be followed, while at the same time, using the validity and reliability criteria to make sure that the study fulfills certain standards. Furthermore, the methodology and procedures will lead the whole contain of this chapter.

3.1 Research Method:

Since the purpose of this research is simply finding out the benefits and potential risks of planning in collaboration between IDX and SGX in terms planning of cross-listing of IDX underlying stock index to be listed in Singapore Exchange, and to identify what proper stock index that may be matched as an underlying derivative product to be listed in Singapore Exchange in the future, the researchers would like to use **Qualitative Method** as a useful tool to do the research.

A study based upon a Qualitative process of inquiry has the goal of understanding a social or human problem from multiple perspectives. Qualitative Research is conducted in a natural setting and involves a process of building a complex and holistic picture of the phenomenon of interest (Creswell, J.W. 1994. Manson, J. 1996). Qualitative Research involves analysis of data such as words (e.g. from interviews), pictures (e.g. video), or objects (e.g. an artifact).

Qualitative Research means “An unstructured, exploratory research methodology based on small samples that provides insights and understanding of the problem setting” (Malhotra and Peterson, 2002)

3.1.1 Source of Data:

This research is conducted from collecting two types of data, they are:

1. *Primary Data:*

Primary data is “Data originated by the researcher for the specific purpose of addressing the research the research problem” (Malhotra and Peterson, 2002). It is the information that is developed or gathered by the researcher especially for the research project on hand.

It refers to the field research conducted in this research, where the data collected is used for the purpose of testing the hypothesis. In this research, the primary data is directly collected by interviewing, mailing and phone, direct observation, and historical/legal documents. In this case study, all research data is collected and processed through some procedures such as;

- **Inquires of the client**

In this procedure, researcher ask for oral information (through interviews and discussion) from the management/staffs, especially in business development division of the company being researched. From this method, researcher obtain invalidated information that need to be validated through other procedures.

- **Observation**

This observation includes the process of gathering data by seeing, hearing, and feeling to assess certain activities. Through observation, the researcher

can obtain some information such as company condition, working environment, and process of internal discussion among some divisions in IDX, includes business development division, research division, and legal and surveillance division.

- Documentation

The documentation is the process of tracking down evidences either internal or external evidences of activities being researched. Researcher should state evidences (documents) being researched and the function who authorized them, where they are distributed, and the use of the evidences (those documents)

- Confirmation

This process is for getting verification about certain information from third party. This study case is done under supervision by Indonesia Stock Exchange (IDX). The company has confirmed that researcher has done his/her research in the company during period's time, and has discussed the content of his/her Thesis, including the findings and recommendations.

2. Secondary Data:

Secondary data is "Data collected from some purpose other than problem at hand" (Malhotra and Peterson, 2002). Actually, secondary data is used for exploratory study, but more formalized studies are typically structured which clearly stated hypothesis or investigative questions which are known as descriptive studies. The purpose of descriptive itself is to describe, explain, and validate findings. Descriptive research has a definition describes data and characteristic about the population or phenomenon being studied. Descriptive research answer the questions of who, what, where, when, how and why. The

secondary data is data collected from other sources than your own such as reference books or the Internet.

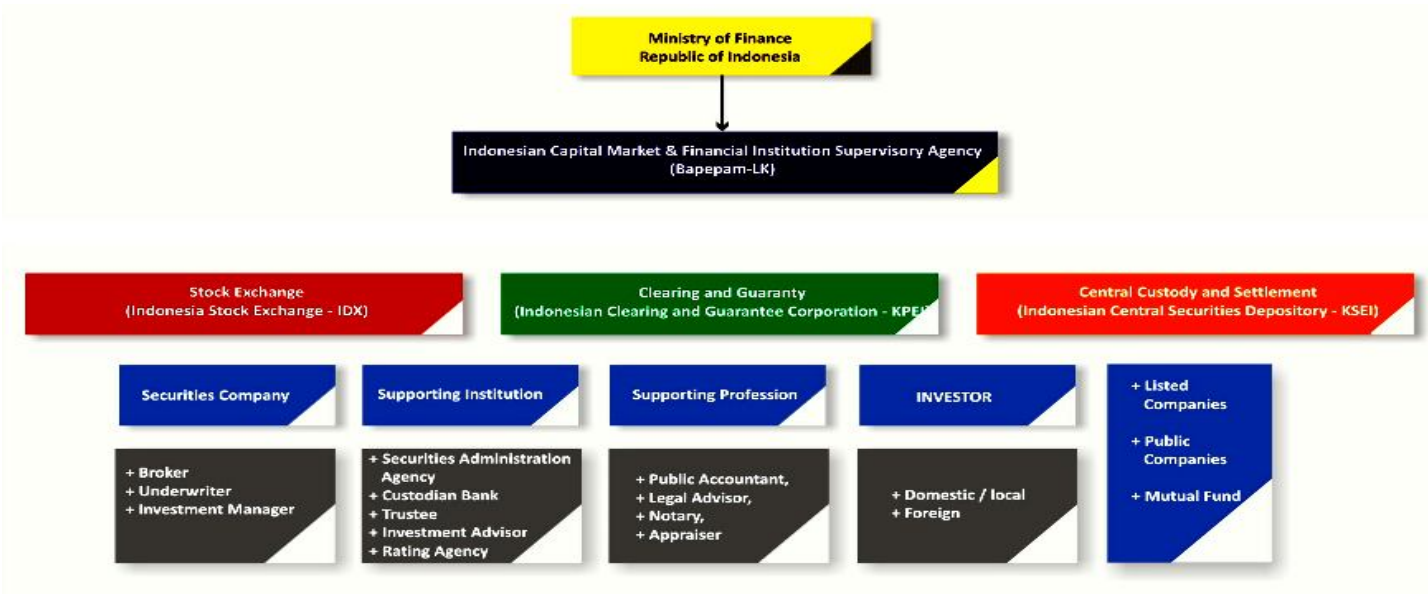
3.2 Company's Existing Condition

3.2.1 About IDX

Indonesia Stock Exchange (IDX) or in Indonesian is known well as Bursa Efek Indonesia (BEI) is a stock Exchange based in Jakarta, Indonesia. It was previously known as Jakarta Stock Exchange (JSX) before its name changed in 2007 after merging with Surabaya Stock Exchange (SSX). As of 28 June 2010, the Indonesia Stock Exchange had 341 listed companies with a combined market capitalization of \$269.9 billion. With this merger, IDX has established a stronger capital market that could serve as an alternative investment and acted as a mirror of the national economy.

The IDX is also supervised by the the Indonesian Capital Market (LK) and the Financial Institution Supervisory Agency (Bapepam) Ministry of Finance. Bapepam and LK are under monitored by Indonesia Finance Ministry. The Indonesia Capital Market Structure is following below.

Indonesia Capital Market Structure



Source: IDX (regulated by Law No. 8 Year 1995 concerning Capital Market)

Indonesia Stock Exchange (IDX) facilitates all market segments, securities firms and issuers will only need to be listed in one Bourse. IDX will also have an integrated trading infrastructure that facilitates all the traded instruments. As a result, the market capitalization will certainly grow and be able to compete in regional scale. IDX has improved the image of Indonesian capital market by setting a series of strategic programs such as increasing the number of local investors and issuers, adding new instruments of investment, and many more. By doing this study, IDX is preparing to aim the foreign investors and issuers to enlarge the capital market in Indonesia.

The capital market in Indonesia has actually exist long before the Independence of Indonesia. The first stock exchange in Indonesia was established on 1912 in Batavia during the Dutch colonial era. At that time, the Exchange was established for the interest of the Dutch East Indies (VOC).

During that era, the capital market grew gradually, and even became inactive for a period of time due to various conditions, such as the World War I and II, power transition from the Dutch government to Indonesian government, etc.

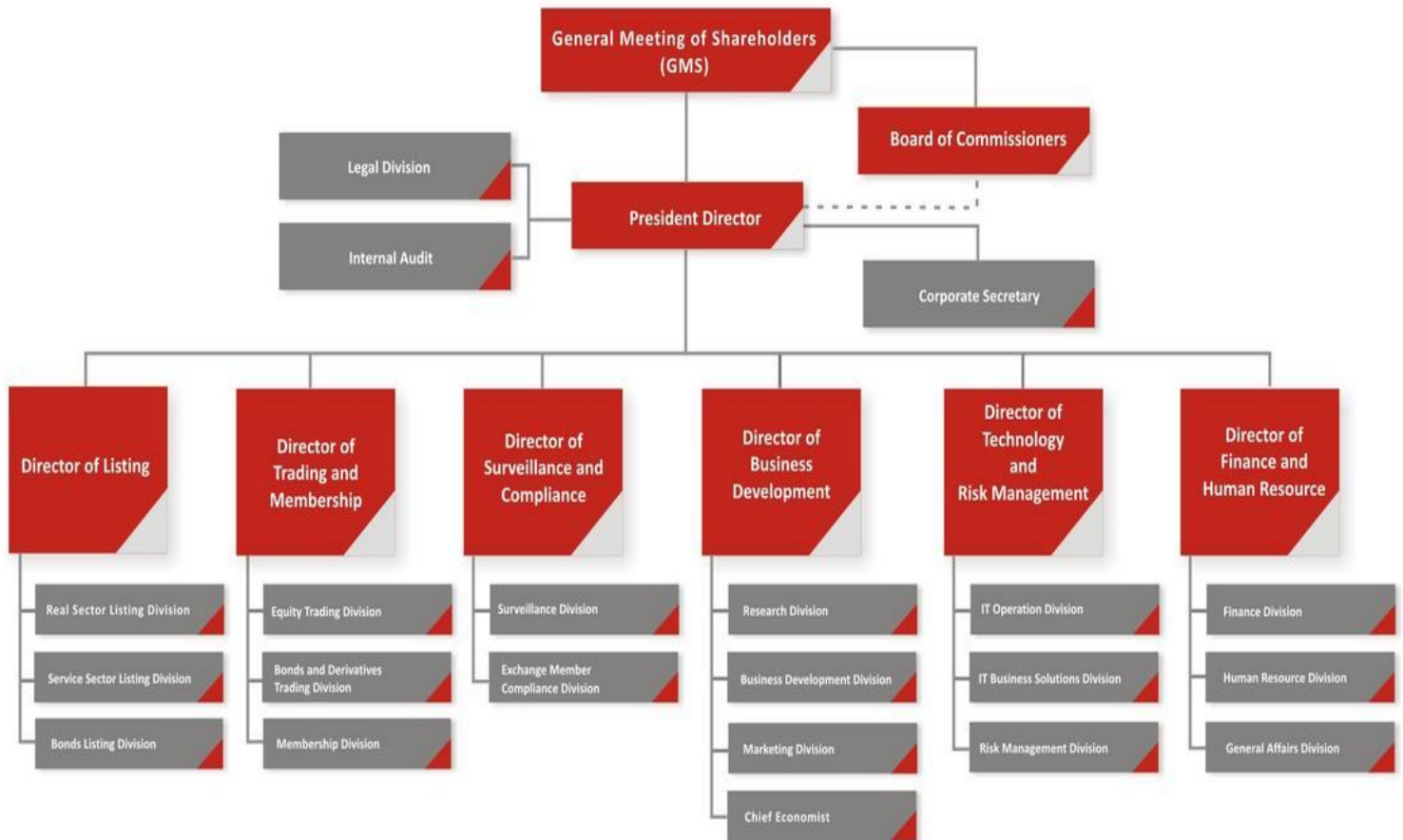
Indonesian government reactivated its capital market in 1977, and it grew rapidly ever since, along with the support of incentives and regulations issued by the government.

