EAEA 2016

convention
program

**The 15th International Convention
of the East Asian Economic Association**

November 5-6, 2016 Bandung - Indonesia

FEB Universitas Padjadjaran | EAEA

convention program

The 15th International Convention of the East Asian Economic Association

November 5-6, 2016 Bandung - Indonesia

FEB Universitas Padjadjaran | EAEA

BANDUNG, 5-6 November 2016
EAEA 15th International Convention
of the East Asian Economic
Association

Convention Program

East Asian Economic Association (EAEA)
FEB Universitas Padjadjaran

FOREWORD

Greeting from the East Asian Economic Association (EAEA), President

Akira Kohsaka

Welcome message for EAEA15

We are very glad to be back to Bandung to hold the 15th biannual convention of the East Asian Economic Association (EAEA15) again. Our 2nd convention (EAEA2) was held here in 1990. Since then, we have witnessed *The East Asian Miracle*, the Asian currency/economic/financial Crisis, *An East Asian Renaissance*, the Global Financial Crisis and then *The Next Convergence*, alternately optimistic then pessimistic, as usual.

In light of the EAEA's aim "To Promote the Advancement of Economic Science with Particular Reference to Asian Economic Problems", we have been tested to what extent we have attained this goal in each convention. Let us turn these challenges to our great opportunities. The regional economies in East Asia, currently regarded as more resilient than some other regions, have shown remarkable progress in industrialization, international trade and investment, macroeconomic management, and human capital formation, but are not without their problems. We will be able to learn from these experiences by examining facts and analyzing mechanisms, to propose policies, and to share our knowledge with other regions.

This convention has been supported and realized by many individuals and private and public institutions including Universitas Padjadjaran in particular Faculty of Economics and Business, Ministry of Research, Technology and Higher Education of the Republic of Indonesia (Ristekdikiti), Economic Research Institute for ASEAN and East Asia (ERIA), Government of Bandung City and other generous sponsoring agencies. I sincerely hope that their efforts and dedication will be fully rewarded over the next two days' intense academic debate and exchange of views.

This would, I believe, be the best way for us to express our gratitude to our supporters.

Akira Kohsaka
President of the East Asian Economic Association
School of International Studies, Kwansei Gakuin University

Greeting from Faculty of Economics and Business, Universitas Padjadjaran (FEB UNPAD), Dean

Nury Effendi

Welcome to Bandung!

It is with great pleasure to welcome all the participants to the 15th Convention of the East Asian Economics Association (EAEA). First and foremost, I would like to thank the association for the opportunity to host the EAEA 2016, the gathering of the biggest and most prominent association of economics profession in East Asia.

This convention is not only a perfect venue for sharing research findings but also a place to extend friendship and networking. I do believe that participants of the convention which come from different countries can learn from each other's on how to produce good quality research and publications. In particular, I believe that Indonesian participants will benefit from the interaction with their colleagues from countries with more advanced research and scientific culture.

The theme of the convention; "Sustainable and Inclusive Development in Asia and the Global Economy", is very relevant and timely. Recently, the world leaders adopted the 2030 sustainable development goals (SDGs). This is a new chapter in the international development as the agenda applies not only to the developing but also for the developed countries too. There has never been a time in recent history where all countries, without exception, are facing the same set of development goals. This requires partnership in the spirit of learning from each other's development experiences. This convention is definitely a good model of turning such spirit into partnership and potential collaboration.

Finally, enjoy the convention and the beautiful city of Bandung.

Dr. Nury Effendi
Dean of Faculty of Economics and Business, Universitas Padjadjaran

Greeting from Local Organizing Committee (LOC), Chair

Mohamad Fahmi

As Chair of the Organizing Committee, I will be delighted to welcome you to the 15th International Convention of the East Asian Economic Association. The convention will be held on 5-6 November, 2016 in Bandung, the capital of West Java Province, Indonesia and hosted by the Faculty of Economics and Business, Universitas Padjadjaran (FEB UNPAD).

Surrounded by fresh mountainous region, Bandung has been the top destination in the region since the colonial era. Known to the world as the host of the 1955 Asian African Conference, and full of cultural heritages including its art-deco architecture, Bandung has been long well known also as the Paris van Java.

The convention is the annual event of the East Asian Economic Association and will be a venue for economist from Asian countries and beyond to share research findings and discuss current topics on the sustainable and inclusive development in Asia and the global economy. As one of the biggest economics convention in the Asia, the 15th EAEA Convention will be attended by around 400 researchers and academicians from 19 countries who will share their expertise and find out about the latest research on Asian development policies.

Above of all, this convention is in large part of the efforts of the Program Committees, Scientific Committees, Organizing Committees and Volunteers who participated in all aspects of the convention. I want to express my gratitude for their sacrifice and contribution, especially the Steering Committees, Prof. Dr. Armida S Alisjahbana and Dr. Arief Anshory Yusuf, Program Committees, Dr. Craig R. Parsons and Dr. Eric D. Ramstetter, Local Organizing Committee Secretariat, Mr. Heriyaldi and Mr. Iqbal Dawam Wibisono.

The convention would not be possible without the excellent papers contributed by authors. I also thank all the authors for their contributions and their participation in the 15th EAEA 2016!

Finally, I would like to thank to Universitas Padjadjaran, Faculty of Economics and Business UNPAD, all sponsors and exhibitors for your support in making the 15th International Convention of the East Asian Economic Association the landmark event it has become.

Best Wishes,

Dr. Mohamad Fahmi
Chair, Organizing Committee

TABLE OF CONTENTS

Welcome to Bandung

Bandung is the 3rd largest city and the 2nd largest metropolitan area in Indonesia. Bandung also the capital city of the West Java Province (Provinsi Jawa Barat). Situated at the elevation of 750m (2,350 ft.) above sea level, the city lies in a river basin and almost completely surrounded by volcanoes, most of which remain active. Bandung has cooler temperatures year-around than most other Indonesian cities.

The area is a major industrial and trade center producing textiles, dyes, chemicals, aircraft, machinery and quinine. It is also an important center for education and research with facilities such as the Institute of Technology Bandung (1920), Universitas Padjadjaran (1957), Parahyangan Catholic University (1955) and other national research institutes.

