



Empirical Study of Capital Flight in Indonesia 2009-2017 Period

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Abstract

The phenomenon of capital flight is triggered by two biggest financial scandals, Panama Papers, and Paradise Papers. The impacts of this phenomenon can erode the tax base and contribute to the distribution of income from developing countries to developed countries. Therefore, the purpose of this study is learning of Indonesia's capital flight and analyzing more deeply the causes of capital flight for the Indonesian economy in the period 2009 until 2017. The data used in this research is secondary data from BI, BPS, and OECD. The independent variables are the budget deficit ratio, economic growth, inflation, exchange rate growth, and dummy sovereign rating. The measurement of capital flight in this research uses residual approach, while the estimation techniques use Ordinary Least Squares (OLS). Empirical results of this research conclude that the amount of capital flight in Indonesia increased quite rapidly since the first quarter of 2009 until the second quarter of 2011 compared to next periods. Furthermore, macroeconomic factors used as independent variables are not strong enough to explain capital flight in Indonesia.

Abstrak

Fenomena capital flight, salah satunya dipicu oleh dua skandal keuangan terbesar, Panama Papers dan Paradise Papers. Dampak yang ditimbulkan oleh fenomena ini di antaranya dapat mengikis tax base dan berkontribusi dalam distribusi pendapatan dari negara berkembang menuju negara maju. Penelitian ini bertujuan mempelajari gambaran umum capital flight Indonesia, serta mengkaji lebih mendalam penyebab utama capital flight tersebut pada periode 2009-2017. Data sekunder penelitian ini berasal dari BI, BPS, dan OECD. Variabel bebas yang dikumpulkan adalah rasio defisit anggaran, pertumbuhan ekonomi, inflasi, pertumbuhan nilai tukar, dan dummy sovereign rating. Penghitungan capital flight dilakukan dengan residual approach, sedangkan teknik estimasi yang digunakan adalah Ordinary Least Squares (OLS). Hasil empiris penelitian ini menyimpulkan bahwa secara umum besaran capital flight di Indonesia meningkat cukup drastis sejak kuartal pertama tahun 2009-kuartal kedua tahun 2011 dibandingkan periode setelahnya. Kemudian, faktor makroekonomi yang digunakan sebagai variabel independen, tidak cukup kuat untuk dapat dikatakan sebagai penyebab utama terjadinya capital flight di Indonesia.

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INTRODUCTION

Capital flight from developing countries due to high taxes, large foreign loans, and domestic political instability (Collier, Hoeffler, & Pattillo, 1999; Vu & Zak, 2006). Other researchers refer to capital flight as a financial illicit flow or trade miss-invoicing (Schneider, 2003). This phenomenon is again a trending topic in almost all countries in the world, especially in developing countries, including Indonesia. The trigger was the two biggest financial scandals of the century, the Panama Papers and Paradise Papers.

Throughout the 2016-2017 period, these two cases have dragged many conglomerates, government officials, and well-known companies from all over the world countries without exception from Indonesia. The investigation results of The International Consortium of Investigative Journalists (ICIJ) revealed that there were 2,961 names from Indonesia. ICIJ also revealed that around 200 individuals and 15 Indonesian companies were identified in these two scandals.

The phenomenon of capital flight is increasingly becoming popular because many Indonesian capital owners prefer to put their wealth abroad. Based on data from Bank Indonesia and the Ministry of Finance in 2016, around 82.7 percent of Indonesian citizens' money is in Singapore. Approximately Rp. 4.8 trillion of the total assets declared from abroad (Rp. 5.8 trillion). Singapore is a place to save their money because the lowest income tax value in Southeast Asia is 17 percent compared to Indonesia, which reaches 25 percent.

Not only that, based on the 2017 Global Financial Integrity (GFI) report in *Illicit Financial Flows to and from Developing Countries: 2005-2014* noted that during this period Indonesian money abroad amounted to the US \$ 271.65 billion or around 3.38 quadrillion rupiah (exchange rate Rp.

12,440).

Countries in the world that also experience capital flight include Vietnam, Myanmar, BRIC, Ukraine, Hungary, and so on. For Indonesia, the Panama Papers and Paradise Papers scandals, cases of Indonesian citizens' money abroad, and illegal outflow of capital are implications of the national economy which is still covered by uncertainty and the bureaucracy in Indonesia is still poor. Also, the three cases are also due to other implications such as high country risk and corruption cases in Indonesia.

Based on the A.M report. Best Rating Service in 2017, Indonesia Country Risk Tier (CRT) of four out of five (highest score). Also, Transparency International notes that Indonesia's 2016 Corruption Perceptions Index (CPI) is low with a score of 37 which is ranked 90th out of 176 countries. Therefore, it is natural that a lot of capital flight occurs to developed countries because it is far more promising and profitable.

Some of these problems have caused Indonesia to lack capital so that the Indonesian Government increases bonds (debt). Based on the World Bank's report on *International Debt Statistics* in 2017, Indonesia is one of the top ten middle-income country borrowers. Even so, not all macroeconomic problems cause capital flight in Indonesia. Several capital owners have fled their assets abroad because they are considered to be far safer and avoid domestic taxes that are deemed high enough. As a result, Indonesia's revenues from the tax sector are diminishing. Based on the 2018 State Budget Information report, the value of tax to GDP ratio during the last five years or so-called Indonesia's tax ratio is low, at 10.4 percent in 2016. Also, the trend has tended to decline since 2013.

The low tax ratio is due to a large number of entrepreneurs who are made into

“dairy cows” because the revenue target is quite high at 1.618 trillion rupiahs or up nine percent in 2018. As a result, there are many cases of tax evasion by Indonesian capital owners by escaping their capital out country. Indirectly, the impact of the tax evasion will increase foreign debt because it is used to close the fiscal gap.

