

CAPITAL FLIGHT: ISSUE, ESTIMATES AND EXPLANATION EVIDENCE FROM ASEAN COUNTRIES

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Abstract

The purpose of this study is to identify estimates and determinants of capital flight in 8 ASEAN countries. These are measured using the residual method. The estimated relationship between the variables that affect capital flight in this study was carried out through the approach of Fixed Effect Model with Cross-section SUR (Seemingly Unrelated Regression). The SUR method in panel data is used to overcome errors in correlated different models (autocorrelation) whose parameters are estimated using Generalized Least Square (GLS). Based on the results of testing the best model selection, namely the chow test and the hausman test, the best panel data regression estimation model that can be used for this research model is the Fixed Effect Model (FEM). The results showed that economic growth, differences in interest rates, inflation and growth in external debt had a significant positive effect on capital flight, while the exchange rate had a significant negative effect on capital flight. This research was conducted in developing countries, aimed at reducing capital outflows, exchange rate stability and economic growth.

Keywords: capital flight; exchange rate; economic growth; external debt; GLS

INTRODUCTION

At present, it can be understood that the capitalization of capital flows and capital mobilization between countries is growing rapidly where it is a vehicle for risk diversification by investors, which is mostly done by them as an effort to deal with uncertainty from economic, social and political turmoil in various countries, especially in developing countries so that investors can avoid or minimize the risk of investing their funds. Therefore, the issue of capital flight has been a hot topic lately among experts, especially related to the economic context, not least in ASEAN.

It is almost impossible to ascertain the amount of capital flight from a country, especially for countries that adopt a free foreign exchange system. Even for countries that adhere to tight foreign exchange, capital flows remain out without being known by the country's monetary authorities. The thing that can be done to find out the magnitude of capital flight in a country is to make an estimate. Broadly speaking, there are three different approaches to the measurement of capital flight. The three approaches are: Computational Balance of Payments Approach Cuddington, (1986); Residual Approach World Bank, (1985), Morgan Guaranty (1986), and Dooley (1988), and the Bank Deposit Approach. According to Mohsin Khan & Ulhaque (1987) the use of the term capital flight is often associated with developing countries related to conditions of scarce availability of capital. Cuddington (1986) said that capital flight can have adverse effects on developing economies, such as economic growth, taxes, income distribution, exchange rates and direct investment. Cuddington (1986) defines capital flight as short-term, recorded and unregistered capital flows abroad, which are speculative by the non-bank sector. Dooley (1988) sees capital flight as part of the stock of foreign assets (foreign billing stock) that graphs investment income that is not recorded in the balance of payments. Other notions expressed by the World Bank & Susanne Erbe (1985) where capital flight is seen as a residual, namely between capital inflows and capital use. The capital inflow

consists of an increase in foreign debt used to cover the current account deficit and increase foreign exchange reserves. The rest reflects the domestic net bill by the private sector in the country. Morgan Guaranty Trust Company (1986) also sees capital flight as a residual. Technically, the calculation is almost the same as the calculation of the World Bank and Susanne Erbe. It's just that Morgan added one more component, namely the increase in the short-term foreign assets of the banking sector as a deduction from the total capital inflows, in addition to the current account deficit and rising foreign exchange reserves. Cline capital flight formulated a capital flight almost the same as Morgan Guaranty. The difference is that Cline issues investment income reinvested from the current account calculation (Lensink et al., 1998). The reason is that money in the real sense (interest income received from bank deposits / other assets that have been held abroad) has never entered the country so that it cannot be considered as a capital flight. If the interest income is included as credit in the current account statistics, even though the money has never entered the country, then the current account deficit will decrease so that in turn it will increase capital flight. This study explains the determinants of capital flight namely Economic Growth, differences in interest rates, inflation and the growth of foreign debt, and exchange rates.