Below is the brief history of Indonesia Stock Exchange:

[Desember 1912]	The first Stock Exchange in Indonesia was built in Batavia (currently known as Jakarta) by the Dutch East Indies
[1914 – 1918]	The Batavia Stock Exchange was closed during the World War I
[1925 – 1942]	The Batavia Stock Exchange was re-opened, and new stock exchanges were established in Semarang and Surabaya
[Awal tahun 1939]	Due to political issues (World War II) the Stock Exchange in Semarang and Surabaya closed
[1942 – 1952]	Jakarta Stock Exchange (JSX) was re-closed during the World War II
[1956]	SX was re-activated by the issue of the Capital Market Emergency Regulations 1952 by the Minister of Justice of Indonesia (Prof. Dr. Sumitro Djojohadikusumo). The only product traded in the Exchange at that time was the Indonesian Government bond (1950)
[1956 – 1977]	Due to the nationalism programs on Dutch's companies by the Indonesian Government, JSX became stagnant. During this period, JSX became inactive
[10 Agustus 1977]	The Exchange was re-activated by the President Soeharto. It was supervised under the management of the Capital Market Supervisory Agency (Badan Pengawas Pasar Modal, or BAPEPAM). The re-activation of the capital market was also marked by the go public of PT Semen Cibinong as the first issuer listed in the JSX. July 10th is celebrated as the anniversary of the Capital Market in Indonesia

[1977 – 1987]	The activity of stock trading in JSX was dull. There were only 24 listed companies in JSX. Most people preferred to invest their money in Banks rather than the Capital Market
[1987]	PAKDES 87 (December Package 1987) was issued to give ways for companies to go public and foreign investors to invest their money in Indonesia
[1988 – 1990]	Deregulations packages in Banking and Capital Market were made. JSX welcomed foreign investors. The activities of JSX were improving.
[2 Juni 1988]	Indonesia Pararel Bourse started to operate and managed by the Securities and Money Trading Organization. It consisted of brokers and dealers
[Desember 1988]	The government issued PAKDES 88 to give ways for companies to go public, and some other regulations that brought positive impacts on the capital market growth were made
[16 Juni 1989]	Surabaya Stock Exchange started to operate and was managed by the Surabaya Stock Exchange Inc
[13 Juli 1992]	JSX was privatized, and as a result, the functions of BAPEPAM changed to become the Capital Market Supervisory Agency (BAPEPAM-LK). This date is celebrated as the anniversary of Jakarta Stock Exchange
[22 Mei 1995]	JSX introduced its computerized Jakarta Automatic Trading System (JATS).
[10 November 1995]	The Government of Indonesia issued Regulations No. 8 year 1995 on capital market. This regulation was effective on January 1996
[1995]	Indonesia Pararel Bourse was merged into Surabaya Stock Exchange
[2000]	Scripless trading system was introduced for the first time in Indonesia's Capital Market
[2002]	JSX started to implement the remote trading system
[2007]	Surabaya Stock Exchange was merged into Jakarta Stock Exchange. As a result, JSX changed its name into the Indonesia Stock Exchange
[02 Maret 2009]	The Launching of JATS Next-G, IDX New Trading System

Organization Structure



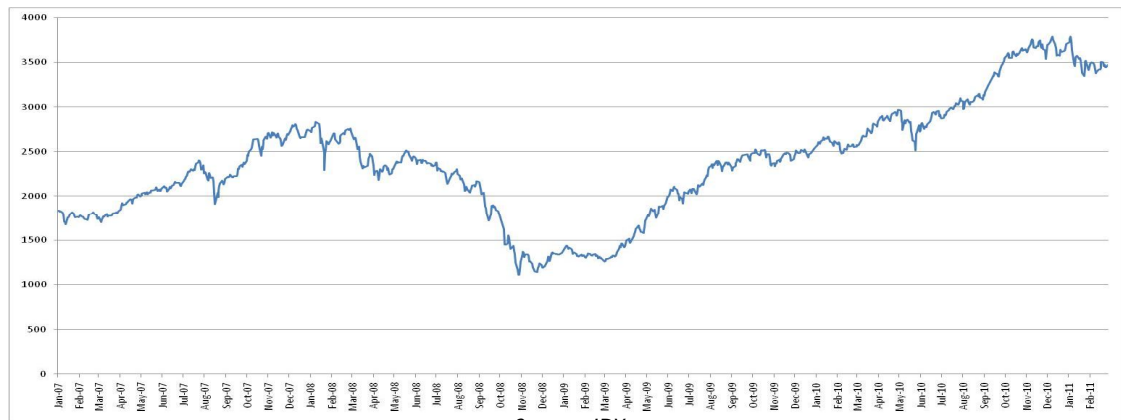
(Source: IDX)

To provide more complete information about the development of the stock to public, IDX disseminates the stock price data through print and electronic media. Stock index is one indicator of stock price movement. Currently, IDX has seven those of stock index, included Jakarta Composite Index (JCI) and LQ 45 Index.

1. Jakarta Composite Index or *Indeks Harga Saham Gabungan*

Jakarta Composite Index (JCI or JSX Composite), or in Indonesia is well known as Indeks Harga Saham Gabungan (IHSG) is one of the stock market index used by the Indonesian Stock Exchange. It was first introduced on April 1, 1983, as an indicator of stock price movements in IDX, this index includes the movement of prices of all common stock and preferred stock listed in IDX. The highest position that ever be achieved by IDX is 3.751,933 point on December 13, 2010.⁸ The IHSG's performance is following below.

IHSG's Performance on 2007-2011(February)



Formula:

$$IHSG = \frac{\sum p}{d} \times 100$$

where:

p : closing price in market

x : unit of stock

d : basic value (nilai dasar)

⁸ <http://www.financeindonesia.org>

$$Rata - Rata\ IHS\ G = \frac{Jumlah\ IHS\ G\ periode\ harian\ selama\ 1\ bulan}{Jumlah\ periodewaktu\ selama\ 1\ bulan}$$

or

JCI (*IHS*G) on average = total point for 1 month/total period for 1 month

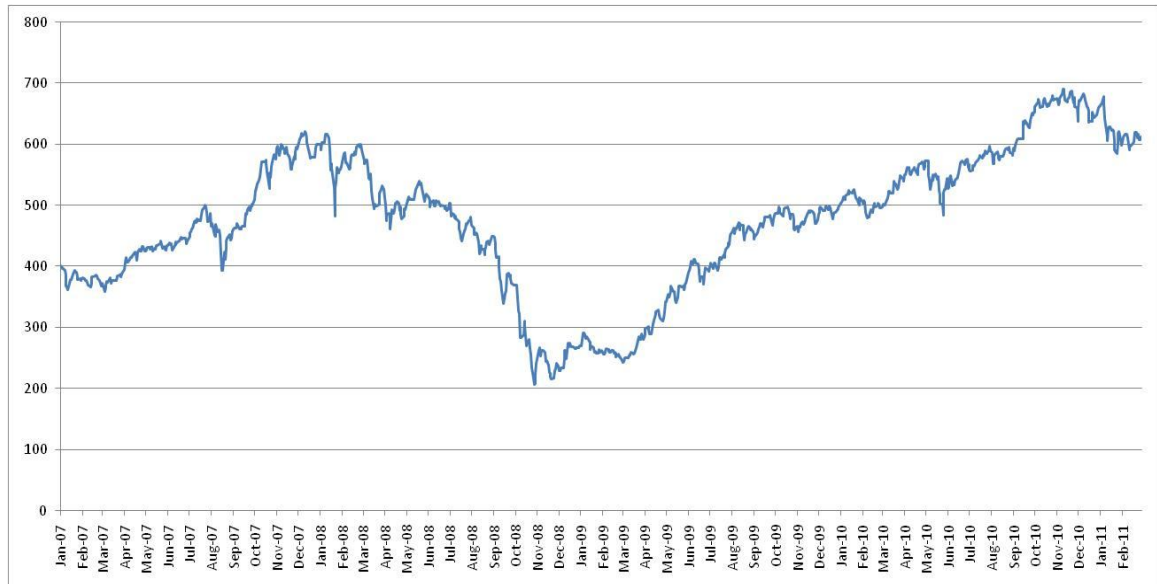
2. LQ 45 Index

LQ 45 Index is a market capitalization indicator of the 45 most liquid stocks and having a large capitalization value which is an indicator of liquidation. LQ 45 Index is using the 45 stocks selected based on the liquidity of stock trading and adjusted in every six months (the beginning of each February and August). Thus, the shares included in the index will always be changing.

The LQ 45 index consists of 45 companies that fulfill certain criteria, which is:

- included in the top 60 companies with the highest market capitalization in the last 12 months,
- included in the top 60 companies with the highest transaction value in a regular market in the last 12 months,
- have been listed in the Indonesia Stock Exchange for at least 3 months,
- have good financial conditions, prospect of growth and high transaction value and frequency.
- LQ 45 index objective is to complement the JCI/IHSG's performance and specifically to provide the reliable tool for financial analysis, investment managers, investors and other market observers in monitoring the price movements of stocks that be traded actively. The movement of the LQ 45 Index is following below.

LQ 45's performance 2007-2011 (February)



Source: IDX

3.2.2 About Singapore Exchange (SGX)

The Singapore Exchange Limited (SGX) is an investment holding company located in Singapore which as a leading financial center in the Asia-Pacific. It is providing different services related to securities and derivatives trading and others. The SGX has become one of the premier Exchanges in Asia. The SGX has approximately 659 companies listed on its Exchange, and has a market capitalization of \$398.4 billion⁹. It is a highly international Exchange, with 40 percent of its market capitalization coming from foreign companies.

The SGX divides its company listings into the SGX Mainboard and the SGX SESDAQ. The Mainboard lists companies that meet certain requirements including market capitalization, pre-tax profits, and operating track record. The SESDAQ, on the other hand, is for newer companies and there are no quantitative requirements for

⁹ About Singapore Exchange.
<http://asia.advfn.com/StockExchanges>

listing. The companies listed on the SESDAQ may apply to be moved to the Mainboard if they have been listed for at least two years and meet the minimum quantitative requirements.

The Singapore Exchange is a fully electronic Exchange, using the Central Limit Order Book (CLOB). Brokers place orders online and when a buy and sell order match, the system automatically executes the order and notifies the brokers. Trades that are not executed by the end of the day are terminated. Shares are typically traded in lots of 1000.