Based on the explanation, capital flight has an adverse impact on Indonesia because, in addition to reducing revenue, it can also increase debt indirectly. Besides, several researchers revealed that the harmful effects of capital flight on the national economy. Capital flight will reduce domestic investment (Ajayi, 1997) and give a signal to foreign investors about a country's risk is still not right (Schneider, 2003). The worst thing is that capital flight contributes to the transfer of assets from developing countries to rich countries (Henry, 2013).

In general, the causes of capital flight vary in macroeconomic and non-macroeconomic factors. Some of the previous majority studies stated that macroeconomic variables were the most influential factor, but some researchers reported that non-macroeconomic factors were triggering capital flight. Macroeconomic factors such as an increase in the budget deficit can trigger capital flight in developing countries and some developed countries such as Portugal, Italy, Greece, and PIGS Lecturers (Baek & Yang, 2010; Han, Gan, Hu, & Li, 2012; McCaslin, 2013). Similarly, inflation also has a positive influence on increasing capital flight (Gouider & Nouira, 2014; Ndikumana et al., 2014).

On the other hand, capital flight can be reduced by increasing economic growth (Gouider & Nouira, 2014; Istikomah, 2003; Ndikumana, Boyce, & Ndiaye, 2014). Then, in several studies, it was revealed that the exchange rate did not have a significant influence in increasing capital flight in several

developing countries (Adetiloye, 2012; Geda & Yimer, 2016). This is because investors tend to observe the domestic investment climate. When the local investment climate shows good prospects, capital flight can be minimized (Virgantari, 2010).

Some researchers also partly state that non-macroeconomic factors such as political risk, financial risk, or economic risk and corruption also have the potential to trigger an increase in capital flight. However, these factors are quite challenging to measure quarterly in Indonesia (Baek & Yang, 2010; Geda & Yimer, 2016; Le & Rishi, 2006; Ndikumana et al., 2014). Based on the explanation that has been explained, the purpose of this research is to study the general description of Indonesian capital flight and to examine more deeply the causes of capital flight in 2009 s.d. 2017.

Some definitions according to experts and researchers mention that capital flight is as follows: (1) Capital flight is the calculation of claims on income that are not recorded in the balance of payments (Dooley, 1986); (2) Capital flight is a speculative and short-term outflow of capital due to the country's economic instability. This capital flow is commonly referred to as “hot money” (Cuddington, 1986); (3) Capital flight is a residue of rising foreign debt, net direct investment, foreign exchange reserves, and current account deficits (World Bank, 1985); (4) Capital flight is the difference between the total personal capital that comes out of the domestic economy and reported income. It can also be said that capital flight is a lost income from a country (Adetiloye, 2012); (5) Capital flight is part of the capital outflow of resident residents (capital outflow) caused by political and economic risks (Schneider, 2003); (6) Capital flight is a short-term outflow of personal capital that is caused not only by political risks but also by economic

policy failures (Henry, 2013; Yalta, 2009); (7) Capital flight is a transfer of investment or capital in order to get a better return or prospect (Liew, 2016).

From some definitions according to experts and researchers beforehand, it can be outlined that capital flight is the flow of capital out of the resident population due to macroeconomic and non-macroeconomic factors. The amount of capital outflows from a country, especially unusual ones (indicative of capital flight) indicates that economic and political conditions in the country have a high risk.

It is almost impossible to calculate the exact amount of capital flight from a country, especially for states that adopt a free foreign exchange system (Istikomah, 2003). Therefore, to calculate the capital flight amount, the calculation is needed through several estimation methods or the following approaches:

- a. *Residual Method* (World Bank, 1985; Morgan Guaranty Trust Company, 1986)
 - b. *Dooley Method* (Dooley, 1986)
 - c. *Trade Misinvoicing Method* (Bhagwati, Krueger, & Wibulawasdi, 1974)
 - d. *Hot Money Method* (Cuddington, 1986)
- The Asset Method* (Hermes & Lensink, 1992)

The five methods are divided into two classifications, indirect and direct calculation. The first three methods are complicated calculations, while the rest are direct calculation methods. Of the five methods, the residual method made by the World Bank is considered to have several advantages over other indirect methods. This method of the majority has been widely used by several researchers lately.

Also, because capital flight calculations cover various types of private capital flows, the residual method is the best method in a variety of situations (Wujung & Mbella,

2016). However, the weakness of this method is to ignore the flow of funds such as debt forgiveness. Debt forgiveness is the amount of capital transfer that is forgiven by creditors to debtors (IMF in BoP Manual 5th edition).

Meanwhile, the direct method, unusually hot money, received some criticism. This is because the method uses basic data errors and omissions, whereas error and omission include compiling data errors, calculation errors, and unreported imports. Error and omissions are "trash bins" because they function as balancing items in the balance of payments, so they are not appropriate to use to calculate capital flight. Then, the critique of the direct calculation with the asset method is that the assumption that national depositors are reported is needed, whereas, in reality, the incident does not always occur (Beja, 2005).

The following is a capital flight calculation formula with a residual approach:

$$CF = \Delta ED + \Delta FI - CAD - \Delta FR \quad (1)$$

Where:

- CF = Capital flight
- ΔED = Foreign Debt Change
- ΔFI = Net foreign investment
- CAD = Current account deficit
- ΔFR = Changes in foreign reserves

The first two components are sources of funding sources (references), while the last two elements are sources of use (uses). If the difference between cause and usage is positive, it means there is a capital flight (Henry, 2013). If the difference between the two is negative means, there is a capital reflow (Ajayi & Khan, 2000) or reverse capital flight (Makochekanwa, 2007). Other studies say that the difference between the two is negative inward capital flight (Virgantari, 2010).

Structural Change Theory (Arthur Lewis)

Structural change theory is a concept that examines the mechanism of developing countries to transform the structure of the economy from subsistence patterns to a more modern economy (Todaro & Smith, 2015). This theory is recognized as a general theory that examines labor surplus during the 1960s and early 1970s. Lewis's argument is still used and studied, especially in China and other developing countries (Todaro & Smith, 2015).