Bandung is the cultural heart of the Sundanese people and is noted for its angling bamboo orchestra and its traditions of classical Sundanese Theater, dance, Puppet Theater and gamelan music.
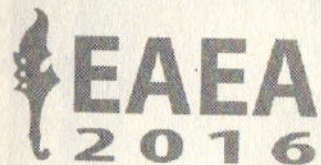
More info about Bandung

Bandung Local Government → Official Website www.bandung.go.id

Bandung Tourism → Official Web site www.bandungtourism.com
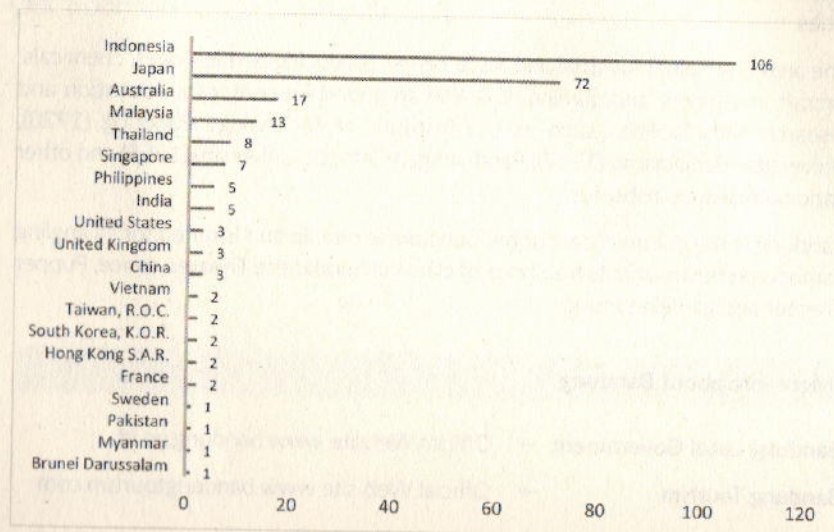
About EAEA 2016

OVERVIEW

The East Asian Economic Association (EAEA) was established in 1987 as the first international academic organization to focus on the economics of East Asia, comprising Northeast and Southeast Asia. The core activities of the EAEA include publishing a quarterly journal, the *Asian Economic Journal*, and holding biannual international conventions.

The 15th International Convention of the East Asian Economic Association 2016 is the biannual international conventions of EAEA. The convention is hosted by the Faculty of Economics and Business, Universitas Padjadjaran (FEB UNPAD) and will be held on 5-6 November 2016 in Bandung. The theme of current Convention is "**Sustainable and Inclusive Development in Asia and the Global Economy**". The convention issued topics that related to the convention theme and wide range of economics issues.

The convention will be a venue for researchers of various different disciplines and countries to share research findings and discuss current topics on the regional aspects of various global issues.

List of registered participants by resident:

Country	Count
Indonesia	106
Japan	72
Australia	17
Malaysia	13
Thailand	8
Singapore	7
Philippines	5
India	5
United States	3
United Kingdom	3
China	3
Vietnam	2
Taiwan, R.O.C.	2
South Korea, K.O.R.	2
Hong Kong S.A.R.	2
France	2
Sweden	1
Pakistan	1
Myanmar	1
Brunei Darussalam	1

Convention Host

Faculty of Economics and Business, Universitas Padjadjaran (FEB UNPAD)

Faculty of Economics and Business (FEB) Universitas Padjadjaran

Host of EAEA 2016 is Faculty of Economics and Business (FEB) Universitas Padjadjaran. Faculty of Economics and Business (FEB) Universitas Padjadjaran was established under Government's Decree Number 37 on September 18th, 1957 underlying the establishment of Universitas Padjadjaran. It has been officially valid on September 11th in 1957. Faculty of Economics and Business (FEB) Universitas Padjadjaran has three departments – Accounting, Economics and Management- and one diploma program. Each department consists of study programs from undergraduate to doctorate level.

Founded in 1957, Universitas Padjadjaran is among the top universities in Indonesia. Since its establishment, the university has set the agenda of playing a major role in promoting research toward the more recognition as the world class research and education institution.

FEB UNPAD MAILING ADDRESS

Jalan Dipati Ukur No. 35

Bandung – 40132

West Java – Indonesia

Email : info.feb@unpad.ac.id
Website : www.feb.unpad.ac.id

EAEA 2016 SECRETARIAT

Jalan Cimandiri No. 6-8
Bandung – 40115
West Java – Indonesia
Website : http://eaea2016.events/
Email : info@eaea2016.events

Program Overview

This schedule is last updated on 25th October 2016. Any changes will be inform via message board and/or email from organizers.

**SAT,
5 NOV 2016**

TIME	AGENDA	VENUE
07.30 – 08.30	REGISTRATION	Ramayana

08.30 – 09.00	Opening Ceremony
	Opening Speech
	   Dr. Mohamad Fahmi, Chair of Local Organizing Committee
	   Prof. Akira Kohsaka, President of EAEA
	   Prof. Dr. med. Tri Hanggono Achmad, dr., Rector of Universitas Padjadjaran
		Ramayana

09.00 – 09.30	Tribute to Prof. Dr. Sumitro Djojohadikusumo Prof. Akira Kohsaka, President of EAEA	Ramayana
09.30 – 10.00	Keynote Speech 1st Session Muliamad Darmansyah Hadad, The Chairman of Board of Commissioners of the Financial Services Authority (OJK)	Ramayana
10.00 – 10.30	COFFEE BREAK SESSION	Parallel Session Area
10.30 – 12.30	PARALLEL SESSION I	
	PAR1-C1: Economic Growth and Income Disparity	Mahabharata
	PAR1-E1: Green Growth and Sustainable Development I	Rancabali
	PAR1-F1: The Economics of Disasters I	Lembang
	PAR1-I1: Exchange Rates and Currency Crisis I	Garuda
	PAR1-J1: Financial Institutions and Markets I	Priangan
	PAR1-K1: Firm Behavior I	Malabar
	PAR1-L1: Food and Agricultural Policy I	Pandawa
	PAR1-S4: Labor and Human Resource Economics IV	Punakawan
	PAR1-W3: Public Sector Economics III	Maribaya
	PAR1-SP3: ERIA Special Session: Firms in Globalized Economies: Evidence from Micro Data Analyses	Ramayana

TIME	AGENDA	VENUE
12.30 – 13.30	LUNCH BREAK	Restaurant
13.30 – 15.30	PARALLEL SESSION II & SPECIAL SESSION I	
	PAR2-I2: Exchange Rates and Currency Crisis II	Punakawan
	PAR2-K6: Firm Behavior VI	Rancabali
	PAR2-N2: Household Behavior II	Mahabharata
	PAR2-O1: International Trade and Trade Policy I	Garuda
	PAR2-P1: Urbanization and Regional Development I	Pandawa
	PAR2-Q1: Supply Chain and Economic Development I	Maribaya
	PAR2-R1: Institutions and Economic Analysis I	Priangan
	PAR2-S3: Labor and Human Resource Economics III	Malabar
	PAR2-T1: Macroeconomic Management I	Lembang
	PAR2-SP2: UNPAD-OFCE Special Session: Indonesia's Electricity Policy under Climate Change	Garuda
15.30 – 16.00	COFFEE BREAK SESSION	Parallel Session Area
16.00 – 18.00	PARALLEL SESSION III	
	PAR3-A2: Economic Integration II	Lembang
	PAR3-E2: Green Growth and Sustainable Development II	Priangan
	PAR3-J2: Financial Institutions and Markets II	Rancabali
	PAR3-K5: Firm Behavior V	Maribaya
	PAR3-N3: Household Behavior III	Mahabharata
	PAR3-O2: International Trade and Trade Policy II	Garuda
	PAR3-S5: Labor and Human Resource Economics V	Malabar
	PAR3-W1: Public Sector Economics I	Pandawa
	PAR3-Z1: Institutions and Economic Analysis IV	Punakawan
	PAR3-SP5: ADBI Special Session	Ramayana
18.30 – 21.00	GALA DINNER	