SGX's securities products include bonds, debentures and loan stocks; business trusts; equities; Exchange traded funds (ETFs); global depository receipts (GDRs); infrastructure funds; real estate investment trusts (REITs) and warrants. During the fiscal year ended June 30, 2010 (fiscal 2010), the company held 50% interest in Chi-East Pte. Ltd. (Chi-East). The Singapore Exchange is also well known for its trading in a variety of derivative securities via SGX-DT. The derivative market segment provides trading, clearing, market data, member services and connectivity for the derivatives market. It was the first Exchange in Asia to offer equity index futures, and now offers the world's widest range of Asian index futures.

The movement of SGX, includes price movements, earning and dividends, is following below.



source: Company Snapshot(2011). <http://www.corporateinformation.com/>

With Singapore Exchange Limited key data:

Ticker:	S68	Country:	SINGAPORE
Exchanges:	SIN OTC	Major Industry:	Miscellaneous
		Sub Industry:	Service Organizations
2010 Sales	639,714,000 (Year Ending Jan 2011).	Employees:	588
Currency:	Singapore Dollars	Market Cap:	8,409,328,200
Fiscal Yr Ends:	June	Shares Outstanding:	1,071,252,000
Share Type:	Ordinary	Closely Held Shares:	418,525,348

Though the Singapore Exchange has benefited from increasing Asian capital inflows, others have made greater strides. Hong Kong, through its connection with China, became the world's top market for IPOs last year, raising \$53.2 billion, according to data provider Dealogic below, as it drew listings from mainland China as well as from other companies drawn to China's orbit. Singapore ranked 16th, raising US\$6 billion.



Singapore's stock Exchange is ratcheting up competition among Asian Exchanges for more-prominent global profiles and a greater share of the flood of investor money pouring into the region. Size, depth and liquidity of the market along with global market dynamics will influence how fast SGX can grow its business. SGX is planning to install what it says will be the world's fastest trading system¹⁰, enable customers to trade faster and at a lower cost, with a response time of 90

¹⁰ Wall Street Journal

microseconds and the ability to handle one million order-book changes per second. London Stock Exchange Group PLC's Turquoise platform, currently the world's fastest trading system¹¹, has an average response time of 126 microseconds.

HKEx also expects to multiply its trading capacity by 10 after introducing by the end of the year technology that can handle 30,000 orders per second (scalable to 150,000 orders per second if necessary) with an average order response time of nine milliseconds. "We are aware of the competition, and we are doing a lot of work strengthening our competitiveness," HKEx spokeswoman Lorraine Chan said.

Similarly, Tokyo Stock Exchange Group Inc. is considering extending trading hours by cutting 30 minutes off the current lunch-time break. A decision on the new trading hours is expected within two weeks.

The Exchange began a high-tech replacement to its notoriously creaky system last year and is in the process of combining its futures and options trading in a new platform that should reduce trading time by a multiple of 10, according to TSE.

"We don't know what other additional steps we are going to take at our Exchange from here on, but we will pay close attention to any development at other Asian stock Exchanges and will continue to study ways to make ours a competitive and attractive bourse," said Kazuhiko Yoshimatsu, head of media relations at Tokyo Stock Exchange Group.

¹¹ Singapore Exchange's global strategy – world's fastest trading system.
<http://www.africancapitalmarketsnews.com>

The Singapore Exchange reported a 14% rise in second-quarter net profit as increased trading volumes from big-ticket capital raisings in recent months boosted securities revenue.¹²

Under Mr. Böcker, who previously was the president of the Nasdaq OMX Group, the Singapore Exchange has also taken other initiatives to attract liquidity and strengthen its competitiveness.

In October last year, a joint venture between the Singapore Exchange and Chi-X Global Inc. received approval from the Monetary Authority of Singapore to become a recognized market operator for an Asian-Pacific alternative trading platform, or dark pool, an electronic trading venue where money managers trade large blocks of shares anonymously.

¹² Asia Top Exchanges speeding ahead
<http://zincip.biz/2011/01/24/asia-top-exchanges-speeding-ahead/>

CHAPTER IV

ANALYSIS AND EVALUATION

Following the evolvement of technology in the trading and reporting systems of financial markets in the recent past, the abundance of high frequency data made available for analysis has opened up the scope for more insightful research work on the intraday behaviour of financial market data. Since then, there have been several papers that have worked on characterizing the behaviour of intraday prices, returns and volumes of financial market data. Hence, this paper consists cross-listing index analysis in Singapore Exchange (SGX) and its home market.

Singapore Exchange Limited engages in the ownership and operation of an integrated securities Exchange and derivatives Exchange in Singapore and their related clearing houses. The company's two Exchanges serve an array of international and domestic investors and end users, including financial institutions. The company is a founding member of the GLOBEX Alliance together with other derivatives Exchanges. It also has alliances or significant relationships with the Chicago Mercantile Exchange, the American Stock Exchange, the Australian Stock Exchange, and the National Stock Exchange of India. The company has introduced a variety of securities and derivatives products to respond to investors' needs for 24-hour trading, diversification, and trading across markets. The company's listed Exchange offer exposure to Singapore, India, Asia, ASEAN, United States, Eastern Europe, Latin America, and emerging markets, as well as commodities, including gold. The company's customers include domestic retail investors, financial institutions, capitalized entities, and small companies.

4.1 Cross Listing Index Market Analysis as an Underlying Derivative Product in Other Countries.

In this study, we will review about the stock index that may be traded by cross-listing in another foreign market and compared with trading in domestic market. This market analysis is using the example of some Exchanges that have been proven successfully to trade stock index through cross-listing as an underlying index derivative product in another foreign market such as Singapore Exchange with Osaka Stock Exchange, Singapore Exchange with Taiwan Futures Exchange, and Singapore Exchange with NSE India.

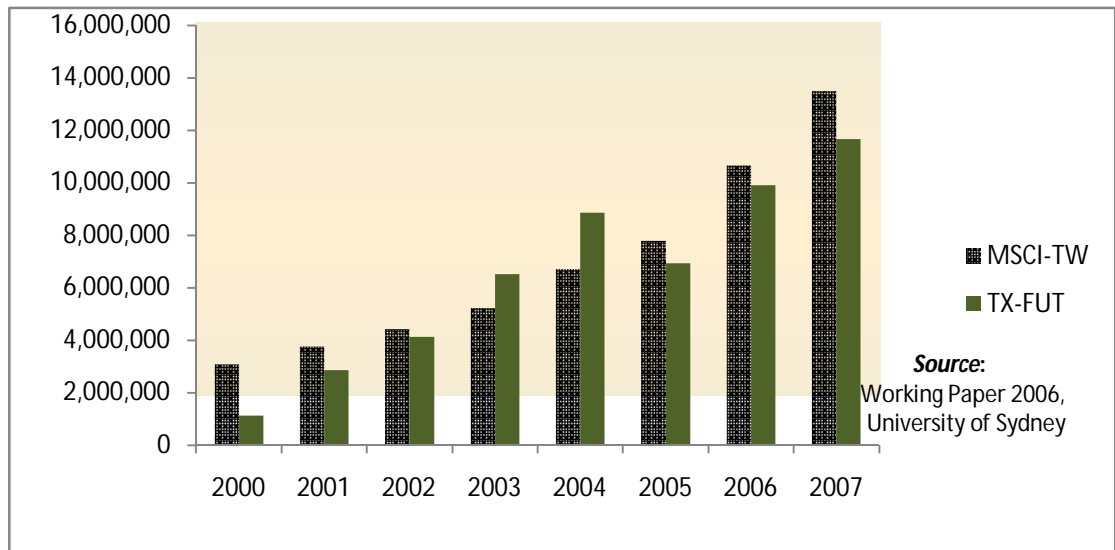
One of the reason to conduct the stock index cross-listing in Singapore's market (SGX) is because it did a lot of cooperation with the Stock Exchanges in other countries, and the SGX is the one that provides a flexible setting sufficiently in trading relations through its mechanisms of satellite market and home market that facilitates trading regarding with financial derivative product, including the trading among Nikkei 225, MSCI Taiwan and the CNX Nifty Index. Here some explanations of each derivative product traded on SGX with the underlying index (Nikkei 225, MSCI Taiwan and the CNX Nifty Index).

4.1.1 MSCI-TW Futures in SGX and TX-Futures in TAIFEX.

The Morgan Stanley Capital International Taiwan Index Futures (MSCI Taiwan) is a futures contract traded on the SGX since January 9, 1997. Basically, the MSCI-TW index can be measured by market capitalization of 77 component stocks traded on the Taiwan Stock Exchange Corporation (TSEC), and on May 30, 2008, the components of the index stocks increased to 114 shares. The Taiwan Capitalization Weighted Stock Index (TAIEX) was traded, for the first time, on July 21, 1998, in Taiwan Futures Exchange (TAIFEX). The two contracts have the same period and the trading

hours. The volume of contract development between the SGX MSCI Taiwan and TX-Futures contract in TAIFEX are following below.

Trading Volume between MSCI-TW dan TX-FUT



The graph above shows us the development of future contracts trading volume between MSCI-TW and TX-Fut have been increased for seven years. The MSCI-TW contract volume has been increased to 339% during 2000 to 2007 with the annual average of 24%. Meanwhile, the contract trading volume for the TX-Fut increased to 937% during 2000 to 2007 with the annual average of 47%. From the above data, it can be concluded that the acceleration of volume growth rate of the contract on the home market has experienced the significant growth higher than the satellite market.

The MSCI Taiwan Index is a free float-adjusted, market capitalisation-weighted index representing a sampling of large, medium and small capitalisation stocks of the Taiwan stock market. Compiled by Morgan Stanley Capital International (MSCI), the index is disseminated real time through major international price reporting media and is widely used by international fund managers to measure the performance of Taiwan stock market. The index has the following characteristics:

Broad and Fair Market Representation

The index is constructed and managed with a view to providing broad and fair market representation. The index aims to accurately and completely reflect the structure and distribution of business activities across and within industries that international institutional investors can gain exposure to in the Taiwan stock market.

Investability and Replicability

The index is fully investable from the perspective of international investors. It is replicable and the constituents in the index are represented at weights that can easily and cost effectively be reflected in global institutional portfolios of reasonable size. This is achieved by a) free float adjusting constituents weights, taking into account of Foreign Ownership Limits and b) selecting stocks of reasonable size and liquidity.

Consistency and Continuity

The index construction and maintenance methodology, including its rules and guidelines, is applied in a consistent manner across all markets over time. To enhance predictability of and greater stability to the index, the continuity of constituents in the Index is a primary concern when considering additions and deletions of its constituents. Additionally, the index is managed with the objective of keeping the level of index turnover relatively low, while at the same time reflecting current market conditions in a timely manner.

