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Analisis Perdagangan Produk Alas Kaki Indonesia - China



**Kemiskinan, Ketimpangan dan Pertumbuhan Ekonomi di
Indonesia (Tinjauan Analisis Regional)**



**International Linkages to The Indonesian Capital Market :
Cointegration Test**



**Analisis Efektivitas Pengenaan Cukai atas Produk Kantong
Plastik dan Dampaknya terhadap Perekonomian**



**Analisis Pengembangan Kebijakan Hutan Tanaman Rakyat
Sebagai Pendorong Pertumbuhan Ekonomi**

KATA SAMBUTAN

Kami panjatkan rasa syukur kepada Tuhan Yang Maha Esa atas terbitnya Kajian Ekonomi dan Keuangan edisi ini ke hadapan pembaca sekalian. Pada edisi ini, kami menyajikan berbagai topik yang berkaitan dengan analisis dan dampak kebijakan publik di bidang ekonomi dan keuangan negara.

Kajian pada volume kali ini diisi oleh berbagai topik tulisan yaitu Analisis Perdagangan Produk Alas Kaki Indonesia - China; Kemiskinan, Ketimpangan dan Pertumbuhan Ekonomi di Indonesia (Tinjauan Analisis Regional); *International Linkages to The Indonesian Capital Market : Cointegration Test*; Analisis Efektivitas Pengenaan Cukai atas Produk Kantong Plastik dan Dampaknya Terhadap Perekonomian, serta Analisis Pengembangan Kebijakan Hutan Tanaman Rakyat Sebagai Pendorong Pertumbuhan Ekonomi. Adapun para penulis yang berkontribusi pada penerbitan kali ini yaitu Ragimun, Tri Wibowo, YooPi Abimanyu, Nur Sigit Warsidi, Sunu Kartiko, Ridiani Kurnia, Tety Mahrani, Purwoko, dan Noeroso L. Wahyudi.

Demikianlah kata pengantar yang dapat kami sampaikan. Ibarat peribahasa tiada gading yang tak retak, maka kami menyadari kajian ini tentunya masih terdapat kekurangan baik yang disengaja maupun yang tidak kami sengaja. Oleh karena itu, kami mengharapkan masukan dari para pembaca guna perbaikan di masa yang akan datang. Selanjutnya, kami berharap jurnal ini dapat memberikan manfaat kepada para pembaca sekalian. Selamat membaca!

Jakarta, 2012
Dewan Redaksi

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MAJALAH KAJIAN EKONOMI DAN KEUANGAN**ISSN 1410-3249****KEK Terakreditasi****(No. Akreditasi : 467/AU3/P2MI-LIPI/08/2012)****Volume 16 Nomor 2 Tahun 2012***Keywords used are free terms. Abstracts can be reproduced without permission or charge.***ABSTRAKSI****Ragimun, et. al. (Badan Kebijakan Fiskal, Kementerian Keuangan)****Analisis Perdagangan Produk Alas Kaki Indonesia - China****Kajian Ekonomi dan Keuangan Volume 16 Nomor 2 Tahun 2012, halaman 1-22**

The Government continues to encourage non-oil exports in order to increase state revenues. One of them is a footwear product. Main export products are in addition to generating foreign exchange also employment. One factor that may affect the export of footwear products are competitive and many competitors' products, including China. Indonesia has the footwear of competitiveness is quite good for the world and exports of footwear products to China. From 2001 to 2010 Revealed Comparative Advantage (RCA) showed an average of over 1. Besides, the analysis of trade specialization index also shows the average above 0.5 which means that Indonesia is best suited as an exporter of footwear products. Related to this strategy of increasing competitiveness of footwear products, which need do is to continuously improve product quality and efficiency as well as footwear business climate in Indonesia.

Keyword: The competitiveness of products, specialty products, increased footwear products

Wibowo, Tri, et. al. (Badan Kebijakan Fiskal, Kementerian Keuangan)**Kemiskinan, Ketimpangan dan Pertumbuhan Ekonomi di Indonesia (Tinjauan Analisis Regional)****Kajian Ekonomi dan Keuangan Volume 16 Nomor 2 Tahun 2012, halaman 23 - 54**

Strategy development pro-growth, pro-job, pro-poor and are listed in the RPJM 2004-2009, have shown encouraging results. During this period of economic growth increased, the unemployment rate declined, so did the level of poverty, but not so with income inequality figures. Menurunannya poverty

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level has not kept pace with the inequality. Both rural and urban areas, the poverty rate showed a declining trend, but inequality has increased. National development priorities need to pay attention to regions / provinces that have high levels of poverty and high inequality and low per capita income and slow growth. This area is not a priority when development will potentially social disparities and the potential conflict that would ultimately hamper growth. Indonesia as an agricultural country, the average growth of the agricultural sector has always been below GDP growth, and the growth of a more unstable. Contribution of agriculture to GDP is also declining. The poor are mostly in the agricultural sector, and labor also largely absorbed in agriculture, should receive priority. Agricultural growth will be able to reduce the level of poverty, employment and reducing inequalities, particularly in rural Indonesia.

Keywords : Pertumbuhan, Ketimpangan, Kemiskinan, Ekonomi

Abimanyu, Yoopi, dan Tim, et. al. (Kementerian Keuangan)

International Linkages to The Indonesian Capital Market : Cointegration Test

Kajian Ekonomi dan Keuangan Volume 16 Nomor 2 Tahun 2012, halaman 55 - 76

This paper explores the international linkages of the Indonesian capital market using cointegration tests to examine the long-run equilibrium relationship between the stock markets of Indonesia with China, France, Germany, Hong Kong, Japan, Korea, Malaysia, Netherlands, Philippine, Singapore, Thailand, Taiwan, the United Kingdom, and the United States. The method used in this paper is visual inspection, followed by Johansen cointegration. Our results show that there exist cointegration between these stock market indices except between Indonesia and Philippine.

