Role of instability in affecting capital flight magnitude: An ARDL bounds testing approach

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Abstract

Capital flight resulting from hot money has been a popular issue recently. The effect of capital flight is unquestionably bad to the domestic economic condition. The current global economic slowdown exposes a bigger risk of capital flight to developing countries. Likewise, the causal relationship of capital flight and political stability as well as exchange rate stability is not clearly observed yet in the literature. This paper aims to analyse this issue and fill the research gap. Our paper extends previous studies by using another measure of political risk index, and also exchange rate stability has not been really examined by previous studies in the case of capital flight. A more focused study on one country may give a direct policy implication to the policymakers of the country, rather than a panel data study. We employed time-series data of Indonesia for 35 years from 1980 to 2015 and use ARDL procedure, which is really suitable for our research objectives and sample used, to analyse the data. We find that political risk plays a significant role in affecting the magnitude of capital flight. Furthermore, the results show that both capital flight and exchange rate stability are endogenous variables, and movement in one variable will affect the movement of another variable. Our main suggestion for the policy makers to prevent capital flight is to maintain political and exchange rate stability in the country. In short, preventing capital flight is all about maintaining domestic stability, either political stability or economic stability.

Keywords: Capital Flight; Political Stability; Exchange Rate Stability; ARDL bounds tests.

1 Introduction

The 1998 Asian financial crisis had caused massive capital flight from South East Asian countries, especially from Indonesia at that time. Statistics show that there were up to USD 26 billion capital flight going out from Indonesia on 1998. Surprisingly, capital flight on 1999 showed a very small amount compared to 2008, although the effect of the crisis still haunted the economy. To date, the government has not been able to solve the issue of capital flight, and statistics show that there is continuous negative capital flight from 2002, meaning every year there is quick capital flow out from the country.

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The problem of capital flight is that it affects the stability of financial system in the country due to the massive and sudden money flows out from the country. Capital flight usually will be highly related to so-called hot money inflows to the country. The effects of hot money are very similar to the effects of capital flight. The difference is that hot money is the term that is usually used to portray massive and sudden capital inflows into the country, while capital flight is the term used to represent massive and sudden capital outflows from the country. In this study, we will only use the term of capital flight, positive capital flight means inflows of capital, and negative capital flight depict outflows of capital from the country.

Capital flight has never been clearly explained in the economic theory, unlike most of the economic concepts. However, there are some alternative definitions proposed by economist. Our preferred definition, in regard to this study, is referred to Cuddington (1986) which define the term “capital flight” as short-term speculative capital outflows which involves "hot money" that responds to political or financial crises, heavier taxes, a prospective tightening of capital controls or major devaluation of the domestic currency, or actual or incipient hyperinflation. Moreover, since there is no clear theory on capital flight, there is no text-book explanation on what is the cause-effect of capital flight. For that, Le & Zak (2006) argued that if economic, political, and policy risk can affect capital flows in developing countries, the same factors are expected to be correlated with capital flight.

Due to the definitional problem, there are no theoritical standard measure of capital flight. There emerged few alternative measure of capital flight which has been developed by economist. Three most common measure used in the literature are broad measure (World Bank, 1985), non-bank measure (Morgan Guaranty, 1986), and narrow measure (Cuddington, 1986). Since we adopt the definition proposed by Cuddington (1986), we will use the measurement tools proposed by the same author. The narrow measure is focused on the hot money rather than the normal capital outflows. Hot money, is the money that flow into the country to benefit from short-term interest or fluctuation, and arguably hot money is the one that contribute to instability in the economy.

There has been many studies that look into capital flight and its cause and effect, but studies which focused on political variables are rather limited. Most of previous studies found that political instability is positively correlated with capital flight, althought there is study which found that political instability is insignificant in affecting capital flight. Moreover, studies also found that real exchange rate is negatively correlated with capital flight, implying that capital flight will increase when exchange rate depreciate. Again, some studies found that real exchange rate has no significant role on affecting capital flight.

However, most of previous study use regression techniques, rather than cointegration techniques to analyze capital flight and political instability. Also, no study, up to my utmost knowledge, have used exchange rate stability variable in their sample. Number of study on capital flight in indonesia is very limited, even though Indonesia is considered as one of the biggest developing country in the world. Therefore, our study aims to contribute to this research area on the mentioned issues.

From current economic perspective in Indonesia, it is believed that Indonesia is more vulnerable to capital flight, as mentioned by S&P analyst[3]. They mentioned that Indonesia's domestic markets aren't deep enough, which means it relies more on foreign funding compared with any other market in the region. It is believed as the reason why Indonesia has big amount of hot money within the country. Also, the recent currency fall in Indonesia exposes a bigger risk of capital flight (Financial Times, 2015[4]). The currency falls expose the risk of hot money withdrawal from the country, due to fear of further depreciation in the currency which also reduce the value of their assets in term of foreign currency.

Therefore, motivated by a) unclear theoretical definition of capital flight and its determinants, b) limited number of empirical studies especially in our sample, as well as conventional regression methodology used in previous studies, and c) current economic condition of Indonesia which expose the risk of capital flight, we aim to empirically analyse Indonesia's capital flight movement and its relationship with political and exchange rate instability. The choice of Indonesia is motivated by the relative size of its capital flight and its roles as one of the biggest emerging countries in the world. Specifically, our research questions are focused on examining the impact and role of government stability on capital flight, and also to observe the causal relationship between capital flight and exchange rate stability.

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[3] Bloomberg. (2015). Indonesia is more exposed to capital flight than Malaysia, says S&P. http://www.bloomberg.com/news/articles/2015-09-07/indonesia-more-exposed-to-capital-flight-than-malaysia-s-p-says

[4] FT. (2015). Indonesia's currency fall exposes risks of capital flight. http://www.ft.com/intl/cms/s/0/afdafa84-d431-11e4-b041-00144feab7de.html#axzz477F6KlIw.

We employed ARDL procedure to analyse our sample and answer our research question. The reason of choosing ARDL is because it is more suitable for our sample due to some reasons, including small number of observations and mix of I(0) and I(1) variables in the sample. The ARDL results show that political risk is an exogenous variable in affecting capital flight, and these two variables are significantly correlated. Furthermore, both capital flight and exchange rate stability turned out to be endogenous variables, which could indicate that there might be a bidirectional causal relationship between the variables. The result also shows that capital flight will increase when exchange rate become more volatile or unstable.

The rest of the paper is outlined as follows. The next section elaborates on the theoretical definition of capital flight, followed by reviews of empirical studies on capital flight and stability in section III. Section IV will discuss the methodology used in this research as well as the source of data. Section V discusses about the result and its implication, and lastly is the conclusion in the section VI.

2 Theoretical Underpinnings

Capital flight is a phenomenon which, though unobservable, is assumed to be widely prevalent in developing countries (Schneider, 2003). Unfortunately, capital flight is not well-defined by economic theory, unlike most concept in economics. Ketkar and Ketkar (1989) emphasize that the concepts of capital flight and that of its measure, in particular, are complex and elusive endeavours, because economic agents engaging in capital flight are likely to shroud such activity in secrecy, therefore measuring capital flight precisely is quite difficult.

However, there exist some alternative definition of capital flight, even though none of those definitions is universally accepted. For instance, Cuddington (1986) defines the term “capital flight” as short-term speculative capital outflows which involves "hot money" that responds to political or financial crises, heavier taxes, a prospective tightening of capital controls or major devaluation of the domestic currency, or actual or incipient hyperinflation. While, Schneider (2003) defined capital flight in his study as a part of outflow of capital which is motivated by economic and political uncertainty. He argued that his definition has its basis in the traditional definition in Kindleberger (1937) where capital flight was a real resource transfer motivated by such uncertainty. Kindleberger (1937) himself defined capital flight as a one-way flow caused by political and economic uncertainty.

Literature is also often defined capital flight as illegal transaction which occurs when exporters and importers keep capital abroad by falsification of trade documents (Bhagwati, 1974). Under this definition, capital flight only happens when investors transfer illegally earned foreign exchange out of the country. A further drawback of this definition is that it may include earnings kept abroad to evade quotas and tariffs. They are included in the estimation even though it is not possible to measure them statistically and it is therefore not possible to distinguish between the flight component and the component due to such evasions[5].

Despite the conceptual issue of capital flight, there are at least three distinct measure of capital flight have been widely used in the literature. The three commonly used measures have been developed by the World Bank (1985), Morgan Guaranty Trust (1986), and Cuddington (1986). Firstly, the "broad" measure or residual measure, introduced by World bank (1985), computes capital flight as the residual of capital inflow (increases in gross external debt plus direct foreign investment) and uses of capital (increases in official foreign currency reserves plus current account deficit). This method considers the difference between net capital inflow and uses of capital as a measure of capital flight, since any difference between the two essentially reflects some sort of unrecorded and unlawful use of capital. This residual measure includes assets of both the banking and non-banking sectors. The principal drawback of this measure is that it does not distinguish normal capital outflows, which are motivated by long-term interests, from non-normal capital flight, which is primarily motivated by short-run speculative interests (Alam & Quazi, 2003).

