



The Fed's Tapering Talk: A Short Statement's Long Impact on Indonesia

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The Fed's Tapering Talk: A Short Statement's Long Impact on Indonesia

Muhamad Chatib Basri

June 2016

Ash Center for Democratic Governance and Innovation
Harvard Kennedy School

Ash Center Occasional Papers Series

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Ash Center Occasional Papers

Tony Saich, Series Editor

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Letter from the Editor

The Roy and Lila Ash Center for Democratic Governance and Innovation advances excellence and innovation in governance and public policy through research, education, and public discussion. Three major programs support our mission:

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The Global Financial Crisis (GFC) of 2008–2009 triggered the world’s most serious economic downturn since the 1929 Great Depression. This led to a series of unprecedented government interventions around the world to mitigate the impact of the GFC and kick-start national economies. In the United States, government policies included a combination of three large fiscal stimulus packages and an aggressive monetary expansion through large-scale asset purchases, referred to as Quantitative Easing (QE). QE resulted in capital inflow to emerging markets, spurring economic growth, exchange rate appreciation, and financial sector booms. However, by May 2013, the US Federal Reserve began to talk about tapering its asset purchases, which had the opposite effect, known as the Taper Tantrum (TT): capital outflows from emerging markets, together with weakened exchange rates and tumbling financial markets. In this paper, Dr. Muhamad Chatib Basri, who was Indonesia’s Minister of Finance during the TT period, analyzes the response to the TT of the five hardest-hit countries, dubbed the “Fragile Five” (Brazil, India, Indonesia, South Africa, and Turkey), and describes how Indonesia was able to mitigate the negative effects of the TT so quickly and effectively. Dr. Basri’s account provides many insights in the realm of macroeconomic management amidst external shocks that should be quite useful to emerging markets as the Fed now contemplates raising interest rates, which could have the same impact as the TT. Dr. Basri wrote this paper while a Senior Fellow at the Ash Center for Democratic Governance and Innovation and is now in the Department of Economics at the University of Indonesia.

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Tony Saich, *Series Editor and Director*
Ash Center for Democratic Governance and Innovation
Harvard Kennedy School

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I. Introduction

The years from 2008 to 2014 are an important and extremely interesting period in terms of macroeconomic policy both in advanced and emerging market countries (EMs). We witnessed that in the US, from 2008 to 2013, a series of economic policies were issued in an effort to overcome the Global Financial Crisis of 2007–2008. The most important policy was, of course, the Federal Reserve's Unprecedented Monetary Policy (UMP) through large-scale asset purchases, namely Quantitative Easing (QE). This policy resulted in capital inflow to Emerging Markets (EMs), which triggered not only economic growth and a boom in financial sectors, but also exchange rate appreciation in EMs. The QE also triggered a commodity boom and high returns in EMs, which boosted investor optimism, reflected in the increase of portfolio investment in EMs (Saghaian and Reed, 2015; Sahay et al., 2014). But all parties must come to an end. As the US economy improved, in May 2013 the Fed began to talk about the possibility of ending its QE or tapering its asset purchases or bond-buying program. Similar to QE, the tapering talk also significantly impacted several EMs, including Indonesia. But unlike QE, the tapering talk resulted in capital outflow from EMs to advanced countries, particularly the US. As a result, exchange rates weakened dramatically, and the stock and bonds markets were hard-hit. This is now known as the Taper Tantrum (TT).

The IMF (2014) and Morgan Stanley (2013) show that the TT impacted each country differently. Still, a group of countries experienced the worst effect. Morgan Stanley described these as the “Fragile Five” in 2013, consisting of Brazil, India, Indonesia, South Africa, and Turkey. How did these countries become the Fragile Five? This will be discussed in this paper's literature review.

To face pressures in the financial market, these countries each undertook a series of macroeconomic policy efforts. Interestingly, Indonesia and India were able to handle the problem in the shortest time (about seven months) and succeeded in macroeconomic stabilization, evidenced by the decrease in their current account deficit and the stabilization of their financial markets. Capital inflow returned to Indonesia at the start of 2014. The IMF specifically stated that Indonesia was able to handle the TT well.

[S]ince mid 2013, Indonesia has taken significant steps to strengthen policy and reserve buffers . . . Aided by enhanced policy credibility and global push factors, external inflows to Indonesia have been supportive the past 18 months. Equity

prices rebounded in the first half of 2014, including relative to most EME peers. Government bond yields have stabilized, with the fixed-income market buoyed by strong foreign inflows, which has led to an increase in reserves and helped keep the rupiah relatively stable against the U.S. dollar. (IMF, 2015:5)

The same response was echoed in the international media¹ as well as by the World Bank (2014). Media analysts argued that Indonesia and India were relatively successful in handling the situation. It must be recognized that the return of capital inflow increased the risk of vulnerability for Indonesia's economy. This was proved in the second half of 2015, when the weakening of the Chinese economy, weakening terms of trade, and concern about the normalization of Indonesian monetary policy led to capital outflow in 2015. But this is not the focus of this paper.

Rather, this paper will discuss the period from May 2013 to April 2014, when the TT first emerged and began to impact EMs, particularly Indonesia. April 2014 was chosen as the cut-off date as the market, media, and multilateral institutions all pointed to Indonesia's return to stability at the end of February 2014. Several studies have focused on the TT, but this is the first study to specifically address in detail how Indonesia was able to step away from the Fragile Five, as well as to compare Indonesia to other Fragile Five countries.

As mentioned above, the most important question to address is why was Indonesia relatively successful in facing the TT and breaking out from the Fragile Five? What policies were undertaken and why were they chosen? Equally important is to understand the political economy process behind these policies. These questions are the focus of this paper. In recording and researching this episode, I have a particular advantage, as I was directly involved in the policy decision-making process as the Finance Minister of Indonesia at the time.

I expect that there are important lessons to be learned from this experience. These lessons are vital, as EM countries, including Indonesia, face the possibility of normalization in US monetary policy. There is a real chance that the impact will be similar to that of the TT. Because of this, these lessons will help EM countries, particularly Indonesia, to prepare policies and take appropriate steps in anticipation of the US interest rate lift-off.

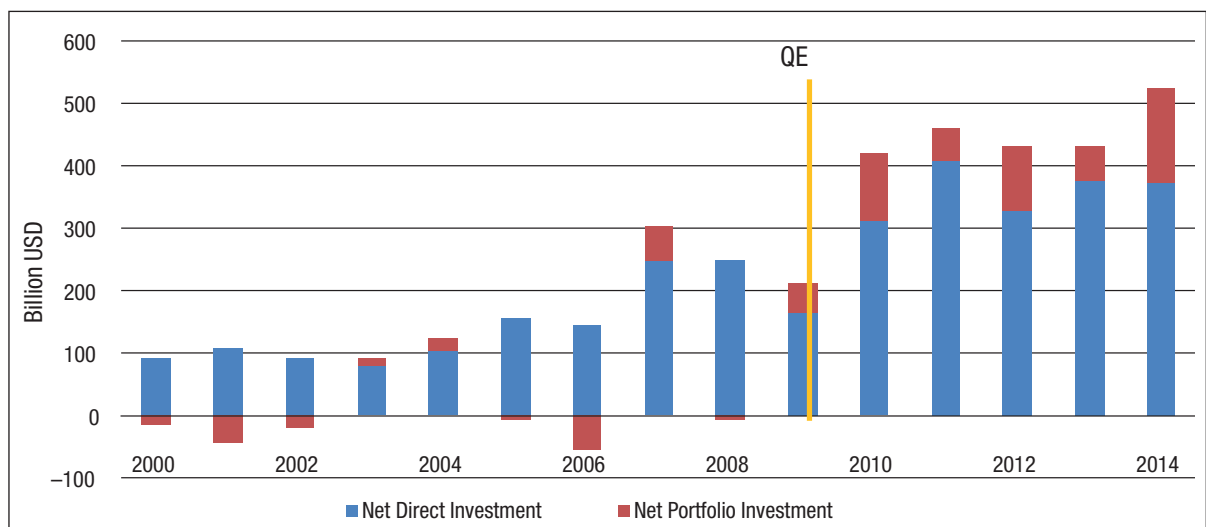
This paper is structured as follows. This introduction is followed by the literature review in the second section. The third section will discuss conditions before the Taper Tantrum, during which EMs, including Indonesia, lived in a “false normal world” resulting from QE policy. The fourth section will examine the Taper Tantrum and its impact on Indonesia’s economy. The fifth section will look at the policy response and its results. The sixth section will attempt to understand why Indonesia and India were relatively successful in handling the TT, and the final section will discuss the lessons learned and the way forward.

II. Literature Review

As previously mentioned, the QE policy propelled capital inflow to emerging markets (Figure 1), resulting in exchange rate appreciation and financial market booms. Sahay et al. (2014) show that the majority of capital inflow to China was in the form of Foreign Direct Investment (FDI). But for other emerging market countries in Asia, capital inflow was dominated by portfolio investment.

QE was accompanied by an increase in commodity prices. Saghaian and Reed (2015) demonstrate that QE affected commodities. Frankel (2006) also argues that expansive monetary policy resulted in an increase in commodity prices. Frankel does state that expansive monetary policy was not the only reason for the increases in commodity prices, but that it certainly contributed

Figure 1: Capital Inflows to Top 10 Emerging Markets Recipients
(China, Brazil, India, Turkey, Mexico, Poland, Indonesia, Peru, Colombia, South Africa)



Source: Economist Intelligence Unit

to this.² Yet, Kozicki, Santor, and Suchanek (2015) argue that QE did not impact commodity prices from 2008 to 2012. Instead they suggest that QE had a spillover effect on commodity producing countries impacting exchange rates and stock markets.

Whether or not QE impacted commodity prices, it is clear that commodity producing countries like Indonesia experienced a commodity boom from 2009 to 2012. Indonesia, Brazil and South Africa benefited from this and capital inflow. As previously discussed, the combination of capital inflow and positive terms of trade led to appreciation in exchange rates. As a result, export competitiveness showed signs of weakening.

Sahay et al. (2014) show that half of all global flow entered EMs from 2009 to 2012, with 90% of this capital flow concentrated in just eight countries.³ This positive impact was unsustainable, as the improvement in EM economies was mainly due to external effects (capital inflow) and the commodity boom (Rodrik, 2015). Further, Sahay et al. (2014) show that in several countries the capital inflow was greater than the absorption capacity of these countries (overflow). This occurred in China, Brazil, Mexico, Turkey, Indonesia, and India.

The potential vulnerability arising from capital inflow has been thoroughly discussed in crisis literature. Interestingly, these types of situations often repeat themselves as one can see in studies by Kaminsky, Reinhart, and Veigh (2003); Calvo, Leiderman, and Reinhart (1992); and Reinhart and Rogoff (2009). It is worth noting the findings of Calvo, Leiderman, and Reinhart (1992:1):

[We] argue that falling interest rates, a continuing recession, and balance of payments developments in the United States, along with developments in other industrialized countries, have encouraged investors to shift their resources to Latin America to take advantage of renewed investment opportunities and the increased the solvency in that region.

If we simply change the year and the country in the quote above, we will find a situation that mirrors the QE phenomenon. Kaminsky and Reinhart (2003) show that there is a risk of capital outflow when a shock occurs in an initial crisis country, which they refer to as a “surprise crisis.” The situation is worsened when there are common creditors. When common creditors experience

a shock in an initial crisis country, there is no time for creditors to take anticipatory steps or scale back their portfolio in affected countries. Thus, they will review their portfolio. Fund managers responsible for investments in dozens of countries do not necessarily have access to complete information about each country. This forces them to use quantitative data as a benchmark, like the current account deficit. When these indicators display worrying signs, they will withdraw their portfolio from these countries, especially when there is a surprise factor. Conversely, if the crisis can be anticipated or the information is complete, investors have the time to adjust and minimize the impact (Kaminsky and Reinhart, 2003). In this case, we can analogize that Bernanke's announcement of the TT had a "surprise crisis" element, as did data on the sharply increasing current account deficit. It is thus quite interesting to examine how the TT impacted EMs.

The Taper Tantrum is a hot topic in current macroeconomic policy literature. Several studies have been conducted to identify the causes of the Fragile Five, including Eichengreen and Gupta (2014); Aizenman, Binici, and Hutchison (2014); Sahay et al. (2014); and Ahmed, Coulibaly, and Zlate (2015). Eichengreen and Gupta (2014) show that the impact of the TT was greater in countries that experienced very high currency appreciation and allowed their current account deficit to increase during the QE period. They also highlight that countries with relatively large financial markets experienced a greater impact. Aizenman, Binici, and Hutchison (2014) emphasize the importance of fundamental economic factors, like the current account deficit, foreign reserves, external debts, growth prospects, and inflation. Ahmed, Coulibaly, and Zlate (2015) argue that economic fundamentals, like the budget deficit and index vulnerability, were the most important factors, although other factors like the amount of private capital inflow also influenced later capital outflow. Morgan Stanley (2013), which coined the "Fragile Five" phrase, argued that the current account deficit, inflation, and high capital flow, as well as low economic growth, caused an increase in vulnerability. Morgan Stanley wrote that countries with these characteristics experienced pressure on their exchange rates, stock markets, and bonds market. They further stated that the Fragile Five would be under pressure for the medium-term.

It is interesting to analyze which of these fundamental factors played a significant role in explaining the Fragile Five. Eichengreen and Gupta (2014) best explain the situation in Indonesia. Through mid-2013, Indonesia's economic growth was relatively high, with the second highest growth of all

G-20 countries after China. Inflation in Indonesia was relatively controlled and the budget deficit was maintained at less than 3%. It should be noted that the budget deficit did increase starting in 2012 due to fuel subsidies, but still it was relatively small. India, Turkey, and Brazil also posted relatively high economic growth compared to other G-20 member nations. India, South Africa, and Turkey had higher fiscal deficits than Indonesia or Brazil. In terms of foreign exchange reserves, Brazil had higher foreign exchange reserves than Indonesia, Turkey, South Africa, or India. Interestingly, although Brazil had the highest foreign exchange reserves of all the Fragile Five countries, the impact of the TT on Brazil was far more significant.

From the several studies mentioned above, one common view emerges: that the expanding current account deficit was the primary reason for classification in the Fragile Five. The situation worsened with Bernanke's announcement of a possible TT. The combination of these two factors eventually propelled capital outflow. Bernanke's announcement led to asset repricing, especially when capital inflow had been dominated by portfolio investment.

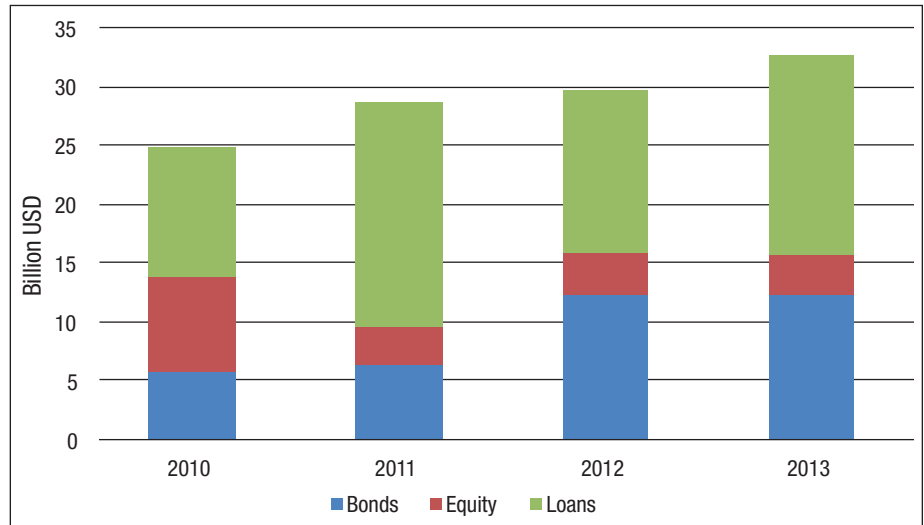
III. Living in a "False Normal World"

IMF (2014) data shows that total market external financing to Indonesia (bonds, equities, and loans) increased from \$24.7 billion in 2010 to \$32.6 billion in 2013, peaking in the second quarter of 2013 (then decreasing as a result of the Taper Tantrum) (Figure 2).