Several previous studies have been carried out related to the determinants of capital flight, among others by: Cuddington (1986) examining the determinants of capital flight determined by expectations of the domestic exchange rate, domestic inflation rates, and domestic interest rates. Harrigan et al. (2002) which examined the determinants of capital flight namely the real exchange rate, changes in external debt, GDP growth, and domestic inflation. Suarez (1990) from 13 developing countries, namely; Argentina, Bolivia, Chile, Colombia, Ecuador, Gabon, Jamaica, Mexico, Nigeria, Peru, the Philippines, Venezuela and Yugoslavia, examined the correlation of the risk of failing to pay off foreign debt to the level of capital flight. Schineller (1997), who examines the econometric model of capital flight in 17 developing countries, uses variable interest rate differences, black market premiums, budget surplus on GDP, the impact of the imf program and media control as variables that have alleged influence on capital flight. Moghadam, Samavati, and Dilts (2002), which examines the variables of real interest rates, term of trade, private foreign capital inflows and exchange rates, all affect capital flight in the four countries. Quazi (2004), has conducted research on the model of foreign aid and capital flight in the country of Bangladesh.

Okoli and Akujuobi (2009) observed and evaluated the determinants of long-term capital flight in Nigeria in the period 1970-2005. Al-Fayoumi, Al-Zoubi, and Abuzayed (2012) conducted a study of the determinants of capital flight in MENA countries, namely; Jordan, Syria, Algeria, Morocco, Egypt, Turkey and Tunisia, the period 1981–2008. Ahmad and Sahto (2015), analyzed the determinants of capital flight in Pakistan during the period 1971-2011. Liew, Mansor and Chin (2016) analyzed capital flight in Malaysia. Wujung and Mbella (2016), in the State of Cameroon for the period 1970 to 2013. Aziz et al. (2017), in their research on determinants of capital flight in the period 1975-2013.

This study measures the estimation of capital flight based on the residual approach. This research examines capital flight in eight developing countries in ASEAN which have foreign debt. Countries Singapore and Brunei Darussalam are excluded from the research model because they do not have foreign debt which is a component of calculating capital flight based on a residual approach. The renewal of this research examines all ASEAN member countries except Brunei and Singapore and uses the SUR model and the Generalized Least Square (GLS) regression method.

Therefore, the purpose of this paper is to explore the issue of capital flight that has occurred in several ASEAN countries included in developing countries, and estimate the magnitude of capital flight occurring in the country during the period 2015-2023, and how the implications of capital flight for the economies of these countries. The estimated relationship between the variables that affect capital flight in this study uses the Fixed Effect Model approach with SUR (Seemingly Unrelated Regression) Cross-section. The SUR method on panel data is used to overcome autocorrelation whose parameters are estimated using Generalized Least Square (GLS). Based on the test results show that Economic Growth, differences in interest rates, inflation and foreign debt growth have a

significant positive effect on capital flight, while the exchange rate has a significant negative effect on capital flight.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

The model of the determinant of capital flight in this study uses the approach of international capital flows, investment portfolio theory, interest rate parity theory, and Fleming Mundel theory. To complement these theories, references from empirical studies have been used before.

The variable exchange rate is one of the factors thought to be considered by an investor in carrying out capital flight. Cuddington, 1986; Pastor, 1987; Ahmad and Sahto (2015), Mbewe (2015), and Wujung and Mbella (2016), which states that the exchange rate has a positive effect on capital flight. The positive effect of the research results from the exchange rate on capital flight because for foreign investors the existence of depreciation causes the domestic exchange rate to be lower in price than the value of the dollar. Different opinions about the effect of exchange rates on capital flight come from Pradhan, Bhujabal, Sethi, 2023; Vespignani, 2008; Al-Fayoumi, AlZoubi, and Abuzayed, 2012; Ozer, Doker, and Turkmen, 2013; and Hasnul and Masih, 2016, which state that the effect of the exchange rate on capital flight is negative. This is related to the assumption that the decline in the domestic exchange rate causes the domestic exchange rate to be lower in price and the value of the dollar becomes more abundant if measured by domestic exchange rates in ASEAN countries.