In the modern sector (industry), Lewis assumes that capitalists will reinvest their capital so that the capital stock will increase. Although this model is simple and can generally explain in the western world, there are four assumptions on this model that are considered not very suitable for developing countries. One of the assumptions related to capital flight (the first assumption) is the rate of transfer of labor and job creation in proportion to the level of capital accumulation in the modern sector. As fast as capital accumulation, the faster the transfer of employment and job creation. However, capitalists do not reinvest their funds. As a result, there were many capital flights in the form of creating deposit accounts in western banks.

Economic Growth Theory (Solow-Swan)

The Solow growth model is designed to explain the interaction between labor growth, capital accumulation, and technological progress and the influence of these three factors on overall output (Mankiw, 2016). One of the issues that are a concern in the Solow model is capital stock because it is an essential determinant in the economy (Mankiw, 2016). In the '90s this model received criticism because it contradicted international capital flows. Capital should flow from countries that have more capital to countries that lack money.

One reason why the phenomenon does not fit the theory is that developing countries have low levels of capital accumulation and production capability. Another reason is that generally developing countries have high levels of corruption, coup revolutions, and insolvent governments. So, even though capital is more valuable in developing countries, investors may be reluctant to invest because they are afraid of losing their money (Mankiw, 2016). One of the best possible options is to save the capital in developed countries such as the United States (US) even though it is less valuable but safe. Furthermore, this phenomenon will be further clarified in the Lucas Paradox study.

Capital Flow Theory (Lucas Paradox)

In neoclassical theory, it was previously stated that capital should flow from uphill to downhill. In other words, money flows from rich countries to developing countries (Qolbi & Kurnia, 2015). However, the theory was questioned by Robert E. Lucas (1990) in his article entitled "why doesn't capital flow from rich to poor countries?" In its calculations, capital did not flow from the US to India, so Lucas questioned the validity of the assumptions used in the neoclassical theory. The article found that money flows from developing countries to rich countries.

Lucas's findings apply to develop countries. This condition is similar to the indication of capital flight. This phenomenon is in contrast to the neoclassical theory known as Lucas Paradox. Then, the three assumptions used in this theory are differences in human capital, external benefits from human capital, and capital market imperfections. Besides, Lucas also assumes that the economy is small open, and the factors of production are capital and labor. The following is a further explanation of the discussion in Lucas

Paradox's theory: First, fundamental Differences; (1) Production factors that are eliminated; (2) Government policy, and (3) Institutional structure (institutions). Second, International Capital Market Imperfections; (1) Asymmetric information; and (2) Sovereign risk.

New Political Macroeconomics Theory (Alberto Alesina)

The beginning of this theory comes from the book Adam Smith (1776) entitled "Wealth of Nation." In the book, it has been explained that political factors will influence the national economy. After several decades, many researchers have linked elements of democracy, politics, and economics. Until the beginning of the 20th century, Professor from Harvard University, Alberto Alesina (1989) made a significant contribution in the theory of New Political Macroeconomics (NPM). This theory is further strengthened by studies conducted by Athol Fitzgibbons (1988). In his research, it was said that there was no link between Keynes's macroeconomic theory and classical microeconomics. It tends to produce differences in conclusions (Chernomas, 1989).

Macroeconomic theory should be relevant to global economic events such as the great asset booms or the Japanese asset price bubble case (1986-1991), the dot-com bubble in the US (1995-2000) and the financial crisis in the last few years of the 20th century. Macroeconomic theory is not coherent. Besides, macroeconomic theory tends to provide a deadlock because the method is inconsistent, so it is difficult to explain the phenomenon that occurred.

This theory emphasizes more on the relationship between non-macroeconomic variables such as government policy, political instability, political credibility, and reputation with the impact of inflation that has been impacted (Totonchi, 2011).

However, the subject of NPM is much broader. First, the relationship between politics and economics within the framework of political business cycles, inflation, unemployment, and stabilization policies. Second, economic instability and conflict related to forms of government and institutional structures. Third, the relationship between disability, democracy, inequality, and inflation. Finally, the strength of the national economy and its integration into the global economy (Jakšić & Prašćević, 2011). NPM analysis applies to democratic countries, although there are several ways to regulate and run a democracy.

METHOD

The scope of this research is to be in Indonesia in 2009-2017 on a quarterly basis. This period is chosen because it is by the latest sixth edition of the Balance of Payment Manuals (BPM 6) formed in 2009, so the concept used will be the same. The classification in BPM 6 has also been adjusted to the System of National Account (SNA) in 2008.

The dependent variable used in this study is an indirect approach capital (residual approach). This approach method was developed by the World Bank and has been used by several researchers. Among them are Adetiloye (2012), Baek and Yang (2008), Gouider and Nourira (2014) Liew, Mansor, and Puah (2016), Virgantari (2010), Wujung and Mbella (2016) and other researchers.

The independent variables are the budget deficit ratio, economic growth, inflation, exchange rate growth, and the dummy sovereign rating. All of these variables were chosen because they have been widely used by several previous researchers.

The type of data used in this study is

secondary data sourced from various national and international institutions and departments as in Table 1.

The data analysis technique used in this study is descriptive analysis and inference. In this study, the descriptive analysis used is a graph, while inferential analysis uses the Ordinary Least Squares (OLS) model. This OLS model has several procedures, including: *First*, testing the Root Unit. The unit root test used to test stationary data is the ADF Test.

Second, Ordinary Least Squares (OLS). The form of the model used in this study is as follows:

$$CF = \beta_0 + \beta_1 RDef + \beta_2 PE + \beta_3 Inf + \beta_4 ERG + \beta_5 DR + \mu \dots \dots \dots (2)$$

Third, test the OLS diagnosis; (a) Determination Coefficient. Measurement of the accuracy of the model can be identified through the value of Adjusted R-Squared. The higher the value of Adjusted R-Squared, the more appropriate the model used; (b) Simultaneous Test; (c) Partial Test, and (d) Classic Assumption Testing. In the classical assumption testing there are four types of testing, including the following: (1) Normality; (2) Homoscedasticity; (3) Nonautocorrela-

tion, and (4) Nonmulticollinearity.