The "non-bank" measure also relies on the residual approach, except that it excludes from estimation all increases in short-term external assets of the private banking system (Morgan Guaranty, 1986). This measure makes a strong assumption that private banks do not engage in capital flight. Moreover, inter-bank transfers are not motivated by any flight considerations; rather, they are essential components of international financial intermediation. Critics such as Naylor (1987) have, however, argued that private banks do sometimes play a role in capital flight by exercising their ability to transfer funds to overseas accounts.

Thirdly, the "narrow" measure defines capital flight as the acquisition of short-term external assets by the non-bank private sector. Unlike the residual approach used in the two other measures, this measure uses the balance of payments (BOP) approach. This approach computes capital flight

[5] See Schneider (2003)

directly from the BOP data by adding the "errors and omissions" term to short-term capital outflows by the private non-bank sector (Cuddington, 1986). The main criticism of this method is that, although the "errors and omissions" term in the BOP account does consist of unrecorded short-term capital outflows, it also accounts for problems and inaccuracies in data collection. By excluding all long-term capital outflows from the estimation of capital flight, the narrow measure produces estimates that at best can be considered as a lower bound for capital flight.

However, this study tries to look beyond the debate of the definition of capital flight. Regardless of the definition, economists unquestionably agree that capital flight is not a good economic event for the financial stability in a country. Cheung et al (2015) pointed out that excessive capital inflows will overheat the domestic economy, while massive outflows will drain needed resources from development projects and impose pressure on monetary and exchange rate policies. Cuddington (1986) pointed out several disadvantages of capital flight. He argued that capital flight will destabilize interest rate and exchange rate and reduces money supply in the country. Capital flight will also reduce domestic investment and drive up the marginal costs of foreign borrowing, he added.

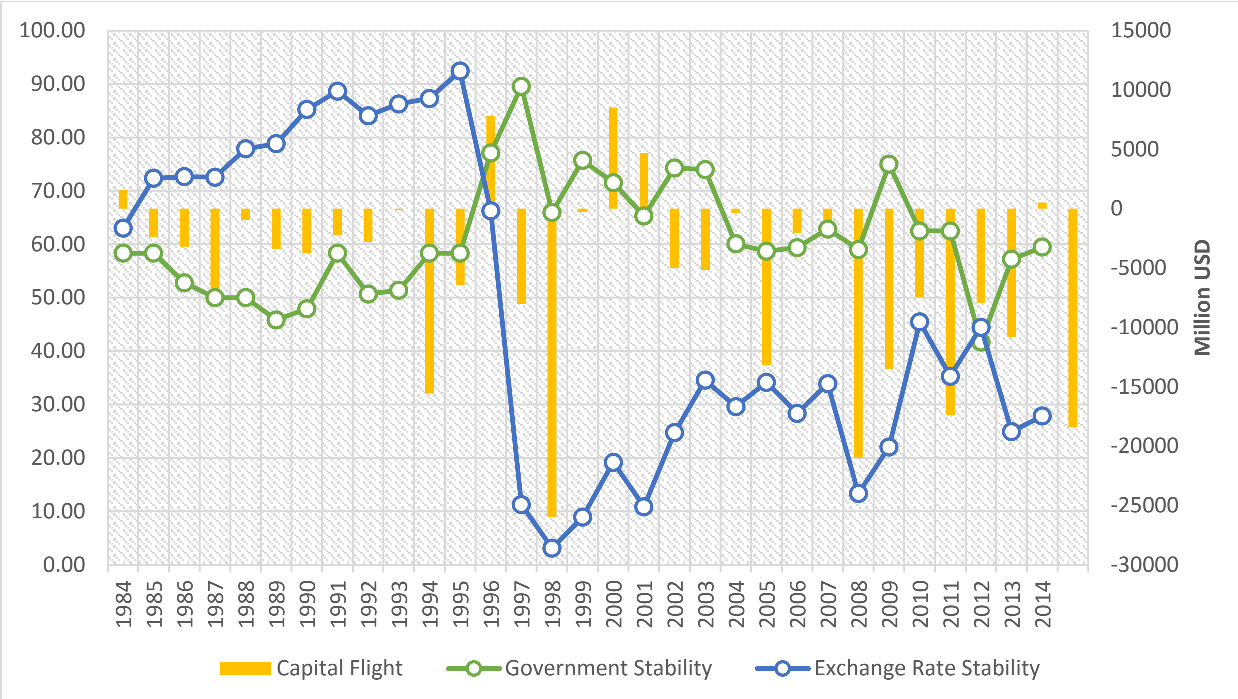
Talking about the theoretical basis of capital flight, there are none theory has clearly explained the cause and effect of capital flight. Therefore, since there is no clear theory on capital flight and its causes and effects, the conventional theory of capital flows seems appropriate to explain the capital flight and its relationship with stability. International finance theory explains that capital flows will depend on many macroeconomics variables, including interest rate, exchange rate movement, inflation rate, economic growth, and some other variables. Moreover, any country risk variables also affect the confidence of foreign investors in investing in the country. Specifically, variables such as political stability, rule of law, property rights and corruption play important roles on capital flows. Also, portfolio-choice theory suggests that maximizing relative risk-adjusted expected return drives the choice between domestic assets and foreign assets (flight of capital). The domestic determinants of relative expected return include risks, capital productivity, and their underlying determinants, notably the macroeconomic environment.

Although, these theories are intended to explain the movement of normal capital flows, but we believe that the same variables somewhat have a significant role in affecting the movement of capital flight. As also pointed out by Le & Zak (2006), if economic, political, and policy risk affect the magnitude and direction of capital flows in developing countries, we would expect changes in these factors to be correlated with capital flight episodes.

The above theory explains that capital flight is caused by economic, political and policy instability. However, it is argued that, in the case of developing country, capital flight may be the cause of instability in the country, because the country may loss big amount of resource which may distract domestic economic condition of the country. This unclear causal relationship between capital flight and instability concerns the policy makers regarding the appropriate policy needed in order to prevent capital flight.

2.1 Instability and Capital Flight in Indonesia

Capital flight in Indonesia has been a hot issue for the last few years. The presence of hot money in developing countries, specifically in Indonesia, has made capital flight worsen. From graph 1, it can be seen that capital flight in Indonesia was very small in 1980's and early 1990's. Big amount of capital flight was started on 1994 where there was a ban done by government to some local media because of a very strong criticism toward the government at that time. It might affect the level of confidence of investors which furthermore bring out their money out of the country. While on 1998, as we know, there was Asian financial crisis which depreciate Rupiah by almost 500%. The effect of this crisis was unquestionably very bad to the South East Asia, including Indonesia.



Graph 1. Government Stability, Exchange Rate Stability and Capital Flight in Indonesia

For the last few years, since 2008, there are continuous big amount of capital flight flow out of the country. It might be caused by lack of business confidence in the country. Analyst said the capital flight in the past several years took place because of panic selling rather than Indonesia's economic condition[6]. It is believed that said Indonesia's fundamental macro-economy was still resilient as the inflation rate was under control, which should be maintained by central bank of Indonesia, amid massive outflows from the markets. It also might cause by high amount of hot money inflow toward the country, which in affect also cause a big amount of capital flight.

Talking about the government stability of Indonesia, they face a downward trend of government stability index since 1998. It is argued due to a more open political system after the reformation on 1998, which ended the 32-years regime of Soeharto, and it was also the same reason on why government stability is less volatile before 1998.

Whereas, the measure of exchange rate stability in Indonesia shows a very stable before the Asian financial crisis. The Asian financial crisis has affected Indonesia exchange rate very badly. After the crisis, the level of exchange rate stability has never gone back to its previous stable level.

[6] Jakarta Post. (2015). RI 'strong enough to avoid capital flight'. http://www.thejakartapost.com/news/2015/09/09/ri-strong-enough-avoid-capital-flight.html

It is believed because Indonesia has changed their exchange rate regime after the crisis, from soft peg (pre-1998) to managed floating regime (post-1998). But because of that changes, the exchange rate has been more volatile than before, although it shows an upward trend in the long run.

3 Empirical Literature

There are many literatures that tries to look into relationship of capital flight and macroeconomics variables, even though only some of them tried to study on the role of political and governance variables on capital flight. Moreover, we are unable to find any empirical literature on the relationship between capital flight and exchange rate stability, unfortunately. Many previous literatures only studied the effect of real exchange rate on capital flight, rather than the exchange rate stability.