For Indonesia, capital inflow from 2009 to 2012 focused on FDI, but still portfolio investment remained dominant (Figure 3). FDI capital inflow tended to be oriented to the domestic market and natural resources. The increase in FDI and portfolio investment stimulated Indonesia's economic growth, which reached 6.5% in 2011. The growth in investment peaked in 2012, when investment grew by 9.8%.

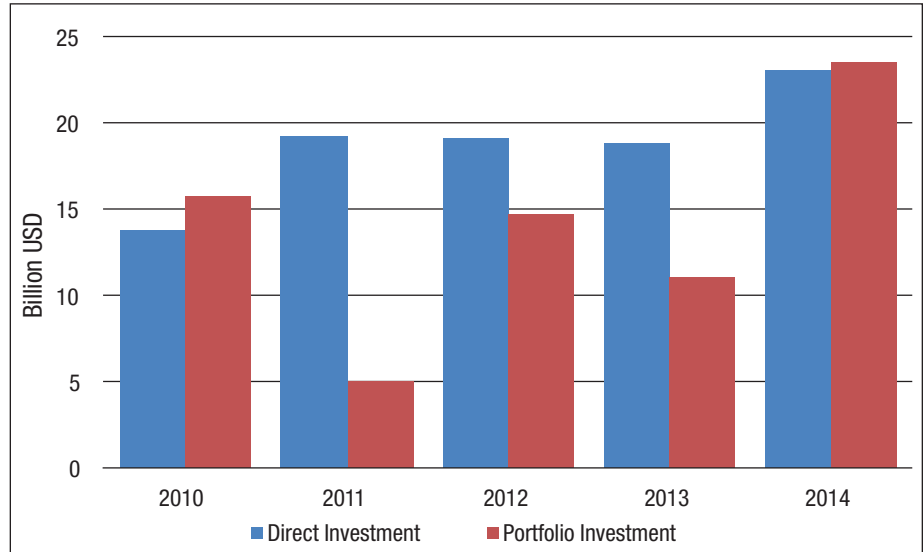
This situation prompted strong optimism in Indonesia, as supported by several studies that argued that Indonesia's economic growth would continue and would lead to the country becoming the seventh largest economy in the world, so long as reforms continued to improve productivity, particularly tied to infrastructure improvements (McKinsey, 2012). This optimistic perspective was not only held by the Indonesian government, as the Asian Development Bank (ADB) stated that high investment growth was stimulated

Figure 2: Indonesia Total Market External Financing, 2010–2013



Source: Global Financial Stability Report, April 2014

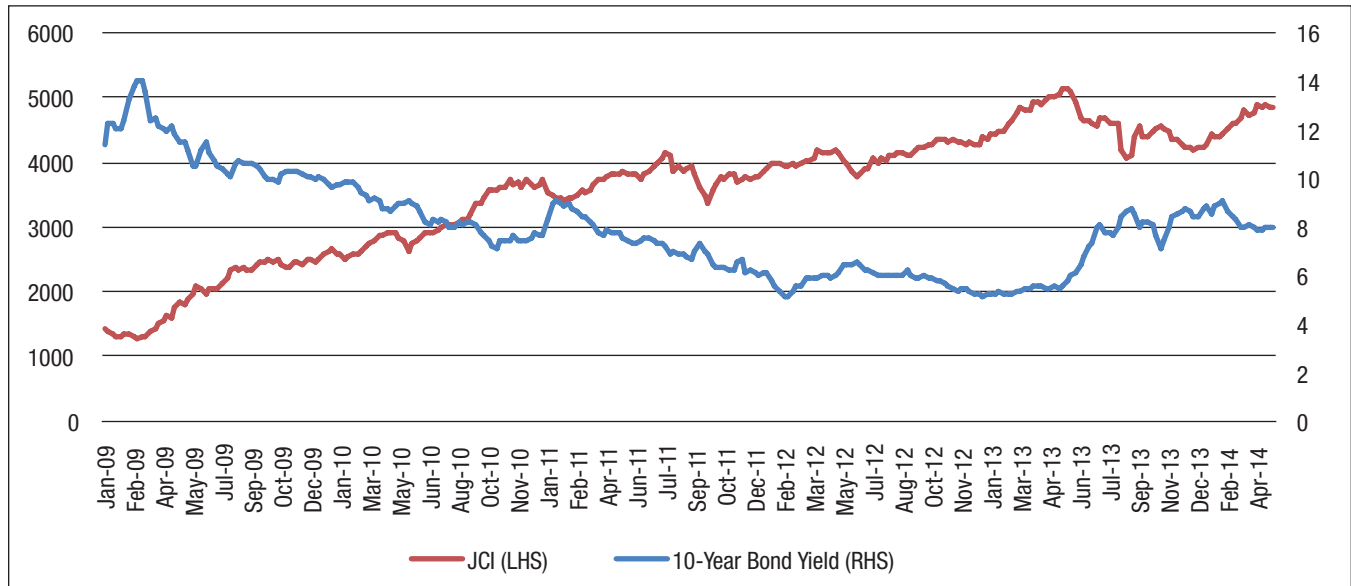
Figure 3: FDI and Portfolio Investment in Indonesia



Source: Bank Indonesia

by improvements in the investment climate, a record of strong economic growth over several years, and an increase in credit. As a result, the ratio of investment to GDP increased to 33.2%, the highest level in the last 20 years. Meanwhile, government efforts to push public-sector investment could be seen from the increase in expenditure.⁴

Figure 4: Jakarta Composite Index (JCI) and Indonesia 10-Year Bond Yield, January 2009–April 2014



Source: Bank Indonesia, investing.com

Through March 2013, the World Bank projected economic growth over 6% for 2013 and 2014 (World Bank, IEQ, March 2013). The Jakarta Composite Index also increased significantly (Figure 4) and yields from government bonds fell to their lowest point in 2012. As a result, the cost of funding was increasingly lower, and thus companies competed to find external funding resources.

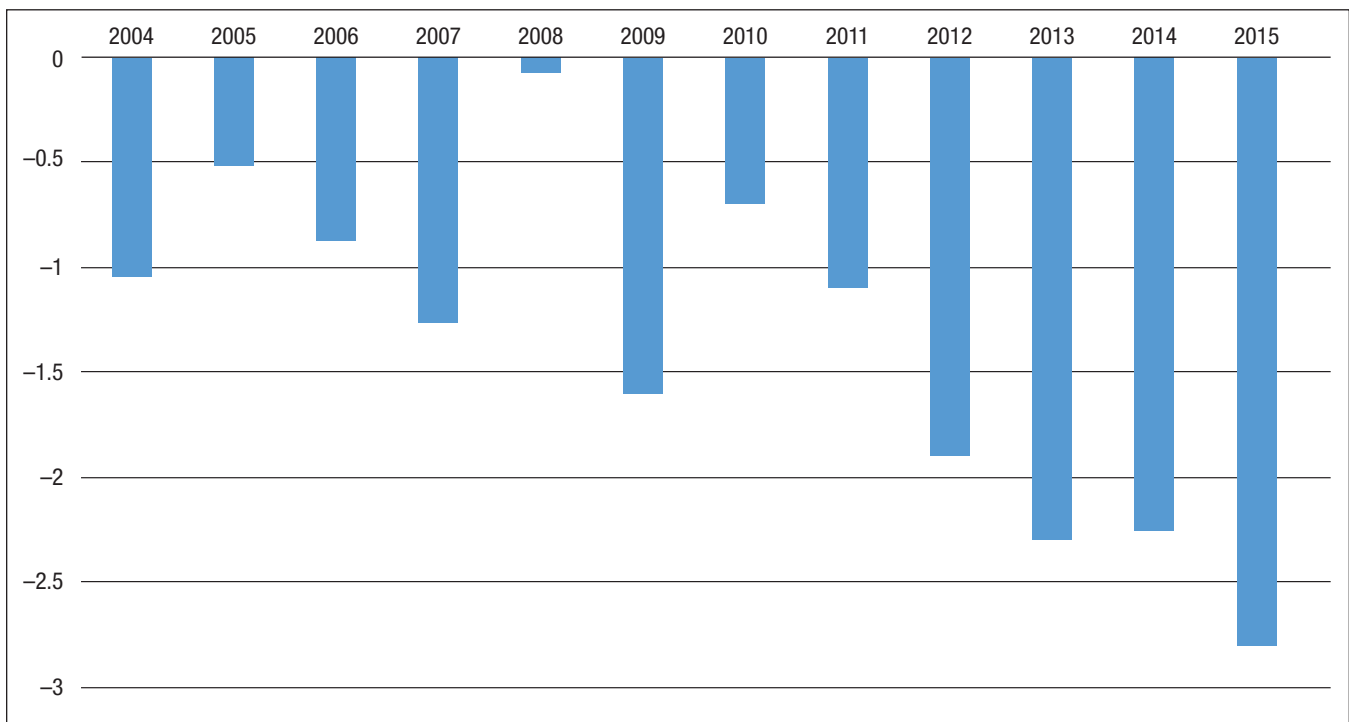
In my capacity as the Head of the Investment Coordinating Board of Indonesia (BKPM) in 2012, this significant increase in investment was, naturally, good news. But behind this optimism, I was concerned that the situation was unsustainable. The global situation could change at any moment and the boom would not persist. Moreover, the driving factor for investment in Indonesia was simply due to the fact that Indonesia was the least unattractive country in the world.⁵ One of my concerns at the time was the limited investment flowing to export-oriented sectors. There is an inherent risk in FDI oriented to the domestic market from currency mismatch, as revenue obtained in rupiah is repatriated in USD. Further, FDI oriented toward natural resources is highly vulnerable to commodity super cycles. For these reasons, the BKPM strove to balance domestic and export market investment.⁶ I also conveyed that while realized investment growth was still strong, it showed signs of weakening. Still, I did not predict that the QE policy would end in 2013.

As discussed above, capital inflow did not only have a positive impact by increasing investment and economic growth, it also caused appreciation in

the exchange rate, which led in turn to a decrease in Indonesia's export competitiveness. In addition, rising investment growth significantly encouraged imports (Basri, Rahardja, Fitriana, forthcoming). The situation was worsened by increased oil imports as a result of fuel subsidies. The continuously rising fuel subsidies caused the budget deficit to swell (Figure 5). The combination of all of these factors led to a current account deficit in the second quarter of 2011.

One important issue to note is that although the Fed continued its QE policy from 2010–2012, the rupiah's exchange rate began to show signs of weakening. Why did this happen? The answer is that the current account deficit began to worsen in the second quarter of 2011 at the same time that economic growth increased sharply. It is interesting to analyze Bank Indonesia's response. Instead of raising interest rates to slow down the economic growth to address the current account deficit, Bank Indonesia lowered rates and used foreign exchange reserves to defend the rupiah. As a result, the current account deficit continued to rise, the rupiah weakened, and foreign exchange reserves fell (Figure 6). This was exacerbated by the government's inaction

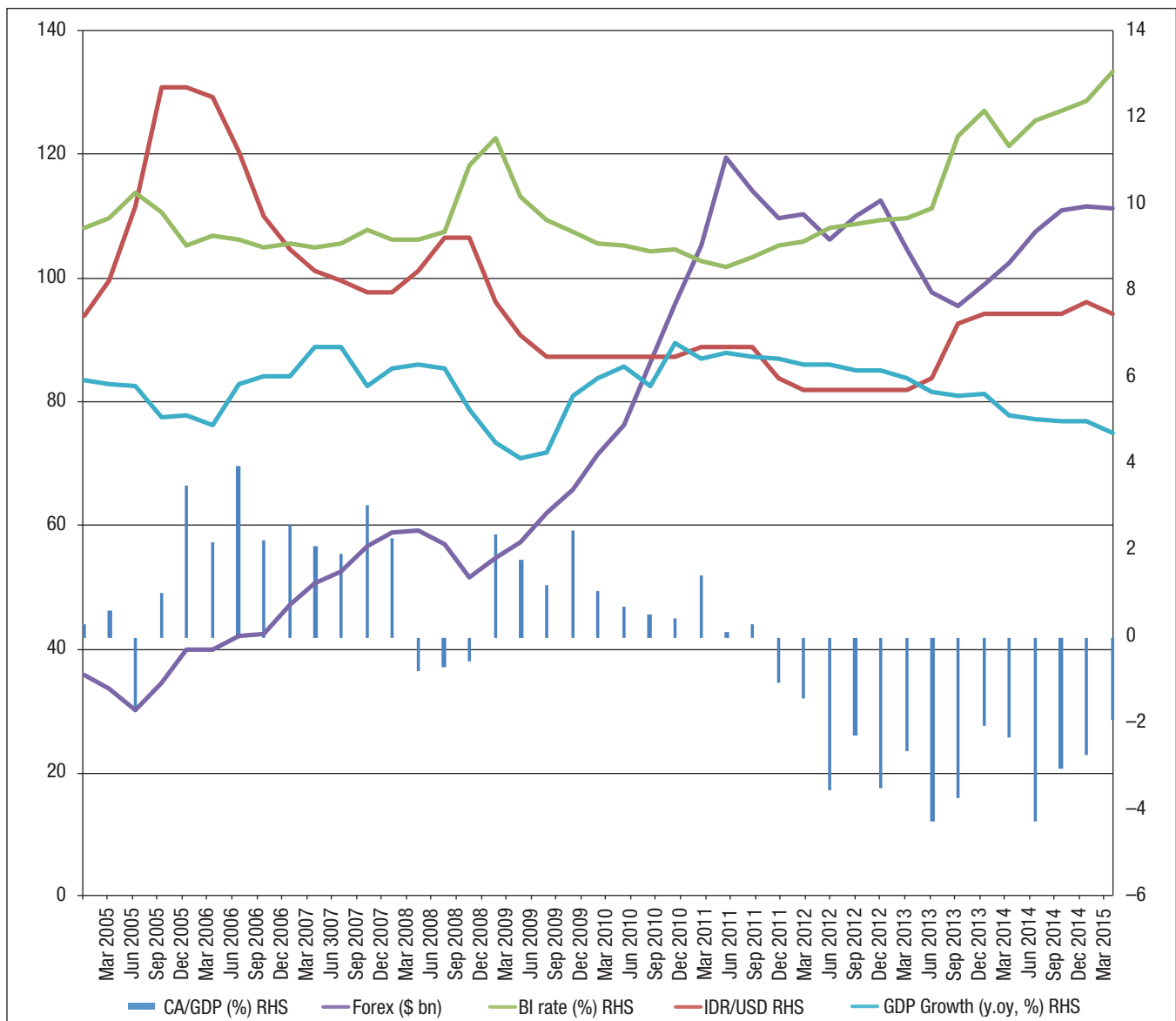
Figure 5: Indonesia: Budget Surplus (deficit)/GDP (%)



Source: Ministry of Finance, Indonesia

on reducing energy subsidies, and thus the burden on the budget deficit continued to rise. As previously mentioned, while FDI dominated capital inflow from 2009, portfolio investment still made up the lion's share of investment. Because of this, there was a high risk of capital outflow if a shock occurred. Yet investors in EMs like Indonesia continued to see the situation as normal. In fact, EMs, including Indonesia, were living in a “false normal world.” Normal is a world without QE.