Empirically, inflation is a determinant of capital flight. Inflation is a monetary event that is almost found in all countries in the world. Rising inflation causes the purchasing power of society to decline and the general level of prices in the country increases. If the increase in general prices in this country continues, it will cause investment in the country to be less profitable and the assets or wealth owned by investors will decrease in value. The positive influence of inflation on capital flight can be seen in the results of the empirical Pastor, 1987; Okoli and Akujuobi, 2009; Ahmad and Sahto, 2015; Mbewe, 2015; Hasnul and Masih, 2016; Wujung and Mbella, 2016; and Uddin, Yousuf, and Islam, 2017), which show empirical evidence of the positive and significant influence of the inflation variable on capital flight. Whereas Cuddington, 1986; Pradhan, Bhujabal, Sethi, 2023; Ozer, Doker, and Turkmen, 2013, Liew, Mansor and Chin, 2016, showed empirical evidence of a negative and significant effect of inflation on capital flight. The empirical findings confirm that the more inflation increases, the lower the capital flight.

Economic growth is the next factor that determines capital flight. Economic growth is the process of increasing output per capita in the long run. Economic growth has a relationship with the need for capital. The faster the economic growth of a country the greater the need for capital. Thus, in countries with rapid economic growth, there will be a lot of capital needed both from domestic sources and from outside sources, so that capital will go to countries that have high economic growth. If viewed from the perspective of investors in the context of investment, high growth shows the potential of the business and business opportunities that allow it to continue to grow, so that the opportunity is available to obtain the benefits of the activities carried out. Some of the previous studies also produced empirical facts that economic growth has a negative direction towards capital flight, including; Pastor, 1987; Quazi, 2004; Makochehanwa, 2007; Al-Fayoumi, AlZoubi, and Abuzayed, 2012; and Hasnul and Masih, 2016. An economy with high economic growth reflects the existence of a conducive climate for investment that allows each business unit to grow and develop rapidly in order to maximize the level of profit. While the results of research that reveal the opposite results are; Harrigan, Mavrotas, and Yusop, 2002; Okoli and Akujuobi, 2009; Ahmad and Sahto, 2015; and Uddin, Yousuf, and Islam, 2017, Agyeman, et.al, 2022.

The growth of foreign debt is also thought to be an invoice affecting capital flight. Is Harrigan, Mavrotas, and Yusop, 2002; Quazi, 2004; Makochehanwa, 2007; Al-Fayoumi, AlZoubi, and Abuzayed, 2012; Ahmad and Sahto, 2015; Wujung and Mbella, 2016; and Uddin, Yousuf, and Islam, 2017, which states that the growth of foreign debt has a positive effect on capital flight. This means that the

higher the growth of foreign debt, the higher the potential for escape capital from developing countries. Positive direction with respect to principal payment obligations and interest that must be returned from the loan that occurred, resulting in a large capital outflow. Only a small number of researchers have stated otherwise, where the growth of foreign debt has a negative effect on capital flight, such as; Schineller, 1997; Liew, Mansor and Chin, 2016; and Ozer, Doker, and Turkmen (2013).

The difference in interest rates is another factor that determines capital flight from developing countries. Interest rates in developing countries are generally higher than the interest rates of developed countries, so the benefits of investing in the country are better than abroad. The difference in interest rates reflects the rate of return on investment invested. The greater the difference in interest rates, the greater the difference in profits between investing in domestic and overseas investments, in this case in American securities. Thus, the greater the interest rate difference, the smaller the rate of capital flight, because investors will continue to invest in the country with a relatively higher level of profit.

Previous studies of the negative influence of interest rate differences on capital flight can be seen in the results of previous studies from Schineller, 1997; Moghadam, Samavati, and Dilts, 2002; Quazi, 2004; and Al-Fayoumi, AlZoubi, and Abuzayed (2012). While the positive influence of interest rate towards capital flight can be seen in the results of Cuddington, 1986; Pastor, 1987; Vespignani, 2008; Okoli and Akujobi, 2009; and Uddin, Yousuf, and Islam, 2017. Based on the description above, the determinant of capital flight (CF) is formulated as a function of:

$$CF_t = \beta_{10} + \beta_{11}ER_t + \beta_{12}INF_t + \beta_{13}GRT_t + \beta_{14}GDEBT_t + \beta_{15}DINT_t + \varepsilon_t.$$

With ;

$$\beta_{11} > 0, \beta_{12} > 0, \beta_{13} < 0, \beta_{14} > 0, \text{ and } \beta_{15} > 0$$

Where, CF is capital flight, ER is the exchange rate, INF is inflation, GRT is economic growth, GDEBT is the growth of foreign debt, DINT is the difference in interest rates.