A study done by Le and Zak (2006) has studied on the relationship between capital flight and political risk. They also added other types of risk into the sample, namely economic risk and policy variability. They employed a panel data of 45 developing countries over 16 years from 1976 until 1991 and by using Feasible Generalized Least Squared (FGLS), they found that all three types of risk have a statistically significant impact on capital flight and political instability is the most important factor associated with capital flight. This findings confirmed the findings of Fedderke and Liu (2002) and Collier et al. (2003) which found that political stability is associated with lower capital flight.

Another study which found similar result is done by Lensink et al. (2000), which utilize a large cross-sectional data set with 79-89 countries covering 1971-1991. They examine the impact of six political variables (instability, political rights, civil liberties, a war dummy variable, democracy, and institutional structure) on three different measures of capital flight. They conclude that on the basis of the analysis, they found all political variables are positively related to capital flight, no matter how capital flight is measured, which indicate that a higher political instability will lead to an increased capital flight.

A more focused study by Rahnama-Moghadam et al. (2002) in term of sample found that the degree of openness, and lack of political stability (measured by the government's perceived need to be well armed) are positively associated with capital flight. They tested the model by employing ordinary least squares method and using data from six emerging countries from East Asia Region for the period of 1987 – 1997. Furthermore, using a different proxy for political risk index, Le &

Rishi (2006) studied the role of corruption, the proxy for political risk, in impelling capital flight in a broad sample of 69 countries over the period 1995–2001. The empirical results emerging from the analysis strongly suggest that corruption affects the magnitude of capital flight, controlling for the return differential, GDP, and standard economic risk parameters.

Interestingly, Cheung et al. (2015) found a contradicting result regarding political instability and capital flight. They tested political risk index on two different measure of capital flight, namely the broad measure and the trade mis-invoicing measure, using the two-stage least squares and found that political risk has no significant effect on China's capital flight over the period of 1998 to 2014. Moreover, they also tested for the impact of exchange rate volatility in capital flight. The result suggested that the exchange rate volatility exhibits a statistically significant positive effect on capital flight since the global financial crisis.

Looking at the role of exchange rate on capital flight, Sheet (1996) presents rapid exchange rate depreciation, and low real interest rates are associated with increased capital flight. Similarly, Collier et al. (1999) show, in a cross section of developed countries, that capital flight is correlated with policy distortions resulting in exchange rate overvaluation. These confirmed the findings of pioneer research in capital flight, Cuddington (1986), that capital flight is caused by exchange rate overvaluation and expectations. Another study by Alam and Quazi (2003) examined the determinant of capital flight in Bangladesh using time series data for the period of 1973 – 1999. By employing ARDL procedure, they conclude that Among the determinants of capital flight from Bangladesh, political instability appears to be the most consequential one. While, real exchange rate appears to have only insignificant effects on capital flight.

In the case of Indonesia, there have been a few studies looking into the determinant of capital flight, although no studies on causality between capital flight and instability can be found. For instance, Istikomah (2003) analyse the determinant of capital flight by using Ordinary Least Square (OLS). She used quarterly data from 1990 to 2000 and used broad measure of capital flight developed by World Bank (1985). She found that real exchange rate is negatively correlated with the exchange rate, meaning if the real exchange rate depreciates, capital flight will increase. Furthermore, she introduced a political dummy variable to indicate political instability if dummy equal to one. Surprisingly, the result showed a negative coefficient which imply that when there is political instability in the country, capital flight will reduce. Hutasoit (2008) also found the same result in her OLS analysis using a longer sample period from 1990 – 2004. This finding regarding political instability is completely contradicted to the theory, and other international research papers. In addition, a study by Maski and Wahyudi (2012) found that real exchange rate is not significant in explaining capital flight movement in Indonesia for the period of 2000 – 2009.

One of the limitation of empirical research on capital flight is that different studies will use different measure of capital flight. Thus, the result might depend on the measure used in the sample. Moreover, most of the previous empirical research have used either the ordinary least squares (OLS) single equation method or the two stages least squares (2SLS) simultaneous equations method. It is well established that if time-series variables used in regressions are not tested against the presence of non-stationarity, the estimated regression results are possibly spurious and, hence, may not be reliable (Alam and Quazi, 2003). Therefore, we would make an attempt to improve the methodology used on empirical research, in addition to our contribution on the topic and sample used.

4 Data and Methodology

4.1 Data

The analysis will use 35 years' historical data from 1980 to 2015 which are collected from various sources. There are eight variables in our analysis; three variables are our main focused variables, namely capital flight, government stability which is a proxy for political risk, and exchange rate stability; another three variables are variables that are believed to be significant in affecting capital movement, which are domestic interest rate, domestic stock index, and foreign interest rate which is represented by U.S. interest rate. While the other two variables are control variables, namely inflation rate and GDP growth. Table 1 shows the source of the data, as well as the type and measure of the data.

For capital flight, our preferred definition of capital flight is the definition proposed by Cuddington (1986), which defined capital flight as short-term speculative capital outflows which involves "hot money" that responds to political or financial crises, heavier taxes, a prospective tightening of capital controls or major devaluation of the domestic currency, or actual or incipient hyperinflation. The reason for this selection is because our focus is on the capital flight which come from hot money and speculative activities, rather than the broad definition of capital flight. For that, the narrow measure of capital flight is selected as it is also the one that proposed by

Cuddington (1986). The source of data for this variables is Oxford Economics which use the narrow, also known as BOP approach, to measure the capital flight.

4.2 Methodology

This paper adopted autoregressive distributed lag (ARDL) framework by Pesaran and Shin (1995, 1999), Pesaran et al. (1996) and Pesaran (1997) to establish the direction of causation between variables. This method is selected due to some reason. Firstly, it can fulfil our objectives to find the causality relationship between the variables. Secondly, it does not impose the restriction that all under the consideration data series have the same order of integrations and it is applicable irrespective of whether the regressors are I(0) or I(1) order of cointegration (Pesaran and Pesaran, 1997). Since we have a mix of I(0) and I(1) variables in the sample, this is an advantage for us, as compared to the conventional Granger causality test of which it requires all the variable to be stationary in first difference form only.

Name of Variables	Source	Measurement	Type of Variable	Abbreviations
Capital Flight	Oxford Economics	Million USD	Focus Variable	KF
Government Stability	ICRG Index by PRS Group	0 (high risk) - 100 (low risk)	Focus Variable	GS
Exchange Rate Stability	Trilemma Indexes by Aizenman et al. (2010)	0 (high risk) - 100 (low risk)	Focus Variable	XRS
Indonesia's Interest Rate	Oxford Economics	Percentage	Control Variable	IDINT
U.S. Interest Rate	Oxford Economics	Percentage	Control Variable	USINT
Indonesia Stock Index	Indonesia Stock Exchange	IDR	Control Variable	IDX
Inflation	Oxford Economics	CPI level	Control Variable	INF
Real GDP	Oxford Economics	Million USD	Control Variable	GDP

Table 1. Source of Data and Its Measurement

Thirdly, Pesaran and Shin (1999) also note that the ARDL-based estimation procedure can be reliably used in small samples to estimate and test hypotheses on the long-run coefficients, which mean the ARDL approach can avoid the pretesting problem implicitly involved in the cointegration analysis of the long-run relationships[7]. Therefore, this is another advantage for our sample, since the sample used in this analysis is a 35 years' annual observations. Furthermore, the endogeneity is less a problem in ARDL framework because it is free of residual correlation (Jalil et al., 2013). Pesaran and Shin (1999) have shown that the ARDL method can distinguish between dependent and explanatory variables and the estimation is possible even when the explanatory variables are endogenous (Pesaran and Pesaran, 1997; Pesaran et al., 2001). Lastly, the ARDL procedure avoids the larger number of specification to be made in the conventional cointegration test which include decisions regarding the number of endogenous and exogenous (if any) to be include, as well as the optimal number of lags to be specified (Duasa, 2007). With ARDL, the procedures will select its own lag, therefore, it is possible to have different optimal lags for different variables, which is not possible in the standard cointegration test. Because of these mentioned advantages and the conditions of the sample used, Granger causality test looks unsuitable for our sample and ARDL bound testing has been selected for that.

The first step for our analysis before going to the ARDL test is to test the stationarity of each variable, whether the variables are stationary at level form (I(0)) or difference form (I(1)). Determining the stationary of the variables has been regarded as pre-requisite step for many methods in econometrics, since it may help in selecting the most appropriate method. Although, ARDL does not require any stationary test, examining the sequence of the integration may assist in determining the suitability of the method (Sulaiman & Abdul-Rahim, 2013). To test the stationarity of each variable, three test, namely ADF test, PP test and KPSS test, has been carried out.