Figure 6: Indonesia GDP Growth, Interest Rate, Forex Reserves, Exchange Rates, and Current Account



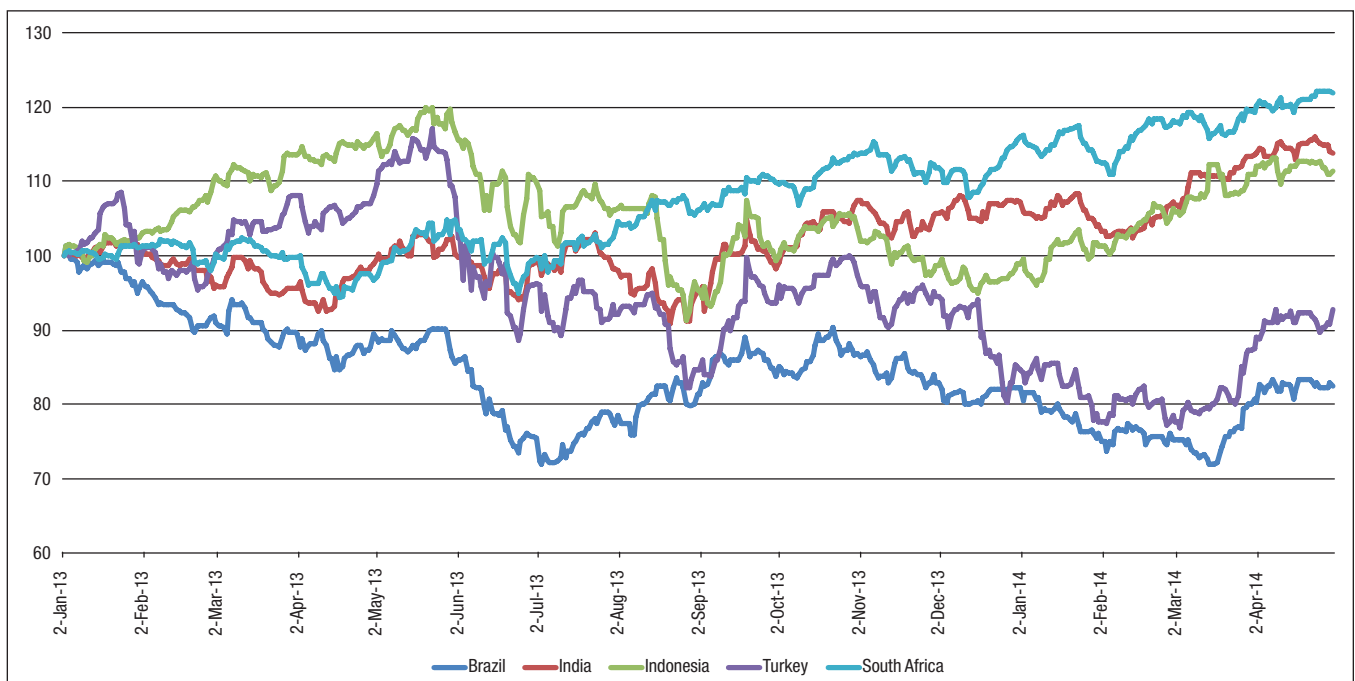
Source: FRED economic data, Economist Intelligence Unit, Bank Indonesia

IV. Taper Tantrum

In May 2013, Bernanke began to allude to the possibility of QE policy coming to an end (tapering its securities purchases). This became clearer when he testified in front of Congress on May 22, 2013. His announcements had a direct impact on financial markets in EMs, which experienced a significant decrease in their stock markets and exchange rates (Aizenman, Binici, and Hutchison, 2015). Aizenman, Binici, and Hutchison (2015) show that the impact from Bernanke's announcement was felt more greatly in EM countries with current account surpluses, high international reserves, and low debt. But as time passed (one month on), the impact from Bernanke's tapering news was cumulatively more significant on influencing stock prices and exchange rates in "fragile" nations. Figures 7 and 8 demonstrate the impact of the Taper Tantrum on the Fragile Five. These graphs show the capital outflow, which occurred in the Fragile Five as a result of Bernanke's plan to enact a Taper Tantrum.

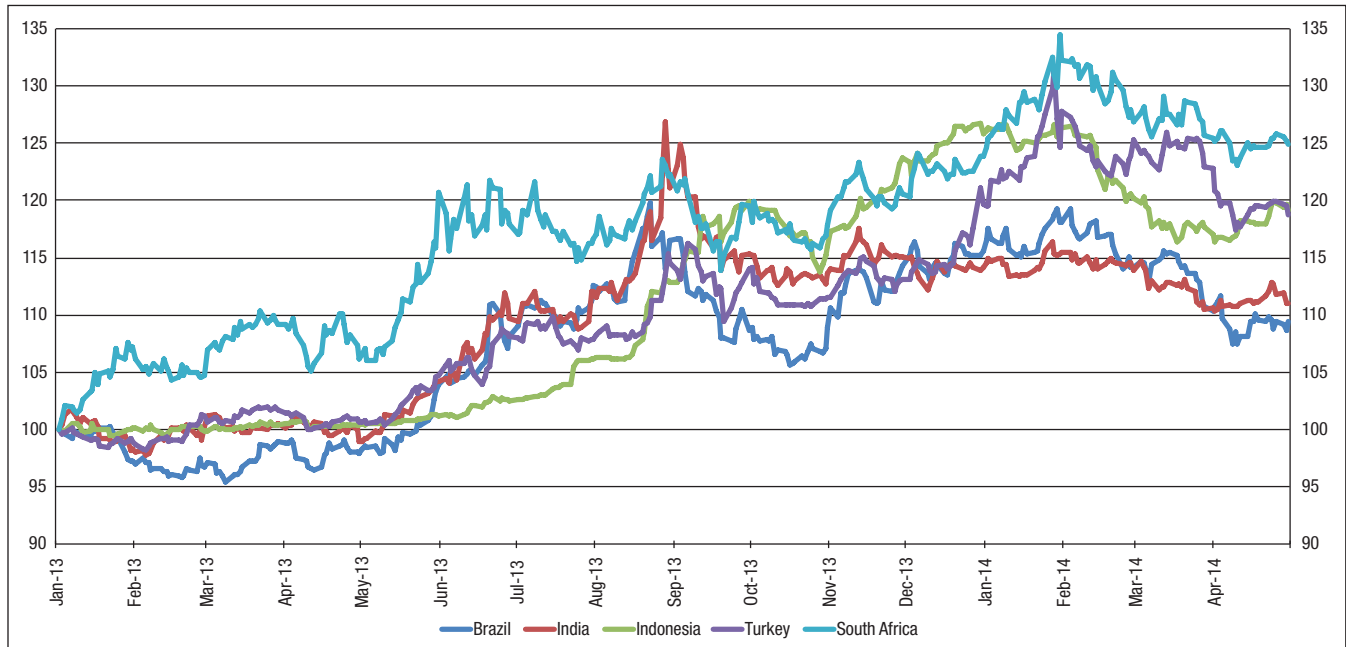
The same effect was felt in Indonesia. The rupiah's exchange rate began to weaken, bond yields increased, and there was erosion in the stock markets. At the same time, the process of negotiating budget revision for 2013 with parliament was heated and difficult.

Figure 7: Stock Market Index in the Fragile Five (daily, 2 Jan 2013 = 100)



Source: FRED Economic Data

Figure 8: Exchange Rates of the Fragile Five (daily, 2 Jan 2013 = 100)



Source: FRED Economic Data

Market uncertainty continued to rise. Efforts undertaken by the government and Bank Indonesia to calm the market were ineffective, because the market forces could not see concrete steps being taken. The impact of the Taper Tantrum on Indonesia can be seen also in Figures 7 and 8.

The situation was exacerbated when on August 16, 2013, just after President Yudhoyono formalized the government budget for 2014 in the Parliament, Bank Indonesia announced that the current account deficit had reached \$9.8 billion or 4.4% of GDP. The market went into shock and the news was taken quite negatively. The rupiah plummeted, the stock market collapsed, and government bond yields and Credit Default Swap soared. Market panic ensued. I quickly called a coordination meeting with the Governor of Bank Indonesia, Agus Martowardojo, and the Head of the Financial Services Authority (OJK), Muliawan Hadad, to discuss what was unfolding. President Yudhoyono called a cabinet meeting and it was decided that the government, Bank Indonesia, and OJK needed to create a policy package to calm the markets and return economic stability. This policy response is discussed in the next section.

V. Policy Response and Stabilization Period

As mentioned above, the primary problem faced by Indonesia was the current account deficit resulting from the investment boom triggered by capital inflow. The budget deficit was under increasing pressure resulting from fuel subsidies, yet it was relatively safe compared to the other Fragile Five countries. Because of this, the government and Bank Indonesia focused their policies on addressing the current account deficit. This section will focus on the government's efforts to reduce expenditure and its expenditure switching policy. To handle the current account deficit, an expenditure reducing policy was undertaken to tighten the fiscal policy, and an expenditure switching policy for the exchange rate (Caves, Frankel and Jones, 1993). Table 1 provides a list of the policy measures.

Table 1: Indonesia's Policy Measures (through September 2013)

Since May 2013, the government and Bank Indonesia have announced or implemented a series of measures (summarized below) aimed at reducing macroeconomic imbalances, neutralizing inflation pressures, and maintaining financial stability, as well as containing employment losses. Monetary Policy and Liquidity Management Bank Indonesia (BI): • Raised both the policy rate and the overnight deposit facility rate (bottom of interest rate corridor) starting in June 2013 by a total 150 bps to 7.25% and 5.5%, respectively. • Introduced tradable central bank rupiah deposits at one- and six-month tenors in September to facilitate interbank money market development, and allowed these instruments to be treated as required reserves. • Shortened the minimum holding period for central bank bills (SBIs) from six months to one month from mid-September to increase their liquidity. Exchange Rate Policy and Foreign Exchange Market Operations • Commenced biweekly auctions of foreign exchange (FX) swaps with resident banks in July 2013; allowed derivative positions held by banks with their customers to be passed on to BI through the swap auctions starting August 2013. • Broadened the maturities of US dollar term deposits placed by banks with BI from August. • Relaxed the rules in August on FX purchases by exporters that have converted their export proceeds. • Relaxed regulations in August on banks' short-term foreign borrowing (currently capped at 30 percent of their capital) mainly by exempting demand deposits of nonresidents used for investment activities in Indonesia and demand deposits of nonresidents that contain divestment funds.
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Macroprudential Controls • Tightened loan-to-valuation (LTV) limits on mortgages for second and third residential properties in September 2013. Additionally, raised LTV limits for motor vehicles. • Raised the secondary reserve requirement (RR) in September (fulfilled by banks holding of treasury and BI securities) from 2.5 percent to 4 percent, to be phased in by December 2013; also tightened the loan-to-deposit ratio (LDR) linked RR by lowering its applicability to banks with an LDR in excess of 92 percent (from 100 percent) and with a capital adequacy ratio of less than 14 percent.
Fiscal Policy • Increased subsidized petrol price by 44 percent and subsidized diesel price by 22 percent in mid-June 2013, and approved in the revised 2013 budget a temporary cash compensation scheme for vulnerable groups. • Announced in August the allowance of temporary deductions and deferred payments of income tax for the rest of 2013 for certain labor-intensive and export-oriented industries. • Eliminated luxury taxes on more common use goods previously classified as luxury items (certain televisions and appliances) in August. • Increased the quantity of biodiesel usage to 10 percent in diesel fuel to reduce oil imports in August. • Relaxed regulations in August on bonded zones through simplification of licensing procedures and increasing the allocation of certain goods for local sale.
Other Measures • Changed the mechanism for importing beef and horticultural products in September 2013, moving away from strict quotas to a system that will halt imports when the domestic price falls below the reference price and allow imports to resume if the domestic price exceeds the reference price. • Expanded the share of sales that industries in bonded zones can derive domestically in August to 50 percent from 25 percent, reversing a 2011 decision to restrict these sales. • Announced plans in August to issue a presidential decree guiding regional minimum wage setting in 2014.

Source: Taken from IMF, 2014 (Box 1, p. 6)

V.1 Quantitative Approach⁷

This section will try to elucidate the relationship between budget deficit, interest rate, exchange rate, and current account deficit. Section V.1 employs a formal quantitative model followed by an analysis of political economy.

V.1.1 Expenditure Reducing Policy and Expenditure Switching Policy

The conventional relationship between the current account and variables in the national income can be explained through the national account identity as follows:

The standard Keynesian identity:

Caves, Frankel, and Jones (1993) shows that Income (GDP or GNP) can be decomposed into sectors to which the output is sold (expenditure approach)

$$(1) Y = C + I + G + X - M$$

Where: $Y = \text{GDP/GNP}$,

$C = \text{Private Consumption}$,

$I = \text{Investment}$,

$G = \text{Government Spending}$,

$X = \text{Exports from good and services and}$

$M = \text{Imports from good and services}$

$$(2) Y - C - G = I + (X - M) \quad \text{Where } X - M = \text{CA, CA} = \text{current account}$$

$$(3) Y - C - G = S$$

$$(4) S = S_p + S_g$$

where

$S_p = Y - T - C$; $S_p = \text{private saving}$

$S_g = T - G$; $S_g = \text{government saving}$

$T = \text{tax}$

if $T > G$ government saving is positive (budget surplus) and if $T < G$ government dissaving or budget deficit

$$(5) S = I + (X - M)$$

Combine (4) and (5):

$$(6) X - M = (S_p - I) + (T - G)$$

Equation (6) implies that if we assume that the tax revenue and savings is stable over time, a reduction in the government expenditure or the investment will improve current account balance.

The Mundell-Flemming Framework

The Mundell-Flemming framework suggests that expenditure switching and expenditure reducing policies are alternatives to cut CA deficit (Caves, Frankel and Jones, 1993; Batiz and Batiz, 1994). This mechanism can be explained as follows: an increase in budget surplus (or cut budget deficit) puts downward pressure on real interest rates, leads to capital outflow from the country and depreciates the exchange rate. This depreciation reduces the current account deficit by switching foreign and domestic expenditure toward home products.

In addition, the Mundell-Flemming framework argues that the monetary policy can be used to influence the current account balance. The interest rate hike due to the restrictive monetary policy will reduce investment and improve current account balance. However, the interest rate hike may also lead into currency appreciation and weaken the current account balance. Thus, the net effect of the tight monetary policy on current account can be relatively small or not so clear; it depends on whether the reduction in investment is greater or smaller than the impact of the expenditure switching policy (exchange rate movement).