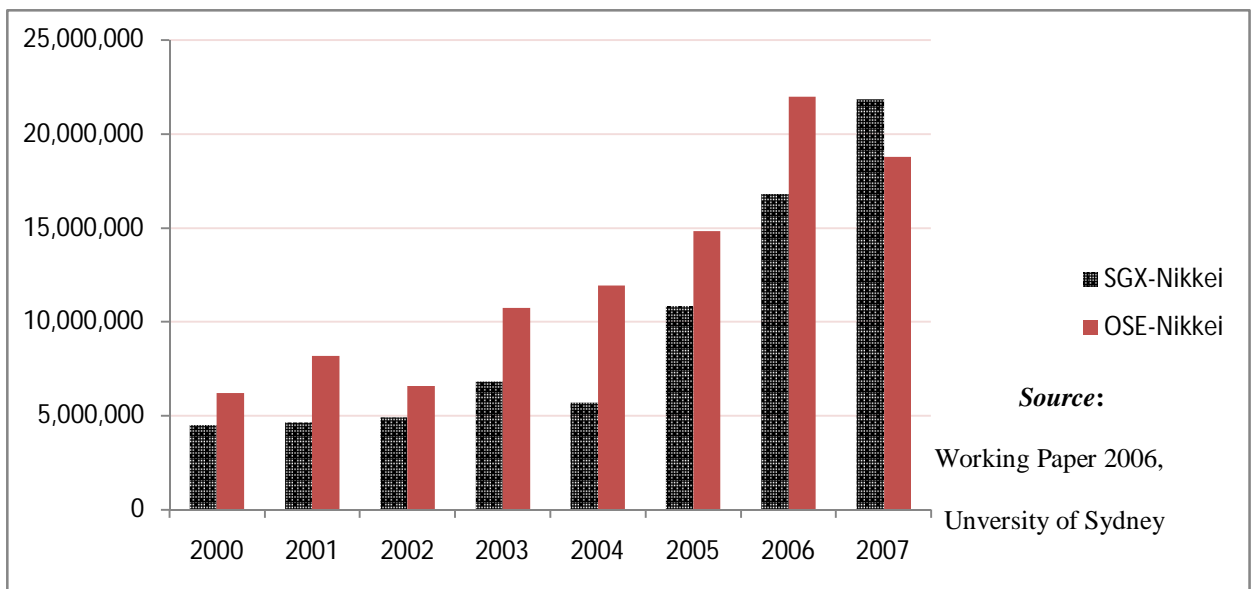
Transparency

The index is transparent in the context of index construction objectives, guiding principles and methodology which are clearly specified and published. To promote transparency and predictability in the market place, all significant changes to the index are announced prior to implementation.

4.1.2 SGX-Nikkei 225 and OSE-Nikkei 225

Nikkei 225 Stock Index is the weighted average price of the 225 largest stocks traded on the Tokyo Stock Exchange (TSE). The Nikkei 225 index future contract was first introduced on the SGX at September 3, 1986, while Japanese had just traded it on the OSE at September 3, 1988. Today, the Nikkei 225 index futures have a high daily average turnover (USD) in the Asia-Pacific region. The contracts are traded in the quarter of the contract period at OSE, while SGX has a monthly contract period. The two Exchanges (SGX and OSE) have overlapping trading hours with overseas markets which have longer trading hours. The volume of contract development between the SGX Nikkei 225 index futures (SGX-Nikkei) and Nikkei 225 index futures contract (OSE-Nikkei) are following below.

Trading Volume between SGX-Nikkei and OSE-Nikkei



The graph above shows the trading contract volume between SGX-Nikkei and OSE-Nikkei for 7 years. The SGX-Nikkei contract trading volume has increased to 385% during 2000 to 2007 with the annual average increase of 30%, while the contract trading volume for OSE-Nikkei has increased to 202% during 2000 to 2007 with the

annual average of 21%. From the above data, it can be concluded that the acceleration of volume growth rate of the contract on the home market has experienced the significant growth higher than the satellite market.

4.1.3 SGX-Nifty in SGX and IND-Nifty in NSE India

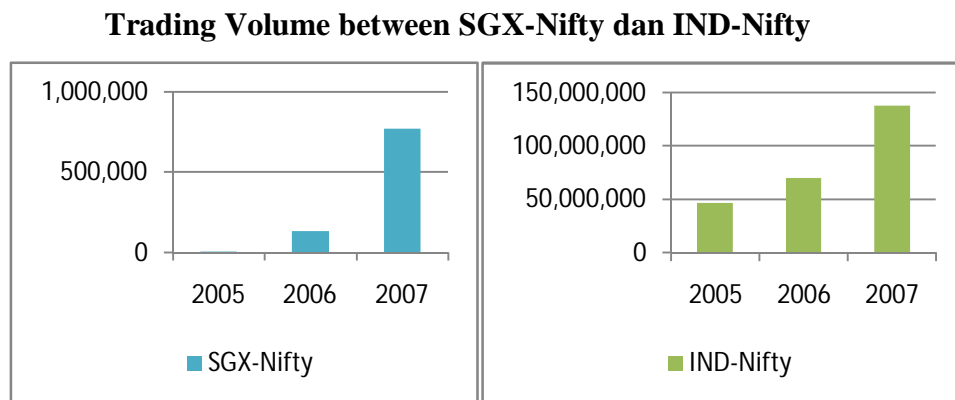
Standard & Poor's CRISIL NSE Index 50 (S & P CNX Nifty) is the leading index for the large companies in the National Stock Exchange (NSE) India. The Nifty is a well diversified 50 stock index accounting for 23 sectors of the economy. It is used for a variety of purposes such as benchmarking fund portfolios, index based derivatives and index funds. The S&P CNX Nifty covers 23 sectors of the Indian economy and offers investment managers exposure to the Indian market in one portfolio. The S&P CNX Nifty stocks represent about 60% of the total market capitalization of the National Stock Exchange (NSE).

The index is a free float market capitalisation weighted index. From inception, the index used full market capitalisation as weight assigned to different constituents. From June 26, 2009, the index is computed based on free float methodology. As of November 2010, top four scrips in the index (Reliance Industries, Infosys Technologies, ICICI Bank and Larsen & Toubro) account for about one third of the weight in the index whereas the top eight scrips account for about half the weightage in the index.

The base period for the S&P CNX Nifty index is November 3, 1995, which marked the completion of one year of operations of NSE's Capital Market Segment. The base value of the index has been set at 1000, and a base capital of Rs 2.06 trillion¹³.

¹³ S&P CNX Nifty Index Methodology.
<http://www.standardandpoors.com/home/en/us>

The future index was first launched in the NSE India on June 12, 2000 and subsequently, it was introduced in SGX on September 25, 2000. Both of future contracts are traded on a monthly trading period with the overlapping system until the end of the trading period. Here is the volume contract between SGX Nifty in SGX and IND Nifty volume contract in NSE -India.



Source: Working Paper 2006, University of Sydney

From the graph above, it shows us that the contract volume of SGX-Nifty and IND-Nifty have increased for 3 years and still ongoing. The SGX-Nifty contract trading volume has increased very significantly in 2006 to 2007 that is equal to 1308%. While the IND-Nifty contracts volume increased by 195% during 2005 to 2007 with the increasing annual average of 73%. Eventually, it can be concluded that the acceleration of growth in those contract volume on the home market is experiencing growth significantly and more stable than the satellite market.

4.2 Contract Specifications Cross Listings Index in Other Countries.

This paper examines each aspect of these contract specifications traded in the two Exchange. This analysis aims to find out any possibility that may have any differences and similarities between those specifications of the derivative product with the same underlying. This study shows the contract specifications on some

Exchanges in the Asia that have been proven made a successful cooperation to conduct the index cross-listing in other countries, such as Singapore Exchange with the Osaka Stock Exchange, Singapore Exchange and Taiwan Futures Exchange and the Singapore Exchange with NSE India.

4.2.1 MSCI-TW Futures (SGX) and TX-Futures (TAIFEX)

The MSCI-TW future contract that be traded on SGX and the TX-Futures contract that be traded on the TAIFEX, using the same underlying stock index which is the stock index traded on the Taiwan Stock Exchange. Here is the comparison of the contract specifications between those two products.

Table 4.1 Contract Specifications between SGX MSCI-TW & TX-FUT

	SGX MSCI-TW	TX-FUT
Exchange	Singapore Exchange	Taiwan Futures Exchange
Currency	US Dollar (USD)	Taiwan Dollar (TWD)
Underlying Stock Index	MSCI Taiwan Index SM	Taiwan Stock Exchange Capitalization Weighted Stock Index (TAIEX)
Launch Date	9 Jan'97	21 Jul'98
Contracts Months	Spot month, the next calendar month, and the next three quarterly months	Spot month, the next calendar month, and the next three quarterly months in the March quarterly cycle: March, June, September, December.
Contract Size	US\$ 100 x Index	NTSS\$ 200 x Index

Minimum Price Fluctuation	0.1 index point (equivalent to US\$)	One index point (NT\$200)
Trading Hours (Local Time)	08.45-13.45	08.45-13.45
Daily Price Limit	+/- 7% of previous day's settlement price	+/- 7% of previous day's settlement price
Last Trading Day	The third Wednesday of the delivery month	The third Wednesday of the delivery month of each contract
Final Settlement Day	The same day as the last trading day	The first business day following the last trading day
Final Settlement Price	<p>The average price of the underlying index provided by Reuters within the last 30 minutes prior to the close of trading on the final settlement day.</p> <p>Reuters is the information vendor for Morgan Stanley Capital International (MSCI).</p>	<p>The final settlement price for each contract is computed from the first fifteen-minute volume-weighted average of each component stock's prices in the index on the final settlement day. For those component stocks that are not traded during the beginning fifteen-minute interval on the final settlement day, their last closing prices would be applied instead.</p>
Settlement	Cash Settlement	Cash Settlement

(Source : Singapore Exchange)

From the table above, it shows the differences that may be useful for two different derivative products in that two Exchanges with the same related index. The denominated in contracts trading is using different currency where the SGX using the U.S. Dollar while the TAIFEX using the Taiwan Dollar, but the date of issuance is done first on the SGX. The contract periods in TAIFEX have more alternatives in quarterly cycle (March, June, September, and December).

The contract size at SGX is US\$ 100 x Index and in TAIFEX is NT\$ 200 x Index, with the fraction of the contracts price in SGX is 0.1 index points (equivalent to U.S. \$) and in TAIFEX is 1 index point (NT\$ 200). The last trading day in SGX is same with TAIFEX. The final settlement price in SGX is measured by the average index price of the underlying within the last 30 minutes prior to the close of trading on the final settlement day, and the final settlement price in TAIFEX is computed from the first-fifteen-minute volume-weighted average of each component stock's prices in the index on the final settlement day.

The similarity in that two contract specifications are about the underlying stock index, they have similarity in trading hours, daily price limits, the last day of trading, and settlement method of payment in cash.

4.2.2 SGX-Nikkei Futures and OSE-Nikkei

The SGX-Nikkei contract traded on the SGX and the OSE-Nikkei contract traded on the OSE are using the same underlying stock index which is the Nikkei Stock Average or Nikkei 225. Here is the comparison of the contract specifications between those two products.