The ARDL test basically involves a few steps to get the complete result of long run relationship and short run dynamic. First, we need to test the existence of long-run relationship among the variables. This is estimated through ordinary least square method with each variable in turn as a dependent variable and F-test will be conducted for each regression model to test the existence of long run relationship among the variables. One of the initial equation for this study can thus be presented in the following ARDL form:

[7] See Cavanaugh et al. (1995) and Pesaran (1997)

$$
\begin{aligned}
\Delta lnKF_t = \alpha_0 &+ \sum_{i=1}^{k} \quad {}_1\, \Delta lnKF_{t-i} + \sum_{i=1}^{k} \alpha_2\, \Delta lnGS_{t-i} + \sum_{i=1}^{k} \alpha_3\, \Delta XRS_{t-i} + \sum_{i=1}^{k} \alpha_4\, \Delta lnIDINT_{t-i} \\
&+ \sum_{i=1}^{k} \alpha_5\, \Delta lnUSINT_{t-i} + \sum_{i=1}^{k} \alpha_6\, \Delta lnIDX_{t-i} + \sum_{i=1}^{k} \alpha_7\, \Delta lnGDP_{t-i} + \sum_{i=1}^{k} \alpha_8\, \Delta lnINF_{t-i} \\
&+ \gamma_1 lnKF_{t-1} + \gamma_2 lnGS_{t-1} + \gamma_3 lnXRS_{t-1} + \gamma_4 lnIDINT_{t-1} + \gamma_5 lnUSINT_{t-1} \\
&+ \gamma_6 IDX_{t-1} + \gamma_7 lnGDP_{t-1} + \gamma_8 lnINF_{t-1} + \varepsilon_t
\end{aligned}
$$

Where k = maximum lag order (1)

As suggested by Pesaran and Shin (1999) for annual data, we choose a maximum of 2 number of lag order for our annual observations. From this, the orders of the lags in the ARDL model are selected by either the Akaike Information criterion (AIC) or the Schwarz Bayesian criterion (SBC), before the selected model is estimated by ordinary least squares.

The null hypothesis for the F-test is $H_0\colon \gamma_1 = \gamma_2 = \gamma_3 = \gamma_4 = \gamma_5 = \gamma_6 = \gamma_7 = \gamma_8 = 0$ which indicate no long-run cointegration among the variables, against alternative hypothesis that long-run cointegration does exist among the variables ($H_1\colon \gamma_1 \neq \gamma_2 \neq \gamma_3 \neq \gamma_4 \neq \gamma_5 \neq \gamma_6 \neq \gamma_7 \neq \gamma_8 \neq 0$). Pesaran et al. (2001) provide two sets of asymptotic critical values to the two polar cases: all regressors are purely I(0) or purely I(1). These two sets of critical values create a band that covers all possible classification of the variables into I(0), I (1) or fractionally integrated. If the computed F-statistic falls outside the critical bounds, a conclusive inference can be drawn irrespective of the order of integration of the variables. However, if the computed F-statistic falls within these bounds, inference depends on whether the underlying variables are I(0), I(1) or fractionally integrated. Thus, the rejection of the null hypothesis will allow us to draw the conclusion whether there exists a long-run level relationship between y and x. If the F test coefficient falls below the respective lower critical values (I(0) critical values), we cannot reject the null hypothesis of the F-test, which imply that there exist no long-run cointegration among the variables. Conversely, if the F test statistics exceeds the upper critical values, we conclude that there exist a long-run relationship between the variables, regardless of the order of integration of the variables.

If there is evidence of the existence of long-run cointegration among the variables, the next step is to estimate the causal long-run relationship (endogeneity and exogeneity) and the short-run dynamic by using the following ARDL error correction model:

$$\Delta lnKF_t = \alpha_0 + \sum_{i=1}^{k} \theta_i \, \Delta lnKF_{t-i} + \sum_{i=1}^{k} \beta_i \, \Delta lnGS_{t-i} + \sum_{i=1}^{k} \varphi_i \, \Delta XRS_{t-i} + \sum_{i=1}^{k} \omega_i \, \Delta lnIDINT_{t-i} + \sum_{i=1}^{k} \rho_i \, \Delta lnUSINT_{t-i} + \sum_{i=1}^{k} \delta_i \, \Delta lnIDX_{t-i} + \sum_{i=1}^{k} \lambda_i \, \Delta lnGDP_{t-i} + \sum_{i=1}^{k} \varpi_i \, \Delta lnINF_{t-i} + \phi ECT_{t-1} + \upsilon_t \quad (2)$$

Where, the ECT represent the lagged error correction term of which its coefficient (ϕ) represents the speed of adjustment back to long run equilibrium after a short run shock. Thus, a negative significant coefficient of the ECT term is required to ensure the existence of a cointegration and adjustment of disequilibrium in the model (Narayan, 2004). The higher the magnitude of the ECT term means the better the speed of adjustment (Coakley et al., 2004).

In addition to the ARDL procedure, we adopt a simulation process by running variance decompositions (VDC) and impulse response functions (IRF) for further inferences. VDC and IR serve as tools for evaluating the dynamic interactions and strength of causal relations among variables in the system (Duasa, 2007). Variance Decomposition (VDC), an out of sample causality test, partitions the variance of the forecast error of a certain variable into proportions attributable to innovations or shocks in each variable in the system including its own (Masih and Masih, 1995, 1996). This means VDC can provide relativity between the variables in the system. A variable that is optimally forecast from its own lagged values will have all its forecast error variance accounted for by its own disturbances (Sims, 1982). Since the frequency of data used in the sample are annual data, the time horizon selected in the VDC are 3, 5, and 10 years in order to determine the degree of exogeneity/endogeneity of the variables. Moreover, the IRF trace the directional responses of the variables to a one standard deviation shock of another variable. The IRF are normalized in such a way that zero represents the steady state value of the response variable (Masih and Masih, 1995, 1996). This means we can observe the persistence of capital flight and other variables to variation in other variables.

5 Result Discussion

As explained before, prior to the ARDL procedure, we conducted unit root test for each variable, in its level form and first difference form, using three type of test, namely Augmented

Dickey-Fuller (ADF), Phillip Perron (PP), and Kwiatkowski–Phillips–Schmidt–Shin (KPSS) test. Although ARDL procedure does not require any unit root test, this additional step could convince whether ARDL procedure would be suitable to use. The results in table 2 show that there is conflict of result between the test. However, regardless of the test used, the results show a mixture of I(0) and I(1) regressors in the sample. Therefore, the ARDL testing could be used, rather than the standard time-series techniques which require all regressors to be I(1).

In any time-series techniques, finding cointegration among the variables in the sample is a requirement before finding the long- and short-run dynamic of the model. Cointegration among the variables imply that there exist long-run i.e. theoretical relationship among the variables. The standard time series technique has two type of test to examine the cointegration among the variables, namely Engel-Granger and Johansen test. We conducted these two test to see whether we can get long-run cointegration by using time series standard techniques. Again, this step is not necessary for ARDL procedure and we conducted these additional step to convince us more that ARDL procedure is the most suitable techniques to be used in our sample.

Variables	**ADF Test**			**PP Test**			**KPSS Test**		
	T-stat	C.V	Result	T-stat	C.V	Result	T-stat	C.V	Result
				Logarithm Transformed Variables					
LKF	-2.4990	-3.6428	NS	-6.6104	-3.3861	S	.15688	.21779	S
LGS	-2.2333	-3.5098	NS	-2.8861	-3.5387	NS	.14503	.21779	S
LXRS	-2.8305	-3.6861	NS	-3.1386	-3.6494	NS	.14488	.21779	S
LIDINT	-2.2117	-3.6428	NS	-2.8504	-3.3861	NS	.13702	.21779	S
LUSINT	-1.0325	-3.6428	NS	-1.6384	-3.3861	NS	.14011	.21779	S
LIDX	-1.9857	-3.6376	NS	-2.1311	-3.5341	NS	.13578	.21779	S
LGDP	-2.3163	-3.5631	NS	-1.4014	-3.3861	NS	.12626	.21779	S
LINF	-1.3237	-3.5631	NS	-1.4496	-3.3861	NS	.11476	.21779	S
				First-differenced Transformed Variables					
DKF	-3.4418	-2.9094	S	-20.4781	-2.9308	S	.20172	.37748	S
DGS	-4.3353	-3.0422	S	-8.9076	-2.9447	S	.15129	.37793	S
DXRS	-2.8395	-2.8726	NS	-11.0994	-2.9270	S	.18849	.37748	S
DIDINT	-2.9676	-2.8091	S	-8.0919	-2.9308	S	.18253	.37748	S
DUSINT	-2.6607	-2.9094	NS	-3.9235	-2.9308	S	.18740	.37748	S
DIDX	-2.5059	-2.9556	NS	-6.1479	-2.9605	S	.20030	.37748	S
DGDP	-3.1107	-2.8379	S	-4.3067	-2.9308	S	.15857	.37748	S
DINF	-3.7268	-2.8379	S	-4.5844	-2.9308	S	.15376	.37748	S

NS denoted non-stationary, S denoted stationary

Table 2. Result of Unit Root Test

Engel-Granger test seems to be unable to test the long-run cointegration among our variables, as it gave us no critical value because Engel Granger critical value is not available for number of our regressors, although it gave us the test statistics. Whereas, the Dickey Fuller critical value for unit root test is not valid for cointegration, because it is only valid to test for unit roots on actual variables, and not on residual of regression model. Nonetheless, MacKinnon (1990) proposed a set of critical value for cointegration test, and his critical value for our model is −4.97684. Using this critical value and compared it to our result, we are unable to reject the null hypothesis of residual is non-stationary which imply that there is no cointegration among the variables. Thus, we conclude that the initial result is inconclusive, and even by using MacKinnon critical value, we are unable to reject the null hypothesis of no cointegration.