Keywords: Capital Market, Cointegration Test, Stock, Market

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ABSTRAKSI

Purwoko, et. al. (Badan Kebijakan Fiskal, Kementerian Keuangan)

Analisis Efektivitas Pengenaan Cukai atas Produk Kantong Plastik dan Dampaknya Terhadap Perekonomian

Kajian Ekonomi dan Keuangan Volume 16 Nomor 2 Tahun 2012, halaman 77 – 106

Karena sifatnya yang kuat menahan beban, harganya yang murah, dan bisa digunakan sebagai sarana promosi yang efektif, penggunaan kantong plastik di Indonesia telah berkembang dengan sangat pesat. Banyak supermarket, toko, dan warung yang memberikan kantong plastik untuk membungkus barang belanjaan secara gratis. Akibatnya, sampah kantong plastik bisa dijumpai di mana-mana. Masalahnya, sampah kantong memerlukan waktu ratusan tahun untuk dapat terurai dengan sempurna, sehingga terjadi ketidakseimbangan antara produksi dan penghancuran sampah kantong plastik. Apabila tidak dibatasi penggunaannya, dikhawatirkan akan mengganggu upaya pelestarian lingkungan.

Pengenaan cukai atas produk kantong plastik merupakan salah satu upaya untuk mengurangi laju pertumbuhan penggunaan kantong plastik. Kajian ini menganalisis efektivitas pengenaan cukai atas produk kantong plastik serta dampaknya terhadap perekonomian. Analisis dilakukan dengan menggunakan elastisitas untuk melihat sejauh mana kebijakan pengenaan cukai dapat mengurangi laju penggunaan kantong plastik serta model Input-output untuk melihat dampak ekonomi dari kebijakan pengenaan cukai atas produk tersebut.

Kata kunci: kantong plastik, pelestarian lingkungan, cukai, dampak ekonomi, input - output

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ABSTRAKSI

L. Wahyudi, Noeroso, et. al. (Badan Kebijakan Fiskal, Kementerian Keuangan)

Analisis Pengembangan Kebijakan Hutan Tanaman Rakyat Sebagai Pendorong Pertumbuhan Ekonomi

Kajian Ekonomi dan Keuangan Volume 16 Nomor 2 Tahun 2012, halaman 107 – 126

Tulisan Ilmiah ini menyajikan kerangka analisis untuk menjawab permasalahan bagaimana meningkatkan peran Hutan Tanaman Rakyat atau HTR dalam mengembangkan kapasitas domestik, Kerangka Analisis ini menyajikan analisis SWOT berdasarkan data kualitatif dan kuantitatif yang mengeksplorasi perkembangan kebijakan, sumber pembiayaan dan perkembangan HTR.

Tujuan utama penelitian ini adalah menformulasikan konsep kebijakan pembiayaan yang inovatif dengan menganalisis posisi strategi pengembangan kebijakan. Konsep ini merupakan pilihan kebijakan berdasarkan implikasi strategi antara lain: i) menggunakan kekuatan dan kelemahan dalam memanfaatkan peluang, dan ii) strategi menggunakan kekuatan dan kelemahan dalam mengatasi ancaman.

Peluang yang harus dimanfaatkan untuk pengembangan HTR adalah kelangkaan pasokan kayu dari hutan primer, dan komitmen pemerintah untuk mendukung HTR. Sementara identifikasi faktor eksternal kekuatan antara lain-lainnya kawasan hutan yang terdegradasi untuk menjadi areal HTR, banyaknya UMKM yang berdomisili disekitarnya. Sedangkan strategi yang harus dilaksanakan antara lain: i) mempercepat pembangunan HTR dengan membuka kendala yakni perijinan dan pembiayaan HTR.

Kata Kunci : HTR, Pertumbuhan Ekonomi, Insentif Fiskal, REDD

INTERNATIONAL LINKAGES TO THE INDONESIAN CAPITAL MARKET : COINTEGRATION TEST

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Abstract

This paper explores the international linkages of the Indonesian capital market using cointegration tests to examine the long-run equilibrium relationship between the stock markets of Indonesia with China, France, Germany, Hong Kong, Japan, Korea, Malaysia, Netherlands, Philippine, Singapore, Thailand, Taiwan, the United Kingdom, and the United States. The method used in this paper is visual inspection, followed by Johansen cointegration. Our results show that there exist cointegration between these stock market indices except between Indonesia and Philippine.

Keywords: Capital Market, Cointegration Test, Stock, Market

I. INTRODUCTION

For the past several years, analysts have tried to find linkages between international capital markets. These researches on the interaction amongst different countries were done for different reasons and under different underlying assumptions.⁶ This short paper is trying to find out which market is particularly linked to the Indonesia's capital market using the cointegration method.

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⁵ Ministry of Finance's Employee.

⁶ See Phylaktis and Ravassolo, 2007; Ou Hu, 2004; Baccheta and van Wincoop, 1998.