Commitees

Program Committee

- Shigeyuki Abe (Doshisha University)
- Anggito Abimanyu (Ministry of Research, Technology and Higher Education, Indonesia)
- Armida S. Alisjahbana (Universitas Padjadjaran)
- Julan Du (The Chinese University of Hong Kong)
- Hal Hill (Australian National University)
- Soyoung Kim (Seoul National University)
- Kozo Kiyota (Keio University)
- Ari Kuncoro (University of Indonesia)
- Akira Kohsaka (Kwansei Gakuin University)
- Colin McKenzie (Keio University)
- Jayant Menon (Asian Development Bank)
- Oleksandr Movshuk (Toyama University)
- Craig R. Parsons (Yokohama National University)
- Eric D. Ramstetter (Asian Growth Research Institute)
- Budy P. Resosudarmo (Australian National University)
- Kiyotaka Sato (Yokohama National University)
- Shandre Thangavelu (University of Adelaide)
- Arief A. Yusuf (Universitas Padjadjaran)

ORGANIZING COMMITTEE

Advisory Committee

- Tri Hanggono Achmad (Rector Universitas Padjadjaran)
- Nury Effendi (Dean, Faculty of Economics & Business, Universitas Padjadjaran)
- Yudi Azis (Vice Dean for Finance & General Administration Affairs, Faculty of Economics and Business, Universitas Padjadjaran)
- Rina Indiastuti (Head of Economics Department, Faculty of Economics and Business, Universitas Padjadjaran)

Steering Committee

- ▶ Armida S. Alisjahbana, Chair
- ▶ Arief A. Yusuf, Vice Chair

Organizing Committee

- ▶ Mohamad Fahmi, Chair
- ▶ Heriyaldi, Secretary
- ▶ Iqbal Dawam Wibisono
- ▶ Ade Maulana
- ▶ Wahyudio Mahesa
- ▶ Luqmannul Hakim

**10:30am -
12:30pm
Priangan**

PAR1-J1: Financial Institutions and Markets I
Session Chair: **Anhar Fauzan Priyono**, Universitas Padjadjaran, Indonesia

Unconventional Monetary Policies and International Spillover to Asian Stock Markets

Kimiko Sugimoto[1], Takashi Matsuki[2]
[1]Konan University, Japan; [2]Osaka Gakuin University, Japan; kimiko@center.konan-u.ac.jp

Why Does Informal Trading of Foreign Exchange Persist in Myanmar?: Evidence from a Survey of Exporters and Importers

Koji Kubo
Japan External Trade Organization, Thailand; Koji_Kubo@jetro.go.jp

The Dynamics of the Relationship Between Current Account with Return of Composite Stock Price Index in 1990-2014 (VAR-X Model Approach)

Eka Desy Purnama, Achmad Kemal Hidayat
Universitas Kristen Krida Wacana; eka_desypurnama@yahoo.co.id

Loan Facilitators? The Role of Commercial Bankers in Non-Financial Corporations

Julan Du, Haoyun Ding, Chih-Sheng Hsieh, Yichuan Hu
The Chinese University of Hong Kong, Hong Kong S.A.R. (China); julandu@cuhk.edu.hk

Faculty of Economics & Business
Universitas Padjadjaran

EAEA
The East Asian
Economic Association

EAEA 2016

conference
proceeding

The 15th International Convention
of the East Asian Economic Association

November 5-6, 2016 Bandung - Indonesia

FEB Universitas Padjadjaran | EAEA

EAEA 2016

conference proceeding

**The 15th International Convention
of the East Asian Economic Association**

November 5-6, 2016 Bandung - Indonesia

FEB Universitas Padjadjaran | EAEA

TABLE OF CONTENTS

Financial Institutions and Markets I

PAR1-J1: Financial Institutions and Markets I

Unconventional Monetary Policies and International Spillover to Asian Stock Markets

Kimiko Sugimoto[1], Takashi Matsuki[2]
[1]Konan University, Japan; [2]Osaka Gakuin University, Japan; kimiko@center.konan-u.ac.jp

This paper focuses on the effects of global liquidity produced by G4's (US, EU, UK and Japan) Quantitative Easing (QE) on East Asian stock markets. First, this paper investigates the stock return connectedness within seven East Asian financial markets and from G4 markets by estimating spillover indices of daily stock returns, which are obtained based on the forecast error variance decompositions from a generalized impulse response function introduced by Diebold and Yilmaz (2012). The results show that the cross-market return spillovers tend to be higher during and after the global financial crisis but begin to decrease since the latter half of 2013 which is consistent with the timing of US Fed tapering announcements. Thus, the unconventional monetary policies seem to have considerable impacts on the transmission mechanism of the Asian stock markets. Second, this paper reveals the main factors which influence the Asian stock market by regressing the estimated time-varying spillovers on monetary policy variables including QE measures. The results show that the QEs of US Fed and ECB play a major role in increasing the global spillover to Asian stock markets before the US Fed tapering announcements.

Why Does Informal Trading of Foreign Exchange Persist in Myanmar?: Evidence from a Survey of Exporters and Importers

Koji Kubo
Japan External Trade Organization, Thailand; Koji_Kubo@jetro.go.jp

During two and a half decades of administrative controls on foreign exchange and trade, the informal market for foreign exchange developed in Myanmar. Although policy reforms since 2011 established formal channels for foreign exchange trading, the informal market persists, exacerbating the volatility of exchange rate in the reform period. Based on the questionnaire survey of 230 private export and import firms with stratified sampling, we first quantify the prevalence of the informal foreign exchange trading. Furthermore, by identifying the characteristics of firms that continue informal foreign exchange trading, we shed light on root causes of the prevalence of informal market. Major findings from the survey are as follows. First, 60 percent of sampled exporters strictly remained in the informal

market, and so did 52 percent of sampled importers. Second, larger and foreign-invested exporters were more likely to move to the formal market compared with smaller and local exporters. Third, unexpectedly, operational length of firms was not associated with their likelihood of informal market trading. Therefore, we would argue that firms' choice of currency conversion methods is dependent more on their current attributes such as the size of business, rather than their track records of informal transactions.