The Ricardian Equivalence Hypothesis

The opposite of the hypothesis above is the Ricardian Equivalent Hypothesis (REH), which posits that there is no link between the current account and the budget surplus/deficit. Barro (1974) argues that there is equivalence impact between issuing government bonds and raising taxes, so an intertemporal shift between taxes and budget deficits will have no impact on the interest rate or real exchange rate and thus does not impact the current account balance (Barro, 1974; Barro, 1989; El-Namrouty and Saidam, 2015; and Perera and Liyanage, 2011).

The Expenditure Switching Policy

Improving the current account can also be achieved through an expenditure switching policy. Expenditure switching is a policy in which government tries to switch consumption from foreign goods into domestic goods (Caves, Frankel and Jones, 1993). One of the effective instruments for expenditure switching is the exchange rate. An exchange rate depreciation, *ceteris paribus*, will induce export and reduce imports. Thus, we can surmise that depreciation in the exchange rate will improve the current account balance.

Econometrics Analysis⁸

In this section, we will evaluate whether a reduction in the budget deficit (in the case of Indonesia by reducing fuel subsidies) will improve the current account balance or not. It is also necessary to analyze whether the monetary policy that aims at increasing the BI rate will reduce investment and improve current account balance. In addition, we will also evaluate the impact of expenditure switching on current account balance.

Data employed:

- Current account deficit (\$ million) (CA)
- Budget surplus (government revenue minus expenditure) (Rp billion), this data is then converted to US\$ (BSUS)
- Bank Indonesia Rate (BI) as a percentage
- Exchange rate (Rp/\$) (ER)

All of the data was taken from the CEIC, and was quarterly data. The sample period was from 2000Q1 to 2014Q1.

To understand this relationship, the Granger Causality is used, which hypothesizes:

H1: If the budget surplus increases, then the current account will rise. This means that there is a positive relationship between the budget surplus and the current account.

H2: Current account deficit does not influence the budget surplus. However, there is a possibility that current account does influence budget surplus if current account deficit is heavily financed by internal and external borrowings, thus the interest payments on these debts will affect budget surplus (Khalid and Guan, 1999).

H3: If the Bank Indonesia (BI) rate is increased, investment will decrease, and thus the current account will rise. However, the impact may not be so clear because the improvement of current account due to the reduction of investment can be undermined by the reduction of net export caused by the appreciation of the exchange rate.

H4: CA does not influence the BI rate. However, there is a possibility that Bank Indonesia is taking into account the current account condition in its monetary policy in order to maintain the stability of the exchange rate.

H5: Exchange rate depreciation (ER rises) will cause the CA to rise. This means that there is a positive relationship between the ER and CA.

H6: A rising CA will cause the ER to appreciate (ER falls). This means that there is a negative relationship between the CA and ER.

The Vector Error Correction (VEC) model was used to analyze the causality hypotheses above. This paper employs an Impulse Response Function (IRF) and variance decomposition to provide a better picture of the above hypotheses. Estimates were obtained using standard procedures, in which after the causality test was conducted, the causality direction could be seen through the IRF. Unit roots tests were conducted to guarantee that the time series data was stationary. A more detailed and complete explanation of the quantitative method used and the procedure for the time series econometrics tests can be found in the Appendix.

The VEC Granger Causality tests show there is a bidirectional causality between BSUS and CA. These results show that while budget surplus may influence current account balance, the current account may also influence government budget due to the high interest payments, because as was the case for Indonesia, the deficit in the CA was heavily financed by both external and internal borrowings.

Consistent with the hypothesis, the Granger causality test shows there is a bidirectional causality between ER and CA.

It is worth noting that CA does cause BI interest rate. This can be interpreted that Bank Indonesia was taking into account the current account balance in its monetary policy in order to maintain the stability of the exchange rate.⁹ But there is no statistical evidence that BI rate influenced CA.

The results from Toda-Yamamoto (1995) Granger Causality test can be found in Table 2.

Table 2: Granger Causality Test

Hypothesis	λ^*	Descriptions
H1: BSUS does not cause CA	15.69 ^a	Rejected at 5%
H2: CA does not cause BSUS	5.53 ^b	Rejected at 10%
H3: BI does not cause CA	0.26	Not rejected
H4: CA does not cause Bi	4.73 ^b	Rejected at 10%
H5: ER does not cause CA	5.39 ^b	Rejected at 10%
H6: CA does not cause ER	5.74 ^b	Rejected at 5%

^aSignificant at 5%^bSignificant at 10%

*Calculated based on Toda-Yamamoto (1995)

The VEC estimates show that there exists a long-run relationship between budget surplus and current account balance (Table 8 in the Appendix). This result confirms that current account balance in Indonesia depends on government budget. As for ER and BI rate, we cannot find statistical evidence that there exists a long-run relationships between these variables respectively with current account balance.

Both Impulse Response Function (IRF) and the cumulative IRF support the argument that the expenditure reducing and expenditure switching policies improve the current account deficit. Both IRF and cumulative IRF show that a shock in the BSUS (budget surplus increase) led the CA to increase. The shock in ER (exchange rate depreciation) also led the CA to increase. The same result applies for BI rate. The interesting part of this result is that the shock of ER and BI result in a J-curve phenomenon, in which the CA decreases for a short period of time before it eventually increases.

In terms of the interest rate (BI), the result is rather ambiguous. While the Granger Causality test shows that BI does not cause CA, the IRF shows that after seven quarters the increase of the BI rate improves CA. This can be explained as follows: in the short-run, the interest rate hike may deteriorate the current account balance due to the exchange rate appreciation; however, over time the reduction of investment will improve the current account balance. While the IRF shows that an increase in the BI rate will improve CA, the variance decomposition shows the impact is relatively small.

The results of the IRF, the cumulative IRF, and variance decomposition are presented in Figures 14, 15, and 16 respectively (in the Appendix).

The quantitative results provide evidence that both the expenditure reducing and switching policies improve the current account balance and reinforces that Indonesia's policy is consistent with the theory. The quantitative analysis above, while very useful, does not tell the whole story, as the political process and institutional issues cannot be fully modeled quantitatively. Qualitative analysis is needed, particularly to become linked to political economy, to understand the policy process and the factors that influence this. The next section of this paper will discuss the qualitative analysis emphasizing political economy in the policy process.

V.2 Qualitative Analysis and the Political Economy Process

On May 21, 2013, I was appointed the Finance Minister for the Republic of Indonesia. I had very little time to adjust. After my appointment, I directly held a meeting with the Finance Ministry to prepare the government budget revisions for 2013.¹⁰ The most difficult mission at the time was the government's plan to increase fuel prices by reducing fuel subsidies. This was a good policy, but politically it was very difficult. Less than 24 hours after my appointment, on May 22, 2013, I was at the Parliament (DPR) to announce the revised budget for 2013, including the possibility that the government would have to increase fuel prices. The government actually proposed to cut the fuel subsidy in 2012, but the plan was blocked by opposition parties.¹¹

Bernanke's congressional testimony on May 22 (May 23 in Jakarta) about the planned Taper Tantrum was shaking EM financial markets, including Indonesia. This further convinced me of the need to increase fuel prices quickly. In a limited cabinet meeting on the economy with the President, I proposed raising fuel prices swiftly. My reasoning was that the longer this decision was delayed, the bigger the impact of expected inflation due to speculation on increases in the fuel prices. Inflation expectations would continue to rise as long as the government did not increase fuel prices (inflation overhang). Inflation overhang and uncertainty over the increase in the fuel price would lead to uncertainty in the financial markets. This would further propel capital outflow. I also conveyed that Indonesia's current account deficit would continue to grow and that there was a real possibility that it would further worsen in the second quarter of 2013 if steps weren't taken quickly.

There were two options to handle the worsening current account deficit. The first was to increase export productivity, improve the investment climate, and improve infrastructure to increase competitiveness to control the

current account deficit. But these are long-term programs and the situation was urgent. The second was to slow economic growth by cutting the budget deficit through increasing fuel prices and raising the interest rate to suppress investment and allow the exchange rate to weaken (expenditure reducing and expenditure switching policy). I suggested the second option to the President and Vice President.

V.2.1 Increasing Fuel Prices

As discussed above, efforts to decrease the government's budget deficit were made by revising the budget, specifically by slashing fuel subsidies and allocating these funds to infrastructure, poverty, and health programs.

To understand the impact of fuel subsidies on Indonesia's budget, it is worthwhile to examine the 2013 budget structure. The government's budget deficit for 2013 was initially set at 1.65% of GDP under which the fuel subsidies would account for Rp 193 trillion or nearly 2% of GDP or around 11% of total government budget. But increases in fuel prices and consumption volumes swelled the subsidies themselves to an estimated Rp 297 trillion or nearly 3% of GDP (17% of the total government budget) at the end of 2013. The rise in fuel consumption volume was due to smuggling and the migration from non-subsidized fuel to subsidized fuel due to the price disparity between domestic and international prices. Under these conditions, it was expected that the budget deficit would exceed the maximum allowable limit allowed by law, namely 3%.¹² Internal estimates from the Finance Ministry projected that if the government did not slash the fuel subsidies by raising prices, the deficit would reach 5%. The budget revision was therefore absolutely necessary. The continuation of the fuel subsidy would negatively impact the current account deficit, which in turn would lead to capital outflow.¹³

The government planned to reduce the subsidy by increasing the price of gasoline and diesel from Rp 4.500/liter (\$0.46/liter)¹⁴ to Rp 6.500/liter (\$0.67) and Rp 5.500/liter (\$0.56), respectively. Another effort was to slash the budgets of the Ministries/Institutions (Kementerian/Lembaga or K/L) by Rp 24.6 trillion (\$2.5 billion).

Raising fuel prices does not actually require parliamentary approval, but as one implication of raising fuel prices, the government must provide budgetary compensation for the poor. President Yudhoyono viewed that the price hike could only be done if a compensation fund for the poor was made available.

This compensation fund was necessary, as an increase in fuel prices would increase inflation, which would affect the poor through price hikes. The direct impact on the poor is felt through increased transportation costs. The World Bank (IEQ, April 2012) has shown that the poor are extremely vulnerable to price increases in goods and services. In this study, the World Bank estimated that an increase in fuel prices by an average of Rp 1500 (\$0.15) would lead to an increase in the poverty rate of 0.7%. To anticipate this, the government needed to provide compensation in the form of direct cash transfers (BLSM), conditional cash transfers (PKH), and others. In the 2013 budget revision, Rp 9.3 trillion (\$959 million) was allocated for 15.5 million households. If one household is assumed to consist of four people (two parents and two children), then the budget would provide compensation and protection to approximately 62 million Indonesian citizens. It was this compensation allocation that required parliamentary approval.¹⁵ In addition, government allocated Rp 7.2 trillion (\$742 million) for basic infrastructure programs for rural areas.

One important item was to ensure that the cash transfers reached their intended targets. As such, it was necessary to prepare identification for poor citizens to access these funds.¹⁶ Vice President Boediono was directly involved in this compensation preparation process. As a seasoned technocrat, who had served as a Finance Minister, a Minister for Economic Affairs, and a Governor of Bank Indonesia, Boediono played a vital role as the anchor in this policy process. Boediono himself was supported by a strong team from the TNP2K (National Team for Poverty Alleviation) that prepared all the data and analysis of the compensation scheme.

Internal cabinet discussions were very dynamic, as many non-economic items were raised, including the political impact and the preparation of compensation for the poor. Politically, this was not an easy process, particularly as elections were to be held in April 2014. Increasing fuel prices carries the risk of decreasing government popularity. Although President Yudhoyono would not be directly impacted as he had reached his term limit and could not run again, clearly it would impact the popularity of the ruling coalition parties. However, after taking into account various factors carefully, President Yudhoyono gave his full support for the price hike.

Discussions with parliament were heated and difficult. Although data clearly showed that the fuel subsidy was not a good policy and that it only benefited the middle and upper classes, the issue was not simply about economics.

Rather, the issue encompassed political, social, and even security concerns. In parliamentary debates, political parties opposing the policy went on the attack, arguing that the budgetary problems resulting from overly large subsidies could be solved by increasing government revenue. We rejected this argument. The government's position was that the issue was not how to increase revenue to pay for the subsidies, but rather that the fuel subsidies themselves had to be reduced as they were inherently inequitable. In parliamentary hearings, I maintained that even under a budget surplus the fuel subsidies had to be reduced and replaced by more appropriate subsidies for the poor, namely direct cash transfers (BLSM), conditional cash transfers (PKH), and infrastructure and health programs.

The opposition parties, particularly Partai Demokrasi Indonesia-Perjuangan (PDIP), balked at the government's budget revisions. PDIP even went so far as to publish a white paper on how to manage the budget without raising fuel prices. President Yudhoyono met with parliamentary leaders and coalition parties to garner support for the revisions. After long, drawn-out, and heated debates accompanied by demonstrations and student protests, the revised budget was approved through a vote in the Plenary Session on June 17, 2013. On June 21, 2013, the government officially announced the increase in fuel prices. An important and challenging process had passed.

V.2.2 A Rise in the Bank Indonesia Rate and Limiting Intervention in the Forex Market

To anticipate inflation from the increase in fuel prices, Bank Indonesia increased interest rates by 25 basis points (bps), from 5.75% to 6%. Still, the economic situation, particularly in the finance sector, continued to deteriorate. In early July 2013, the Trade Minister, Gita Wirjawan, and I were summoned by President Yudhoyono to discuss this. In this meeting, I explained that tightening the fiscal policy by reducing fuel subsidies was not enough. This fiscal policy should be combined with tight monetary policies to slowdown the growth and prevent large capital outflows. In addition, the exchange rate should be allowed to move with market fluctuations (of course intervention from BI was still necessary to smooth volatility). The Indonesian government, like all governments throughout the world, was of course oriented toward economic growth to create jobs and reduce poverty. But, at that moment, I believed that economic growth should be reduced to maintain macroeconomic stability. Needless to say, this was not easy to digest politically, particularly just 10 months before the next election. On the other hand, Bank Indonesia must ensure that macroeconomic stability was maintained.

Tight monetary policy can interfere with the government's objective to stimulate economic growth. I saw the need for common ground between the government and Bank Indonesia, primarily to send a signal to the markets. Therefore, I suggested that the government be prepared to accept lower growth rates. I also conveyed that excessive intervention in the forex market would be ineffective and not improve the current account deficit situation. We needed to support Bank Indonesia's limited intervention in the forex market. In other words, the government should support Bank Indonesia to allow the rupiah to follow economic fundamentals. I also expressed this viewpoint to the Vice President, who was fully supportive of this policy.

Interest rate and exchange rate policies fall under the jurisdiction of Bank Indonesia. Bank Indonesia is an independent institution and the government cannot intervene. The government must support any monetary policy made by Bank Indonesia, including interest rate hikes, which affects economic growth. The position and support from the government is vital. If the market senses that the government and Bank Indonesia have opposing positions, in which the government is pro-growth, while Bank Indonesia is pro-stability, this will lead to panic in the markets.

Conversely, if the government and Bank Indonesia have the same understanding they will present a united front for the prioritization of stability. If the government is willing to accept lower economic growth, the markets will be more stable and Bank Indonesia will have sufficient room to run its monetary policy.

After a long discussion, the President agreed that in the short term Indonesia had to focus on stabilization, be prepared to accept lower economic growth, and allow for the rupiah to fluctuate with the markets. The President had one demand, to ensure that unemployment not rise. We coined this as the "keep buying strategy" (discussed in the following section).