II. CONTENT

2.1. General

The abolition of foreign exchange control, the development of technology in communications and trading systems, and the introduction of innovative financial products, have increased the interest of researchers on the interaction among international capital markets. Phylaktis et al (2007) in their paper had found out that for open economies countries there were no linkages nor dynamic interactions between a group of Pacific-Basin capital markets and the industrialized countries of Japan and US in the 80's and the 90's. There was no linkage as well for Hong Kong and Malaysia for the 80's period. This shown that even though there was a relaxation on financial restrictions, other factors such as information availability, accounting standards, or liquidity, and political risk particularly for Hong Kong at that time, might reduce the interest of international investors, thereby affecting the decision on the portfolio diversification. For other semi-open countries where foreign ownership and other restrictions were placed, there was a close financial links for Taiwan and Thailand with both Japan and US. This probably was due to the introduction of innovative financial products. In general, Phylaktis et al (2007) had shown that under open economies, although the linkages have increased in recent years, they do not seem to respond to a common world factors but that of the domestic factors, creating spaces for long-term gains by investing in these markets. On the other hand, under semi-open economies, even though long-term diversifications benefits from exposure to these markets might be limited, substantial transitory fluctuations might resulted in short-run benefits.

Based on sample period of December 1969 until May 2003, using Kalman filter recursive procedure and maximum likelihood estimation, Hu (2004) however had found out that every member of OECD countries capital market price does not have a one-on-one relationship with the world price.⁷ The cointegrating vectors between these countries' price indices and the world price index are not {1,1}.⁸ In other words, each country has a different degree of sensitivity to the world price, and therefore implies that there is a potential long-run international diversification benefit.

A different approach was done by Baccheta et al (1998) where their paper showed that liberalization and reforms had positive impact on capital inflow

⁷ The OECD counties consists of Australia, Austria, Belgium, Canada, Denmark, France, Germany, Hong Kong, Italy, Japan, Netherlands, Norway, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

⁸ The world index consists of 23 developed market country indices taken from Morgan Stanley Capital International (MSCI). Those countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States

despite higher real interest rates in the emerging markets. Incomplete information as a crucial element in liberalization however, can generate considerable volatility. This problem is likely to become less acute over time as investors learn about their new environment. Substantial liberalization and macroeconomic reforms imply a regime change. This creates an environment of uncertainty for foreign and domestic investors alike. Particularly in the beginning there is uncertainty both about the extent of the reforms and their success. However, as time goes by investors will learn and most of the initial uncertainty will be resolved. This paper also had shown that the analysis on incomplete information can be extended to include contagion across countries. Consider the case where several emerging countries liberalize at the same time, assuming that investors think (rightly or not) that events in one emerging country provide information about other countries. Thus, a very low return in certain country will lead to a large decline in inflows to that country accompanied by declines in other countries. The extent of the declines in the other countries will depend on the informational value attributed by investors to that certain country's return. This value will probably vary across countries. A negative shock in Thailand may provide informational value (in the eyes of the investors) about other South East Asian countries than a shock in Mexico (Bucchette et al, 1998).

On the contagion, contagion occurs because open economies that are connected through trade, geography, common external shocks, or similar economic structures also have integrated financial markets (Fratzscher, 1999). When one country is hit by a financial crisis, investors may flee from the other countries as well, either because they want to adjust their investment holdings and raise cash ('constitutional' contagion) or because they follow other investors who fear the spread of the crisis to the connected countries ('herding' contagion). The more financially integrated one country is with a country where a currency crisis begins, the more likely it is that the crisis will spread and the more severe crisis will be in the infected country (Abimanyu, 2000).

Forbes and Rigobon (1999) differentiated contagion from interdependence. They described contagion as a significant increase in the cross-market correlation during the period turmoil. If an exogenous shock to one market has undulation effects and causes a significant increase in market co-movements between this market and others, then there is a contagion. Forbes and Rigobon (1999) have founded that there is no contagion in South East Asia and Latin America during the crisis periods but those markets were highly interdependent. Tan (1998) investigated the extent of contagion during Asian financial turmoil using a VAR model on stock markets and found out the evidence of contagion during Asian financial crisis.

Eun and Shim (1989), Hamao et al. (1990), Koch and Koch (1991), and Roll (1992), evaluated cross-country correlation. They found out the evidence of significant linkages between stock markets around the world. Kasa (1992) investigated common stochastic trends in the stock markets of the U.S., the U.K., Japan, Germany and Canada. Using Johansen cointegration technique with monthly quarterly data from 1974 to 1990, he found out that there exists a single common stochastic trend driving these countries stock markets. Therefore, there is a long run relationship between stock markets of these countries. In other words, they tend to move together.

Based on the assumptions used on the above papers, under the hypotheses that there exist a long run relationship between the Indonesia stock market and other countries stock market, a cointegration analysis of the Indonesian capital market index against several groups of countries would be done in this paper.

2.2. Indonesia's Case

Indonesian capital market has played an important role on the Indonesian economy. It has become an alternative source of financing due to its relatively low-cost, long-term funding, as well as an engine for the development of the national economy. Capital market is important not only to finance growth but also to provide economic stability. Since the financial crisis in 1997, the collapse of the Indonesia's banking sector, among others, has driven people to turn to the capital market as a source of long-term financing.

The role of the Indonesian capital market to support the Indonesian economics apparently has increased from 2005 until 2007. Table 1 below shows the market capitalization and also the ratio of market capitalization to Gross Domestic Product (GDP) between 2005 and 2007. The value of market capitalization has increased from IDR 1,264 trillion in 2005 to IDR 2,548 trillion in 2007 (101.58%). The ratio of market capitalization to GDP has also increased from 45.39 % in 2005 to 64.40% in 2007.