While, Johansen test shows erratic result among their determinant. Based on Maximal Eigenvalue and Trace of the stochastic matrix, it shows that there is five cointegration among the variable, and based on Maximized LL, AIC, and SBC, the results show that there is eight, seven, and seven cointegration, respectively. This result, we believe, is not reliable because often times Johansen test will give only one or two cointegration. Therefore, we conclude that the result is unreliable. The result for Engel-Granger and Johansen test is shown in table 3 and 4, respectively.

Selection Criteria	**T-statistic**	**AIC**	**SBC**	**Critical Value**	**Decision**
ADF(1)	-2.9728	-36.0080	-37.2269	*NONE*	Inconclusive
ADF(2)	-3.2825	-35.9671	-37.7954	*NONE*	Inconclusive
ADF(3)	-2.7172	-36.9505	-39.3883	*NONE*	Inconclusive
ADF(4)	-2.2736	-37.9505	-40.9977	*NONE*	Inconclusive
ADF(5)	-2.7305	-37.6654	-41.3220	*NONE*	Inconclusive

Table 3. Result of Engel-Granger Cointegration Test

Because of the inconclusive and erratic result from the standard cointegration test, it gave us permission and more confidence to proceed with the ARDL procedure. As explained in previous section, the first step in ARDL procedure is to examine the long-run cointegration among the variables. For that, we conducted F-test for each OLS model where each variable act as dependent variable alternately, meaning there will be eight regression model and eight F-test for each regression model since we have eight variables in the sample. The result for F-test statistics, as well as the lower bound and upper bound critical value proposed by Pesaran et al. (2001), are shown in table 5. Based on table 5, we can see that there is one F-test statistic that exceed the upper critical value, which allow us to reject the null hypothesis of no cointegration and accept that there is long-run theoretical relationship among the variables, ruling out the possibility of a spurious relationship. ARDL procedure allow us to proceed to the next step as long as we could find at least one cointegration among the variables.

Selection Criteria	**Number of Cointegrating Vectors**
Maximal Eigenvalue	5
Trace	5
Maximized LL	8
AIC	7
SBC	7
HQC	7

Table 4. Result of Johansen Cointegration Test

Dependent Variable	**F-statistics**	**Critical Value: Lower Bound**	**Critical Value: Upper Bound**	**Decision**
Capital Flight	1.6697	2.9347	4.4867	No Cointegration
Government Stability	0.7733	2.9347	4.4867	No Cointegration
Exchange Rate Stability	2.1604	2.9347	4.4867	No Cointegration
Indonesia Interest Rate	1.6407	2.9347	4.4867	No Cointegration
US Interest Rate	10.8359	2.9347	4.4867	Cointegrated
Stock Index	1.0959	2.9347	4.4867	No Cointegration
GDP	1.7511	2.9347	4.4867	No Cointegration
Inflation	1.6020	2.9347	4.4867	No Cointegration

*Critical values at 95% level of significance

Table 5. ARDL Cointegration Test

After establishing the long-run cointegration among the variables, we conducted the next step i.e. to find the endogeneity and exogeneity of each variable, as well as the short-run dynamic of the model. It is done through running the ARDL version of error correction equation, whereby each variable act as dependent variable interchangeably, meaning there are eight error correction equation and eight error correction term which will be used as basis to determine the causal relationship and the short-run dynamic. The result of the error correction equations are shows in table 6 below.

Variable	Coefficient	T-statistics	P-value	Decision
ECT of Capital Flight	-1.7036	-9.4943	0.000	Endogenous
ECT of Exchange Rate Stability	-1.5131	-8.8366	0.000	Endogenous
ECT of Government Stability	-0.45677	-1.6581	0.120	Exogenous
ECT of Stock Index	-1.4692	-6.061	0.000	Endogenous
ECT of Indonesia Interest Rate	-0.85381	-6.8287	0.000	Endogenous
ECT of US Interest Rate	-0.35790	-4.3883	0.562	Exogenous
ECT of GDP	-0.023898	-0.67789	0.507	Exogenous
ECT of Inflation	0.029593	1.5336	0.144	Exogenous

Table 6. Error Correction Term of ARDL Procedure Selected Based on SBC

The causal relationship among the variables is determined by the significance of error correction term (ECT) in each model. If the ECT is significant, it implies that the dependent variable in the model is an endogenous variable, and if the ECT is insignificant, it implies that the dependent variable of the model is an exogenous variable. Our results show that capital flight, exchange rate stability, stock index, and domestic interest rate are endogenous variable, while the other variables, namely GDP, inflation, foreign interest rate and government stability is exogenous variable. The exogenous variables are the leaders and endogenous variables are the followers, implying that endogenous variables will follow exogenous variables i.e. endogenous is dependent and exogenous is independent variables. From these results, we can conclude that capital flight, exchange rate stability, stock index, and domestic interest rate follow the movement of the exogenous variables.

The coefficient of error correction term indicates the speed of adjustment of disequilibrium in the model, and the higher the magnitude of the coefficient means the better the speed of adjustment. Also, the negative sign in the coefficient confirmed the existence of cointegration. All coefficients have the correct sign, except the level of inflation, which may indicate that inflation is not co-integrated among the variables. Moreover, the coefficient of ECT of capital flight and exchange rate stability is -1.7036 and -1.5131, respectively, which imply a fast speed of adjustment compare to other variables. It is possibly due to the nature of capital and exchange rate market which is really reactive to any information in the market, indicating a fast reaction from capital flow and exchange rate movement to any new information either good or bad information. Whereas, the coefficient of ECT of government stability and real GDP is -0.45677 and -0.023898, respectively. It indicates a very slow speed of adjustment to any disequilibrium in the model. This possible because these two variables are affected by many other variables, hence if there is any disequilibrium in the model, it might take some times for these two variables to get back to equilibrium.

However, from the ARDL result, we could not determine the relative exogeneity and endogeneity of each variable in our sample. Therefore, we decided to conduct the additional steps which are VDC and IRF simulation to see the relative exogeneity and endogeneity, and to see how long it takes for the variables to go back to equilibrium if there is a shock in one of the variables.

Before conducting the additional VDC and IRF simulation, we need to conduct this to see the VAR order of our variables. We selected two as the optimum VAR order of lag because that is the highest number that we can enter into the test, possibly due to small number of observations. The result (table 7) show a conflicting result between AIC and SBC, as expected. Although, AIC and SBC is conflicting, the adjusted LR test show one as corresponding lag order. Besides, it is also suggested that when the result is conflicting, take the lower order of lag. At last, we choose one as the VAR order to proceed with the VDC and impulse response simulation.

Selection Criteria	**Maximum lag order**	**Optimum Lag Order**
AIC	2	2
SBC	2	1
Adjusted LR Test	2	1

Table 7. VAR Lag Order Selection

After defining the VAR order, we can proceed to conduct VDC and IRF step. The VDC result show that US interest rate and government stability are the most exogenous variables, while capital flight and domestic interest rate are the most endogenous variables in the short-, medium-, and long-term period. However, the result for inflation is contradicting to result from the ARDL error correction equation. In the ARDL result, inflation is shown as an exogenous variable, while in the VDC it is shown as an endogenous variable. This conflicting result may be explained by the positive sign of coefficient of ECT of inflation. The positive sign in the coefficient does not confirm the existence of cointegration between inflation and other variables, hence this could be the reason why the result for inflation in conflicting.