RESULTS AND DISCUSSION

Based on Figure 1 the amount of Indonesian capital flight increased quite dramatically after the global economic crisis in 2008. The flow of capital that came out in the first quarter of 2009 to the second quarter of 2011 was far higher than in the other periods. The reason is that the global economic conditions are not conducive and the domestic economy is not yet stable. Indonesia's economic growth on average is only 1.42% (BPS). The best economic growth is only 4.07 percent (2010: Q2). Economic growth amounted to -2.12 percent (2010: Q4) and -2.18 percent (2011: Q4). The existence of the mega brass bomb tragedy in July 2009 further aggravated domestic political instability.

As a result, investor confidence in the Indonesian market was increasingly faded, and there was an increase in capital outflows in large numbers during the period. Capital outflow is the flow of capital out of a country as usual (Yalta, 2009).

Conditions that remained unstable continued into the second quarter of 2011 where

Tabel 1. List of variables and data collected

Variable Notation	Data	Unit	Sources
CF			
ΔED	Changes in foreign debt		
ΔFI	Perubahan Net FDI	Million US\$	BI-SEKI, BOP
CAD	Current account deficit		
ΔFR	Changes in foreign reserves		
RDef	Budget Deficit Ratio to GDP	Percent	BI-SDDS, <i>Fiscal sector</i>
PE	Economic Growth (the base year 2010)	Percent	BPS
Inf	Changes in the Consumer Price Index (the base year 2010)	Percent	OECD
ERG	Exchange Rate changes	Percent	OECD
DR	<i>Dummy Rating (Moody's)</i>	Baa3 (D=1) Ba1-Ba3 (D=0)	BI-IRU

there was the highest capital flight, which amounted to the US \$ 32.02 billion. The reason is that the investment climate in Indonesia is not yet conducive in addition to low economic growth. The investment climate in Indonesia was hit by various problems including the failure of the largest Initial Public Offering (IPO) of one of the SOEs (PT Garuda Indonesia Tbk), the corruption case of PT Asuransi Kredit Indonesia (Askrindo) which tarnished the name of the Indonesian capital market, and revised the market law capital by the slow House of Representatives (DPR).

In contrast, the lowest capital flight value in the second quarter of 2013, which amounted to the US \$ 8.67 billion. That is, there is a capital reflow / inward capital flight. The reason for this is the performance of the Indonesian Government, which is struggling to improve economic policies amid a slowing global economy.

This performance appears in the “Indonesia-centric” strategy promoted by the government to improve the investment climate in Indonesia. This type of approach prioritizes development throughout the country to the outer regions of the Republic of Indone-

sia. With this strategy, the domestic economy grew quite dramatically, by four percent in the second quarter of 2013 compared to the previous quarter which was only 0.49 percent.

Furthermore, Figure 2 shows that there is a positive and robust relationship between capital flight and the budget deficit (correlation value of 0.51). The pattern of development both appear to show the same model. This is because many state budgets are misused, thus making foreign loans indirectly increase to cover the budget deficit. As a result, risk aversion or behavior for investors to avoid investors' risk to withdraw funds by investors (deleveraging) increases.

Figure 3 shows that there is a weak correlation between economic growth and capital flight (correlation value of -0.11) Also, since the beginning of 2012 the amount of capital flight was smaller than the beginning of the 2009-2011 period after the global economic crisis. This cannot be separated from the economic recovery by the government. In fact, in the fourth quarter of 2011 to 2016 there was a capital reflow or

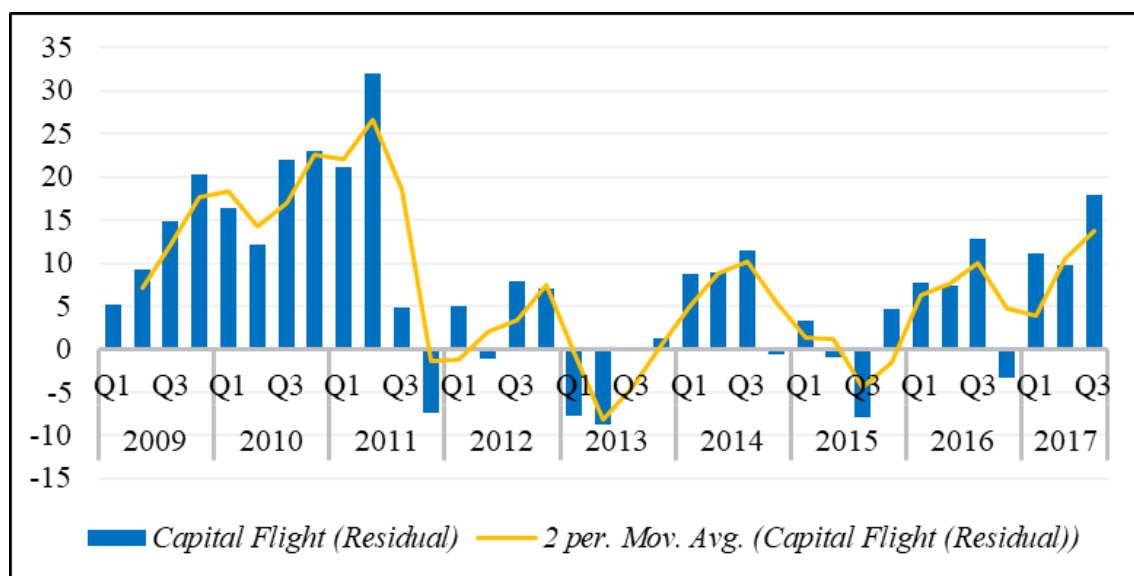


Figure 1. Dynamics of capital flight in Indonesia for the period 2009-2017

inward capital flight.