Table 4.2 Contract Specifications between SGX-Nikkei and TW & OSE-Nikkei

	SGX-Nikkei	OSE-Nikkei
Exchange	Singapore Exchange	Osaka Stock Exchange
Currency	US Dollar (USD)	Japanese Yen (JPY)
Underlying Stock Index	Nikkei Stock Average (Nikkei 225)	Nikkei Stock Average (Nikkei 225)
Launch Date	3 Sep'86	3 Sep'88
Contracts Months	3 nearest serial months and 5 nearest quarterly months	5 months in the March quarterly cycle: Mar, Jun, Sep, Dec (Maximum trading period: 1 year & 3 months)
Contract Size	¥ 500 x Index	¥ 1000 x Index
Minimum Price Fluctuation	Outright: 5 index points (¥2500) Calender spreads: 1 index point (¥500)	Outright: 10 index points (¥10,000)
Trading Hours (Local Time)	07.45-14.30	09.00-11.00, 12.30-15.10
Daily Price Limit	+/- 7.5% of previous day's settlement price	+/- 8% of previous day's settlement price
Last Trading Day	The day before the second Friday of the contract month.	The business day preceding the second Friday of each contract month (When the second Friday is a non-business day, it shall be the preceding business day). Trading in a new contract month begins on the business day following the last trading day.
Final Settlement Day	In the business day following the last trading day	The same day as the last trading day
Final Settlement	The final settlement price	Special Quotation (SQ calculation)

Price	shall be the Special Nikkei 225 Index Quotation based on the opening prices of each component issue in the Nikkei 225 Index on the business day following the last trading day.	is based on the total opening prices of each component stock of Nikkei 225 on the business day following the last trading day)
Settlement	Cash settlement	Cash settlement

(Source : Singapore Exchange)

From the table above, it shows the differences that may be useful for two different derivative products in that two Exchanges with the same related index. The denominated in contracts trading is using different currency where the SGX using the U.S. Dollar while the OSE using the Yen. The contract period in SGX is 3 nearest serial months and 5 nearest quarterly months while in OSE is 5 months in the March quarterly cycle: Mar, Jun, Sep, Dec (Maximum trading period: 1 year & 3 months).

Both of Exchanges have similarity in underlying stock index, completion price of final settlement and settlement method of payment in cash.

4.2.3 SGX-Nifty and IND-Nifty

The SGX-Nifty contract traded on the SGX and the *IND-Nifty* contract traded on the NSE India are using the same underlying stock index which is the S&P CNX Nifty Index. Here is the comparison of the contract specifications between those two products.

Tabel 4.3 Contract Specifications between SGX-Nifty and IND-Nifty

	SGX-Nifty	IND-Nifty
Exchange	Singapore Exchange	NSE-India
Currency	US Dollar (USD)	INR
Underlying Stock Index	S&P CNX Nifty Index	S&P CNX Nifty Index
Launch Date	25 Sep'00	12 Jun'00
Contracts Months	2 nearest serial months and 4 quarterly months on a March, June, September and December cycle	3 nearest serial months
Contract Size	US\$ 2 x Index	INR 50 x Index
Minimum Price Fluctuation	0.5 index point (US\$1)	0.05 index point (INR 2.5)
Trading Hours (Local Time)	09.00-18.15	09.55-15.30
Daily Price Limit	+/- 10% of previous day's settlement price	+/- 8% of previous day's settlement price
Last Trading Day	Last Thursday of the month. If this happens to fall on an India holiday, the last trading day shall be the preceding business day.	Last Thursday of the expiry month. If the last Thursday is a trading holiday, the contracts expire on the previous trading day.
Final Settlement Day	Last Thursday of the month. If this happens to fall on an India holiday, the last trading day shall be the preceding business day.	Last Thursday of the contract month.
Final Settlement Price	The official closing price of the CNX Nifty Index, which is derived based on the average weighted prices of the individual component stocks of the index during the last 30 minutes of trading. The official closing price will be rounded to	The closing value of the underlying index on the last trading day.

	two decimal places.	
Settlement	Cash settlement	Cash settlement

(Source: Singapore Exchange)

From the table above, it shows the differences that may be useful for two different derivative products in that two Exchanges with the same related index. The denominated in contracts trading is using different currency where the SGX using the U.S. Dollar while the NSE using the Indian Rupee, but the date of issuance is done first on the NSE. The contract periods in SGX is 2 nearest serial months and 4 quarterly months on a March, June, September and December cycle, and in NSE India is 3 nearest serial months, where the contract size in SGX is sr US\$ 2 x Index and in NSE India is INR 50 x Index, with the fraction of the contracts price in SGX is 0.5 index point (US\$1)and in NSE India is 0.05 index point (INR 2.5).

The similarity in that two contract specifications are using the same underlying stock index. They also have similarity in the last day of trading hours and the final settlement day which is on the last Thursday with settlement method of payment in cash.

4.3 Feasibility Study of Planning Cross Listed between Using JCI and LQ 45 Index as Underlying Derivative Products in another Foreign Market

This feasibility study is providing some recommendations on what stock index from IDX that suit to be used as underlying derivative product in another foreign Exchange, which this case is SGX. This analysis is comparing the potential value between JCI (IHSG) and LQ 45 when it is used as underlying derivative product through index cross-listing. With this analysis results, people can see the picture of

using the right index, for the origin country, whether it can provide some benefits with minimizing the risks that happened in foreign Exchange that trade it. Here is an analyzing table of the feasibility of using JCI (IHSG) and LQ 45 index as underlying derivative product listed in another country.

Table 4.4 JCI and LQ 45

	IHSG	LQ 45
Feasible	<ol style="list-style-type: none"> 1. JCI has been widely recognized as the benchmark of stock movement in Indonesia 2. JCI shows the movement of stock market in a whole aspect 3. JCI's performance can affect the stock price movements regionally. 4. Currently, there is no product of JCI future and option at IDX, so it still needs many references in preparation of trading that stock index future and option. 	<ol style="list-style-type: none"> 1. LQ 45 Index reflects approximately 80% of total market capitalization of shares in IDX. 2. LQ 45 reflects to the most liquid stocks from 45 companies traded in IDX 3. The change in the price index for stock LQ 45 index is not as significant as JCI if in case of IPO re-adjustment. 4. The constituents of LQ 45 index are reviewed in every 6 months, so it is more stable than the JCI that changes at any time if there is an IPO. 5. The underlying derivative product that is successful in trading at other countries is not a composite stock index. The LQ 45 index is not a composite index. 6. LQ 45 index futures have been traded in IDX (currently being revitalized), so it encourages the LQ 45 index futures to be more liquid in trading after the process of revitalization. 7. The ETF LQ 45 has been traded in IDX, so investors can hedge through

		the LQ45 index futures traded on the stock in another foreign market. 8. Investors can create an arbitration in buying and selling the LQ 45 index futures in IDX and in another country.
Not Feasible	<ol style="list-style-type: none"> 1. The change in the price index for JCI is very significant if in case of IPO re-adjustment. 2. The constituents of JCI are not stable, they can change at any time since the IPO could happen at any time as well. 3. JCI is a composite index, where the composite index is not common to be used as underlying product in other countries. 	<ol style="list-style-type: none"> 1. LQ 45 is not widely known as the benchmark of stock movement in Indonesia, not such as the JCI. 2. It still needs more confirmation to convey to any financial data vendors extensively about the LQ 45.

(Discussion with IDX)

Recommendation:

From the analysis above, it shows that the LQ 45 has more worthy points compared with JCI. Thus, it can be proposed that the LQ 45 index more feasible as an underlying derivative product traded in another foreign market, but it still needs more confirmation to convey to any international data vendors extensively about the LQ to be more widely known globally.

4.4 Benefits and Risk Management Analysis

In analyzing the benefits and risks of planning in collaboration between IDX and SGX, it needs to be explained first the form of collaboration between IDX and SGX in trading derivative products of underlying stock index (IDX). The planning collaboration between IDX and SGX is more aimed to assess much benefit for the origin country (IDX) and the country (SGX) which trade the stock index from the

origin country. Here is a table analyzing the benefits of collaboration between the IDX and SGX:

Table 4.5 The benefits of the collaboration between IDX-SGX

	Satellite market (IDX)	Home market (SGX)
The Benefits	<ol style="list-style-type: none"> 1. Getting the potential net revenue during the period of collaboration. 2. There is an opportunity to trade the derivative products of other countries that listed in SGX. 3. It is helpful for IDX stock index to be more widely known globally. 4. As a reference in designing specifications of derivative products in IDX if the underlying index derivative products traded successfully in other countries. (such as LQ45 Index options) 5. It would increase the liquidity of LQ 45 index futures when it launched after the process of revitalization. (based on the research(IDX), the success of derivative products listing in other countries with index of the origin country are influenced significantly by the successful growth of derivative products in the origin country) 6. Opening opportunities for both local and foreign investors to conduct the arbitrage way. 7. As a hedging tool for investors who invest to ETF LQ 45, and eventually it can support the market liquidity of ETF LQ 45 at IDX. 	<ol style="list-style-type: none"> 1. Adding a new kind of product so as to make the Exchange can be more competitive globally. 2. The existence of a new product represents the new source to get revenue for the Exchange through transaction fees, clearing fees, data feed and other fees. 3. A partnership with the origin country which becomes the satellite market will open up opportunities for other collaborations. 4. It will come as a complete and flexible exchange and then global investors can invest and trade the products of other countries through one exchange. 5. Using US\$ denominated is more favorable for the Exchange because there is no risk of a currency conversion to their home currency.

(Discussion with IDX)

After doing the analysis of benefits of collaboration between SGX and IDX, then it needs to analyze the potential risks and how to control those that may arise from the collaboration between two Exchanges. There are some aspects contained in the concept of the collaboration offered by SGX which could potentially create some risks. The risks based on studies that have been prepared by the Risk Management Division of IDX are following below.

Table 4.6 Risks and the Causes Analysis of Collaboration IDX~SGX

No	Risk Event	Cause of Risk	Risk Controlling
Strategic Risk			
1	The reputation of IDX potentially gets disturbed due to the failure in providing data regarding with index trading to the SGX.	a) IDX had never done any business cooperation with SGX before. b) Planning and implementation of the business cooperation is not done properly and correctly.	a) IDX needs to involve the relevant parties, such as the Financial Institution Supervisory Agency (Bapepam) and SROs, in the discussion of business plans with the SGX. b) IDX needs to review the analysis within business plan that adequate cover the whole aspects of trading, surveillance, IT, and other important aspects. c) Monitoring and controlling the implementation of appropriate business cooperation with SGX.