	Variable	LKF	LXRS	LIDX	LGDP	LIDINT	LUSINT	LINF	LGS
3 Years Horizon	LKF	**26.51%**	7.01%	0.50%	21.27%	12.89%	0.54%	26.23%	5.05%
	LXRS	14.55%	**46.76%**	2.09%	10.14%	3.55%	5.08%	11.06%	6.78%
	LIDX	5.87%	4.33%	**55.66%**	7.95%	3.58%	13.46%	5.23%	3.92%
	LGDP	19.85%	9.38%	2.96%	**28.27%**	13.30%	1.07%	20.46%	4.73%
	LIDINT	17.73%	6.82%	3.90%	18.42%	**22.54%**	2.36%	24.01%	4.21%
	LUSINT	2.53%	5.37%	14.43%	4.34%	3.64%	**63.38%**	2.42%	3.90%
	LINF	22.63%	7.25%	0.85%	21.89%	16.97%	0.69%	**26.59%**	3.13%
	LGS	5.58%	7.46%	6.51%	4.54%	3.12%	6.06%	6.97%	**59.76%**
	Exogeneity	**26.51%**	**46.76%**	**55.66%**	**28.27%**	**22.54%**	**63.38%**	**26.59%**	**59.76%**
	Ranking	7	4	3	5	8	1	6	2

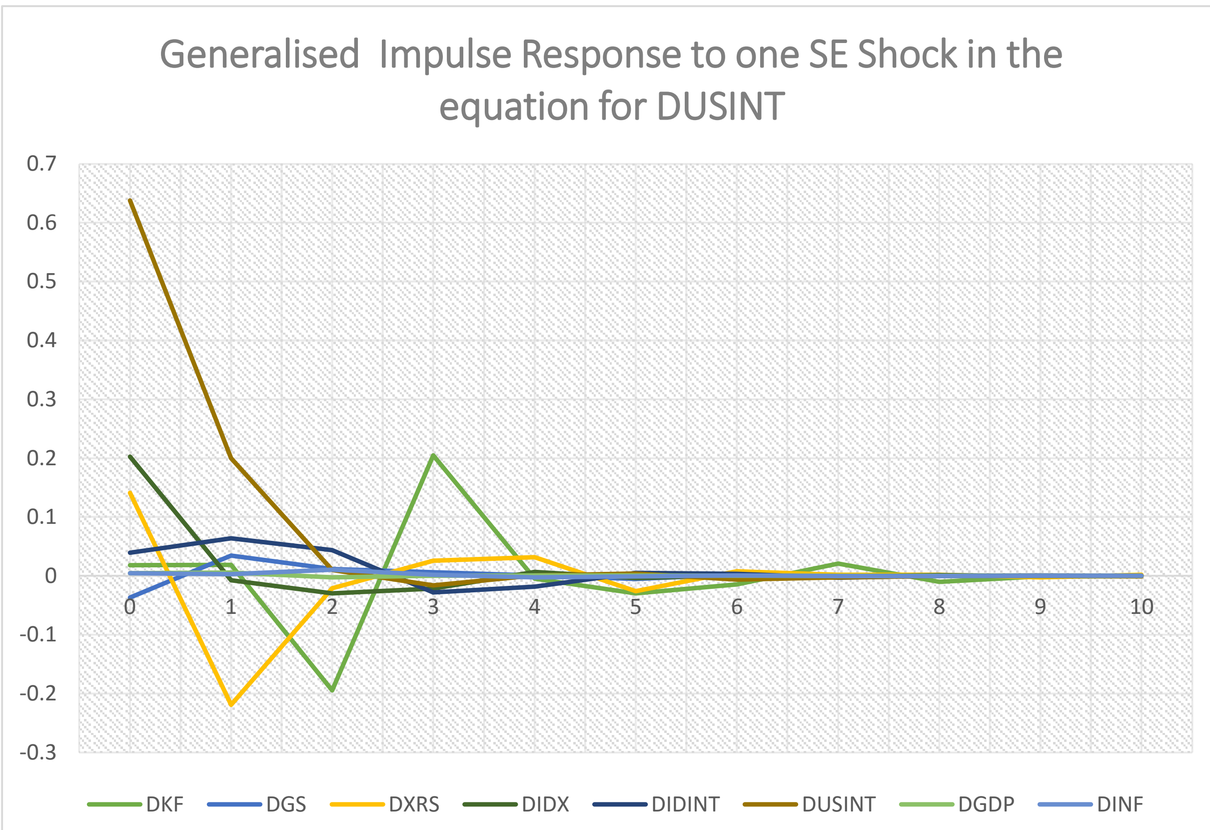
	Variable	LKF	LXRS	LIDX	LGDP	LIDINT	LUSINT	LINF	LGS
5 Years Horizon	LKF	**26.48%**	7.02%	0.53%	21.29%	12.88%	0.54%	26.18%	5.08%
	LXRS	14.38%	**46.79%**	2.11%	10.01%	3.56%	5.12%	11.03%	7.01%
	LIDX	5.87%	4.41%	**55.58%**	7.95%	3.59%	13.46%	5.24%	3.92%
	LGDP	19.82%	9.40%	2.95%	**28.28%**	13.30%	1.08%	20.42%	4.75%
	LIDINT	17.77%	7.17%	3.93%	18.39%	**22.21%**	2.42%	23.83%	4.26%
	LUSINT	2.54%	5.46%	14.36%	4.34%	3.65%	**63.06%**	2.44%	4.15%
	LINF	22.60%	7.32%	0.87%	21.96%	16.89%	0.72%	**26.48%**	3.16%
	LGS	5.80%	7.90%	6.38%	4.65%	3.21%	5.98%	7.29%	**58.78%**
	Exogeneity	**26.48%**	**46.79%**	**55.58%**	**28.28%**	**22.21%**	**63.06%**	**26.48%**	**58.78%**
	Ranking	7	4	3	5	8	1	6	2

	Variable	LKF	LXRS	LIDX	LGDP	LIDINT	LUSINT	LINF	LGS
10 Years Horizon	LKF	**26.46%**	7.05%	0.53%	21.27%	12.87%	0.55%	26.16%	5.10%
	LXRS	14.39%	**46.73%**	2.11%	10.03%	3.58%	5.11%	11.04%	7.01%
	LIDX	5.88%	4.41%	**55.54%**	7.96%	3.59%	13.45%	5.25%	3.91%
	LGDP	19.82%	9.40%	2.95%	**28.28%**	13.31%	1.08%	20.41%	4.75%
	LIDINT	17.76%	7.22%	3.94%	18.38%	**22.19%**	2.43%	23.81%	4.29%
	LUSINT	2.55%	5.48%	14.35%	4.38%	3.66%	**62.98%**	2.45%	4.16%
	LINF	22.60%	7.33%	0.87%	21.95%	16.89%	0.72%	**26.48%**	3.16%
	LGS	5.83%	7.91%	6.37%	4.68%	3.22%	5.98%	7.32%	**58.68%**
	Exogeneity	**26.46%**	**46.73%**	**55.54%**	**28.28%**	**22.19%**	**62.98%**	**26.48%**	**58.68%**
	Ranking	7	4	3	5	8	1	6	2