Table 2.1
Ratio of Market Capitalization to GDP (2005 until 2007)

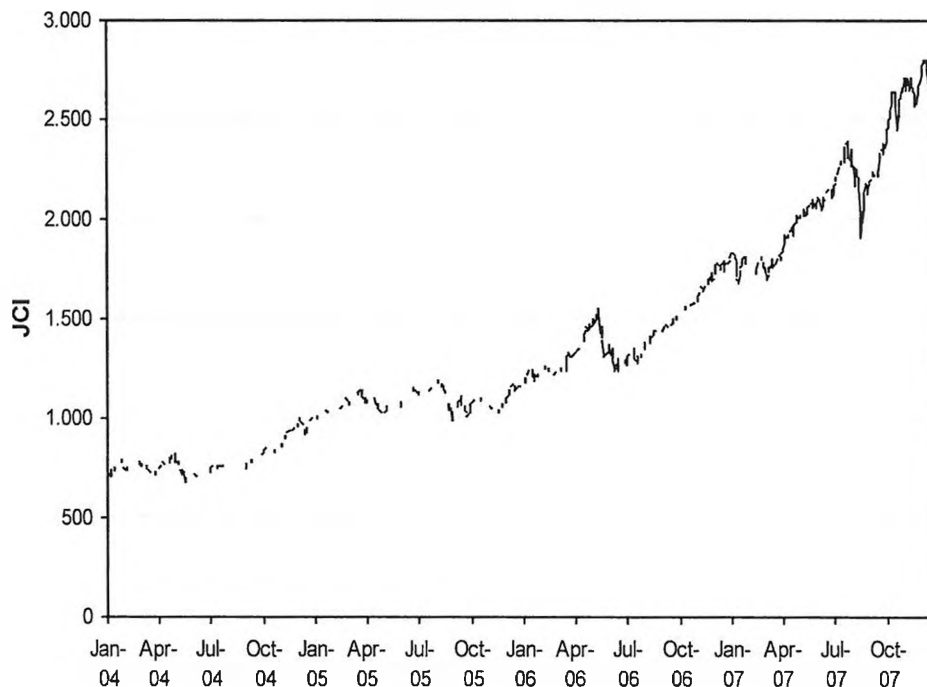
Year	Equity (IDR Trillion)	Bond (IDR Trillion)	Market Cap. (IDR Trillion)	GDP (IDR Trillion)	Equity /GDP Ratio (%)	Bond/ GDP Ratio (%)	Market Cap/GDP Ratio (%)
2005	801,252.70	462,750.65	1,264,003.35	2,784,960.40	28.77	16.62	45.39
2006	1,249,074.50	486,556.74	1,735,631.24	3,338,195.70	37.42	14.58	51.99
2007	1,988,326.20	560,230.81	2,548,557.01	3,957,403.90	50.24	14.16	64.40

Source: Ministry of Finance of Indonesia

From the trading activities point of view, daily average transaction value has increased by 138.88 % from IDR 1.8 trillion in 2006 to IDR. 4.3 trillion in 2007. Daily average transaction frequency has increased by 142.68 % from 19,880 times in 2006 to 48,244 times in 2007. Transaction volume has increased by 133.33% from 1.8 billion in 2006 to 4.2 billion in 2007⁹.

On the Jakarta Composite Index (JCI), graph 1 below shows the daily movement of the JCI from 2004 until 2007. The performance of the JCI showed relatively rapid growth. The Jakarta Composite Index has reached a remarkable level on December 11th 2007 where the composite index was closed at the level of 2,810.962. This is the highest level of the composite index in the Bourse's history. This achievement has placed the Indonesia Stock Exchange (IDX) as one of the best performance Bourses in Asia Pacific.

Graph 2.1
Movement of JCI (2004 until 2007)



Source: Ministry of Finance of Indonesia

The movement of JCI apparently more or less is influenced by the movement of the international economy. During the 1997's Asian financial crisis, some

⁹ See Indonesia Stock Exchange. "Performance of IDX in 2007 and Outlook 2008". Available online at <http://www.idx.co.id>

researches show that the weekly return of the stock markets of Korea, Thailand and Indonesia were closely correlated (Abimanyu, 2000; Fratzscher 1999). Most of these stock markets declined significantly after the crisis struck Thailand on July 1997. This similarity in the movement of stock market indices suggest that there was a contagion effect running from one country to the others.

Other example shows that while on July 2007 the European and Asian markets fell after the trouble on the US sub-prime mortgage, on 16 August 2007 the JCI dropped from 2,211.46 points to 1,908.63 points or 13.69% due to domestic market's concern on the same problem. On that day, the Dow Jones Industrial Average dropped by 2.95%, that is from 13,236.53 points to 12,845.78 points. These turmoil has then engulfed global equities as rising default rates among U.S. mortgage holders with poor credit histories - the so-called sub-prime problem - raised concerns of a spillover effect that might lead to recession in the world's largest economy.

In Indonesia, concern of the possibility of the failure of US sub-prime mortgage settlement has triggered panic selling. Selling of some blue chip stocks dominated the transaction on August. The Jakarta Composite Index fell significantly three times in a row in just one week i.e., 42.82 point (1.94%) in the beginning of the week, 139.55 point (6.44%) in the middle of the week and 120.45 point (5.94%) at the end of the week. In contrast, on week three and week four Jakarta Composite Index strengthened as a result of a number of huge transactions of big capitalized companies. Market still fluctuated on the fifth week of that month. This tendency was inline with the movement of the regional stock indices. Sentiment on global issues such as the decline of the Fed interest rate, price movement of the mining commodities and credit guarantee on housing by Federal Housing Administration were coloring the transaction of that month. Total transaction at week five was amounting to IDR 3,466.73 billions or decreased by 33.43% compared to past week transaction. However the transactions were dominated by local investors rather than by foreign investors. Local investor's transactions took a portion of 80%, while foreign investors took up 20% of the rest.

The numbers of international issue on one hand, and the local dominated transaction on the other hand raised a question whether Indonesian capital market was really integrated with the regional and the global market. These will be analyzed in the next section.