Figure 4 shows that the relationship between capital flight and the inflation rate is weak (correlation value is (-0.10)). The increase in inflation which causes an increase in capital flight occurs at a particular time only, for example in the third quarter of 2009, 2010 and 2012. Post-crisis the economy, year on year (YOY) inflation dropped sharply from 11.06 percent to 2.78 percent and was below the target of $4.5\% \pm 1\%$. When the

inflation rate reached the highest value of 4.35 percent (2013: Q3), the capital flight did not occur.

The growth of the exchange rate in Figure 5 shows that the relationship between capital flight and exchange rate growth is quite strong and negative (correlation value is -0.57). When capital flight increases in the period 2009-2011, the exchange rate shows a slowing growth, even growing below zero

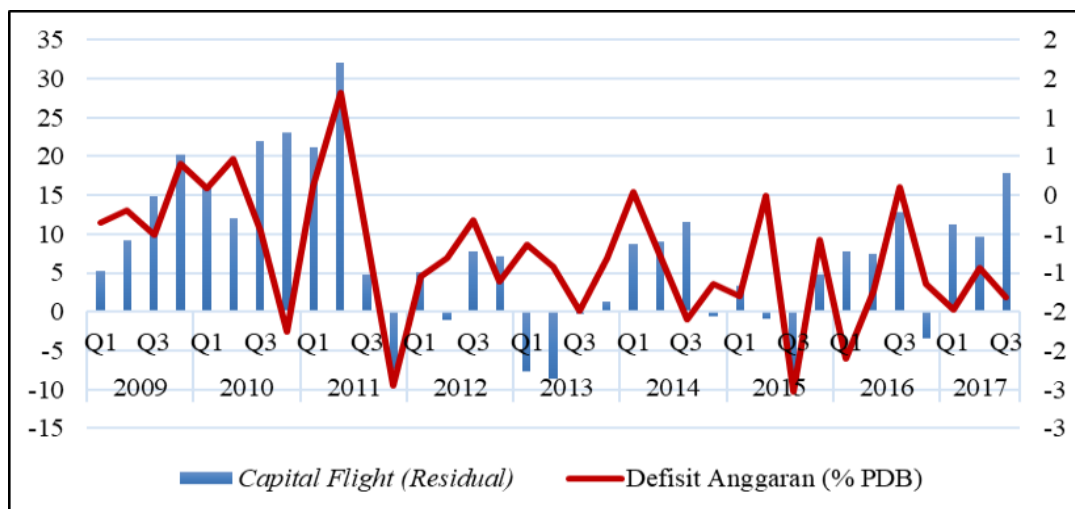


Figure 2. Dynamics of capital flight in Indonesia and the ratio of the budget deficit for the period 2009-2017

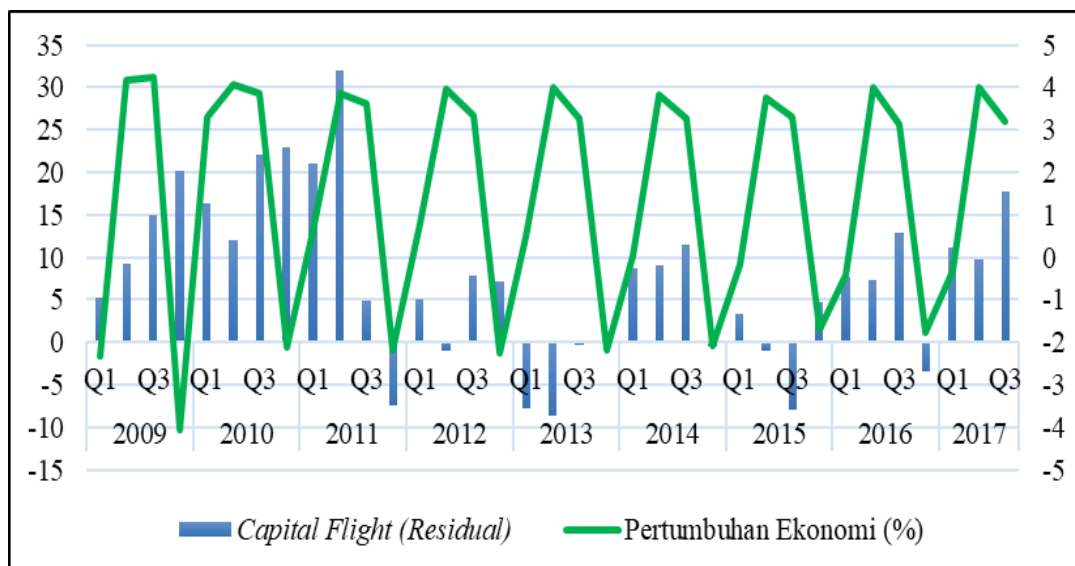


Figure 3. Dynamics of capital flight in Indonesia and economic growth for the 2009-2017 period

percent (appreciation). The strengthening of the rupiah was the result of BI's consistent macroeconomic policies and supported by the relatively stable condition of Indonesia's economic fundamentals.

Based on Figure 6, although in the period 2009-2011 there was an increase in the level of credit rating given by Moody's, Indonesia's investment level was still in the speculative-grade category. This speculative investment climate is another factor that is suspected to be the biggest trigger for capital flight in the period 2009-2011.

Efforts to improve the investment climate such as the "Indonesia-centric" program in the previous explanation turned out to have a positive impact on the national investment climate. As a result, since 2012, the credit rating has also risen to "Baa3" which means that the investment climate in Indonesia is at the initial stage of investment grade. The amount of capital flight was not as much as in the period 2009-2011, even since the second quarter of 2012 there was an incoming capital flight.