Table 8. Generalized Variance Decomposition

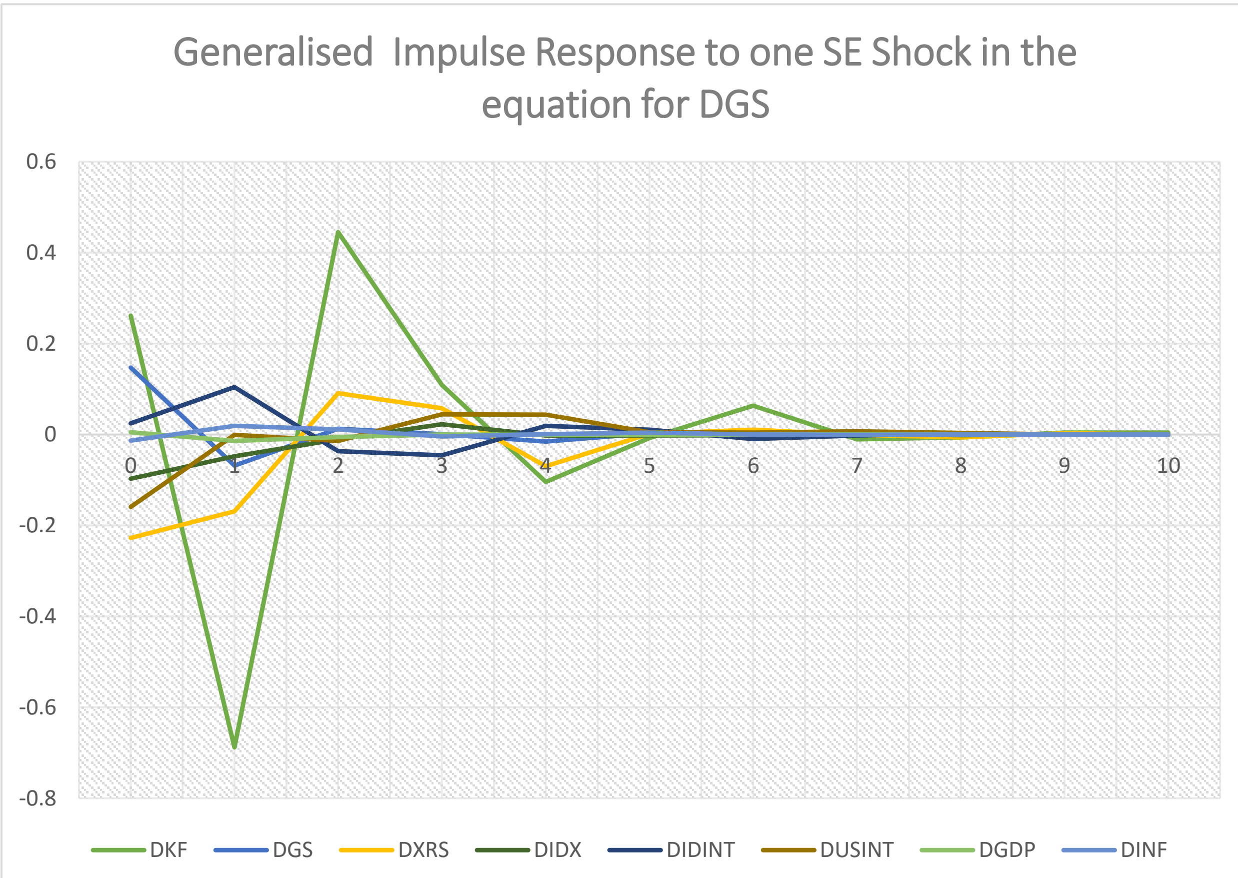
Even so, we believed the result of VDC to be thinkable. It is reasonable that any movement from US interest rate and government stability will affect stock market and exchange rate stability of the country, which furthermore will affect the level of GDP and inflation of the country, and later it will affect capital flight in the country and the domestic interest rate. The interesting result is that domestic interest rate is shown as the most endogenous variable within the sample, which indicate that government will adjust the domestic interest rate for any shock/movement in the other variables.

Another important point is that capital flight is the second most endogenous variable in the sample. In other words, capital flight is following the movement of the first six variables. However, it does not mean that capital flight is not affected by domestic interest rate, just because domestic interest rate is the most endogenous variable. There could be a bidirectional causality between these two variables, implying that these variables are affecting each other. Unfortunately, this issue is not analysed in this study.



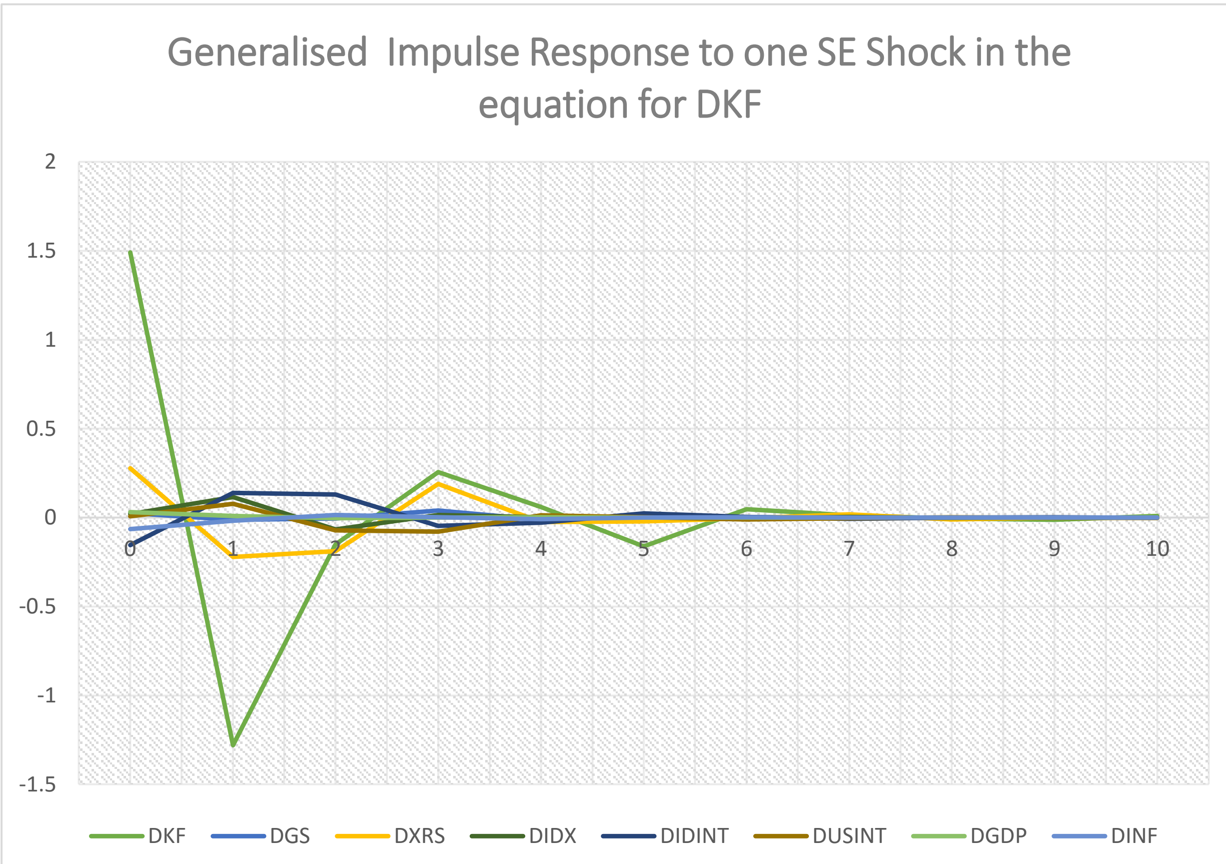
Graph 2. Impulse Response Function of Shock in US Interest Rate

Impulse response allows us to observe how long it takes for the variables to get back to equilibrium if there is a shock in one particular variable. The first that is shocked is foreign interest rate. Since this variable is the most exogenous, we expect big outcome on other variables. Graph 2 shows that capital flight in Indonesia will take a long time to go back to its equilibrium i.e. nine years, while Indonesia's exchange rate stability will need around six years to return to equilibrium, and domestic interest rate will be affected for around 5 years. US interest rate itself will take around four years to go back to equilibrium, and domestic stock index and government stability will take four and two years to resolve the shock. Indonesia's GDP and inflation is not affected much because of the shock.



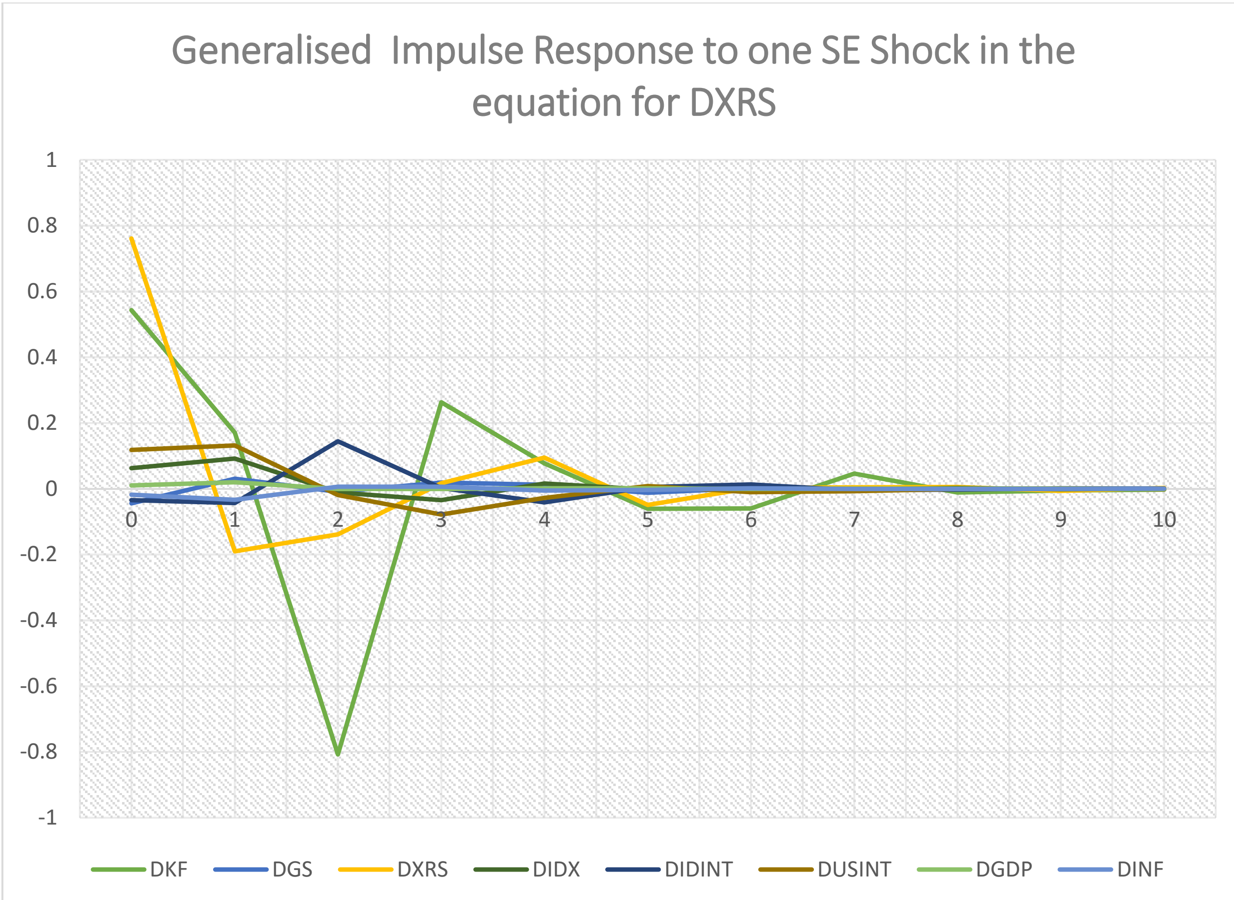
Graph 3. Impulse Response Function of Shock in Government Stability