Hypotheses of this research are:

H1: Exchange rate has a positive effect on capital flight.

H2: Inflation has a positive effect on capital flight.

H3: Economic Growth has a negative effect on capital flight.

H4: Growth of Foreign Debt has a positive effect on capital flight.

H1: Difference in interest rates has a positive effect on capital flight.

RESEARCH METHODS

This research is explanatory research intended to estimate capital flight in ASEAN countries, including Indonesia, Malaysia, Thailand, the Philippines, Myanmar, Vietnam, Cambodia and Laos. The period of data used is 2015 & 2023, which was collected through secondary data from several publication sources. The analytical model used to analyze the effect of independent variables on the dependent variable is the panel data equation model, which is a combination of time series data and cross section. The main focus of this study is to analyze the determinants of capital flight in Asean (including: exchange rates, foreign debt, interest rate differences, inflation, economic growth) with the model referring to the following equations :

$$LnCF_{it} = \beta_0 + \beta_1ER_{it} + \beta_2INF_{it} + \beta_3EG_{it} + \beta_4GDEBT_{it} + \beta_5DINT_{it} + \varepsilon_{it} \quad (1)$$

where :

LnCF = capital flight in country i period t
 ER = exchange rate in country i period t
 INF = inflation rate in country i period t

EG	= economic growth in country i period t
GDEBT	= foreign debt growt in country i period t
DINT	= difference interest rate in country i period t
β_0	= constanta
β_k	= coefficient, k = 1, 2, ..., 5
ε	= error term

The operational definitions of the independent and bound variables in this study are: (1) Capital Flight (CF) is the flow of capital out of each ASEAN country for speculation purposes and accompanied by an increase in foreign debt. Capital flight is estimated using the residual method. The unit is in natural log of million US \$. (2) Exchange Rate (ER) is the size of the domestic exchange rate against the US dollar. (3) Inflation (INF) is the amount of inflation that occurs in each ASEAN country, calculated based on the consumer price index. Unit in percentage. (4) Economic growth (EG) is the magnitude of the value of economic growth in the current year in ASEAN countries, which is measured by constant prices. Unit in percentage. (5) Interest Rate Difference (DINT) is the amount of the difference in the interest rate of the 3-month deposit in each ASEAN country with the interest rate of the Federal Bank. Unit in percentage.

Modeling in using panel data regression techniques is done by using three alternative approaches to processing. The three approaches are Pooled Least Square (PLS) or Common Effect Model (CEM), Fixed Effect Model (FEM) and Random Effect Model (REM). To determine the best model, what is the Common Effect Model (CEM) or Fixed Effect Model (FEM) that will be selected to estimate the data using the chow test and the hausman test. The SUR method in panel data is used to overcome errors in different models that are correlated (autocorrelation) whose parameters are estimated using Generalized Least Square (GLS) (Widyaningsih et.al., 2014).

RESULTS AND DISCUSSION

ESTIMATION CAPITAL FLIGHT

The capital flight referred to in this study was measured using the residual method used by World Bank (1985) based on research conducted (eg. Pastor, 1990; Moghadam et. Al., 2002; Vespignani, 2008; Okoli & Akujuobi, 2009; Al-Fayoumi et.al., 2012; Ahmad & Sahto, 2015; Wujung & Mbella, 2016; Aziz et.al. 2017). Capital flight is associated with situations where uncertainty and risk are so high both economically and non-economically. Citizens carry their own funds to avoid heavy losses if they hold domestic assets. Capital flight occurs because of citizens' fear of wealth loss due to things such as sudden depreciation of the domestic currency, the inability of the government to pay its debts, changes in capital controls and regulations regarding the money market and capital, or changes in policy fiscal that is detrimental to fund owners (Lensink et al., 1998).