III. ANALYSIS

We use daily stock market indices reported by Bloomberg. The countries included in this study are China, France, Germany, Hong Kong, Indonesia, Japan,

Malaysia, Netherlands, Philippines, Singapore, South Korea, Taiwan, Thailand, the United Kingdom and the United States. Specifically, the stock market index prices used are as follows: Amsterdam Exchange Index (Netherlands), Bangkok S.E.T. (Thailand), CAC 40 (France), Dow Jones Industrial Average (United States), DAX Index (Germany), FTSE 100 Index (United Kingdom), Hang Seng Index (Hong Kong), Jakarta Composite Index (Indonesia), Nikkei 225 Stock Average (Japan), Kuala Lumpur Composite Index (Malaysia), Korea SE Composite (Korea), Philippines Composite (Philippines), Shanghai Composite (China), Shenzhen Composite (China), Singapore Straits Times Index (Singapore), Taiwan SE Weighted (Taiwan). Our sample starts from January 2005 to December 2007.

To examine the international linkages of the Indonesian capital market, the stock indices from the sample are further sub-divided into three groups: amongst the stock markets of Indonesia and ASEAN countries (Malaysia, Singapore, Philippine and Thailand), amongst the stock markets of Indonesia with developed market and Asia-Pacific countries (United States, Japan, Hong Kong, Korea, Taiwan and China), and amongst the stock markets of Indonesia and west Europe countries (United Kingdom, France, Germany and Netherlands).

Cointegration tests in this paper consist of two steps. The first step is to examine the stationarity properties of the various stock indices for the countries using Phillips-Perron Test. The second step is to examine the cointegration using Johansen multivariate cointegration analysis.

We use two analyses in this paper, that is, the visual inspection and the empirical tests.



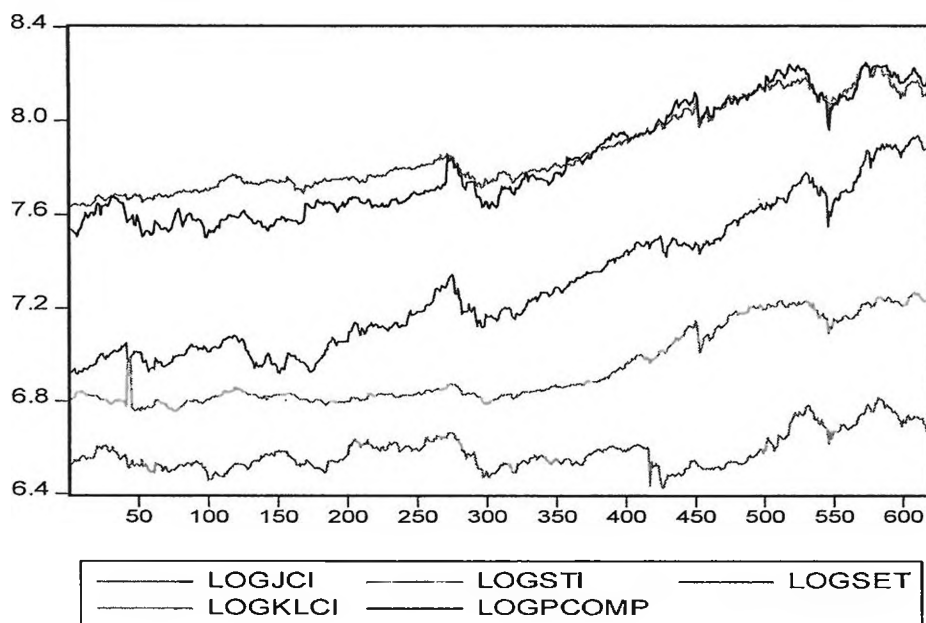
3.1. Visual Inspection (Graph)

Graph 3.1, 3.2 and 3.3 below depicts the time series representation of the variables used in this paper in natural logarithms¹⁰.

These graphs show the movement of JCI relative to the movement of international stock markets indices, where the movement of Indonesia stock market has the same trend with China, France, Germany, Hong Kong, Japan, Korea, Malaysia, Netherlands, Philippines, Singapore, Taiwan, Thailand, the United Kingdom and the United States stock markets. Further analysis using cointegration tests would be done to formalize the visual inspection approach.

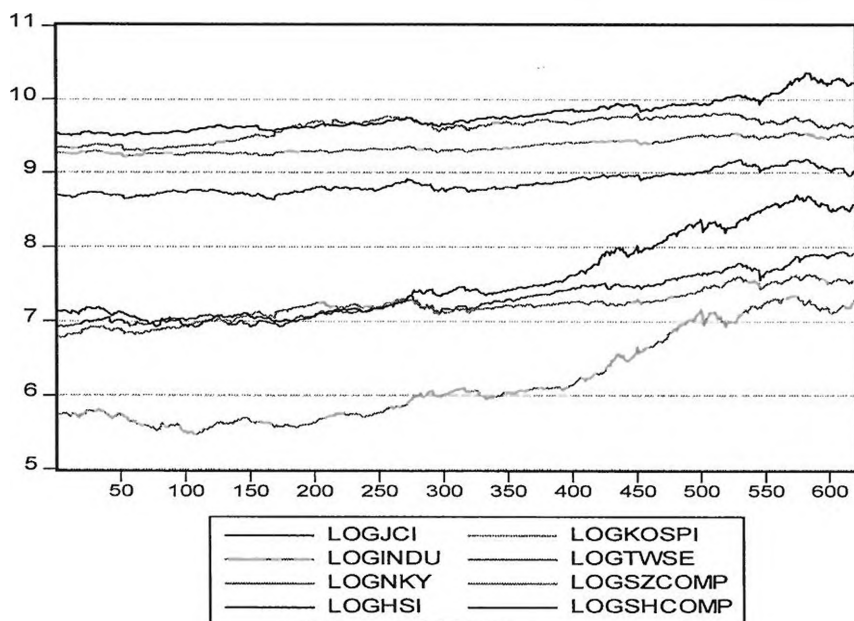
¹⁰ Natural logarithms will linearize the level data.