Operational Risk			
2	The potential of operational failure in cooperation between IDX and SGX	<p>a) There are problems in datafeed system or connectivity of IDX to SGX</p> <p>b) There is no maintenance activity on datafeed system</p> <p>c) Reporting of the transaction result does not match or even violate the provisions of the cooperation agreement</p>	<p>a) It should be prepared some policies and procedures that accompanied any actions of the plan corrective in case of system interference and it is implemented consistently.</p> <p>b) The datafeed system must be maintained all the time by the IDX.</p> <p>c) The evaluation of the reporting transactions result must be matched by the agreement.</p>
Financial Risk			
3	The potential of decreasing, even loss of revenue from the transactions at SGX	<p>a) There are some mistakes in determining the concept of "collaboration model"</p> <p>b) There is misconception of assumptions in calculation of projected revenue</p>	<p>a) Reviewing the analysis of the collaboration model about the profit-sharing and other cases (e.g. "license use fee"), and selecting the best alternative.</p> <p>b) Reviewing the comprehensive benefit and the efficient cost toward each model, including the projected future cash flow.</p> <p>c) Arranging some researches to determine the value of valid assumption in calculation of projected revenue.</p> <p>d) Considering the possibility of other costs incurred in this collaboration that potentially reducing the net revenue.</p>

Submission Risk of Policy Set			
4	The potential of two Exchanges of doing violation out of external or internal regulations	<p>a) The policies of cooperation between IDX and SGX do not pay attention to the related regulations, even violating regulations from the Financial Institution Supervisory Agency (Bapepam) Indonesian Capital Market (LK).</p> <p>b) They (IDX-SGX) do not consider the legal aspects related to external / internal regulations</p>	<p>a) Consulting more with the Legal Division related to technical matters that must be adhered in running the collaboration with SGX</p> <p>b) Consulting more with the Legal Division drafting a contract with SGX</p>
Market Risk			
5	The potential of decreasing index value and volume of transactions in IDX affected by derivative product transactions in SGX.	<p>a) The significant fluctuation of futures / options price and in SGX decreasing the index value of IDX.</p> <p>b) Derivative market in SGX is more attractive, so investors are more interested doing investment and trading in SGX.</p> <p>c) The derivative market in Indonesia is currently in improvement related to the revitalization of the product and the provisions of tax that may support the trading between two Exchanges.</p>	<p>a) Considering the potential risks about price discovery in case of price movements of derivative products traded in SGX affected index value in IDX</p> <p>b) Improving the quality and performance of derivative products trading in IDX so it can compete with SGX.</p> <p>c) Increasing the dissemination of information and education to market participants, such as sharing knowledge, to increase the interest of (potential) investors to invest in IDX, especially local investors.</p>

(Source : IDX)

4.5 Analysis of Legal Aspects within Collaboration between IDX and SGX

Analysis of this legal aspects aim to find out about the legal procedure and its effects that may arise in the collaboration between IDX and SGX. Here is the analysis of legal aspect based on input from the IDX Legal Division.

1. Basically, collaboration between IDX and SGX could be done as long as it beneficial to both Exchanges and there is no coercion from any side.
2. The copyright of LQ 45 is owned by IDX, so if any Exchange (SGX) wants to trade the LQ 45, it should purpose a permission letter before.
3. If IDX allows the proposal then the licensing mechanism is done by signing a licensing agreement between IDX and SGX of using the LQ 45.
4. If already permitted by IDX, using IDX 45 Index futures and IDX 45 Index options can be used for a product derivative name by SGX.
5. In the case of the potential risk of JCI (IHSG) trading futures and options denominated US\$ in IDX (where underlying stock are listed), setting some restrictions for SGX are necessary in terms of license use of LQ 45, and they should be put on the agreement of collaboration.
6. IDX must obtain the approval from the Indonesia Capital Market & Finance Institution Supervisory Agency (Bapepam and LK) related to licensing plan (if allowed by IDX) to trade derivative product with underlying JCI futures and options denominated US\$.

4.6 Analysis of Business Aspects within Collaboration between IDX and SGX

Analysis of this business aspects aim to find out about the trade impacts of cross listing index to derivative products in IDX that may arise in the collaboration between IDX and SGX. Here is the analysis of business aspects based on input from Debenture and Derivative Commerce Department in IDX.

- 1 The derivative market in Indonesia is currently in a better improvement both in product revitalization and the proposed tax provisions which are expected to support the Exchange trading.
- 2 Based on some market participants, explaining the derivative market in Indonesia is large enough since many investors trading the derivative products in foreign countries.
- 3 IDX should more focus to develop domestic capital market if the derivative products are going to be traded in SGX, because it can reduce investors' interest to participate anymore in IDX.
- 4 Socialization and educational activities related to derivative trading are necessary to be more intense in terms of increasing the local investors and derivative market participants.

4.7 Analysis of Surveillance Aspects within Collaboration between IDX and SGX

This analysis intends to identify the mechanisms of supervision over cross-listing index trading to derivative products in IDX, which may arise in collaboration between IDX and SGX. Here are some considerations about the supervision based on input from the IDX Surveillance Division.

1. SGX will trade the JCI futures and options consisting of IDX LQ 45 stocks undercontrolled by IDX.
2. The stocks included in IDX LQ 45 are stocks that become as indicator index in IDX with the largest capitalization.
3. The movement of JCI futures and options can affect the movement of stocks included in the IDX LQ 45. The IDX Surveillance Division have not had a tool and authority in monitoring and assessment over transactions in SGX in case there is an indication that stock price movements in IDX affected by price fluctuations of JCI futures and options in SGX.

4.8 SWOT and PEST Analysis

4.8.1 SWOT Analysis

STRENGTHS

1. Indonesia is the largest economy in Southeast Asia, and also the only G-20 member from Southeast Asia.
2. The country is ranked 1st among Asia-Pacific sovereigns by Standard & Poor's for best fiscal balance. Key economic drivers are the exports of oil and gas, bauxite, silver, tin, copper, gold, coal, agricultural products and garments, electronic goods, furniture and paper products.

WEAKNESSES

1. There is still no derivative product in Indonesia Stock Exchange (IDX) as underlying stock index traded through cross-listing in another foreign market. It is necessary to conduct a study analyzing the potential benefits and risks when the derivative product or index listed in IDX would be traded in another foreign market. It is possible to include Indonesia (IDX) considering it has a huge trading volume in domestic market.
2. LQ 45 is not widely known globally, not such as the JCI as the benchmark of stock movement in Indonesia. It still needs more confirmation to convey to any financial data vendors extensively about the LQ 45.

OPPORTUNITIES

1. Getting the potential net revenue during the period of collaboration.
2. There is an opportunity to trade the derivative products of other countries that listed in SGX.
3. It is helpful for IDX stock index to be more widely known globally.

4. As a reference in designing specifications of derivative products in IDX if the underlying index derivative products traded successfully in other countries. (such as LQ45 Index options)
5. It would increase the liquidity of LQ 45 index futures when it launched after the process of revitalization. (based on the research(IDX), the success of derivative products listing in other countries with index of the origin country are influenced significantly by the successful growth of derivative products in the origin country)
6. Opening opportunities for both local and foreign investors to conduct the arbitrage way.
7. As a hedging tool for investors who invest to ETF LQ 45, and eventually it can support the market liquidity of ETF LQ 45 at IDX.

THREATS

1. The reputation of IDX potentially gets disturbed due to the failure in providing data regarding with index trading to the SGX.
2. The potential of operational failure in cooperation between IDX and SGX
3. The potential of decreasing, even loss of revenue from the transactions at SGX
4. The potential of two Exchanges of doing violation out of external or internal regulations
5. The potential of decreasing index value and volume of transactions in IDX affected by derivative product transactions in SGX.

Result;

TABEL MATRIX SWOT

<i>MATRIX SWOT</i>	STRENGTHS (S)	WEAKNESSES (W)
OPPORTUNITIES (O)	As the largest economy in Southeast Asia, and also the only G-20 member from Southeast Asia, derivative product from IDX must be concerned as a tough one, and can compete to another same product even globally.	The chosen LQ 45 could be widely recognized globally since LQ 45 Index reflects approximately 80% of total market capitalization of shares in IDX and reflects to the most liquid stocks from 45 companies traded in IDX
THREATS (T)	Creating high competitiveness in both satellite and home market, then it can push ahead the quality and performance of derivative products trading on the local market so it can compete with the SGX.	IDX needs to involve the relevant parties, such as the Financial Institution Supervisory Agency (Bapepam) and SROs, in some discussions of this cooperation with the SGX, since IDX had never done any business cooperation with SGX before, and also needs to review the analysis within adequate business plan that cover the whole aspects of trading, surveillance, IT, and other important aspects.

From the strengths and weaknesses from IDX internal, and the threats and opportunities in external environment from industry condition and rivalry among competitors, so it needs to do the SWOT Analysis, so that it can arrange and find the good strategy for each quadrant, where;

S-O (Strength – Opportunity) is arranged for maximize the power to get some good opprtunities.

W-O (Weakness –Opportunity) is arranged to use the opportunities to handle the weaknesses.

S-T (Strength- Threat) is arranged to avoid threats by maximize the strengths.

W-T (Weakness – Threat) is arranged to minimize the weaknesses and avoid the threatshs

4.8.2 PEST Analysis

Sound Economy

Having a GDP size of nearly US\$ 550 billion in 2009¹⁴, it makes Indonesia as the third fastest growing economy in Asia, and also the largest economy in Southeast Asia. The economy's fluctuation is moreless affected by the global financial crisis than its neighboring countries, Indonesia's economy grew by 4.5% in 2009 and is forecast to climb to 5.6% in 2010 and further still to 6% in 2011¹⁵, making Indonesia to be concerned as the top five in the fastest growing economy in the world, also in the inclusion within BRIC (Brazil, Russia, India, China) economies, that may become BRIC+I. The expansion of future economic in Indonesia could be expected to include more inclusive growth as nominal per-capita GDP is expected to quadruple by 2020, according to Standard Chartered's report.

¹⁴ SOUND ECONOMIC FUNDAMENTALS

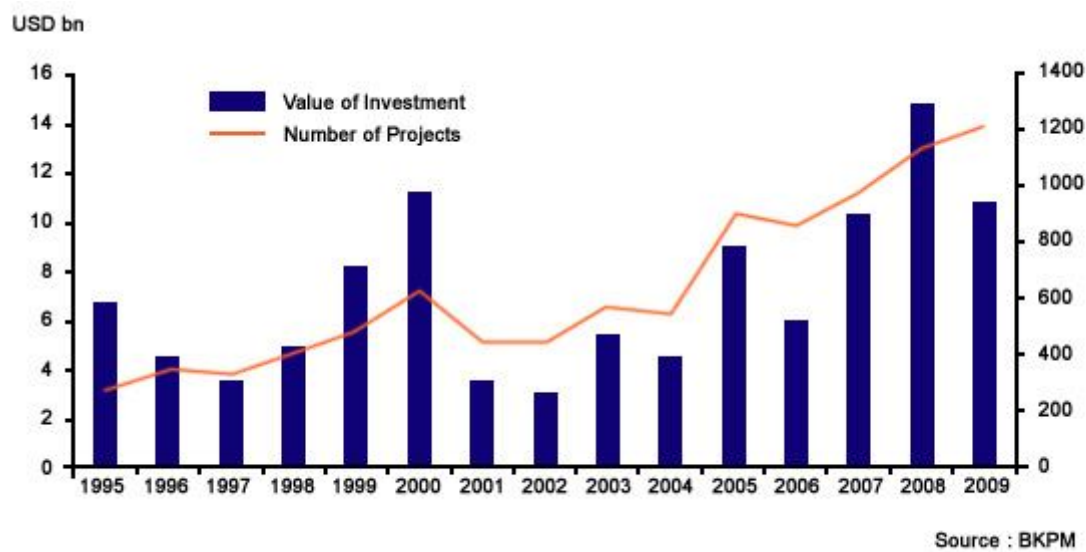
<http://www.ifcci.com/index.3Anewstatisticofindonesia&catid=41%3Ahome&lang=en>