Immediately following the meeting, I contacted the Bank Governor to inform him that the government supported all steps taken by Bank Indonesia.

Bank Indonesia took steps to increase the interest rate by 175 basis points from June to December 2013. Bank Indonesia did not excessively intervene in the foreign exchange market. Figure 6 shows that the foreign exchange reserves began to rebound when Bank Indonesia stopped intervening in the forex market. The weakening of the rupiah also helped to improve the current

account deficit (see previous discussion). These Bank Indonesia policy measures on interest rate and exchange rate contributed significantly in restoring market confidence.

V.2.3 Keep Buying Strategy

A consequence of the expenditure reducing policy was a slowdown in economic growth, which in turn could trigger unemployment and thus increase the poverty rate. This was President Yudhoyono's primary concern. Thus, in addition to providing compensation to poor families, the government also announced a tax incentive scheme under which if a company did not lay off any workers, they would be eligible to request an extension on their tax payments. This scheme helped a company's cash flow, therefore mitigating the need for layoffs. Based on the rules, a company had to report any layoffs to the Ministry of Labor and Ministry of Industry. These ministries thus had data on companies that planned to conduct layoffs. The tax payment extension incentives were based on this data. If a company did conduct layoffs, the company was no longer eligible for these incentives. This was not the first time incentives had been given to prevent layoffs. When Indonesia had to face the impact of the global financial crisis, the government also provided incentives, though the scheme employed was different (Sangsubhan and Basri, 2012). The Minister of Industry MS Hidayat argued that there were 70 companies registered to this scheme, and this helped to mitigate the impact of unemployment.¹⁷ The data from the Indonesia Bureau of Statistics showed that the government was able to lower the unemployment rate from 5.92% in February 2013 to 5.7% in February 2014. Nevertheless we need a further study to conclude whether this successful result should be attributed to this scheme or other factors.

V.2.4 Second Line of Defense and International Diplomacy

The expenditure reducing and switching policies and interest rate hike above were insufficient on their own. There were still concerns that if capital outflow occurred, the foreign exchange reserves would be insufficient. Under the worst case scenario, we estimated that the current account deficit may reach \$30 billion and the capital account deficit may reach \$20 billion, thus the deficit of the overall balance may hit \$50 billion.¹⁸ So, to calm the market, a second line of defense was needed that would be bigger than the deficit. It was expected that this second line of defense would ease market concerns, as Indonesia would have reserves at the ready to handle immense capital outflow. The data showed later on that the 2013 deficit of overall balance was only \$7.3 billion, which was much better than we prepared.

This second line of defense consisted of stand-by loans to be used if Indonesia's foreign exchange reserves were hit by a speculative attack. To achieve this, the government and Bank Indonesia approached several countries.

In a relatively short time (from October to December 2013), Indonesia obtained support for its second line of defense in the form of currency bilateral swaps from China amounting to 100 billion CNY (around \$15 billion); Japan amounting to \$22.7 billion; Korea amounting to KRW 10.7 trillion (around \$10 billion); and, Deferred Drawdown Options (DDO) from the World Bank, Asian Development Bank, JICA, and Australia amounting to \$5.5 billion. These totaled nearly \$54 billion. Indonesia's foreign reserve itself was \$99 billion by the end of December 2013. A significant second line of defense was created.

The G-20 meeting was also used to communicate Indonesia's situation. In meetings in Moscow and St. Petersburg, Indonesia conveyed the importance of exchanging information, with the hope that the Fed could provide better information about the steps it would take to avoid shocks in the market. The same requests were made by Brazil and India.¹⁹ This communication issue was a hot topic at the G-20 meeting, as at the time the US tended to focus on its own domestic economy. It was interesting to see that when Janet Yellen took over as chair of the Fed, there was a change in outlook. In the minutes from meeting September 16–17, 2015, one of the reasons the Fed cited for delaying interest rate hikes was global economic considerations.²⁰ There seems to have been a real improvement in communications since 2013.

V.2.5 Structural Reform

The policies discussed above are short-term steps to address the current account deficit. But more important are mid- and long-term steps that must be undertaken for structural reform. Such structural reform is vital to boost market confidence.

The steps taken in government policies can be found in Table 3.

Table 3: Indonesia's Structural Reform Package, 2013–2014

A	To Improve Current Account Balance
1.	Additional deduction tax provision for labor-intensive sectors with minimum 30% production intended for export
2.	Increasing biodiesel portion to reduce diesel consumption
3.	Additional luxury tax rate for luxury car and branded products by 25–50%
4.	Promote mineral export by easing procedure in regard with quota and Clean and Clear procedure
5.	Easing import facilities for export purposes (KITE)
B	To Maintain People Purchasing Power (Keep Buying Strategy)
6.	Deduction/deferring of income tax for specific industries (labor-intensive and export-oriented industries)
7.	VAT relief for luxury goods for basic products, books, etc.
8.	To curb volatile food inflation and administered inflation by reducing trade barriers for meat and horticultural products
C	To Promote Investment
9.	Additional deduction for R&D
10.	Improve tax holiday and tax allowance provisions
11.	Streamline permit process and improve single window service for investment
12.	Reduce dwelling time at Tanjung Priok (the Jakarta port)
13.	Accelerate the revision of Presidential Decree of negative investment list
14.	Debottlenecking problems in the strategic investment projects such as power plant, oil, gas, mineral mining, and infrastructure projects
15.	Relaxation for facility restriction policy in bounded zone

The structural reform process was made that much more difficult as it involved cross-Ministry negotiations. It was coordinated by the Minister for Economic Affairs, Hatta Radjasa, and supervised by Vice President Boediono. I should recognize here that the structural reform policy taken was still far from what I desired, as there were many more items that could have been addressed through structural reform but this was hindered by coordinating such a complicated process through political issues. In addition, the implementation of the structural reform to promote investment was far from adequate (see Table 3). Coordination was not easy, required significant time, and was politically contentious. Yet, in a relatively short time, the government succeeded in announcing the August Package (Paket Agustus), which consisted of several steps to control the situation. The support from the Minister of Industry MS Hidayat

was very instrumental for this policy package. At the package's core was expenditure reducing and expenditure switching policies plus fiscal incentives like providing tax incentives to companies that did not conduct any layoffs. Furthermore, the government launched the second policy package in December 2013, which eased import facilities for export purposes (KITE). This policy package aimed to boost Indonesia's export competitiveness.

One important element of the structural reform discussion was the change from a beef import protectionist system to a tariff system and the decrease in imported soybean tariffs. Similar to many countries, quota-system import protections are an extremely sensitive issue rife with political economy concerns.

In July 2013, the price of beef soared to over Rp 100.000/kg (\$10.2/kg) from Rp 75.000–80.000 (\$7.6–\$8.1/kg). At the same time, imported soybean prices also rose sharply. One argument put forth by the Ministers of Trade and Agriculture was that the weakened rupiah was responsible for the price increase in beef and soybeans. The hike in fuel prices did contribute to the increase in these prices. A special cabinet meeting was called to discuss how to cope with inflation and maintain purchasing power. There were two views in the meeting. The first held that the quota-based protection system was pretty good but that the implementation should be improved. The second view held that quota-based system led to problems and should be replaced by a tariff-based system. For soybeans, import tariffs were reduced. In line with Vice President Boediono, I supported the second argument. The debates dragged on. The reason for rejecting the argument to replace the meat quota system or decrease soybean import tariffs was to protect domestic producers. I conveyed that quotas and protections often carry the risk of rent-seeking activities and result in higher domestic prices. The poor spend most of their budget on food, and thus reducing food prices by opening imports and changing the quota system to a tariff system would increase buying power.

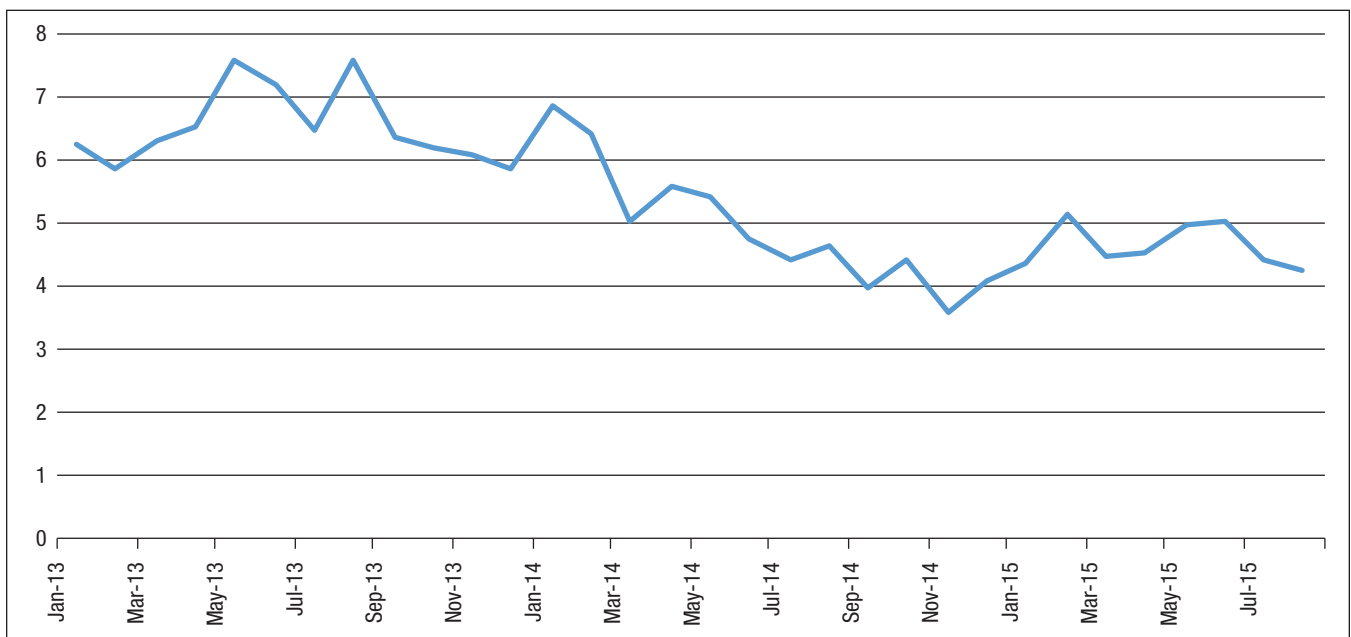
This debate required several cabinet meetings before President Yudhoyono made a decision to eliminate the beef quota and reduce soybean import tariffs to 0%. The Trade Minister, Gita Wirjawan, then issued a Trade Ministry Regulation to eliminate the meat quota and replace it with a price-preferential system, whereby if the price of beef is below a set price (Rp 76.000 or \$7.7) per kg, tariff quotas would come into effect.

This was an important step in structural reform in Indonesia. As previously discussed, import quotas are always a politically sensitive issue, making

them difficult to reform. But the urgent economic situation allowed for more rational economic policy. This situation proves once again the old adage that *bad times make good economic policies*. After the regulation was issued, beef and soybean prices began to fall, with inflation at the end of the year 2013 reaching only 8.4%. This was the first time in history that when fuel prices were raised, interest rates did not exceed 10%.

Another interesting item to examine is the effort to reduce dwell time. Dwell time has long been an issue for Indonesia, with its complicated bureaucracy, and infrastructure constraints led dwell time to balloon, which in turn led to incredibly expensive logistics costs (Sandee, forthcoming). To handle this, in July 2013, I asked Vice Minister of Finance Mahendra Siregar to set up office at Tanjung Priok, Indonesia's biggest port. Improvements were focused on risk management. Coverage of goods that required inspection through the red lane was reduced, but random checks were increased. The impact of this policy change can be found in Figure 9, whereby dwell time was reduced significantly and continued to decrease through November 2014 when it rose again. It is clearly too early to conclude that this was due solely to the change in customs risk management, as improvements in infrastructure and services as well as other institutions at Tanjung Priok Port also contributed to these improvements. Yet it is still important to note that although improved, Indonesian dwell time is still far from satisfactory. Therefore, as part of the structural reform, preparation for the National Single Window was accelerated.

Figure 9: Import Container Dwell Time in Tanjung Priok (Port of Jakarta)



Source: Dashboard Online, Sistem Informasi Dwell Time Tanjung Priok

V.2.6 Policy Coordination between Bank Indonesia, the Financial Supervisory Agency (OJK), and Investors

A vital part of any policy is the coordination process. This was done through the Financial Sector Stability Forum (Forum Stabilitas Sektor Keuangan or FSSK), where the Minister of Finance is the coordinator.

In the FSSK meetings, discussions revolved around developments in the bond market, stock market, banking, and fiscal and monetary policy. Usually after an FSSK meeting, a press conference was held to explain the situation to the media and foster calmness among the public. Outside of these meetings, the BI Governor Agus Martowardojo, the Head of OJK Muliaman Hadad, and the Minister of Finance also met. Coordination went very smoothly.

I routinely presented the results of these FSSK meetings to the President, Vice President, and Coordinating Minister for Economic Affairs, which allowed them to follow the policy process closely. In addition, the three of us (the Minister of Finance, the Governor of Bank Indonesia, and the Head of OJK) reported to the President and Vice President during the cabinet meeting. The President was then able to provide direction for the steps to be taken.

Equally important was providing updates to investors and the media to calm the markets. In practice, we held conference calls with investors and met with analysts almost every two weeks to clarify the government's actions. This was to ensure that no market panic ensued. The government also provided updates to the media to calm the public. At the time, there was a view circulating that the situation could worsen and throw Indonesia back to the Asian Financial Crisis of 1998. But by communicating directly with investors and the media, we were able to explain how different the situations were in 1998 and 2013 and allay fears.

Steps were also taken by the Financial Supervisory Agency (OJK), including relaxation of various regulations, like buy back permits in the stock market, and policies to support initial public offerings. This paper does not discuss the OJK policies. But in general, it can be said that the steps taken by the OJK helped calm the stock market.

V.3 No Longer Fragile

The steps taken by the government, Bank Indonesia, and OJK began to show tangible results much faster than expected. In October 2013, the trade

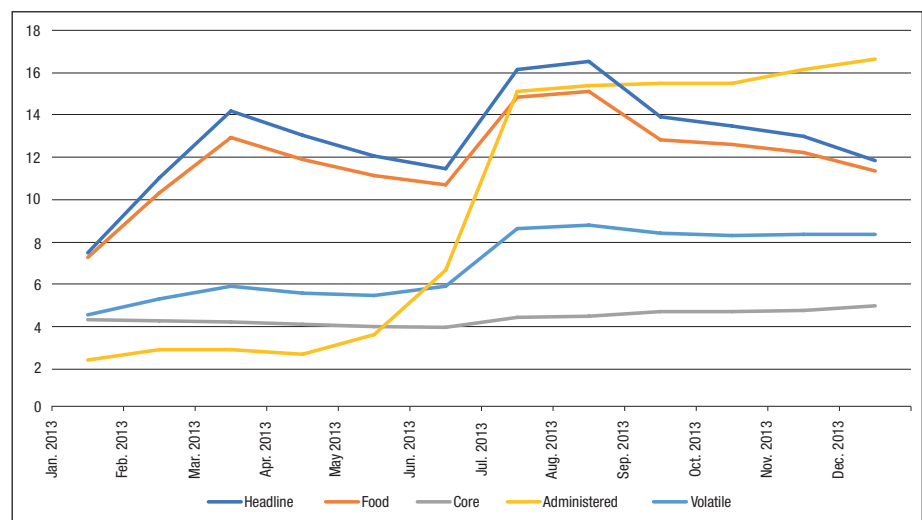
balance showed a surplus, although it did experience deficits again in 2014 as a result of implementing raw goods export restrictions.