The Dynamics of the Relationship between Current Account with Return of Composite Stock Price Index in 1990-2014 (VAR-X Model Approach)

Eka Desy Purnama, Achmad Kemal Hidayat
Universitas Kristen Krida Wacana; eka_desypurnama@yahoo.co.id

The dynamics of balance of payments is only analyzed in terms of international trade (exports and imports) until recently, but when viewed from the detailed components of the balance of payments, there are also Capital and Financial Account's Transactions to be concerned. In the capital and financial account, the improvement of fundamental economies are commonly acknowledged to encourage capital inflows, both direct investment and portfolio investment, which became two alternative sources of financing the current account deficit. It is also a common knowledge that the capital and financial transactions are related to investor activities in the stock market. This study aims to analyze the role of capital markets on the dynamics of the current account in Indonesia. This study will also examine how the current account can help predicting stock market performance. This study draws on research by Marcel Fratzscher (2009) who studied the importance of asset prices and exchange rates as drivers of trade balance industrialized countries, G-7 during the period of 1974-2007 and found that asset price is an important driver of the US trade balance. The Vector Autoregressive-X (VAR-X) is use in this study, which addition to macro variables as transmission variables: (i) inflation, (ii) exchange rates, and (iii) interest rates, there is also a need to incorporate several exogenous variables: (i) foreign stock exchange index and (ii) world oil prices, with concern that foreign investors is dominant as investor in Indonesian stock exchange. The result of the study, expect that the econometric model estimates, shows that composite index (IHSG), dynamically and simultaneously influences the movement of the current account, vice versa the dynamic of the current account also contributes to the IHSG.

The Dynamics of the Relationship between Current Account and Return of Composite Stock Price Index in 1990-2014 (VAR-X Model Approach)

Eka Desy Purnama & Achmad Kemal Hidayat

Abstract

Until recently, the dynamics of balance of payments is only analyzed in terms of international trade (exports and imports), but when viewed from the detailed components of the balance of payments, there are also Capital and Financial Account's Transactions to be concerned. In the capital and financial account, the improvement of fundamental economies are commonly acknowledged to encourage capital inflows, both direct investment and portfolio investment, which became two alternative sources of financing the current account deficit. It is also a common knowledge that the capital and financial transactions are related to investor activities in the stock market.

This study aims to analyze the role of capital markets on the dynamics of the current account in Indonesia. This study will also examine how the current account can help predicting stock market performance. This study draws on research by Marcel Fratzscher (2009) who studied the importance of asset prices and exchange rates as drivers of trade balance industrialized countries, G-7 during the period of 1974-2007 and found that asset price is an important driver of the US trade balance.

The econometric model employed in this study is the method of Vector Autoregressive-X (VAR-X), with rationale that in addition to macro variables as transmission variables: (i) inflation, (ii) exchange rates, and (iii) interest rates, there is also a need to incorporate several exogenous variables: (i) foreign stock exchange index and (ii) world oil prices, with concern that foreign investors dominate as investor in Indonesian stock exchange. Authors expect that the econometric model estimates will show that CSPI, dynamically and simultaneously influences the movement of the current account while, the dynamic of the current account also contributes to the CSPI.

Keywords : Current Account and CSPI

Introduction

Indonesia's economy, in the perspective of macroeconomics, is categorized as "small open economy", thus the economic performance of Indonesia is not only influenced by domestic economy, but also global economy. Changes in the global economic condition spontaneously will have an effect on the economic performance of Indonesia through trade channel and financial market channel as well. The change through the trade channel can be measured in terms of exports and imports, while the change through the financial market channel can be identified in terms of foreign investment inflows and outflows by way of spending portfolios and stocks.

The transparency of economy through export-import activities has a direct impact on Indonesia current account. A current account is an element of balance of payments that gives a brief picture on the trade of goods and services and portrays income factor of a nation with other countries. The balance of payments records all transactions of payments of a country with the rest of the world. The transaction encompasses receipts from exports and payments for imports of goods and services, foreign investment inflows and outflows, and the payments of overseas investments. The balance of payments is an economic indicator that helps a country to measure its ability to support international transactions particularly in relation to the obligation of debt payment and export-import transactions.

The condition of Indonesia's macro-economy demonstrated from the current account has constantly been deficit since 2012. A two-year persistent deficit of the current account raised concerns on the sustainability of Indonesia's economic growth. A current account deficit indicates that the number of imports is greater than exports, whereas a current account surplus indicates that the number of exports is greater than imports.
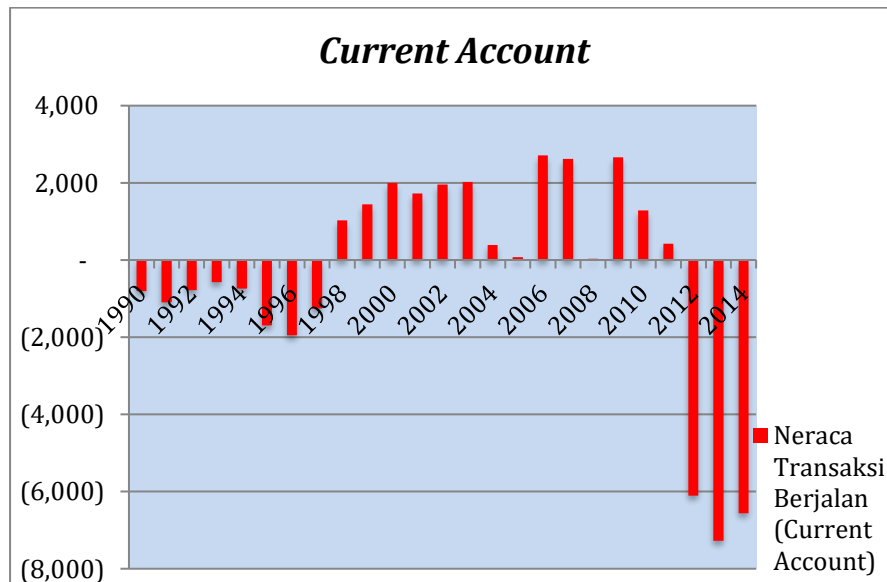
Source: Bank of Indonesia (data analysed) 2015

From the beginning of the first quarter of 2012 to the end of the fourth quarter of 2014, Indonesia current account suffered deficit, while the economic growth was quite strong. The growth that was fairly strong had created an increasing demand for imported products. On the contrary, exports tended to decrease due to the sluggish growth of global economic and the limitation of local product competitiveness in

global markets. It gave rise to the balance of trade in goods depressed and subsequently caused a current account deficit. The dynamics of the current account are also driven by changes in the balance of services. The number of imports of goods and services that is greater than exports created the need of foreign exchanges for importing goods and services that is greater than the availability of foreign exchanges resulted from export. As a result, the supply of foreign currencies decreases which may impact further to the expectation of rupiah weakening and disturb the stability of overall economy. Such condition will provoke foreign investors to regard that Indonesia's risk of investments is increasing. Consequently, it can impact on the decline of foreign investment inflows and outflows.

The intertemporal approach of current account explains that the choice between savings and investments is the result of decision from the calculation of expectation, which is based on expected values from various macro-economic factors (Obstfeld and Rogoff, 1995). Referring to the theory of intertemporal: *Expected Income* from return stock will stimulate investors to consume imported goods that can trigger a current account deficit. The rise of CSPI (Composite Stock Price Index), on the one hand, prompts foreign investors to buy stock. Therefore, it creates a current account surplus. On the other hand, however, both gain and dividend acquired from foreign investors give impacts to capital outflows. Thus, it results in a current account deficit.