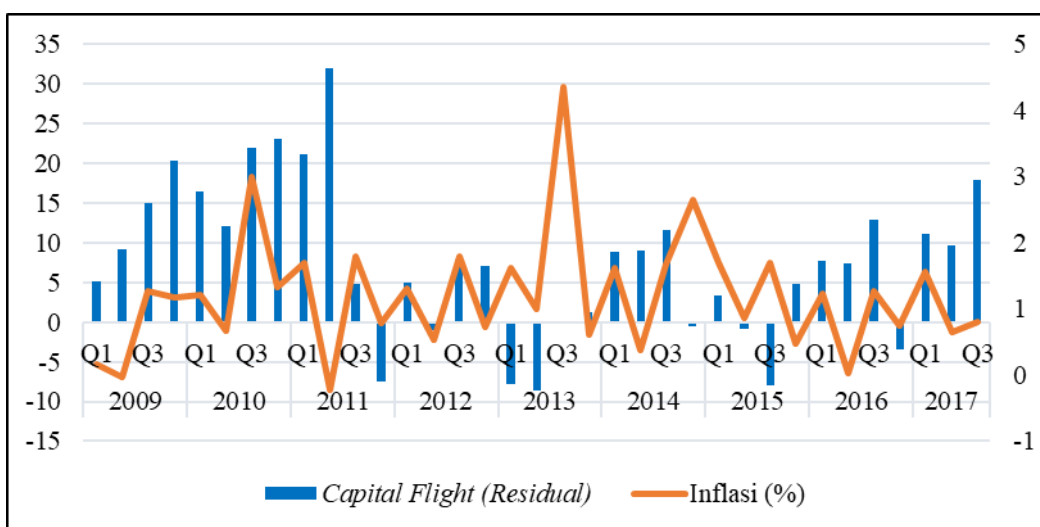


Figure 4. Dynamics of capital flight in Indonesia and inflation rates for the 2009-2017 period

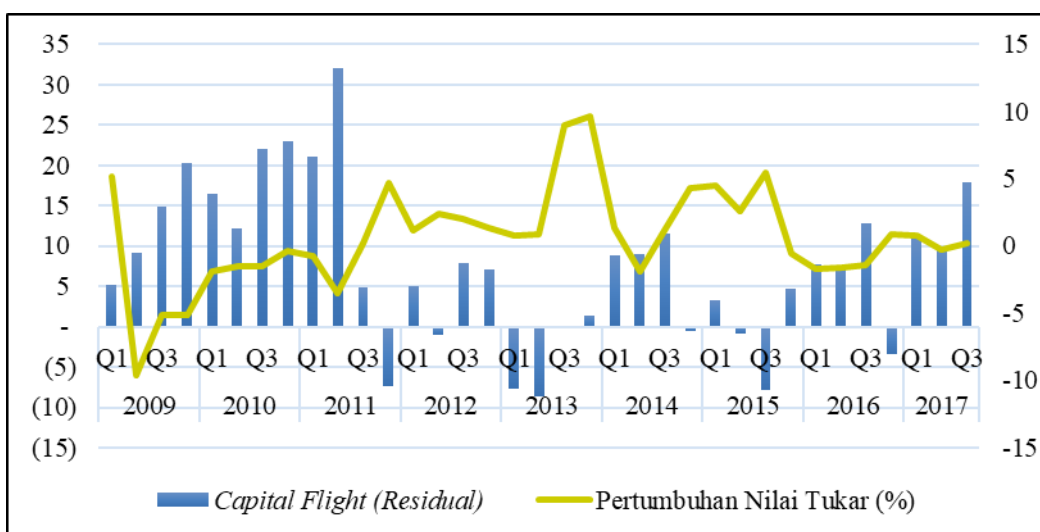


Figure 5. The dynamics of capital flight in Indonesia and exchange rate growth for the 2009-2017 period

Based on Table 2 it can be concluded that all variables are stationary at the level.

OLS estimation results in Table 3 obtained that the probability of the F-calculated value is $0.0013 < \alpha = 0.05$. This shows that the budget deficit, economic growth, inflation, exchange rate growth, and dummy rating have a significant effect on capital flight simultaneously.

Partially economic growth, inflation, and the dummy rating have no significant effect on capital flight partially at a significance level of both 10 percent and five percent. Nevertheless, the direction of the coefficients of the four variables is by the research

hypothesis. Only exchange rate growth variables are different directions. From the OLS estimation results the equation formed is as follows (Figure 7).

Empirical results in this study indicate that an increase in the deficit to GDP ratio of one percentage point can increase capital flight by the US \$ 317.8 billion. This empirical result is supported by Lucas Paradox's theory and NPM theory, where politics and institutional or institutional structures are fundamental factors that affect the national economy. This empirical result is also supported by several previous

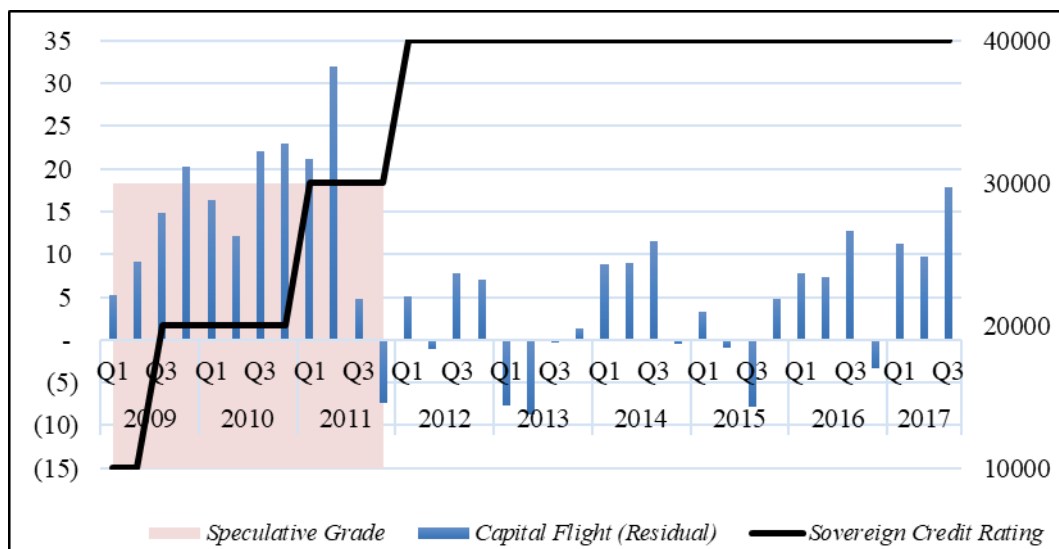


Figure 6. The dynamics of capital flight in Indonesia and Indonesia's sovereign credit rating for the 2009-2017 period