Graph 3.1
Movement of JCI Relative to Other Asean Countries Indices



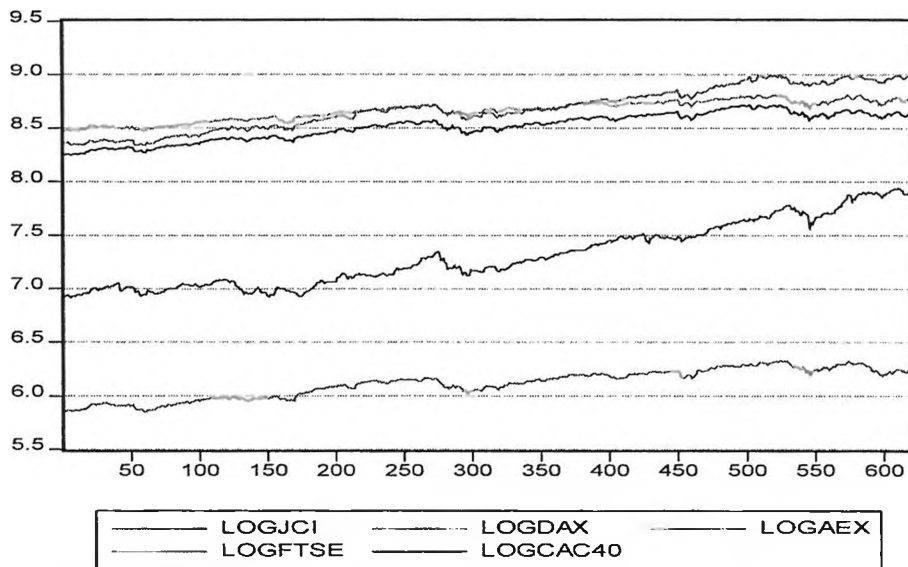
Source: Ministry of Finance of Indonesia

Graph 3.2
Movement of JCI Relative to Asia Pacific Countries Indices



Source: Ministry of Finance of Indonesia

Graph 3.3
Movement of JCI Relative to European Countries Indices



Source: Ministry of Finance of Indonesia

3.2. Empirical Test (Cointegration)

Before running the cointegration test, the stationarity issues of the series should be determined first. There are some important differences between stationary and non-stationary time series (Enders, 2004). Shocks to a stationary time series are necessarily temporary. Over time, the effects of the shocks will dissipate and the series will revert to its long-run mean level. So, the long-run movement of a stationary series will converge to the unconditional mean of the series. On the other hand, a nonstationary time series necessarily has permanent components. The mean and/or variance of a nonstationary series are time-dependent.

There are several ways to find out the time series properties of a series. Inspection of the correlogram or the autocorrelation function could be served as an indication whether a series is stationary or nonstationary (Box and Jenkins, 1976). The autocorrelation function and its companion function, the partial autocorrelation function, are two of the methods used in the identification of the capital market index series, which is, determining from sample statistics the form of the model that underlies the observed exchange rate data. These so called the Box-Jenkins method of differencing the time series after a visual inspection of the correlogram have been formalized in the tests for unit roots (Maddala, 2000).

This involves testing for the univariate unit root properties and the order of integration of the time series using the Dickey-Fuller, the Augmented Dickey-Fuller, and the Phillips-Perron tests (Murinde, 1996). Following Dickey and Fuller (1981),

Greene (1997), Banerjee et al. (1993), and Maddala (1992), the Dickey-Fuller test for unit roots is carried out by testing for first difference of the series and then comparing the result with the appropriate value reported in the Dickey-Fuller table. The equation could be added with either a constant, or a constant and a trend, for unit root test. The augmented Dickey-Fuller test (Banerjee, 1993; Greene, 1993; Maddala, 1992; and Dickey-Fuller, 1981) is the Dickey-Fuller test augmented by higher-order autoregressive process of the dependent variable. As stated in Rao (1994), the augmented Dickey-Fuller test is widely used to test the presence of unit roots in the variables. In this test, sufficient lag of the autoregressive process is added to achieve white noise residuals. Lagrange Multiplier test can be used to test for serial correlation and thus to check whether the chosen lag length is adequate. Another possibility in choosing the lag length is by choosing the minimum value of the Akaike Information Criteria (Holden and Perman, 1994). A constant or a constant and a trend could be added to test for the presence of a unit root. The distribution theory supporting the Dickey-Fuller test assumes that the errors are statistically independent and have a constant variance (Enders, 1995).

Phillips and Perron developed a generalization of the Dickey-Fuller procedure that allows for fairly mild assumption concerning the distribution of the errors. Instead of the Dickey-Fuller assumptions of independence and homogeneity, the Phillips-Perron test allows the disturbance to be weakly dependent and heterogeneously distributed. This test arise from the consideration of the limiting distribution of the various Dickey-Fuller statistics when the assumption that the residual is assumed to define a sequence of independently and identically distributed (IID) process is relaxed (Holden and Perman, 1994). In addition to that consideration, in the augmented Dickey-Fuller test, power of the unit root test may be adversely affected by miss-specifying the lag length in the augmented Dickey-Fuller regression, where the Phillips-Perron tests have the advantage that this choice does not have to be made (Holden and Perman, 1994). Also, the standard augmented Dickey-Fuller test may provide somewhat biased result toward nonrejection of unit root due to major changes in the data, such as oil shock, financial deregulation, and major intervention in the monetary policy by the Central Bank, where these changes could have created a permanent change in the series. In this case, the Phillips-Perron test could provide a more appropriate test (Christiano, 1992; Chu and White, 1992; Perron and Vogelsang, 1992a; Perron and Vogelsang, 1992b; Perron, 1990; Perron, 1989). The equation could be added with a constant or a constant and a trend before tested for the presence of a unit root. Based on the above consideration, the more robust Phillips-Perron test will be done here to test for the presence of a unit root in the capital market index (Abimanyu, 2004).