From the capital market side, the enactment of deregulation policy of financial sector at the end of 1980s had made foreign capital inflows to Indonesia so attracting that made Indonesia's capital market one of the foreign investor destinations for investing capitals. The implication of global economic fluctuation is reflected in the movement of foreign capital inflows that finally affects the performance of financial sector.

Investor behaviour in allocating investment funds has a strong influence to the fluctuations of CSPI movement. Since the enactment of stock market liberalization, stock ownership by foreigners has been rising. It results in the development of capital markets that is influenced by the composition of stock owned by not only local investors, but also foreign investors. Based on the composition of local and foreign investors since 2008, foreign investors having dominated more than 60% on average of the total market capitalization is prominently influential in stock fluctuations of Indonesia stock exchange.

Image 2: The Percentage of Stock Ownership Value by Investor's Type KSEI-2014
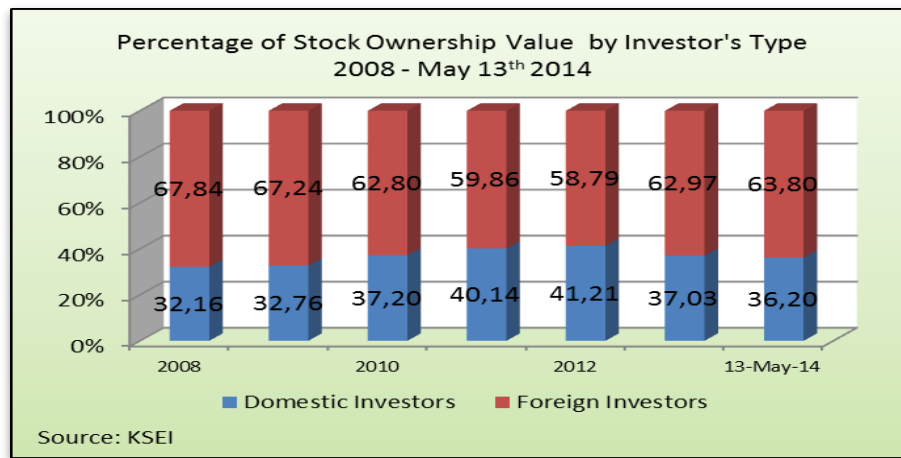
The balance of current account is driven not only by the positions of exports and imports of goods, but also other factors such as rates of interest, inflation, and foreign currency exchange. Marcel Fratzscher dan Roland Straub studying the relation between asset prices (stock) and current account relate the effects of wealth growth acquired from stock markets to private consumption.

Image 4: The Growth of Consumption and Investment, 1990-2014
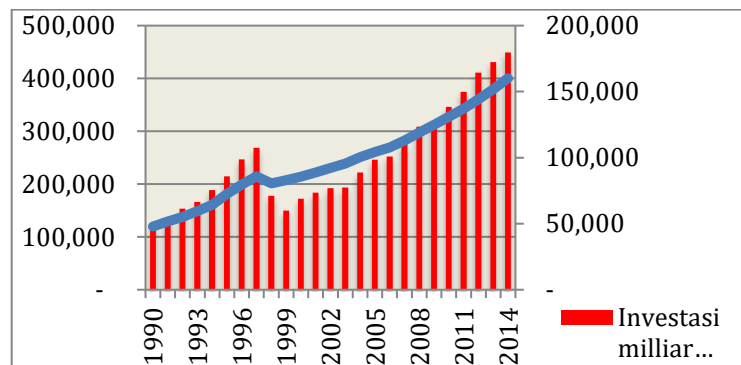
Referring to the data of Indonesia's consumption, from the first quarter of 1990 to 2014, Indonesia's consumption had been rising. The rise of consumption indicates the advance of income of Indonesian people. The growth of investors' wealth gained from stock market will stimulate private consumption, both local products and imported products. Such condition will lead to the rise of inflation and interest rates (Marcel Fratzscher dan Roland Straub, 2008) and subsequently has an effect on current account.

The other economic variable influencing current account is investment. From the data of the growth of investment in Indonesia during 1990–2014, the investments had been quite significantly rising. This reflects investor confidence toward domestic economy.

Sweder Van Wijnbergen in his research entitled *Oil Price Shocks, Unemployment, Investment and the Current Account: An Intertemporal Disequilibrium Analysis*, argues that the decision of investments and savings is based on intertemporal optimization.

Referring particularly to the research of Fratzscher, who studies the importance of asset prices and exchange rates as drivers of trade balance of the G7 industrialized countries, and other related previous researches, the present paper aims to investigate whether stock price shock resulted from the falling of asset prices has an effect on the position of Indonesia's current account by way of the channels of consumption, investments, and government spending during 1990–2014.

Economic fluctuation is influenced by both internal and external factors, considering Indonesia's system of economy that is open economy. Fluctuation in world oil prices is one of the external factors that could greatly influence current account movement. The weakening and strengthening of the world oil prices will determine the balance of trade.

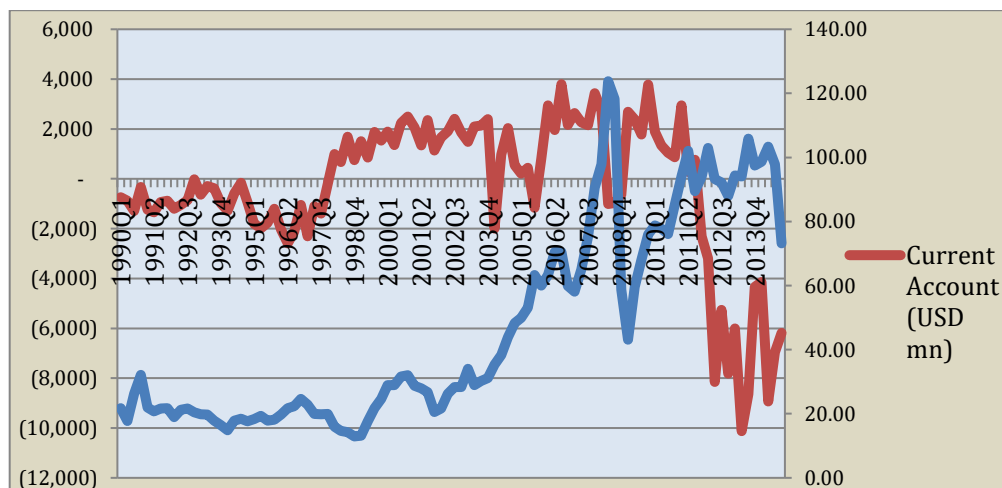**Image 3. The Current Account of World Oil Prices, 1990-2014**

Image 3 shows that the pattern of current account movement and the world oil prices move toward an opposite direction such as in the second quarter of 2011 the current account was falling, but at the same time the oil prices were precisely rising. Likewise the other way around, in the fourth quarter of 2008 when the world oil prices were falling, the current account was exactly rising from the previous quarter.