Graph 3 shows the effect of a shock in government stability to other variables. Since government stability is found to be the second most exogenous variable, we expect that a shock in this variable will significantly affect other variables, except foreign interest rate. From graph 3, we can see that for one S.E. shock in government stability, it will take around seven years for capital flight to go back to its equilibrium level, while exchange rate stability, domestic interest rate, and stock index will take around five years to return to its equilibrium. GDP and inflations rate seem to be not affected much by the shock, while the government stability itself will take around two years to go back to equilibrium, and foreign interest rate need one year to go back to equilibrium, surprisingly. It could be because U.S. economic environment is very open, which possibly cause the US economy to be a little affected by any shock from other country.



Graph 4. Impulse Response Function of Shock in Capital Flight

Graph 4 shows the result of a one S.E. shock of capital flight to other variables. Capital flight itself will take seven years to go back to equilibrium. It seems that the shock will not affect the government stability, level of inflation and real GDP of the country. As expected, shock in capital flight will affect exchange rate stability and domestic stock market, and it takes four and three years for both variables to go back to equilibrium, respectively. Domestic interest rate will take four years to return to equilibrium. The result shows that how capital flight affect domestic financial market i.e. exchange rate, interest rate, and stock market. Surprisingly, U.S. interest rate shows that it is affected by the shock. This could be because the capital that “flies out” of the country go to the US financial market.



Graph 5. Impulse Response Function of Shock in Exchange Rates Stability

Furthermore, graph 5 shows the effect of exchange rate stability shock to other variables. The shock will definitely affect the domestic financial market, as the result suggested. Both domestic interest rate and stock market will need five years to resolve the shock. While, capital flight and exchange rate stability itself will take eight and six years to return to equilibrium, respectively. Government stability is not affected much in this case, and only need one year to get back to equilibrium. Again, real GDP and level of inflation are not affected, similar to previous shock that we have done. Surprisingly, US interest rate again respond to the shock and take for years to return to equilibrium.

Generally, the results from impulse response indicate that real GDP and inflation does not respond to any shock in any other variables. This may be related to result of ECT which indicate that inflation may not cointegrate with other variables, while steady movement of GDP may be due to its exogeneity characteristic. Moreover, capital flight reacts a lot to any shock in the variables and take long time to return to equilibrium. Also, exchange rate stability reacts considerably to any shock that we have done, and on average take six years to get back to equilibrium. Domestic financial market which represented by domestic interest rate and domestic stock index also react to any shock of the variables. It reflects that financial market is so reactive to any shock in other variables.

Overall, we found that capital flight is an endogenous variable which affected by all other variables in our sample. While, political risk, which represented by government instability, is shown as second most exogenous variable, after foreign interest rate. Political risk is indicated as a significant factor in affecting capital flight movement; it can be seen from the impulse response result which show that a shock in government instability will affect capital flight considerably. Since government instability is exogenous variables, there could not be any causal relationship running from capital flight to government instability. This finding is reasonable and as expected, since government instability in this case is more about political instability rather than economic instability. It is very rare that political instability is affected by variables such as capital flight, but it is common that economic variables will be affected by political instability.

These findings are similar to what Le and Zak (2006), Fedderke and Liu (2002), Collier et al. (2003), Lensink et al. (2000), Rahnama-Moghadam et al. (2002), Le & Rishi (2006) and Alam & Quazi (2003) found in their study. It confirms that capital flight is highly affected by political risk index, no matter how the political risk index is measured or characterized. However, there are studies which found a contradicting result with our result such as Cheung et al. (2015) which found that political risk is not significantly important in explaining capital flight and Hutasoit (2008) and Istikomah (2003) which found a negative relationship between capital flight and political risk. But, we consider the outcome of Hutasoit (2008) and Istikomah (2003) to be weak, as they did not properly measure political risk index in their study.

Whereas, exchange rate stability, our third focus variable, is found as endogenous variable, similar to capital flight variable. But VDC pointed out that capital flight is more endogenous, as compared to exchange rate stability. There could exist a bidirectional causality between these two variables, which unfortunately, is not addressed in this paper, as it was not our research objective. This finding confirm the finding of Cheung et al. (2015), which found that capital flight and exchange rate volatility is positively related, especially after the global financial crisis. However, we could not compare this finding to any other studies, as there exist a very limited number of studies on the issue of capital flight and exchange rate stability.

6 Conclusion and Policy Implications

Recently, the issue of capital flight and hot money have become popular again among the analysts, especially with the slowdown of global economic, which affected almost every country, including China, the fastest developing country in the world. China itself has experienced large amount of capital flight going out of the country, and it is expected that other developing countries will face the same capital flight problem. Therefore, we decided to study on the issue of capital flight. Throughout the literature, we find the gap of looking into capital flight and instability. Instability in our study reflects two type of instability, namely political instability and exchange rate instability. We also employed other economic variables to see the relationship between capital flight and these variables. Specifically, the research question of this paper is to examine the impact of government stability on capital flight, and to observe the causal relationship between capital flight and exchange rate stability.

By using the ARDL procedure, which addresses some limitations of the standard time series techniques and which is found to be the most suitable technique for our sample, we found that political risk and capital flight to be significantly related, confirming other previous studies. The result suggests that political risk is the second most exogenous variable, after foreign interest rate, in affecting the magnitude of capital. Furthermore, we found that both exchange rate stability and capital flight are endogenous variables, which could indicate the existence of bidirectional causality between the variables. The result also suggests that a higher exchange rate instability will increase the level of capital flight.

Indonesian government has been aware of the risk of capital flight in the country, especially with the recent global economic condition. The most important thing that government should do in order to prevent capital flight is to maintain the political and exchange rates stability. Besides that, economic variables such as domestic interest rate, stock index, GDP and inflation should be maintained as well, since capital flight is really sensitive to any information in the market. Capital flight resulting from hot money will move out very quickly from the country as soon as there is unpromising and doubtful expectation from the market. Government should anticipate any irresponsible and corrupt information in the market and clarify it as soon as possible so that market expectation toward the local market will not change. Government should also prevent any currency speculation activities such as dumping the local currency in the market, which will depreciate the currency very badly, disturb the exchange rate stability, and furthermore affect the local economic conditions. Regarding the foreign interest rate, government does not have control on it, hence managing market expectation and adjusting domestic economic policy to any changes in foreign interest rate may reduce the impact of the changes. In brief, preventing capital flight is all about maintaining domestic stability, either political stability or economic stability.

There are still rooms for future research in this area, such as expanding the sample used, or explore another measure of political risk index. Currently, there exist many measure for political risk index that could be explored. Future research may also study the relationship between capital flight and other non-economic variables, such as property rights, fiscal freedom, investment freedom or others variables. Future research can also look at the exact causal relationship between political risk and exchange rate stability, as it is not focused in this paper. Furthermore, using different measure of capital flight and comparing the analysis of results to each other could be another idea for future research study.

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