¹⁵ Why invest in Indonesia

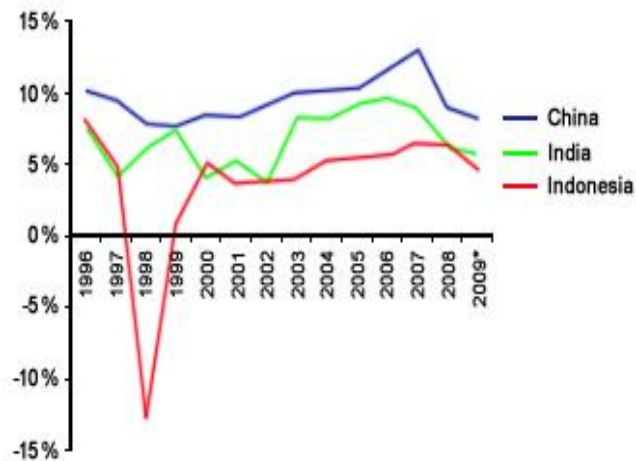
<http://www.indonesiahouston.net/Why-Indonesia>

As a fastest growing economy in the world, Indonesian's economic success includes a result of prudent fiscal stewardship that focused on reducing the debt burden. Indonesia's debt to GDP ratio has steadily declined from 83% in 2001 to 29% by the end of 2009. This is the lowest percentage among the neighbor countries, aside from Singapore which has no government debt. Indonesia is ranked first among Asia-Pacific sovereigns by Standard & Poor's for best fiscal balance. The Fitch ratings upgraded Indonesia's credit rating to BB+ with a stable outlook in January 2010, which is showed by Indonesia's strong and sustained growth, and improving fiscal position. Indonesia is on the right path towards attracting larger pools of fixed income and capital flows, as well as drawing in those funds which have so far been precluded from investing in non-investment grade countries. These achievements are being compared to middle-income developing nations like Brazil, India and Mexico. Indonesia is an emerging global powerhouse in Asia with the economically strong, politically stable, and reform minded.

REALIZED FOREIGN DIRECT INVESTMENT

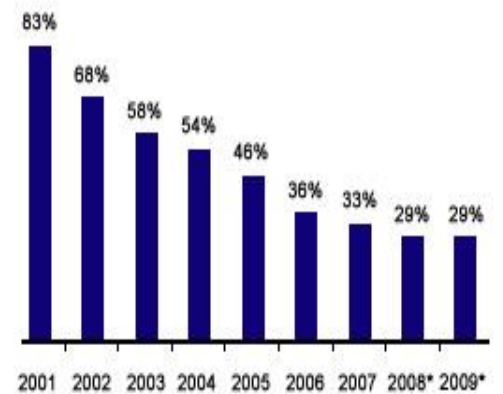


REAL GDP GROWTH



Source : EIU
Note : *estimate

TOTAL DEBT/GDP



Source : EIU
Note : *estimate

Political Stability

The political situation in Indonesia has not yet led their people as what they want. While it has been challenging journey, today Indonesia is one of the most decentralized countries in the world with substantial funds and authorities devolved to the regions. Many people believe that politics in Indonesia is just about selfish, drama, and power abuse by any means.

The Indonesian government has not really been able to function as representatives of the people behind, it embarked with an ambitious but low effort for better changes. Significantly, Indonesia is the only country in Southeast Asia that has bucked the trend of a democracy in trouble. Democracy is a blossoming thing in the country since it is ruled with an iron hand for 30 years, and now, Indonesia has

gracefully transformed from an authoritarian state to a regional role model time by time.

Indonesian citizens have not felt the good performance yet of the government totally, instead taking them as a bad figure in the country, but at least in some years ago, Indonesia has completed another round of a peaceful and successful legislative and presidential elections. The election itself has confirmed the people's confidence in President Susilo Bambang Yudhoyono's leadership, who won more than 60% votes from 176 million registered voters¹⁶ in the first period. President Yudhoyono's party, *Partai Demokrat*, controlled over 25% of plenary votes, and still won for the second period, providing him with a stronger mandate to lead Indonesia until now. However, the political stability in Indonesia needs to be improved and maximized up to the satisfaction of their people, so that it may be interested by foreigners to invest some big money in the country. In addition, the Indonesian young generation should be introduced with the actual politics, so they could be a new generation with more responsibility.

Stronger Investment Climate

After the economic crisis in 1998, Indonesia's economy has again demonstrated positive economic growth, but until now the average growth per year is still relatively slow compared to neighboring countries that also affected by the crisis such as South Korea and Thailand, or still much more lower than average growth per year ever achieved by the New Order (Orde Baru), in particular between 1980s to the middle of 1990s. One mistake is caused by the unwillingness of intensive activities investment, including investment flows from outside, especially in the form of foreign direct investment (FDI). While the era of New Order proves that investment, especially FDI, is a driving factor that was very crucial for achieving high economic growth and sustainable, especially the fact that the source of technological

¹⁶ Indonesia's Political Stability
<http://www.kemlu.go.id/rome/Pages/InformationSheet.aspx?IDP=1&l=id>

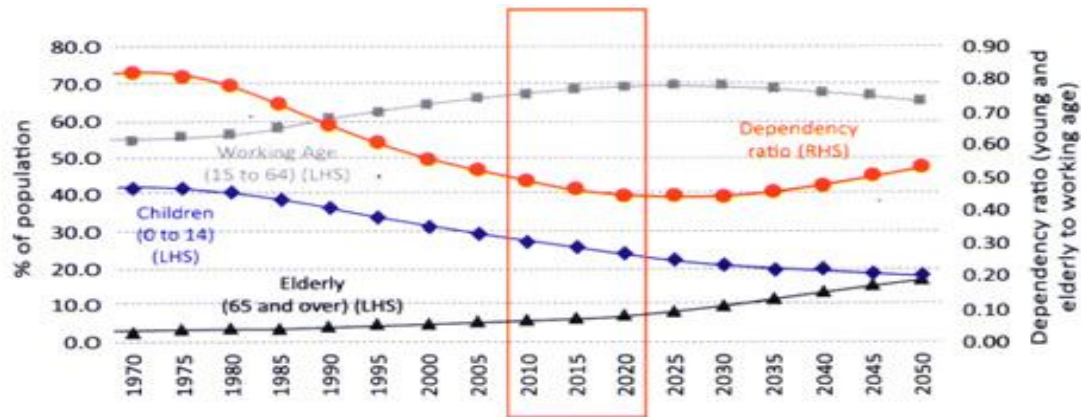
developments, structural changes, product diversification, and export growth in Indonesia during the New Order in large part because presence of FDI in Indonesia.

There are so many factors are interrelated to each other with a very complex pattern which causes a slow recovery of investment in Indonesia until now. The factors include the security problems, lack of legal certainty, and poor infrastructure conditions, also the labor conditions are getting worse. So from those descriptions, how good an investment policy, the effectiveness of the policy itself would depend on many factors out of that investment policy, because these factors greatly influence one decision to do any investments or new business opens in Indonesia.

Social and Dynamic Demographic Base

According to population of the census in 2000, Indonesia's population was about 206 million, and in 2006 estimated became 222 million¹⁷, 130 million (more than 50%) lived on the island of Java, which is the most populous island as well as the island where the capital Jakarta are the majority (95%) population of Indonesia are Austronesian people, and there are also tribal groups of Melanesia, Polynesia, and Micronesia, especially in Eastern Indonesia. Indonesia is the 4th most populous nation in the world. Apart from its remarkable fiscal and political transformations during the last decade, Indonesia is also undergoing a major structural shift in terms of demographics. Of the 240 million people, over 50% of the population is under 29 years old, with the same percentage living in urban areas. This provides for dynamic labor market participation, growing at 2.3 million per year. A rapidly urbanizing population also provides for strategic pools of labor force in centers of investment.

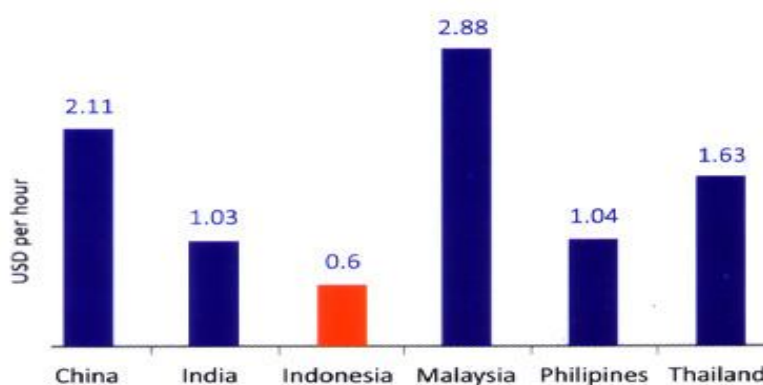
¹⁷ Badan Pusat Statistik Indonesia, 1 September 2006.



Source: The World Bank

Supported with this demographical strength, Indonesia is fighting in a commitment to improve productivity and the education level of its youth, with 16% of total government expenditure on education.¹⁸ This expenditure is higher than any other sector. Nowadays, the majority of university graduates are trained in technical fields such as finance and economics (28%) or engineering and sciences (27.5%).

The labor cost is still relatively low in urban centers, even as compared to urban centers of investment magnets China and India that can be seen as below.



Source: EIU

¹⁸ Why Invest in Indonesia
<http://www.indonesiahouston.net/Why-Indonesia.html>

Strategic Location and Expanding Global Influence

Indonesia lies at the intersection of the Pacific Ocean, along the Malacca Straits and the Indian Ocean. Over half of all international shipping goes through Indonesian waters. Increasingly, Indonesia is playing a more dominant role in global affairs. It is Southeast Asia's only member of the G-20, the latest global grouping for transnational economic policy. Standard Chartered sees Indonesia's inclusion in the G-7 by 2040, provided that growth achieves its potential by 2012, moving the economy ahead of South Korea by 2016 and Japan by 2024.

Indonesia is also a leading member of ASEAN, shaping integrative approaches in the region for security, trade and commerce, and will be the integral part of the ASEAN Economic Community in 2015.

Technology

Indonesia is lagged far behind neighboring countries like Malaysia and Singapore in terms of technology use. For example the ratio of Internet use in Indonesian people is very small because the number of people of Indonesia are also very much. The lack of the adequate infrastructure and the expensive cost to access, are the small part that cause of the slowness towards technological development in Indonesia.

Currently, the development of IT in Indonesia is still centered in big cities, the other parts are lagged very far behind those big cities. The government works very hard to take the effectiveness to increase the internet penetration in every part of Indonesia. They have to provide the free public internet access such area like hospitals, terminals, libraries, schools, colleges, and other public places that can help more to introduce the internet to the public

Recommendation

It needs to increase the transparency that needed to restore investor confidence, but should accompanied by sound economic fundamentals and macroeconomic policies. However, maybe I can suggest that improving and maintaining transparency in policy and regulatory environment served as one key element of crisis human resources as Indonesia tries to rebuild confidence in the international community. Finally, Indonesia is emerging as a key player on cross-cutting international policy issues as climate change, which will have direct and indirect impacts on business and investment decisions.

4.9 PEST Analysis of Singapore's Business Environment

Singapore is globally recognized as a country that having the best business environments in the world, and also one of the world's most competitive (Institute for Management Development World Competitiveness Yearbook), most profitable (Business Environment Risk Intelligence Report), most transparent (Transparency International Survey), with world-class intellectual property protection and enforcement (World Economic Forum Global Competitiveness Report).