The development of stock markets can be observed from the development of stock market capitalization (market capitalization listed company) that gives a picture about the value of shares recorded in Indonesia Stock Exchange multiplied by stock prices.

Image 4: The Development of Indonesia Market Capitalization and Current Account, 1988-2012
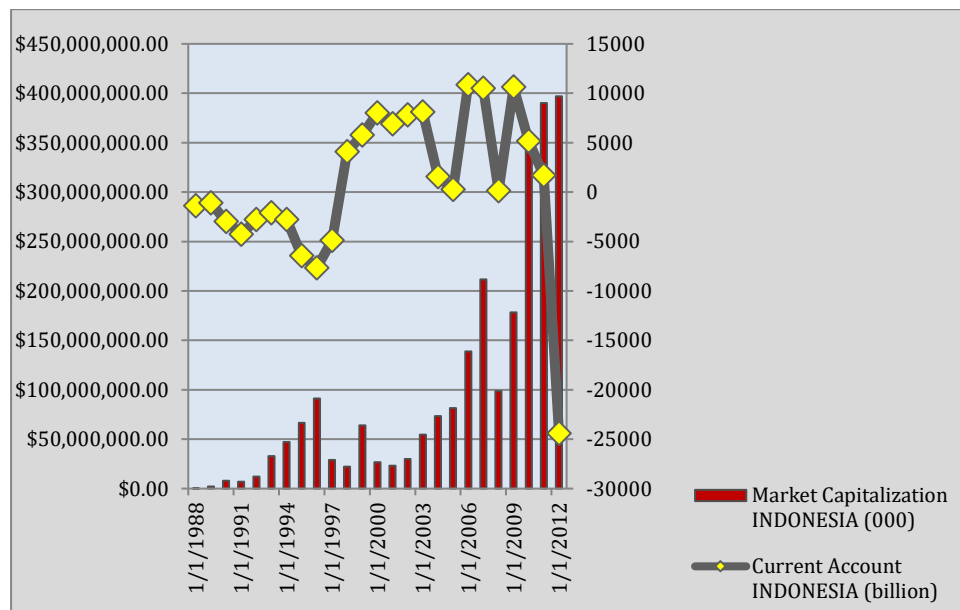
Source: World Bank, OECD Statistics

The growth of Indonesia's current account until 2010 followed the pattern of market capitalization growth, but starting in 2011 the rise of market capitalization had been indicated by the dramatic falling of current account. As a result, it achieved a considerable deficit. The rise in market capitalization is driven by the rise in transactions of foreign capital flows, from both developed and developing countries, due to capital market liberalization. The growth in capital flow is driven as well by the improvement of Indonesia's economic growth. The amount of foreign investor composition of trade in Indonesia Stock Exchange makes foreign exchange index the external factor that affects the movement of Stock Price Index. Observed from the composition of local and foreign investors since 2008, dominancy of foreign investors in more than 60% on average of the total market capitalization has been noticeably influence the stock fluctuations in Indonesia Stock Exchange (Image 2)

The relationship between capital market and current account is also discussed by Bertaut who argues that the rise in wealth effect of stock will have a considerable

influence on private consumption, which in turn will be the cause of the increasing demand to import (Bertaut, 2002). The growth of imports that is imbalance with the growth of exports will encourage a current account as a part of balance of payments to suffer deficit.

The present research examines the influence of Stock Price Index toward the dynamics of current account by using a unique dataset consisting of current account and rupiah exchange rates against US dollar, inflation level, interest rates, the amount of consumption, investments, government spending, CSPI data, Foreign Exchange Index, and world oil prices. Subsequently, the impact of those variables' movements on the movement of CSPI is studied. In addition, the study also investigates how current account can be used to help predicting stock market performance in which the current account are derived from optimal portfolio and consumption savings, investments and government spending. The current account must cover and reflect all relevant information concerning stock market performance in the future.

The substantial question of the research is how CSPI and the macro variables exert influence structurally and simultaneously on current account movements.

The objective of the study is to analyze the role of capital markets on the dynamics of the current account and examine how the structural and simultaneous influence of CSPI and macro variables (interest rates, inflation, and exchange rates) on current account movements.

2. VAR-X Estimation and Data

The present research employs *VARX (Vector Auto Regression X)* method for data analysis. The VARX method is a time series multivariate method used to explore models and capture the dynamics of the relation between endogenous and exogenous variables. It is developed from VAR method that includes exogenous variable in its equation in which the exogenous variable is regarded as the independent variable, input, predicator or regressor. The VAR-X is employed to find the dynamics of the relation between exogenous and endogenous variables. The equation of VAR-X is applied to explore the interconnection among economic variables that connect with monetary transmission. The application of VAR-X method is due to the limitation of economic models that are commonly used to explain the relation among variables, which influence each other in a simultaneous equation, and to explore models and the dynamics of the relationship between exogenous and endogenous variables.

Recognizing the analysis of VAR is started from the simple bivariate system as follows:

$Y_t = a_{10} + a_{11}Y_{t-1} + a_{12}Z_{t-1} + a_{13}Y_{t-2} + a_{14}Z_{t-2} + e_{yt}$ .... (3.2)

$Z_t = a_{20} + a_{21}Y_{t-1} + a_{22}Z_{t-1} + a_{23}Y_{t-2} + a_{24}Z_{t-2} + e_{zt}$ ....(3.3)

where:

Y_t = Current Account at year t

Z_t = Composite Stock Price Index at year t

Y_{t-n} = Current Account at year t-n

Z_{t-n} = Composite Stock Price Index at year t-n

a_{10}, a_{20} = constant

e_{yt}, e_{zt} = disturbance factor

The method of research:

- $NTB_t = \alpha_1 + \beta_{11}NTB_{t-1} + \beta_{12}CSPI_{t-1} + \beta_{13}SB_{t-1} + \beta_{14}Inf_{t-1} + \beta_{15}NT_{t-1} + e_1$…(3.4)
- $CSPI_t = \alpha_2 + \beta_{21}NTB_{t-1} + \beta_{22}CSPI_{t-1} + \beta_{23}SB_{t-1} + \beta_{24}Inf_{t-1} + \beta_{25}NT_{t-1} + e_2$ .....(3.5)
- $SB_t = \alpha_3 + \beta_{31}NTB_{t-1} + \beta_{32}CSPI_{t-1} + \beta_{33}SB_{t-1} + \beta_{34}Inf_{t-1} + \beta_{35}NT_{t-1} + e_3$ ……(3.6)
- $Inf_t = \alpha_4 + \beta_{41}NTB_{t-1} + \beta_{42}CSPI_{t-1} + \beta_{43}SB_{t-1} + \beta_{44}Inf_{t-1} + \beta_{45}NT_{t-1} + e_4$ ……(3.7)
- $NT_t = \alpha_5 + \beta_{51}NTB_{t-1} + \beta_{52}CSPI_{t-1} + \beta_{53}SB_{t-1} + \beta_{54}Inf_{t-1} + \beta_{55}NT_{t-1} + e_5$ …...(3.8)

The present study relates Foreign Exchange Index and world oil prices to CSPI, in which the exogenous variables are the Foreign Exchange Index and the world oil prices. The model constructed in this study is vector autoregressive model with exogenous variables (VAR-X method) in the equation of:

$$Y_t = a_0 + A_1Y_{t-1} + ., + A_pY_{t-p} + B_1X_{t-1} + .. + B_qX_{t-q} + C_1X_{t-1} + .. + C_qX_{t-q} + U_t$$

The domestic endogenous variable is Yt and the exogenous variable is Xt (foreign exchange index and world oil prices) in the above equation. The model assumes that the equation system has endogenous and exogenous variables and that there is no cointegration among the variables.