Table 2. Stationary Test Results OLS Equations

Variabel	Level		
	ADF Stat	Critical value 5%	Results
<i>Capital Flight</i>	-2.9573	-2.9511	Stationer
Budget Deficit Ratio (Rdef)	-4.9925	-2.9511	Stationer
Economic Growth (PE)	-4.4165	-2.9763	Stationer
Inflation (Inf)	-7.0969	-2.9511	Stationer
Exchange Rate Growth (ERG)	-3.6119	-2.9540	Stationer

studies. A one-percentage point increase in the budget deficit against GDP will increase capital flight by 0.003 units in 53 developing countries and 23 developed countries in the Continent of Asia, Europe, Africa and America (Baek & Yang, 2010).

Meanwhile, the same results also occurred in Hong Kong where the budget deficit did not have a significant effect on capital flight. An increase in one unit of the budget deficit will cause capital flight to increase by around the US \$ 270 (Han, Gan, Hu, & Li, 2012). This empirical result is further strengthened by Figure 9 where the relationship between capital flight and the budget deficit ratio is positive and quite healthy as previously explained.

However, in countries in Europe such as PIGS, the budget deficit has no significant effect. The increase in the budget surplus will reduce capital flight between the US \$ 915.84 billion and the US \$ 1.74 trillion (McCaslin, 2013). Similar results are also found in Nigeria. The increase in changes in the budget surplus will reduce capital flight in Ethiopia by around 1.04 percent in the long run and around 0.72 percent in the short term (Geda & Yimer, 2016).

Then, the empirical results also found that economic growth did not have a significant effect on capital flight statistically. Nevertheless, the direction of the coefficient is by the research hypothesis and several previous studies. If Indonesia's economic growth increases by one percentage point compared to the last quarter, capital flight can be reduced by around the US \$ 0.23 billion. The empirical results are in line with the Solow-Swan economic growth theory. In

this theory, it is stated that capital accumulation becomes an essential determinant in the formation of economic growth in Indonesia (Mankiw, 2016).

If there is a shortage of capital in a country, capital accumulation will decrease. As a result, the country's economy will not reach the point of long-term equilibrium (steady state). In the end, the country's economy became unstable which led to the capital flight to a rich country.

Since 2014, Indonesia's economic growth has stagnated at five percent. Indonesia's economic growth based on BPS (YOY) data for the last three years is 4.88 percent (2015), 5.03 percent (2016), and 5.07 percent (2017). This stagnant growth is because there are still many investors who have benefited a lot in Indonesia not reinvesting. Reinvestment in Indonesia is seen by investors as something that is less profitable because of the obligation to repay like a new investment.

Especially in the telecommunications, automotive, banking, and cosmetics industries. Besides, many overlapping regulations and regulations increase uncertainty for investors. Lewis's theory considers this event to have caused the accumulation of capital in Indonesia not to take place quickly, resulting in a lot of capital flight from Indonesia. In the end, economic growth is quite challenging to increase rapidly.

This empirical result is also supported by Gouider & Nouira (2014) and Ndikumana, Boyce & & Ndiaye (2014). Both studies concluded that a one-percentage-point increase in economic growth would reduce 0.004 capi-

$$\widehat{CF} = 12316,4 + 317770,8RDef - 230,79PE + 1661,54Inf - 1066,49ERG - 4895,96DR$$

Figure 7. OLS estimation results the equation formed

tal flight units in developing countries (52 countries in the continents of Asia, Africa, and Latin America) and the US \$ 281 million in 39 countries on the African continent. Meanwhile, the Istikomah study (2003) concluded that a one percent increase in economic growth would reduce capital flight changes by the US \$ 646.92 million in Indonesia. In addition to economic growth, the inflation rate also has no significant influence on capital flight. Even so, the direction of the coefficient of inflation is by the research and research hypothesis. When inflation has increased by one percent, capital flight will increase by the US \$ 1.67 billion.

This empirical result is supported by the NPM theory where the government intensively conducts stabilization policies. The government stabilization policy will undoubtedly have a good impact on the condition of the Indonesian economy, especially price control. This is characterized by a low inflation rate according to the target in the last three years (Bank Indonesia, 2018). These empirical results are also supported by several previous studies and are by the research hypothesis. Almost the majority of prior studies con-

cluded that inflation did not have a significant impact on the capital flight (Gouider & Nouira, 2014; Ndikumana et al., 2014). In developing countries, an increase of one percent inflation will increase capital flight by around 0.003 (Gouider & Nouira, 2014). Meanwhile, in PIGS countries, an increase of one percent inflation points will increase capital flight by the US \$ 13.75 billion (McCaslin, 2013).

On the other hand, the rupiah exchange rate against the United States dollar (US) has a significant influence on capital flight statistically. This empirical result shows that the direction of the growth coefficient of the exchange rate is different from the research hypothesis. An increase of one percentage point in exchange rate growth will cause capital flight to decrease by the US \$ 1.06 billion. This empirical result is supported by the NPM theory where stabilization policy is considered as the factor that most plays a role in stabilizing the rupiah against the US dollar. During the 2009 crisis, the rupiah exchange rate tended to strengthen. Then, the rupiah exchange rate moved

Table 3. Results of estimation of OLS equations

Variabel		Koefisien	P-Value		Adjusted Squared	R-
Dependen	Independen		t-Stat	F-Stat		
<i>Capital Flight (CF)</i>	C	12316,4	0,0004*			
	Budget Deficit Ratio (Rdef)	317770,8	0,0936**			
	Economic Growth (PE)	-230,79	0,663			
	Inflation (Inf)	1661,54	0,3102	0,0013	0,3883	
	Exchange Rate Growth (ERG))	-1066,49	0,0245*			
			-4895,96	0,1311		
<i>Dummy Rating (DR)</i>						

steadily during 2017 (Bank Indonesia, 2018). This condition is seen by investors as an achievement because Indonesia's stabilization policy is quite stable against the crisis. As a result, capital flight can be reduced, even capital reflow occurs. Among them happened in the first quarter of 2010 and 2016, the second quarter of 2011 and 2015, the third quarter of 2011 and 2016, and the fourth quarter of 2009.