3.2.1. Unit Roots

We tested for unit roots in all stock market indices in our study by using the Phillips-Perron test. The Phillips-Perron test bandwidth selection is based on Newey-West (1987). Newey and West have proposed a more general covariance estimator that is consistent in the presence of both heteroskedasticity and autocorrelation of unknown form. Table 3.1, 3.2 and 3.3 below present the results of the unit root tests for each country. The results show that the stock prices indices for all of the markets which are being analyzed have unit roots. The results also show significant results on the null hypothesis at 5% and 1% respectively. We found that the null hypothesis of the existence of unit root in level data was accepted in all cases.

Table 3.1
Result of Phillips-Perron Unit Root's Tests Using Level Data

Variable	Phillips-Perron		
	Constant	Constant and Trend	No constant no trend
JCI	0.494739	-2.228026	2.818321
KLCI	0.460484	-1.964623	2.127266
STI	-0.572497	-2.164978	2.066311
PCOMP	-0.499658	-2.739865	1.760951
SET	-1.628420	-2.433662	0.672242
Critical values 1%	-3.440685	-3.972949	-2.568703
Critical values 5%	-2.865991	-3.417095	-1.941335
Critical values 10%	-2.569199	-3.130925	-1.616355

Table 3.2
Result of Phillips-Perron Unit Root's Tests Using Level Data

Variable	Phillips-Perron		
	Constant	Constant and Trend	No Constant No Trend
JCI	0.494739	-2.228026	2.818321
INDU	-0.571840	-3.331635	1.341628
NKY	-1.715508	-0.933311	0.950781

HSI	0.371451	-2.372991	2.200903
KOSPI	-1.161230	-2.316794	-2.316794
SZCOMP	1.170805	-2.083824	2.899723
SHCOMP	1.157867	-2.201685	3.075593
TWSE	-0.938888	-2.833272	1.110349
Critical values 1%	-3.440685	-3.972949	-2.568703
Critical values 5%	-2.865991	-3.417095	-1.941335
Critical values 10%	-2.569199	-3.130925	-1.616355

Table 3.3
Result of Phillips-Perron Unit Root's Tests Using Level Data

Variable	Phillips-Perron		
	constant	constant and trend	No constant no trend
JCI	0.494739	-3.290423	2.818321
FTSE	-1.557555	-1.964623	1.641630
DAX	-0.571247	-2.989485	2.867900
CAC40	-1.810146	-2.389132	1.828578
AEX	-1.630338	-2.514508	1.828578
Critical values 1%	-3.440685	-3.972949	-2.568703
Critical values 5%	-2.865991	-3.417095	-1.941335
Critical values 10%	-2.569199	-3.130925	-1.616355

We then proceed to test unit roots in first difference. We found that the null hypothesis of a unit root for the first difference can be rejected for all series (as shown in table 3.4, 3.5 and 3.6). Thus, as most financial series, the stock market levels are $I(1)$, which means that they are stationary after first difference.

Table 3.4
Result of Phillips-Perron Unit Root's Tests Using First Difference Data

Variable	Phillips-Perron		
	constant	constant and trend	No constant no trend
JCI	-25.74358	-25.78074	-25.42599
KLCI	-27.50571	-28.74835	-26.30128
STI	-27.77755	-27.75506	-27.59197
PCOMP	-24.35357	-24.33861	-24.22160
SET	-28.06129	-28.06073	-28.05605
Critical values 1%	-3.440702	-3.972973	-2.568709
Critical values 5%	-2.865999	-3.417107	-1.941336
Critical values 10%	-2.569203	-3.130932	-1.616355

Table 3.5
Result of Phillips-Perron Unit Root's Tests Using First Difference Data

Variable	Phillips-Perron		
	constant	constant and trend	No constant no trend
JCI	-25.74358	-25.78074	-25.42599
INDU	-27.39331	-27.38491	-27.22977
NKY	-24.78399	-24.87096	-24.75845
HSI	-26.07026	-26.09052	-25.86987
KOSPI	-25.58634	-25.57447	-25.35923
SZCOMP	-24.48261	-24.65203	23.04769
SHCOMP	-25.35913	-25.53111	-24.13572
TWSE	-25.14333	-25.12263	-25.10663

Critical values 1%	-3.440702	-3.972973	-2.568709
Critical values 5%	-2.865999	-3.417107	-1.941336
Critical values 10%	-2.569203	-3.130932	-1.616355

Table 3.6
Result of Phillips-Perron Unit Root's Tests Using First Difference Data

Variable	Phillips-Perron		
	constant	constant and trend	No constant no trend
JCI	-25.74358	-25.78074	-25.42599
FTSE	-28.82037	-28.89150	-28.42969
DAX	-25.87170	-25.84906	-25.35209
CAC40	-27.33773	-27.49850	-27.02460
AEX	-25.47500	-25.49066	-25.38746
Critical values 1%	-3.440702	-3.972973	-2.568709
Critical values 5%	-2.865999	-3.417107	-1.941336
Critical values 10%	-2.569203	-3.130932	-1.616355

In conclusion, the Phillips-Perron unit root tests indicate that the null hypothesis of a unit root in the level series cannot be rejected in all series, which indicates nonstationarity in all the time series. However, the null hypothesis of a unit root in the first difference of the same data is clearly rejected. Therefore, each of the stock price indices are integrated of order $I(1)$. We then proceed with the cointegration tests for these countries in the next section.