The VAR-X is used to recognize the dynamics of the relation between exogenous and endogenous variables. The VAR-X equation is applied to find the relation among economic variables connecting with monetary transmission. In addition, the VAR-X is considered as the proper method for the research because of the limitation of economic models that are commonly applied to explore the interconnection among variables, which influence each other in a simultaneous equation, and to discover models and the dynamics of the relationship between endogenous and exogenous variables.

The research makes use of secondary data derived quarterly in time series within the period of January 1990 to December 2014.

3. The Procedure of Estimation

A VAR model estimation requires data in stationary condition (Gujarati, 2003:853). Non-stationary data will generate a spurious regression. The spurious regression is a regression with high value of determination coefficient but low value of Durbin Watson statistic. For that reason, a prior test is needed before analysis. The test is intended to get efficient estimation result without errors. The stages of testing are as follows:

1. Stationary test is intended to make mean data stable and to get random error = 0, in which the regression model has a powerful ability to predict without spurious regression (Gujarati 1995).

2. Unit root test is an important statistical test to examine whether data of a variable is stationary or not because it is only a stationary data that can be used for estimation. The stationary data has the characteristic where its variation is not too big. The test is carried out on the data having a tendency to approach mean of all variables used in VAR (*Vector Autoregression*) equation. Analysing a stationary time series data by means of unit root test in this study employs the method of Dickey-Fuller (DF). According to Gujarati (2003), stationary test by means of Dickey-Fuller test is initiated from autoregression process of the first order. If the testing result shows that the data has been stationary in the first order, VAR method subsequently can be applied.

3. DF test is applied to identify stationary level of data. If the coefficient of DF statistic is larger than *Critical Value McKinnon* (1%, 5%, 10%), it means that Ho is rejected. On the contrary, if the coefficient of DF statistic is smaller than *Critical Value McKinnon* (1%, 5%, 10%), it means that Ho can be rejected which means that a series does not have root unit in which the variable is non-stationary.

4. *Granger Causality* is employed to evaluate whether a variable has a bidirectional or unidirectional causal relation. In addition, the statistical test is used to observe to what extent the influence of past events to recent condition. The method of *Granger Causality* test is also applied to find if an independent

variable can improve the forecasting performance of a dependent variable.

5. The empirical model of the research makes use of VAR-X model (*Vector Auto Regression-X*). The model functions as an alternative to anticipate if there is causal relation among variables in the research that cannot be solved by OLS model (*Ordinary Least Square*). The VAR model can be used not only to identify causal relation, but also to determine projection model (forecast).

6. Stability test describes a model which is stable in order to make the estimation result remain unchanged although the period is extended, making the estimation result more valid (Gujarati 2004). The stability test is a requirement in VAR analysis because of the reason that if the test result from VAR model is not stable, *Impulse Response Function* analysis becomes invalid.

7. *Autocorrelation function* (ACF) test is examining the presence of autocorrelation in lag -1, lag-2, lag-3, etc. In this test, autocorrelation problem happens when there is a lag in ACF plot that is out of significance limit.

8. Normalization test is applied to investigate if residual is distributed normally.

9. *Impulse Response* is an approach to show a long-term dynamic response among variables in case there is a one-standard-deviation shock in every equation until several periods after the shock. The approach aims to examine responses of every endogenous variable every time shock occurs.

10. *Variance Decomposition* analysis is applied to identify the most influential variable in explaining the change of a variable. The analysis explains the role of a variable toward other economic variable shocks. The *Varian Decomposition* separates variation from several variables that are estimated as the elements of shock.

4. *Granger Causality Test*

Granger Causality is used to investigate if a variable has a bidirectional or unidirectional causal relation. The test is also applied to observe to what extent the influence of past events to recent conditions. The method of *Granger Causality* test functions as well to analyze whether an independent variable can improve forecasting performance of a dependent variable. The test is done before the analysis of VAR. If causal relation is found through the Granger test, the analysis of regression (OLS) cannot be done because the result of estimation will be bias. According to Gujarati (1994), the most proper method for a causal relation is the VAR method.

Table 4.2. Summary of *Pairwise Granger Causality* Test Result

Ho : X does not Granger cause Y	probability value
CSPI → Current Account	0.0056***
Current Account→ CSPI	0.0063***
WTI → Current Account	0.0550*
Neraca Transaksi Berjalan → WTI	0.0680*
DJIA → Current Account	0.4373
Current Account → DJIA	0.2662

*   : confidence level 10%
**   : confidence level 5%
***   : confidence level 1%

5. *Impulse Response Function*

         VAR data analysis makes use of *Impulse Response*. Chart of the *Impulse Response* demonstrates the responses of a variable caused by shock from other variables until several periods after the shock. The *Impulse Response* generates direction of relationship of the amount of influence among endogenous variables. A variable containing shock because of new information will influence the variable itself dan other variables in VAR system.

    A. Response to *Current Account*

IRF test for Current Account exhibits every single shock caused by all variables that will be responded by Current Account variables.

The Response of CSPI to *Current Account*

Graphs by irfname, impulse variable, and response variable
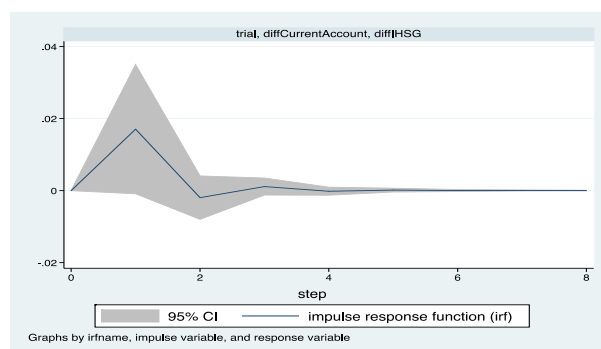
        From image 1, it can be seen that CSPI shock triggers a current account surplus in the first quarter, but then it continues to fall lower in the second quarter. After the second quarter onwards, the movement tends to persistent heading to convergent. It indicates that the influence of CSPI stays responded by current account

although the response is not permanent. The current account will suffer self-correcting after the fourth quarter.