The measure of receipt of inflows of capital in the form of increased foreign direct investment (FDI), foreign debt, and then reduced current account deficits and foreign exchange reserves (official reserves) as a component of capital outflow. This measurement mainly measures net foreign claims by the private sector by using the assumption that inflow or sources of funds are used to fund deficits in the current account balance and changes in foreign exchange reserves or outflows so that the residuals of both are indicated as capital flight. The measurement formula is as follows:

$$CF = \Delta ED + \Delta FDI - (\Delta CAD + \Delta OR) \quad (2)$$

Where :

CF	: Capital Flight
ΔED	: Changes in foreign debt
ΔFDI	: change in foreign direct investment

CAD : Defisit/surplus current account
 Δ OR : change in official reserve

The estimation of the residual capital flight method in this study shows the difference between funding sources and the use of funds where capital flows abroad are indicated by the results of a positive sign. Conversely, if the calculation of capital flight with the residual method shows a negative sign, what happens is inward capital flight. In the notes in the balance of payments, sources are indicated by changes in private foreign debt and foreign direct investment while uses include current transactions and changes in foreign exchange reserves. The disadvantage of this method is that foreign debt stock can change due to currency realignment. Suppose the rupiah depreciates against the US dollar, then the rupiah from the debt expressed in the form of US dollars will increase without the occurrence of new debt. This will reduce the increase (change) in recorded debt, which in turn reduces the estimate of capital flight.

Referring to the residual approach, the following shows the conditions of capital flight in developing countries in ASEAN, as can be seen in Figure 1, which shows the development of capital flight from eight developing countries in the ASEAN region from 2015 to 2023, which tends to experience volatile movements. In figure 1, it can be seen that the impact of the 2015 recovery period from financial crisis only caused increased capital flight to the countries of Indonesia and Vietnam, due to disrupted domestic macroeconomic conditions. Then in 2019 to 2023, the highest increase in capital flight occurred in Indonesia, Malaysia, Thailand and Vietnam due to the depreciation of the domestic currency for several years which affected the trust of capital owners to hold domestic currency.

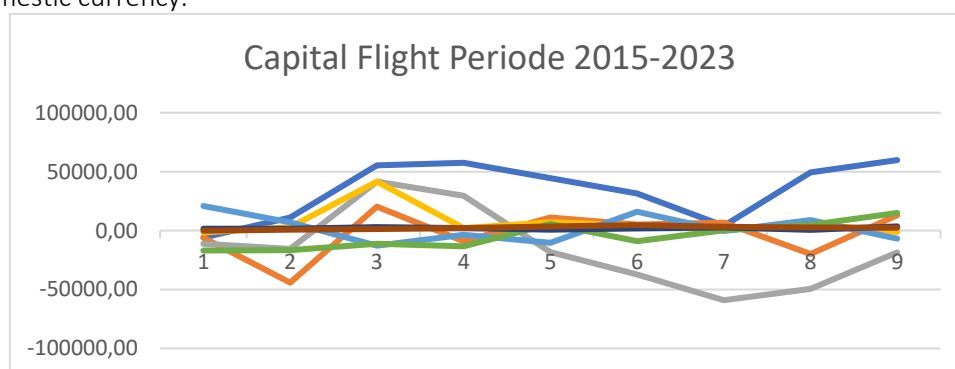


FIGURE 1. Capital Flight in ASEAN
 Period 2015-2023

Laos is the only country that has never reached a negative capital flight value during the study period, with the highest capital flight value in 2022 amounting to US \$ 5,120.22 Million and the lowest capital flight value in 2017 of US \$ 185.37 Million. The development of capital flight in Thailand reaches a negative value of almost every & nbsp; years except 2019 and 2020. During the period 2015 to 2016 and 2021 to 2023, the value of capital flight in Thailand was always the lowest among other countries. In line with Thailand, the Philippines has also become a country with always negative capital flight values except in 2021 and 2023. Unlike the case with Indonesia which achieved positive values almost every year except in 2014 and 2017, it became the country with the highest value of capital flight among other countries in 2019 to 2023. "For the entire ASEAN country studied the highest average value of capital flight during 20014 up to 2023 occurred in Indonesia amounting to US \$ 34,445.45 million and the lowest average occurred in Thailand at US \$ - 10,776.31 Million. Where Indonesia is the country that has the first highest foreign debt among other countries. Whereas Thailand is the country that has the third highest foreign debt after Indonesia and Malaysia. An increase in changes in foreign debt will cause an increase in the value of capital flight. This condition applies in Indonesia, Malaysia, Thailand, the Philippines, Myanmar and Cambodia and does

not always apply in Vietnam and Laos. Because, sometimes the increase in changes in foreign debt in the two countries does not always cause an increase in the value of capital flight.