3.2.2. Cointegration Tests

Cointegration is the existence of a long run equilibrium relationship among time series variables. In this study, we test for cointegration for the three groups of stock market indices by applying Johansen multivariate cointegration method.

The Johansen procedure, determines the rank of π . The maximum likelihood estimation used in the procedure circumvents the use of two-step estimators in the error correction method and can estimate and test for the presence of multiple cointegrating vectors. Also, this test can be used to test restricted versions of the cointegrating vectors and speed of adjustment parameters. Johansen (1988) relies on the relationship between the rank of a matrix and its characteristic roots.

The first test for the presence of cointegration is done for the first group, i.e. Indonesia, Malaysia, Philippine, Singapore and Thailand. We proceed by setting the appropriate lag-length in order to ensure the Gaussian structure of the residuals in the VECM. The lag length is one and is based on the Schwarz Information Criterion (SIC) for the selection of the correct order VAR systems. Reimers (1992) found that the SIC does well in selecting the optimal lag length.

Table 3.7
Multivariate Johansen Cointegration Tests for JCI, KLCI, STI, PCOMP and SET

Null Hypothesis	Eigenvalue	λ Trace Statistic	5 Percent Critical Value	1 Percent Critical Value
$r = 0^*$	0.050452	83.27287	76.07	84.45
$r \leq 1$	0.037160	51.27962	53.12	60.16
$r \leq 2$	0.020933	27.87719	34.91	41.07
$r \leq 3$	0.016358	14.80335	19.96	24.60
$r \leq 4$	0.007432	4.610316	9.24	12.97

Note: * denotes rejection of the hypothesis at 5% level

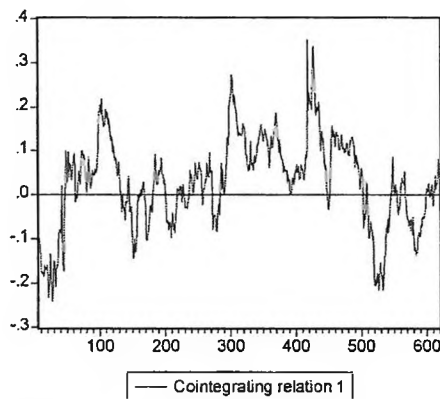
Table 3.7 shows the Johansen trace statistics for cointegration. The results indicate that the null hypothesis of no significant cointegrating vector cannot be rejected at the 1% significance level. However, the null hypothesis of no significant cointegrating vector is clearly rejected at the 5% significance level. In other words, there is a long-run relationship amongst stock market of Indonesia, Malaysia, Singapore, Philippine and Thailand at the 5% significance level but not at the 1% significance level.

Because of the results, we proceed to analyze two-variable, three-variable and four-variable cases. The results of the trace statistics, when considering the system of four markets of Indonesia, Singapore, Malaysia and Thailand, show the presence of one cointegrating vector at the 1% and 5% significance level. The results indicate that the null hypothesis of no significant cointegrating vector cannot be rejected at the 1% and 5% significance level. In other words, there is a long-run relationship amongst stock market of Indonesia, Malaysia, Singapore, and Thailand. The results of cointegration are shown in table 3.8 below.

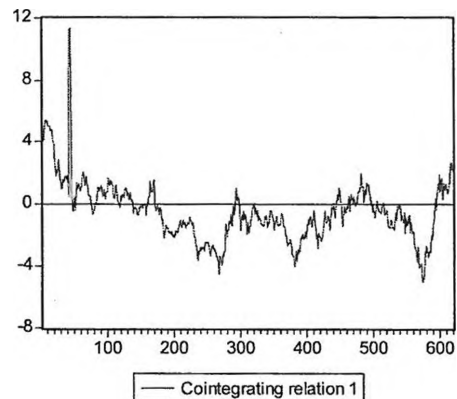
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ATTACHMENTS

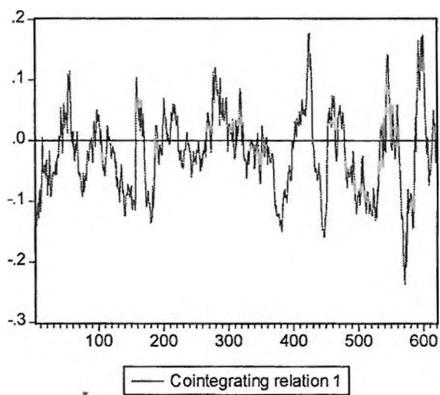
Cointegration Graphs



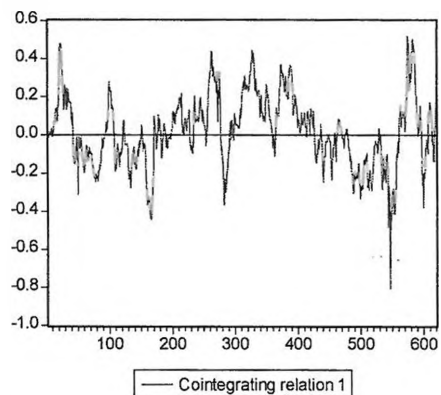
Cointegration graph for the stock markets of Indonesia, Malaysia, Singapore, Philippine and Thailand (at the 5% significance level)



Cointegration graph for the stock markets of Indonesia, Malaysia, Singapore and Thailand (at the 1% and 5% significance level)



Cointegration graph for the stock markets of Indonesia, the United States, Japan, Hong Kong, Korea, China and Taiwan (at the 1% and 5% significance level)



Cointegration graph for the stock markets of Indonesia, the United Kingdom, France, Germany and Netherlands (at the 1% and 5% significance level)