In the third quarter of 2013, the current account deficit began to decrease from \$9.8 billion or 4.4% of GDP to \$8.6 billion (4% of GDP). The current account situation continued to improve to \$4.3 billion (2.1% of GDP) in the fourth quarter of 2013. In 2013, the current account deficit was 3.2%, falling slightly to 2.95% in 2014. The foreign reserve, which hit \$92 billion in August 2013, rebounded to \$99 billion by the end of December 2013 and reached \$105 billion in April 2014.

However, as a consequence of this policy, economic growth slowed to 5.8% in 2013, from 6.5% in 2011. Still, 5.8% is relatively high when compared to other countries. With previous growth above 6%, Indonesia had room to decrease growth to focus on macroeconomic stability.

Pressure on the rupiah's exchange rate continued through the end of 2013, possibly due to improving current account deficit numbers, newly announced by Bank Indonesia in February 2014. Figure 10 shows that after the government issued regulations to replace the beef import quotas and reduce soybean import tariffs to 0%, the prices of both stabilized and inflation began to fall in September 2013 to 8.4% by the end of the year.

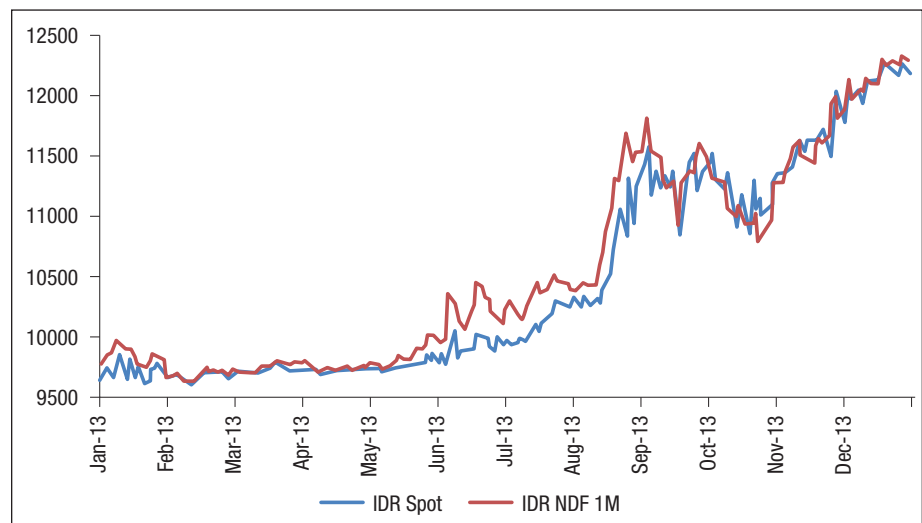
Figure 10: Indonesia: Inflation (year on year) (%), January–December 2013



Source: Indonesian Statistical Agency (BPS)

Figure 11 shows that after Bank Indonesia took steps to allow the exchange rate to fluctuate with the market and only engage in limited intervention to guard against volatility, the IDR spot rate and NDF converged. Finally, in February 2014, Singapore replaced the NDF with JISDOR as the reference for the Rp/USD exchange rate.²¹ The foreign reserve, which hit \$92 billion in August 2013, rebounded to \$99 billion by the end of December 2013 and reached \$105 billion in April 2014 thanks to capital inflows and limiting the intervention in the forex market.

Figure 11: Indonesia Rupiah Spot Exchange and 1-month NDF Rate



Source: Bloomberg

Improvements in the current account positively impacted government bonds. As a result, the 10-year local government bond yield fell from 8.9% in September 2013 to around 7.8% in April 2014 (Figure 12). The stock market index also rallied from 3967 in August 2013 to around 5000 in April 2014.

The exchange rate appreciated beginning at the end of January 2014, stabilizing around Rp 11,200–Rp 11,300 from Rp 12,235 (December 2013). And as previously mentioned, the response from the international media also became positive.

An important question to ask is, how could these unpopular policies be adopted? Basri, Rahardja, and Namira (forthcoming) demonstrate the inherent difficulties in passing economic reform in Indonesia due to the extremely limited number of and support from technocrats, proponents of economic

Figure 12: Indonesia 10-Year Bond Yield and Stock Market Index



Source: Bank Indonesia, investing.com

reform. Furthermore, they argue that technocrats tend to play important policy roles when an economic crisis occurs. During such situations, politicians tend to provide the room and support for technocrats to improve conditions. But during good economic times, politicians are reluctant to sacrifice their political capital by adopting unpopular policies, even when they are vital for the long term. This explains why these difficult policy reforms could be achieved in 2013, as the economic situation was fragile and there was real concern that Indonesia was in the midst of a mini crisis. At such times, politicians can afford to allow technocrats to implement unpopular policies to save the economy. If a real crisis occurs, politicians will also lose popularity. Conversely, when the economic situation is stable, it is difficult to achieve reform. This was later proven, as after the first quarter of 2014, the structural reform process ebbed and fuel price hikes could only be carried out after the election of a new government. Indonesia is living proof that bad times make good policy and good times make bad policy.

VI. Indonesia and India Aren't So Bad After All

It was previously mentioned that India and Indonesia were relatively capable of facing the Taper Tantrum. Why? To answer this, it is necessary to compare the policies of the "Fragile Five." Table 4 compares the policies of these countries.

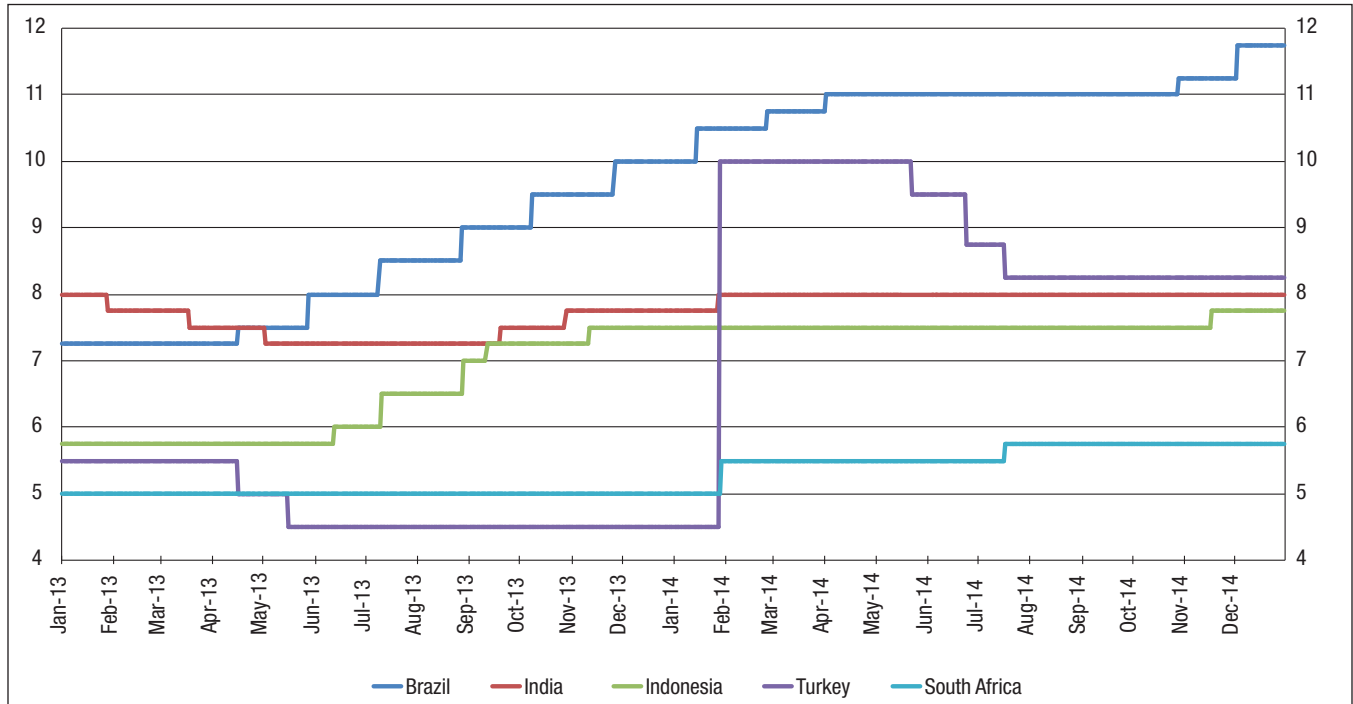
Table 4: Summary of Policy Actions of The Fragile Five

Country	Monetary Policy	Fiscal Policy	Macroprudential and Other	Results
Brazil	Policy rate hike and currency intervention program through currency swaps and repurchase agreements	Proposed \$18.5 bn fiscal tightening and a new primary surplus goal of 1.9% for 2014	IOF tax rate on foreign purchases of fixed-income debt instruments reduced to zero	Budget deficit continued to rise Current account deficit remained a problem
India	Policy rate hike, liquidity tightening measures, and currency intervention	Government departments asked to cut non-plan expenditure by 10%	Tighter rules on lending against gold, some gold imports restrictions, higher taxes on gold import, lower cap on capital inflows for investors and Indian residents; subsidy program for banks hedging nonresident foreign currency deposits and bank capital, easing investment rules for foreigners and Indian expatriates	Succeeded in preventing a worsening in current account deficit Budget deficit fell
Indonesia	Policy rate hikes, currency intervention, relaxed holding period of central bank securities, and tightening of the secondary reserve requirement	Curbed energy subsidies to reduce external and fiscal pressures	Lower loan-to-value ratios on second and third mortgages and lower loan-to-deposit ratio-linked reserve requirement	Succeeded in preventing a worsening in current account deficit Budget deficit remained less than 3%
Turkey	Policy rate hike, and currency intervention		Introduction of credit card limits and changes to provisioning rates for uncollateralized consumer loans and on export and small and medium enterprise loans	Succeeded in preventing a worsening in current account deficit Budget deficit slightly increased
South Africa	Policy rate hike			Both budget deficit and current account deficit improved in 2014, although remained relatively high in 2013

Source: Modified from Global Financial Stability Report, April 2014, Figure 1.26, p. 38.

Table 4 shows that all of the Fragile Five countries responded to the TT with tight monetary policies. One difference is that India, Indonesia, and Brazil rose rates starting in 2013 when the Taper Tantrum occurred; India and Brazil

Figure 13: Policy Interest Rate of The Fragile Five



Source: BACEN SELIC, BI, SARB, CBRT, RBI

had even begun to do this before 2013 (Figure 13). The Central Banks of Turkey and South Africa only did this at the start of January 2014, when Turkey drastically increased rates from 7.75% to 12%, and South Africa from 5% to 5.5%. But Turkey then decreased its rate in April 2014, although inflation continued to rise, reaching 9.4% (Spiro, 2014).²²

Indonesia and India also engaged in fiscal tightening. The Indian government was committed to fiscal discipline in line with its deficit targets for 2012/2013 even though they were facing an economic slowdown (IMF, 2014). The same thing occurred in Indonesia. Both India and Indonesia chose stability over growth strategies, through consistent expenditure reducing and expenditure switching policies. Meanwhile in Brazil, the budget deficit continued to rise. In Turkey, budget deficit increased slightly in 2014. While in South Africa, the budget deficit also fell in 2014.

It is important to note that both Turkey and South Africa had serious current account deficit issues. In Turkey, the current account deficit was immense (7.9% in 2013) and paid for with short-term debt capital inflow (IMF, 2014). In South Africa, although the budget deficit and current account deficit

improved in 2014, the current account deficit to GDP ratio and budget deficit to GDP ratio remained relatively high (4.9% and 5.7%, respectively) in 2013.

In terms of exchange rates, both Indonesia and India chose to employ exchange rate flexibility to face capital flow volatility. It should be noted that all of the Fragile Five countries, except Brazil, succeeded in preventing a worsening in their current account deficit from 2013 to 2014.

The illustration above shows that one reason why Indonesia and India were able to face the Taper Tantrum relatively successfully was due to their consistent stability over growth strategy by opting for expenditure reducing and switching policies.

VII. Lessons Learned and the Way Forward

What lessons can we learn from Indonesia's experience? Anticipatory policies are needed to face the expected normalization of US monetary policy. There are several lessons to be learned.

First, the investment boom caused by capital inflow stimulated the economy to overheat and increased the current account deficit. Caution is necessary in such a time, as the economy is vulnerable and exposed to potential crises from capital outflow or a sudden stop, especially if inflow is concentrated in portfolio investment.

There is a certain limit to which a current account deficit can be tolerated. As long as the current account deficit is financed by export-oriented FDI, the risk of capital outflow will be small. But the situation is exacerbated when the current account deficit is financed by portfolio investment, especially in the form of short-term debt. Indonesia should consider introducing a Tobin tax to minimize the negative impact of the short-term capital inflows. In addition, another key lesson is that capital inflow must be directed toward export-oriented sectors to minimize risk of currency mismatch and balance of payment pressures. In 2014, as Finance Minister, I encouraged more incentives for export-oriented sectors.²³ Admittedly, there were difficulties at the time, the global situation was still relatively bleak and export prospects were not very promising, which explains why FDI tended to be oriented toward the domestic market. There was concern that Indonesia could potentially be infected by the Dutch Disease (Papanek, Basri, Schydrowsky, 2010; Basri and Rahardja, 2011).

Second, over-dependence on external financing increased risk. As put forth by Reinhart and Rogoff (2010), the dependence of emerging markets on external financing increased economic risk. In the future, Indonesia must strive to increase its domestic savings.²⁴ Mexico was able to avoid classification in the Fragile Five because it had a deeper financial market. To decrease its vulnerability, Indonesia must develop its domestic financing resources.

Third, to face short-term risks in the current account deficit and vulnerabilities in the financial sector, the government and Bank Indonesia must choose a stability over growth strategy in the short term. Of course this should be done with adequate assistance to the most vulnerable. I believe that if Bank Indonesia and the government had chosen stability over growth strategy in 2011, the impact from the TT on Indonesia would have been much smaller. Further, Indonesia could have been suffering from Dutch Disease as a result of the commodity boom. The exchange rate should have been allowed to depreciate earlier by Bank Indonesia not intervening in the foreign exchange market, as it did in 2011. The sharp appreciation in the exchange rate from 2009 to 2011 also made Indonesia more vulnerable. The government should have adopted tighter fiscal policy at the time and Bank Indonesia should not have allowed the sharp appreciation in the exchange rate.²⁵ However, I realize fiscal tightening is not easy to achieve politically when economic booms are in full swing. Further, if Bank Indonesia had tried sterilization when the exchange rate was appreciating, the cost would have been excessive.

Expenditure reducing and expenditure switching policies are the right choice for macroeconomic stability. Policy consistency will raise credibility in the eyes of investors. This is what set Indonesia and India apart from the other countries. One vital lesson from Indonesia is the importance of combining policies. Policy cannot rely solely on one instrument. Overly high interest rates increase the risk of bad debt in the banking sector, which in turn encourages capital outflow (Stiglitz, 2002). Overly tight fiscal policy can harm welfare programs and economic growth, while overly weak exchange rates can lead to fear that the Asian Financial Crisis of 1998 could return. This fear can be a self-fulfilling prophecy, which can cause panic. Because of this, combining an expenditure reducing and switching policy with continuous market guidance was the right action to take.