This empirical result is quite strange because it is different from previous studies. When a currency depreciates, the assets of investors should be retained abroad and tend to take their assets away from the country. From the explanation of Figure 5, it is already clear that when the exchange rate tends to strengthen, capital flight increases (period 2009-2011) and vice versa. It can be implicitly concluded that the relationship between capital flight and exchange rate growth cannot be explained statistically. Investors no longer see the exchange rate as a cause for them to flee their capital abroad. It was proven that when the rupiah depreciated, there were many foreign capital flows to Indonesia.

This empirical result is also supported by the research of Geda and Yimer (2016). An increase in nominal exchange rate growth will reduce capital flight in Ethiopia by around 0.12 percent in the long run. Changes in the exchange rate growth will reduce capital flight far higher in the short term, which is approximately 1.76 percent. Adetiloye's (2012) study also showed similar results. In the study, it was found that changes in the increase in the exchange rate (depreciation) would reduce the amount of capital flight in Nigeria by 60.22 units.

In addition to the four variables previously explained, the sovereign rating is also considered as one of the factors that affect capital flight. Based on empirical results, the

sovereign rating does not provide a significant influence on capital flight statistically. However, the direction of the coefficient is by the previous hypothesis and research. When Indonesia's sovereign rating is at the level of investment grade ($D = 1$), capital flight can be reduced by the US \$ 4.89 billion. This empirical result is by figure six where at the sovereign rating at the speculative-grade level the amount of capital flight is quite large. However, when the sovereign rating is at the level of investment grade, the capital flight does not occur at the time of the 2009-2011 period.

This empirical result is also by Lucas Paradox theory where capital will flow to Indonesia when sovereign risk decreases (Standard & Poor's rating agency). This observed result is supported by previous research. Virgantari's research results (2010) state that when Indonesia's sovereign rating is at the level of investment grade (BBB-), the capital flight ratio will decrease by 0.034 units.

Then, the coefficient of determination in this study amounted to 0.3883. That is, the five independent variables can explain 38.83 percent of the variance in capital flight. The remaining 61.17 percent is explained by other variables not described in the model. Similar research with OLS estimation techniques also results in a pretty small coefficient of determination below 50 percent (Baek & Yang, 2010; Gouider & Nouira, 2014; McCaslin, 2013; Ndikumana et al., 2014; Virgantari, 2010; Wujung & Mbella, 2016). The coefficient of determination that is less than 50 percent does not mean that the variables used are still not appropriate to measure capital flight. This is because this research ignores other factors such as external debt and foreign investment (PMA) which have been widely used in the previous

study.

Among them are the investigation of Baek and Yang (2010), Virgantari's research (2010), research of Ndikumana, Boyce, and Ndiaye (2014), Gouider and Nourira's (2014) research, and Wujung and Marbella's research (2016). Statistically, it is clear that these two factors will have a significant influence and increase the coefficient of determination.

However, economically the use of these two variables will not provide significant information. This is because these two factors are the components used to calculate capital flight indirectly (identity equation). Not all economic problems can be explained statistically.

Finally, the model is said to be good if it fulfills all assumptions in OLS because the resulting estimator will be the Best Linear Unbiased Estimator (BLUE). The four assumptions are normality, non-autocorrelation, non-multicollinearity, and homoskedasticity.

Based on Table 4, the results of the classical assumption test have fulfilled all four traditional assumptions.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results and discussion, the following conclusions can be drawn: First, in general, the amount of capital flight in Indonesia has increased quite dramatically since the first quarter of 2009-the second quarter of 2011. The amount of capital flight in that period was more significant than the period after that.

The condition of the global economy that is not yet conducive, the domestic investment climate which is still covered by uncertainty, and local political instability encourage investors to move their capital out of Indonesia. At the beginning of 2014 and the 2016-2017 period, the capital flight trend also increased even though it was not as large as the 2009-2011 period. The reason is the expansionary fiscal policy in the US and the normalization of monetary policy of several developed countries including the US.

Both of these policies result in global financial markets experiencing pressure and resulting capital reversals from developing countries including Indonesia. These problems can be overcome by implementing strategies such as overlapping regulatory

Table 4. Classical assumption test results

Normalitas	<i>p-value</i> JB Test	0,9826
Nonautokorelasi	<i>p-value</i> LM Test	0,2984
	Budget Deficit	1,3859
	Economic growth	1,1681
Nonmultikolinieritas	VIF-Value	1,2295
	Inflation	1,7090
Homoskedastisitas	Exchange Rate Growth	1,7090
	<i>p-value</i> Uji BPG	0,8567

deregulation, simplification of business processes (Ease of Doing Business / EoDB), tax relief to zero percent for reinvestment, and equitable investment climate in all regions.

Second, the empirical results in this study indicate that the macroeconomic variables used in this study are not strong enough if it is said to be the main trigger for capital flight in Indonesia. This result is supported by several variables such as economic growth, inflation rate, and a statistically insignificant sovereign rating on capital flight. Also, the coefficient of determination that is small enough to support that other factors cannot be measured statistically and economically. Several recent studies reveal that non-macroeconomic factors such as a country's risk and corruption trigger capital flight. Human factors such as the behavior of investors who carry out tax evasion, tax avoidance, increase profits, and run assets to be safe are also indicated as a trigger for capital flight. Nonetheless, the direction of influence of all macroeconomic factors in this study other than the exchange rate by the theory, hypothesis, and previous research.

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