Data from 2015 to 2023 for eight developing countries in the ASEAN region, namely Indonesia, Malaysia, Thailand, Philippines, Vietnam, Laos, Myanmar and Cambodia, were calculated using panel data regression methods. Before the panel data regression calculation is carried out, the panel data validity is first tested, namely: Chow Test

The chow test is used to find out whether the Common Effect Model (CEM) or Fixed Effect Model (FEM) will be selected to estimate the data. The decision criteria in the chow test are, if Prob. Cross-section Chi Square < alpha (5%) then Fixed Effect Model selected, or if Prob. Cross-section Chi Square > alpha (5%) then the Common Effect Model chosen.

The value of the Prob. Cross-section Chi Square < alpha (5%) or $0.0045 < 0.05$, so the model used is the Fixed Effect Model (FEM) see at Table 1. Hausman Test The Hausman test is used to determine whether Fixed Effect Model (FEM) or Random Effect Model (REM) will be selected to estimate the data. The decision criteria in the hausman test are, if Prob. Random Cross-section > alpha (5%) then Fixed Effect selected, or if Prob. Random Cross-section > alpha (5%) then the Random Effect Model chosen.

TABEL 1. Result *Chow Test*

Effects Test	Statistic	d.f.	Prob.
Cross-section-F	2.496552	(7,67)	0,0121
Cross-section Chi-square	21.534933	7	0,0048

Source: Data processing, attachments

TABEL 2. Result *HausmanTest*

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	17.254434	5	0,0022

Source: Data processing, attachments.

Based on Table 2 shows that the value of the Prob. Random Cross-section < alpha (5%) or $0.0022 < 0.05$, the model used is the Fixed Effect Model (FEM). Based on the results of testing the best model selection, namely the chow test and the hausman test, it can be concluded that the best panel data regression estimation

model that can be used for this research model is the Fixed Effect Model (FEM). The estimation of the relationship between the variables that affect capital flight in this study is done through the approach of Fixed Effect Model with Cross-section SUR (Seemingly Unrelated Regression). The SUR method on panel data is used to overcome errors in different models that are correlated (autocorrelation) whose parameters are estimated using Generalized Least Square (GLS). SUR model with GLS method is better to use because the resulting error is smaller. Parameter estimates on the SUR model are carried out simultaneously by utilizing peer correlation, ie correlation occurs when errors in different models correlate at the same time (Widyaningsih et.al., 2014).

The following are the estimation results of the FEM SUR Cross-section panel data regression shown in Table 3 below:

TABLE 3. Results of Panel Data Regression Estimates

Variable	Coefficient	t _{count}	Prob.	F _{count}	Prob.	R ²
C	-27.919,66*	4,332557	0,0001*	65,20532	0,00*	0,912334
ER	-75.54721*	-5.262626	0,000*			
INF	93.34254*	4.309972	0,0000			
EG	0.070231*	4.243308	0,0000			
GDEBT	724.2218*	9.001304	0,000*			
DINT	452.8217*	6.948309	0,000*			

Source: Data processing, attachments.

Description: * Significant alpha = 5% (0.05)

Based on the estimation results of the FEM Cross-section panel data regression, equation 2 can be interpreted as follows:

$$CF_{it} = -27.919,66 - 75.54721 ER_{it} + 93.34254 INF_{it} + 0.070231 EG_{it} + 724.2218 GDEBT_{it} + 452.8217 DINT_{it} + \varepsilon_{it} \quad (4)$$

Based on Table 3 the best estimation model is Fixed Effect Model (FEM) which shows that Economic Growth (EG), difference in interest rates (DINT), inflation (INF) and ULN Growth (GDEBT) have a significant positive effect on capital flight, while value exchange (ER) has a significant negative effect on capital flight.