The existence of many leading global companies and local enterprises in Singapore is substantiation towards Singapore's excellence in manufacturing and services. Nowadays, there are more than 7,000 Multi-National Corporations listed in Singapore¹⁹. The country has a competitive manufacturing location, possessing world class capabilities in the design, development and manufacture of cutting edge products for the world, Singapore is really an attractive market and home for thousands multinational corporations, that always looking for the most cost efficient in investment things.

Singapore's high labor rate loses out to other developing countries, then some manufacturers have left Singapore to other countries that having cheaper labor, like China, India, and Indonesia. It can be seen the transformation from the manufacturing activities changed into trading and services industry. However, by utilizing on its strength as the regional hub for any services such as logistics and education, Singapore could be the Asia's leading services hub, providing a layout of world-class services.

¹⁹ Singapore: Nonstop Action
<http://www.forbescustom.com/EconomicDevelopmentPgs/SingaporeNonStopAction.html>

Political/Legal

Singapore is well known as a country where corruption is strictly under control in the world, it shows how strong the political will to curb corruption, what actions should be taken against the corrupt, regardless of their status and background. Corruption is just not part in a way of life, which became something inherent in people's mind and behavior. In the country, it has a body (Corrupt Practices Investigation Bureau) that inspects and aims to avoid corruption in the public and private sectors, takes responsibility for safeguarding the integrity of the public service and encouraging corruption free transactions in the private sector.

In enforcement, Singapore has a very efficient and low corruption rate, and it gets a positive public image both local and abroad. The country is really preserving the low crime rate today. The government prioritizes the development of economy inside by aiming the international trading, attracting foreign investment, and developing the skillful manpower. Those steps now bring Singapore as a developed country with its interesting market and very low rate of corruption.

Economy

Singapore economic expansion reached a record up to 14.7 percent in 2010²⁰, more less due to the rise tourism industries that attract people all over the world, include the theme park, casinos and other entertainments. The country also has some strong industries such as the pharmaceutical industry with a particular focus on biotechnology, financial services, business consultation services, education, multimedia, retail and leisure, and the medical technology industry. Some analysts said Singapore is Asia's fastest growing economies in the last 12 months, it is very contrast in 2009 since Singapore's economy plummeted 1.3 percent. The Prime Minister of Singapore, Lee Hsien Loong said the country should rejoice with the performance of its economy, but he admits that, this is the results of the special

²⁰ Ekonomi Singapura Tumbuh Hampir 15 Persen Tahun 2010
<http://www.voanews.com/indonesian/news/Ekonomi-Singapura-Tumbuh-Hampir-15-Persen-Tahun-2010-112733884.html>

conditions and likely to be repeated as well. As the world economy has slowly been recovering in 2009, Singapore's exports were rising, especially in pharmaceutical things. But some entertainment concept and other attraction in tourism industries have made a big increase in that country. The very small country has brought a huge number of tourist and breaks a new record in every month since some casinos was opened early in 2010. The Prime Minister of Singapore, Lee Hsien Loong still expects to grow more about up to six percent in 2011. He noted that the picture for the world's diverse economy nowadays is the stagnant growth in Western countries and more robust expansion in Asia.

Social Cultural

Singapore is well known as a multicultural country that still follows the traditional family values, instead of the young generation prefer to adapt into western culture and values. The citizens are well known as workaholic, discipline, and hardworking, they work very hard to retain and fulfill their materialism desire. This strong habit extents a positively value into the productivities and the business sectors, so it can expect a higher purchasing power from the consumers, on the other hand, some family and social values have to be sidelined.

The country's current population is about 4.8 million, with some ethnic mix such as Chinese (75.2%), Malays (13.6%) and Indians (8.8%)²¹. In some way, most of the Singaporean does not like works within construction and other works in hard environment (blue collar), those are considered as hard and dirty works psychically and therefore not welcome especially by the younger generation, so it is created a chance importing foreign workers to fill up the blue collar vacancies. However, importing the cheaper labors from neighboring countries, especially coming from Malaysia and Indonesia, they can enjoyed the cost saving in business sector and therefore more can be reinvested for further expansion.

²¹ source: Singapore Department of Statistics reports overall population

SWOT/ PEST	Strength (S)	Weaknesses (W)	Opportunities (O)	Threats (T)
Political (include legal) aspect (P)	<ul style="list-style-type: none"> • Strong political will is to curb corruption • Cooperation between the public and private sectors 	<ul style="list-style-type: none"> • The government, however, still plays a significant role in the economy and government-linked companies are still popular and influential 	<ul style="list-style-type: none"> • Be able to create a new strong political willingness 	<ul style="list-style-type: none"> • Cyber terrorism and cyber crimes • Securities breach and copyright issue
Economic aspect (E)	<ul style="list-style-type: none"> • Economic policies (e.g. Singapore Quality Class) • Funds for any services to improve social and physical infrastructure • Low cost of Internet subscription 	<ul style="list-style-type: none"> • Government-linked companies are still popular and influential. • Many competitors may exist in Singapore since it is one of the international commerce centre in the world 	<ul style="list-style-type: none"> • IT-proficient people can have better opportunity for employment 	<ul style="list-style-type: none"> • Higher cost of living and higher broadband subscription due to higher oil price
Social aspect (S)	<ul style="list-style-type: none"> • Educational system (e.g. national IT Literacy program) • Recruitment of foreign talents • Tech-savvy population (e.g. 	<ul style="list-style-type: none"> • Still many some workers and olders are computer illiterate 	<ul style="list-style-type: none"> • The products could be known and competing globally with other players/ products 	<ul style="list-style-type: none"> • The rapid development of cooperation (abroad) enables to compete tightly with another product.
Technological aspect (T)	<ul style="list-style-type: none"> • High-tech based economy • Innovation keep growing 	<ul style="list-style-type: none"> • Some government websites are unfriendly-user • Over-capacity of the internet highway due to heavy traffic 	<ul style="list-style-type: none"> • Broadband facilitates faster connection 	<ul style="list-style-type: none"> • Dependency on IT (e.g. small technical problems will disrupt the entire networks

Technology

Good infrastructure and the advanced technology enable to create an attraction to foreign investment and local sector business inside a country. Singapore is the one that experienced those things. Currently, the government has been providing free public internet access such at stations, hospitals, terminals, libraries, schools, colleges, and other public places to support some various activities. The internet penetration rate includes more than 70%²² in Singapore, the government really realized how important of the internet. The development of infrastructure and the advanced technology encourage many multinational corporations (MNCs) to open their branch in Singapore. The success of any services industry and business sector in this country are really depending on the adequate of infrastructure and the following technology.

Conclusion about PEST Analysis Business Environment in Singapore

As a conclusion from the factors analyzed above, we can conclude that Singapore business success in the domestic and international platforms are much benefited from its government's policies and enterprise friendly approach. Together with its common tertiary education and the hardworking and discipline of its citizen, the success of domestic business will ensure its competitiveness in the international era.

SWOT and PEST MATRIX of Singapore' Business Environment for IDX

Here from the data above, the researcher makes the SWOT and PEST MATRIX so that it is able to be concerned by IDX.

²² Asia has poor Internet Penetration Levels
<http://india-reports.in/shop/powerpoint-slide-on-internet-penetration-rates-across-the-world/>

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This study analyzes the impact of regional cross-listing stock index on the depth of the stock markets consist some countries as good examples. The paper finds the significant positive and negative effects measuring the stock market depth around regional cross-listing events. Overall, growth in the regional cross-listing of stocks facilitates stock market deepening, and the stock markets of countries with regional cross-listings perform better than those without. The study thus suggests that some countries can benefit from putting in place the necessary conditions for promoting regional cross-listings and thereby deepening their stock markets. These include sound legal and regulatory frameworks, macroeconomic and political stability, harmonization of listing rules, accounting laws and disclosure requirements across the region, and strong money markets.

This study also analyzes the relationship between the MSCI-TW and its component stocks and between the MSCI-TW and the TX-FUT contract for the five-year period from 31 May, 2003, to 31 May, 2008. Results demonstrate that after controlling for broad market movements and simultaneity among endogenous variables, an increase in the turnover of MSCI-TW leads to an increase in the turnover of both its component stocks and the TX-FUT. Specifically, it is observed that for each 10% increase in the turnover stocks increases by 1.63% and 0.78%, respectively. This study also examines the Nikkei 225 and Nifty Index futures, as in the result documented above, it is observed that when the turnover of SGX traded Nikkei 225 index futures contracts increase by 10%, OSE's turnover increases by 6.6% and the components stocks increases by 2.95%. The Nifty Index future shows that a 10%

increase in the SGX Nifty causes an increase of approximately 0.30% and 0.89% in the spot-futures and futures' turnover, respectively.

Regional cross-listing of stocks can bring significant benefits. Through such cross-listings, the stock markets can provide wealth diversification, bring greater efficiency, lower the cost of capital, increase market access for small stock markets, and potentially help mitigate the effects of foreign investment outflows in shallow markets. On the other hand, with global integration, foreign investors are increasingly interested in Indonesia stock markets which have the potential to destabilize the markets, since Singapore market is international oriented. Therefore, the internationalization and globalization of stock markets, and instantaneous mobility of capital across borders can exacerbate volatility and lead to financial sector instability in the event of a sudden and unexpected deterioration in economic conditions.

The integration between IDX and SGX could potentially help reverse the region's economic marginalization by attracting foreign capital and improving the business and investment climate and reinforcing other economic reforms, and it is also helpful for IDX stock index to be more widely known globally in the future.

5.2 Recommendation

The study suggests that regional cross-listings, especially for Indonesia Stock Exchange (IDX) and Singapore Exchange (SGX), may help each other in financial corporate and development needs. The necessary conditions to harness the benefits of regional cross-listings are sound legal and regulatory frameworks, macroeconomic and political stability, harmonization of listing rules, accounting law and disclosure requirements across the region, strong money markets, and incentives for listed firms and other market participants to take advantage of regional cross-listing.

It is necessary to harmonize legal mechanisms such as bankruptcy courts and laws to enforce contracts and ensure minority rights protection by IDX and SGX. Harmonizing common listing requirements and rules will facilitate cross-border listings. Transparency and accountability could be improved through moving to a common financial reporting system and accounting framework. It is necessary to set trading rules, settlement periods, operating days, taxes, and fees associated with cross-listings across the region. Such rules and practices should be monitored and enforced by national Exchanges and authorities, thereby ensuring horizontal integration and producing decentralized and technically uniform stock exchanges. The vertical integration with a common trading platform will bring the cost efficiency and economies of scale by combining trading, clearing, and settlement in a single institution.

The integration between IDX and SGX could potentially help reverse the region's economic marginalization by attracting foreign capital and improving the business and investment climate and reinforcing other economic reforms, and it is also helpful for IDX stock index to be more widely known globally. Thus, it can be proposed that the LQ 45 index more feasible as an underlying derivative product traded in another foreign market, but it still needs more confirmation to convey to any international data vendors extensively about the LQ 45 to be more widely known globally.

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