It must be noted, however, that expenditure reducing and expenditure switching policies are not appropriate in the long term. Economic growth cannot be restricted only for the sake of the current account deficit and macroeconomic

stability. In the long term, the government must look beyond stability by increasing productivity through improvements in human capital, infrastructure, and governance (Basri, Rahardja, Namira, forthcoming; Harvard Kennedy School Indonesia Program, 2011; Rodrik, 2011; and Rodrik, 2015).²⁶

Fourth, in terms of political economy, in a crisis situation, politicians will tend to support technocrats pushing reform and make unpopular economic decisions, following the old adage, bad times make for good policy. We must consider how we can undertake reforms even in the absence of crisis. The best way to do this would be to automatically institutionalize this and thus ease the political process.

Fifth, this study also emphasizes the importance of communication on the global level. The G-20 forum can be used to communicate and share information. The impact from the Taper Tantrum can be mitigated if EMs get information sooner and can thus anticipate its effects. Clearly EMs need to undertake reforms, but this will be easier if EMs have access to information on the direction of policies in advanced countries. The same is true for the devaluation of the Yuan. Better information from China could have lessened the impact on financial markets. In anticipating the normalization of monetary policy in the US, communication is vital. If investors have time to understand forthcoming policies, EMs will be better able to adapt. These steps will minimize volatility. The issue of policy coordination is a very interesting and important research topic for the future.

Appendix

Econometrics Model

To investigate the hypotheses in Table 1, this paper will employ the Vector Autogressive (VAR). The reasons why this paper employs VAR to test those hypotheses are as follows:

Current account deficit variable can be endogenous (for example in related with exchange rate) but also can be exogenous, thus structural regression with pre-established causality may be mis-specified. Furthermore, the impact of budget deficit or exchange rate and other variables on current account deficit is sometimes slow, implying that there are time lags between the interaction among these variables. In such situations, VAR may be one of the best methods to employ. VAR can also help us to understand the interrelationship between variables through Impulse Response Function (IRF) and Variance Decomposition.

The Granger Causality

To elucidate the direction of causation of one variable to the other variables, this paper employs the Granger Causality test. This study uses both pair wise Granger Causality and VAR block exogeneity. In VAR block exogeneity tests we examine the causal relationship among variables, not only two variables.

The model of Granger Causality test have been developed as follows:

$$CA_t = \sum_{i=1}^m \alpha_{i1} BSUS_{t-i} + \sum_{i=1}^m \beta_{i1} ER_{t-i} + \sum_{i=1}^m \delta_{i1} BI_{t-i} + \sum_{i=1}^m \gamma_{i1} CA_{t-i}$$

$$BSUS_t = \sum_{i=1}^m \alpha_{i1} BSUS_{t-i} + \sum_{i=1}^m \beta_{i1} ER_{t-i} + \sum_{i=1}^m \delta_{i1} BI_{t-i} + \sum_{i=1}^m \gamma_{i1} CA_{t-i}$$

$$ER_t = \sum_{i=1}^m \alpha_{i1} BSUS_{t-i} + \sum_{i=1}^m \beta_{i1} ER_{t-i} + \sum_{i=1}^m \delta_{i1} BI_{t-i} + \sum_{i=1}^m \gamma_{i1} CA_{t-i}$$

$$BI_t = \sum_{i=1}^m \alpha_{i1} BSUS_{t-i} + \sum_{i=1}^m \beta_{i1} ER_{t-i} + \sum_{i=1}^m \delta_{i1} BI_{t-i} + \sum_{i=1}^m \gamma_{i1} CA_{t-i}$$

For the Granger Causality test, optimum lag was selected based on LR, FPE, AIC, SC HQ. Four of the six selection criteria show that the optimum lag is 3 (when select number of lag 2). To ensure the model is not mis-specified, we employed LM autocorrelation test. The LM autocorrelation test confirmed that this model is not mis-specified. Based on these optimum lag then we employ Toda and Yamamoto (1995) for the Granger Causality test.

Unit Roots

To test the stationarity of all variables, the standard unit root test procedure was employed. The unit root test shows that the unit root null hypothesis is rejected for BI (with trend). This suggests that BI is stationary at level.

All other variables are stationary at first difference.

Table 5: Unit Root Test by Using Augmented Dickey Fuller (ADF) Test (P-value)

	CA	BSUS	ER	BI
Level	0.3266	0.0046*	0.0795**	0.1677
1st Difference	0.0000*	0.0000*	0.0000*	0.0169*

*Significant at 5%

** Significant at 10%

Optimum Lag

To find an optimum lag for this model, we employ four criteria i.e, FPE, AIC, SC and HQ. We get optimum lag at 2.

The result is presented below:

Table 6: Optimum Lag

VAR Lag Order Selection Criteria

Endogenous variables: CA BSUS ER BI

Exogenous variables: C

Sample: 2000Q1–2014Q1

Included observations: 52

Lag	LogL	LR	FPE	AIC	SC	HQ
0	−1185.130	NA	8.57e+14	45.73576	45.88586	45.79330
1	−1055.831	233.7317	1.10e+13	41.37813	42.12861	41.66585
2	−1018.046	62.49145*	4.82e+12*	40.54023*	41.89109*	41.05811*
3	−1007.442	15.90526	6.10e+12	40.74778	42.69903	41.49584
4	−991.0368	22.08441	6.36e+12	40.73219	43.28381	41.71042
5	−978.8268	14.55813	8.09e+12	40.87795	44.02996	42.08636

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan–Quinn information criterion

Cointegration Test

Following Asteriou (2006), Enders (2004), and Hansen and Juselius (2002), if two or more variables have the same order of integration $I(1)$ then we have to check if they are cointegrated.

We employ the Johansen approach. Both the trace value and eigenvalue statistics indicate only one cointegrating equation at the level 0.05%. The result is presented in Table 7.

Table 7: Cointegration Test: Assume No Deterministic Trend Intercept (No Trend) in CE — No Intercept in VAR

Sample (adjusted): 2000Q4–2014Q1

Included observations: 54 after adjustments

Trend assumption: No deterministic trend (restricted constant)

Series: CA BSUS ER BI

Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.499483	69.51483	54.07904	0.0012
At most 1	0.333297	32.14064	35.19275	0.1029
At most 2	0.111809	10.24848	20.26184	0.6154
At most 3	0.068741	3.845771	9.164546	0.4356

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.499483	37.37419	28.58808	0.0029
At most 1	0.333297	21.89215	22.29962	0.0569
At most 2	0.111809	6.402711	15.89210	0.7416
At most 3	0.068741	3.845771	9.164546	0.4356

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 7: (Continued)

Unrestricted Cointegrating Coefficients (normalized by $b'S_{11}b=I$):

CA	BSUS	ER	BI	C
-2.75E-06	0.666628	-0.000121	-0.061902	2.303641
0.000271	-0.054124	0.001830	-0.065700	-17.15712
0.000154	-0.094854	7.83E-05	-0.340635	2.088735
0.000347	-0.027477	-0.000182	-0.057761	2.475240

Unrestricted Adjustment Coefficients (alpha):

D(CA)	5.104133	339.5938	-234.6168	-287.5552
D(BSUS)	-2.327720	-0.348905	0.192154	-0.339549
D(ER)	140.9466	-280.4107	-6.116746	-44.80646
D(BI)	0.136233	0.033953	0.183004	-0.048092

1 Cointegrating Equation(s): Log likelihood -1062.425

Normalized cointegrating coefficients (standard error in parentheses)

CA	BSUS	ER	BI	C
1.000000	-242431.0	44.09632	22511.82	-837759.7
	(36436.7)	(95.6145)	(17431.9)	(914370.)

Adjustment coefficients (standard error in parentheses)

D(CA)	-1.40E-05 (0.00059)
D(BSUS)	6.40E-06 (1.1E-06)
D(ER)	-0.000388 (0.00022)
D(BI)	-3.75E-07 (2.4E-07)

2 Cointegrating Equation(s):		Log likelihood	-1051.479		
Normalized cointegrating coefficients (standard error in parentheses)					
CA	BSUS	ER	BI	C	
1.000000	0.000000	6.728747 (1.37313)	-261.4782 (249.136)	-62739.20 (13060.5)	
0.000000	1.000000	-0.000154 (0.00039)	-0.093937 (0.07150)	3.196870 (3.74807)	
Adjustment coefficients (standard error in parentheses)					
D(CA)	0.091917 (0.05601)	-14.97750 (138.364)			
D(BSUS)	-8.81E-05 (0.00011)	-1.532840 (0.27631)			
D(ER)	-0.076297 (0.01835)	109.1358 (45.3325)			
D(BI)	8.82E-06 (2.4E-05)	0.088979 (0.05933)			

3 Cointegrating Equation(s):		Log likelihood	-1048.278		
Normalized cointegrating coefficients (standard error in parentheses)					
CA	BSUS	ER	BI	C	
1.000000	0.000000	0.000000	-2408.812 (929.680)	20722.57 (9397.69)	
0.000000	1.000000	0.000000	-0.044748 (0.07407)	1.284993 (0.74876)	
0.000000	0.000000	1.000000	319.1283 (143.516)	-12403.76 (1450.73)	
Adjustment coefficients (standard error in parentheses)					
D(CA)	0.055892 (0.06346)	7.276722 (137.737)	0.602424 (0.37427)		
D(BSUS)	-5.85E-05 (0.00013)	-1.551066 (0.27840)	-0.000341 (0.00076)		
D(ER)	-0.077237 (0.02109)	109.7160 (45.7820)	-0.530687 (0.12440)		
D(BI)	3.69E-05 (2.6E-05)	0.071621 (0.05702)	5.99E-05 (0.00015)		

Since the model contains cointegration relationship then we can proceed to VECM.

Vector Error Correction Model (VECM)

Since there is one cointegrating equation, then we can employ Vector Error Correction Model (Enders, 2004). We develop the VECM as follows

$$\Delta CA_t = \sum_{i=1}^m \alpha_{i1} \Delta BSUS_{t-i} + \sum_{i=1}^m \beta_{i1} \Delta ER_{t-i} + \sum_{i=1}^m \delta_{i1} \Delta BI_{t-i} + \sum_{i=1}^m \gamma_{i1} \Delta CA_{t-i} + \varepsilon_t$$

$$\Delta BSUS_t = \sum_{i=1}^m \alpha_{i2} \Delta BSUS_{t-i} + \sum_{i=1}^m \beta_{i2} \Delta ER_{t-i} + \sum_{i=1}^m \delta_{i2} \Delta BI_{t-i} + \sum_{i=1}^m \gamma_{i2} \Delta CA_{t-i} + \varepsilon_t$$

$$\Delta ER_t = \sum_{i=1}^m \alpha_{i3} \Delta BSUS_{t-i} + \sum_{i=1}^m \beta_{i3} \Delta ER_{t-i} + \sum_{i=1}^m \delta_{i3} \Delta BI_{t-i} + \sum_{i=1}^m \gamma_{i3} \Delta CA_{t-i} + \varepsilon_t$$

$$\Delta BI_t = \sum_{i=1}^m \alpha_{i4} \Delta BSUS_{t-i} + \sum_{i=1}^m \beta_{i4} \Delta ER_{t-i} + \sum_{i=1}^m \delta_{i4} \Delta BI_{t-i} + \sum_{i=1}^m \gamma_{i4} \Delta CA_{t-i} + \varepsilon_t$$

The results of the VEC are presented as below:

Table 8: Vector Error Correction Estimates

Vector Error Correction Estimates

Date: 01/25/16 Time: 07:14

Sample (adjusted): 2000Q4–2014Q1

Included observations: 54 after adjustments

Standard errors in () & t-statistics in []

Cointegrating Eq:	CointEq1			
CA(-1)	1.000000			
BSUS(-1)	-242431.0 (36436.7) [-6.65349]			
ER(-1)	44.09632 (95.6145) [0.46119]			
BI(-1)	22511.82 (17431.9) [1.29141]			
C	-837759.7 (914370.) [-0.91622]			
Error Correction:	D(CA)	D(BSUS)	D(ER)	D(BI)
CointEq1	-1.40E-05 (0.00059) [-0.02397]	6.40E-06 (1.1E-06) [5.59022]	-0.000388 (0.00022) [-1.76995]	-3.75E-07 (2.4E-07) [-1.53332]
D(CA(-1))	-0.137267 (0.14976) [-0.91660]	0.000385 (0.00029) [1.31327]	-0.145547 (0.05599) [-2.59934]	-0.000120 (6.2E-05) [-1.92521]

D(CA(-2))	0.132765 (0.13818) [0.96079]	0.000735 (0.00027) [2.71996]	-0.076702 (0.05167) [-1.48455]	2.32E-05 (5.8E-05) [0.40201]
D(BSUS(-1))	-121.4750 (98.3219) [-1.23548]	0.595751 (0.19223) [3.09923]	-44.65033 (36.7623) [-1.21457]	-0.040095 (0.04102) [-0.97752]
D(BSUS(-2))	133.4611 (83.1544) [1.60498]	0.093153 (0.16257) [0.57300]	-42.57148 (31.0912) [-1.36924]	-0.053290 (0.03469) [-1.53621]
D(ER(-1))	0.759623 (0.38776) [1.95901]	0.000713 (0.00076) [0.94007]	-0.077220 (0.14498) [-0.53262]	0.000127 (0.00016) [0.78762]
D(ER(-2))	-0.358679 (0.38730) [-0.92611]	-0.000261 (0.00076) [-0.34425]	0.000622 (0.14481) [0.00429]	0.000107 (0.00016) [0.66262]
D(BI(-1))	50.56291 (342.373) [0.14768]	0.737485 (0.66936) [1.10177]	83.03770 (128.012) [0.64867]	0.690716 (0.14283) [4.83604]
D(BI(-2))	222.6350 (332.285) [0.67001]	-0.661389 (0.64964) [-1.01809]	22.48862 (124.241) [0.18101]	-0.111138 (0.13862) [-0.80175]
R-squared	0.426873	0.655586	0.206658	0.522970
Adj. R-squared	0.324984	0.594357	0.065620	0.438165
Sum sq. resids	1.10E+08	421.3175	15409632	19.18261
S.E. equation	1565.083	3.059838	585.1805	0.652901
F-statistic	4.189584	10.70711	1.465262	6.166715
Log likelihood	-468.9075	-132.0916	-415.7837	-48.67822
Akaike AIC	17.70028	5.225613	15.73273	2.136230
Schwarz SC	18.03177	5.557110	16.06423	2.467728
Mean dependent	-132.4731	0.018653	48.59259	-0.113333
S.D. dependent	1904.936	4.804262	605.3800	0.871050
Determinant resid covariance (dof adj.)		2.99E+12		
Determinant resid covariance		1.44E+12		
Log likelihood		-1062.425		
Akaike information criterion		40.86759		
Schwarz criterion		42.37775		

The VEC results show that there exists a long-run relationship between budget surplus and current account balance. The coefficient for BSUS is significant at 5% and consistent with the hypothesis. Whereas, ER and BI are not significant.