EFFECT OF EXCHANGE RATE (ER) ON CAPITAL FLIGHT (CF)

The exchange rate variable shows a negative sign of a coefficient value of -75.54721 and a probability value that has a significant effect on capital flight in eight developing countries of the ASEAN region for the period of 2015 to 2023. This means that if the country's exchange rate depreciates 1 unit of currency then capital flight in eight countries the development of the ASEAN region under study will increase by US \$ 75.54721 Million. the falling exchange rate shows a depreciating exchange rate because prices of goods abroad are cheaper so that the volume of imports increases, this condition makes investors reluctant to hold the domestic currency. Then investors will run their capital abroad so that it will increase the value of capital flight. Conversely, if the exchange rate of a country rises, then the country's exchange rate appreciates and will increase export volume. This condition makes investors interested in holding domestic currency so that it will reduce the value of capital flight.

The exchange rate indicates the purchasing power of a country's currency against US dollars. If the exchange rate of a country rises, then the share of the country's trade also rises which causes a strengthening in the competitiveness of the country's products. This condition will cause the country's currency to appreciate, because domestic products dominate the country's trade share. So that investors are willing to hold the country's currency and not invest their capital abroad. The results of this study are in line with the theory of the balance of payments approach which states that the increase in domestic prices relative to prices abroad will cause deterioration in the competitiveness of domestic products, and cause a negative impact on the current account balance. In turn this causes a depreciation of the domestic currency.

According to the theory of purchasing power parity, the comparison of the value of one currency with another currency is determined by the purchasing power of the money in each country O'Connell, P. G. (1998). If the purchasing power of a country's low currency will be considered less profitable by investors. He will divert his capital into foreign currency so that it will increase the value of capital flight. Conversely, if the purchasing power of a country's high currency will be valued favorably by investors. He will invest his capital in the country. The results of this study are consistent with previous studies (eg. Harrigan et. Al., 2002; Vespignani, 2008; Al-Fayoumi et. Al., 2012) which stated that the exchange rate has a negative effect on capital flight.

The implication of this study is that the governments of ASEAN countries are expected to be able to keep exchange rates in the country more stable with the policies of each country. For a country that adheres to a fixed exchange rate system, it is better that the state government when carrying out devaluation or revaluation actions pay attention to global economic conditions such as adjusting interest rates and domestic currencies by taking into account import volumes and tariffs so that domestic currency volatility is controlled. For countries that adhere to a floating exchange rate system, it is better for the central bank in the country to carry out appropriate monetary policy with the main goal of maintaining the inflation target set by the government such as discount politics, open market politics, statutory reserves and moral appeal.

THE EFFECT OF INFLATION (INF) ON CAPITAL FLIGHT (CF)

The inflation variable shows a positive sign the coefficient value is 93.34254 and the probability value has a significant effect on capital flight in the eight developing countries of the

ASEAN region for the period of 2015 to 2023. This means that if inflation rises 1 percent, the capital flight in the eight developing countries studied will increase amounting to US \$ 93.34254 Million. If a country's inflation rises, it will increase the value of capital flight. Conversely, if a country's inflation falls, it will reduce the value of capital flight. Inflation is an indicator that is considered by capital owners to run their capital abroad. Investors consider that inflation in the eight ASEAN countries studied is quite high, so that in real terms it can reduce the level of profits earned. The currencies of countries experiencing inflation tend to experience depreciation. One of the causes of capital flight according to Ndikumana (2003) is inflation, which has implications for the distrust of investors to invest their capital in a country. If inflation occurs, the capital owners will invest their capital abroad so that it will cause an increase in capital flight.

The results of this study are in line with the quantity theory which states that the inflation rate is determined by the amount of money in circulation and the public's expectations regarding future price increases. Investors will expect that future prices will remain stable (as expected). If the money supply increases, the economy becomes sluggish due to low purchasing power. So that investors feel disadvantaged to invest in the country. Whereas according to structuralist theory, inflation arises because of the rigidity of the economic structure of developing countries, where the country's export growth is slow so that it will result in an increase in production costs which will cause an increase in inflation. The results of this study are consistent with previous research (eg Pastor, 1987; Okoli & Akujuobi, 2009; Ahmad & Sahto, 2015; Wujung & Mbella, 2016; and Aziz et. al., 2017), which states that inflation has a positive effect on capital flight.