Investors' responses to the rise of CSPI constantly create good performance and as a result both local and foreign investors tend to add their investments in capital markets by buying stocks. Such condition allows new capital inflow to increase and consequently creates a current account surplus. This case reflects a volatile stock market that is supported by Arch and Garch evidence. By means of Arch and Garch test, the result acquired is as below:

Table ARCH

| Index	GARCH (1,1)		
	ω	α	β
CSPI	3.18e-06***	0.1344***	0.8636***

The table shows that all coefficients of CSPI have significant values indicating CSPI volatile.

That situation, however, does not last long. After the second quarter, investors reconsider from fundamental aspect and macro economic condition in order to make the condition of current account back to the starting condition.

B. Response to Composite Stock Price Index (CSPI)

The IRF test for Composite Stock Price Index (CSPI) demonstrates that every single shock triggered by all variables will be responded by the variables of Composite Stock Price Index (CSPI).

Responses from Current Account to Composite Stock Price Index (CSPI)
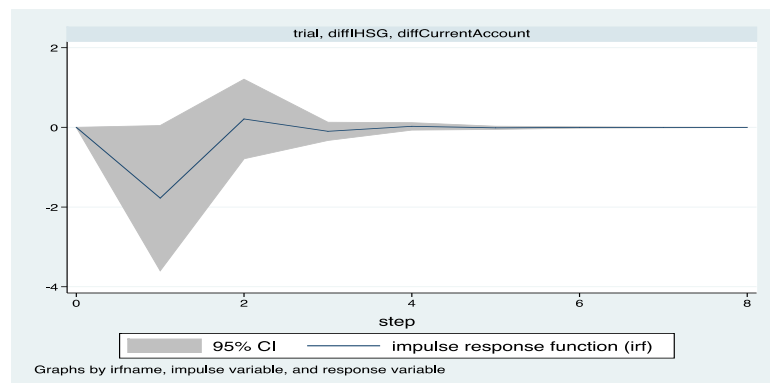
In the first quarter, shocks on the current account resulted in the falling of CSPI. Then, the current account had risen up to the second quarter and its movement tended to be

persistent after the second quarter onwards. This indicates that the influence of current account will stay responded by CSPI although it is not permanently responded. The responses of current account movement to CSPI signify a current account surplus that causes net capital inflows into the country; some of the net capital comes in through capital markets making CSPI to rise.

Conclusion

From the analysis of VAR model, the conclusions that can be drawn are as follows:

1. CSPI and the macro variables (interest rates, inflation, and currency exchanges) structurally and simultaneously contribute (give an influence) to the movement of current account. On the contrary, the current account movement gives rise to CSPI movement as well. This condition indicates a good signal for stock investors to invest by considering current account movement.

2. The Foreign Market Index as the exogenous variable does not influence the movement of CSPI.

3. The world oil prices as the exogenous variables give an effect on the movement of CSPI

Suggestion and Policy Implication

The government institution (OJK) related to fiscal and the stability of economy should form a board to monitor the movement of interest rates, inflation, currency exchanges, and CSPI movement in order to anticipate any changes to build national financial stability. Then, in relation to the dynamics of oil prices, which is an external factor influencing capital markets, OJK as the regulator should have been alert since the beginning. Considering the role of OJK that is micro prudential oriented, while the role of micro prudential is operated by Bank of Indonesia, both of the institutions significantly need a strong coordination.

Bibliography

Anoruo, E. & Ramchander, S. 1998. *Current Account and Fiscal Deficits: Evidence from Five Developing Economies of Asia*. Journal of Asian Economics, Vol. 9, (No.3): 487-501.

Bapepam 2011. Statistik Pasar Modal, 27 – 31 Desember 2012

Bursa Efek Jakarta. 2011. JSX Fact Book 2011

Dickey, D. A. and W. A. Fuller, 1979, "Distribution of the Estimators for Autoregressive Time Series with a Unit Root, "*Journal of the American Statistical Association*", 84, 427-31.

Diego N. Moccero, 2006: *The Intertemporal Approach to the Current Account: Evidence from Argentina*, November 2006

Dornbusch, R. and S. Fischer, 1980, "Exchange Rates and Current Account," *American Economic Review*, 70, 960-71

Enders, Walter, 2004, *Applied Econometric Time Series*. 2nd Edition, New York: John Wiley and Sons, Inc.

Frankel, Jeffrey A., 1993, "Monetary and Portfolio-Balance models of the Determination Of Exchange rates" In Jeffrey A. Frankel on *exchange rates*, Cambridge, MA: MIT Press

Froot, K.A. & Donohue, J. 2002, 'The persistence of emerging market equity flows,' Emerging Market Review, vol 3,pp. 511-534

Gujarati, D.N. 2003. 4rd ed. "Basic Econometric". Mc. Graw Hill

Johansen, S., 1988, "Statistical Analysis of Co-integration Vectors," *Journal of Economic Dynamics and Control*, 12, 231-254

Jorion, P., 1991, "The pricing of Exchange Rate Risk in the Stock Market," *Journal of Financial and Quantitative Analysis*, 26, 363-376

Koray, F & Mc MillianW.D. , 1998. Monetary Shocks, The Exchange Rate, and The Trade Ballance (Leonard, Greg & StockmanAlan C(2010, Current Account and Exchange Rates, A New Look At The Evidence, NBER working paper)

Laporan Perekonomian Indonesia 2013, www.bi.go.id

Machina, Mark. J. 1987. "Choice Under Uncertainty: Problems Solved and Unsolved". *The Journal of Economic Perspective*, Vol. 1, No. 1

Madura, 2010. "International Corporate Finance, 10e, Cangage

Markowitz, Harry.1952. "Portfolio Selection". *The Journal of Finance*, Vol. 7

Mishkin, Frederic S.2000. Financial Markets and Institutions. Addison-wesley Publishing Company.

Obstfeld, Maurice and Kenneth Rogoff (1995), "*The Intertemporal Approach to the Current Account*," in: Gene Grossmann and Kenneth Rogoff (eds.) Hand- book of International Economics, vol. III, Elsevier.

Parthapratim Pal, 1998. *"Foreign Portfolio Investment in Indian Equity Market: Has the Economy Benefited?"* in *the Economic and Political Weekly,* March 14-20.

Saksonovs, Sergejs, 2006, "The Intertemporal Approach to the Current Account and Currency Crises", Darwin College Research Report, June 2006

Sergio Ocampo dan Norberto Rodríguez, Revista Colombiana de Estadística, 2012, Volume 35, No 3, pp 479 – 508

Sims, C.A. (1980). "Macroeconomics and Reality," *Econometrica*, 48, 1-48.

Worasinchai, Lugkana. 2001. Psychology of Foreign Investors in Emerging Stock Markets

Vyshnyak, Olga. 2000. Twin Deficit Hypothesis: Case of Ukraine. National University "Kyiv – Mohyla Academy".

Yabrough , Beth and Yabrough, Robert, 2003, " The world Economy: Trade and Finance" South Western-Thomson Learning

**Faculty of Economics & Business
Universitas Padjadjaran**

EAEA
The East Asian
Economic Association