Figure 14: Impulse Response Function

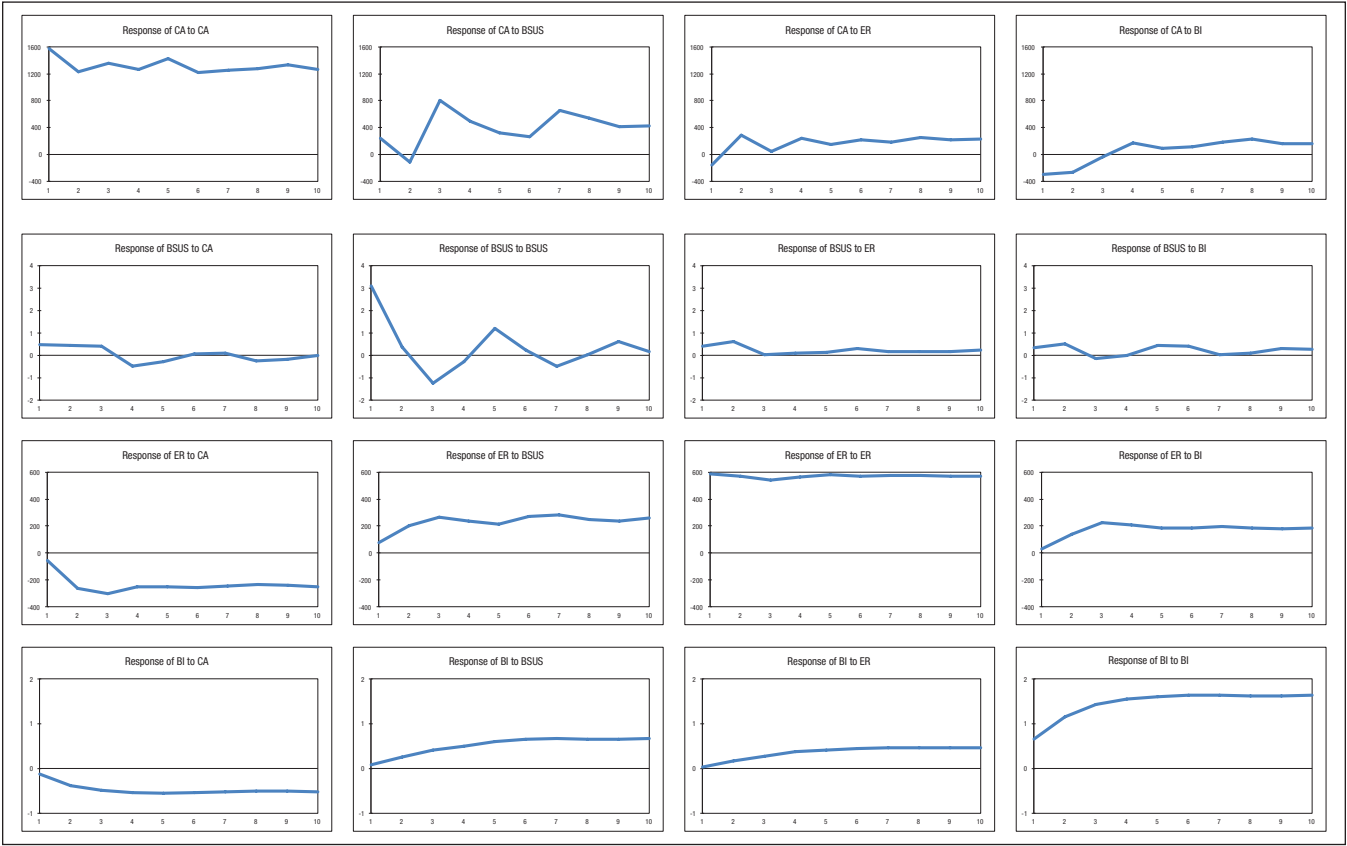


Figure 15: Cumulative IRF

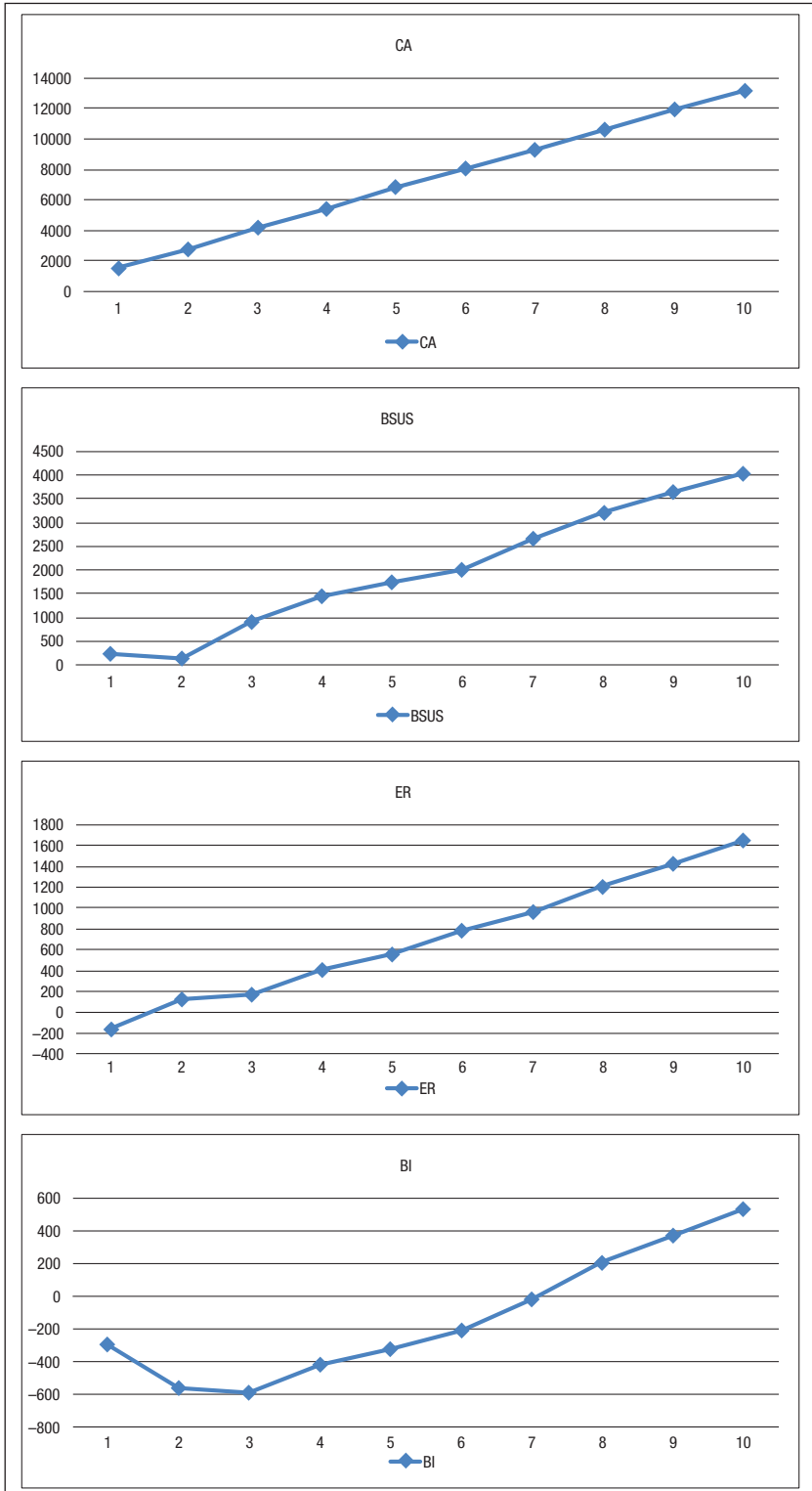
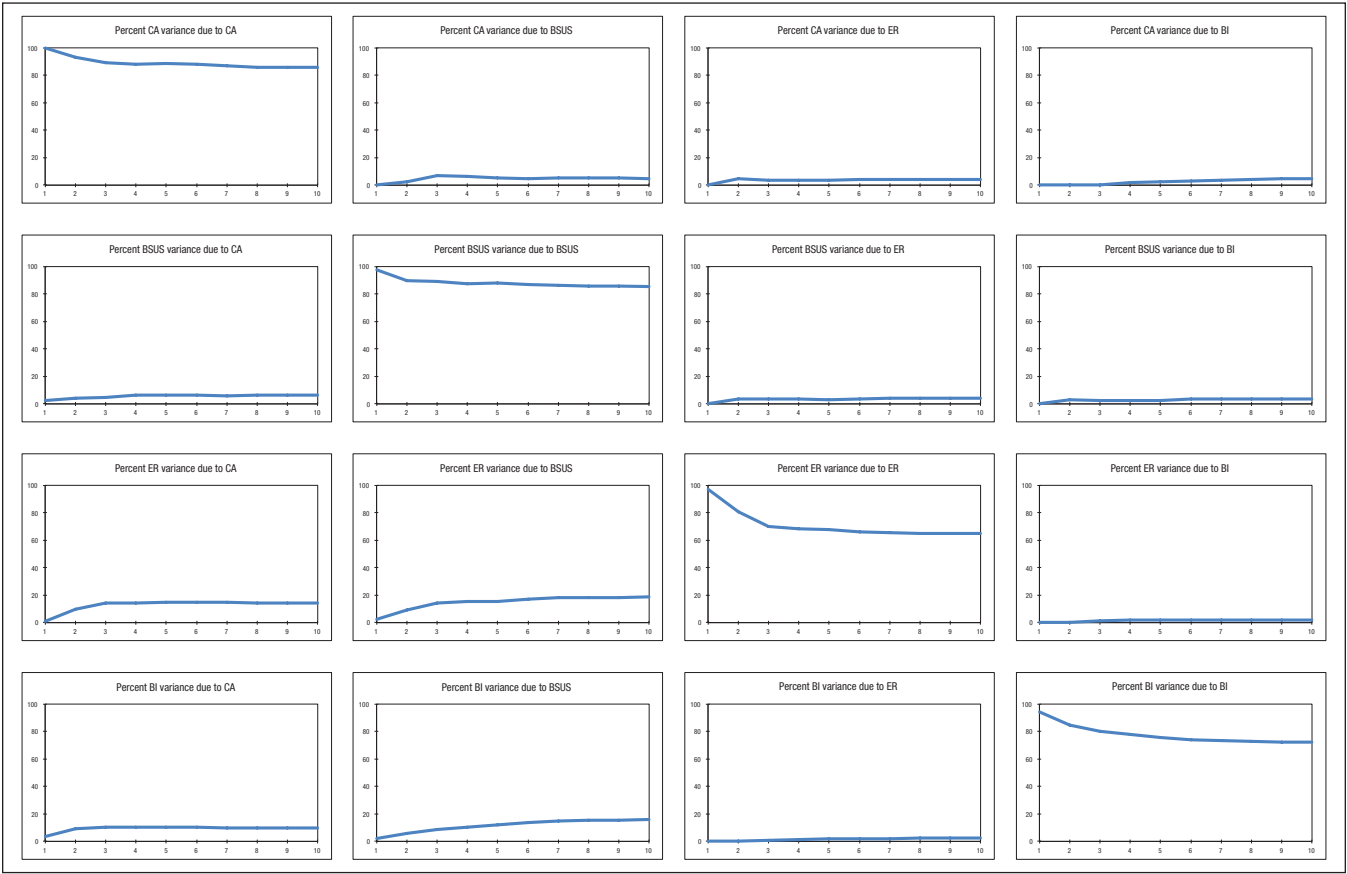


Figure 16: Variance Decomposition



Stability Test

The stability test indicates that the model is stable (Table 9 and Figure 17)

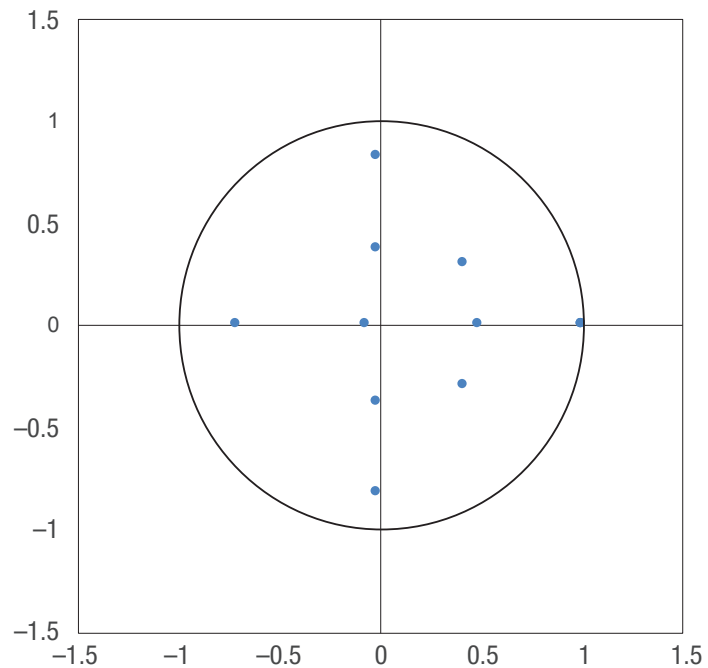
Table 9: VEC Diagnostics: Stability Condition Check

Roots of Characteristic Polynomial
Endogenous variables: CA BSUS ER BI
Exogenous variables:
Lag specification: 1 2

Root	Modulus
1.000000	1.000000
1.000000	1.000000
1.000000	1.000000
$-0.016159 - 0.823418i$	0.823576
$-0.016159 + 0.823418i$	0.823576
-0.717535	0.717535
$0.411971 - 0.297037i$	0.507889
$0.411971 + 0.297037i$	0.507889
0.492122	0.492122
$-0.018628 - 0.376486i$	0.376947
$-0.018628 + 0.376486i$	0.376947
-0.073727	0.073727

VEC specification imposes 3 unit root(s).

Figure 17: Inverse Roots of AR Characteristic Polynomial



LM Test

To ensure that we get the optimal lag length we employ autocorrelation with LM test. The result shows that there is no autocorrelation problem with the current lag length structure (Table 10).

Table 10: VAR Residual Serial Correlation LM Tests

VAR Residual Serial Correlation LM Tests

Null Hypothesis: no serial correlation at lag order h

Date: 01/25/16 Time: 07:26

Sample: 2000Q1–2014Q1

Included observations: 55

Lags	LM-Stat	Prob
1	18.54789	0.2928
2	21.77303	0.1507
3	14.16596	0.5864
4	15.74202	0.4711
5	18.94556	0.2715
6	16.13135	0.4438
7	11.70234	0.7642
8	20.14135	0.2139
9	15.83315	0.4647
10	16.13821	0.4434
11	13.57814	0.6301
12	36.26586	0.0027

Probs from chi-square with 16 df.

Impulse Response Function (IRF)

Because it is difficult to interpret the individual coefficients in the estimated VECM, then we employ the IRF to interpret the results (Gujarati, 1995).

Both the Impulse Response Function and cumulative IRF are presented in Figures 9 and 10. Both cumulative and IRF support our hypothesis.

Author's Note

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Notes

1. *The Economist*, "Capital Flows in Indonesia: No More Fragile," February 22, 2014, <http://www.economist.com/news/finance-and-economics/21596989-how-worlds-fourth-most-populous-country-weathering-emerging-market>; CNBC, "India and Indonesia: Not so bad after all?" February 6, 2014, <http://www.cnbc.com/2014/02/06/india-and-indonesia-not-so-bad-after-all.html>.
2. I owe Jeffrey Frankel for this explanation.
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26. I thank Dani Rodrik for emphasizing this argument.

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