The implication of the results of this study is that the government needs to encourage exports and limit the volume of imports to increase the purchasing power of domestic products so that export volume increases which reflects the strengthening of the domestic currency.

EFFECT OF ECONOMIC GROWTH (EG) ON CAPITAL FLIGHT (CF)

The economic growth variable shows a positive sign of a coefficient value of 0.070231 and a probability value that has a significant effect on capital flight in eight developing countries of the ASEAN region for the period of 2015 to 2023. This means that if economic growth increases by 1 percent, capital flight in the eight developing countries of the ASEAN region is examined will increase by US \$ 0.070231 Million. Increased economic growth in the eight ASEAN countries studied in the period 2015 to 2023 was able to increase the value of capital flight.

If economic growth rises, income and total expenditure on the output of goods and services in the economy of each person (economic actor) also increases. With increasing income, capital ownership will also increase so that investors will expand their types of investment (diversified investment) in a safe place with a high level of profit and low risk. If the capital owned by investors increases, then the diversification of investment will also increase, so that it will cause an increase in the value of capital flight. Conversely, if a country's economic growth declines, investment diversification will also decrease, thereby reducing the value of capital flight.

Greater economic growth leads to greater capital flight, and implies that investors diversify investments when income and profits rise. The reason for this is that increased financial liberalization has caused residents to diversify their portfolios. In addition, greater income and profits will generate more assets abroad and offset investor confidence in domestic assets. The results of this study are in line with Harrod-Domar's theory of economic growth which states that investment plays a role in the process of economic growth, especially regarding the dual character of investment. First, it creates income (the impact of investment demand). Second, it enlarges economic production capacity by increasing capital stock (the impact of investment offers). Capital flight as a form of illegal or unrecorded portfolio investment carried out by capital owners to generate greater profits and lower risks, creating greater income for capital owners. Although capital flight limits the potential for national economic growth because capital that is rushed abroad does not contribute at all to domestic investment needed to finance economic growth, it creates greater profits for investors. The results of this study are consistent with previous research (eg. Harrigan et al., 2002; Okoli &

Akujuobi, 2009; Ahmad & Sahto, 2015; and Aziz et al., 2017), which states that economic growth has a positive effect on capital flight.

THE EFFECT OF FOREIGN DEBT GROWTH (GDEBT) ON CAPITAL FLIGHT (CF)

The variable of foreign debt growth shows a positive sign of a coefficient value of 724.2218 and a probability value that has a significant effect on capital flight in eight developing countries of the ASEAN region for the period of 2015 to 2023. This means that if foreign debt growth increases 1 percent then capital flight in eight developing countries the ASEAN region studied will increase by US \$ 724.2218 Million.

The direction of the sign of a positive coefficient value from the positive growth of foreign debt to capital flight shows that the higher the growth of foreign debt the higher the potential for the occurrence of escape & capital from developing countries. Positive direction with regard to principal payment obligations and interest that must be returned from the loan that occurred, resulting in a large capital outflow. Foreign debt according to Eaton (1987) is one component of capital flight. If you look at the composition of foreign debt in Asean countries, it shows a growing value, which is the reason for the large capital flight in ASEAN. The results of this study are consistent with previous research (eg. Harrigan et al., 2002; Quazi, 2004; Al-Fayoumi et. Al., 2012; Ahmad & Sahto, 2015; Wujung & Mbella, 2016; and Aziz et. al., 2017), which states that the growth of foreign debt has a positive effect on capital flight.

THE EFFECT OF DINT INTEREST LEVELS ON CAPITAL FLIGHT (CF)

Variable differences in interest rates show a positive sign of a coefficient of 452.8217 and a probability value that has a significant effect on capital flight in eight developing countries of the ASEAN region for the period of 2015 to 2023. This means that if interest rates increase by 1 percent, capital flight in eight developing countries the ASEAN region studied will increase by US \$ 452.8217 Million.

Based on data on the development of interest rate differences in the eight ASEAN countries studied, almost all ASEAN countries studied had positive interest rate differences between the countries studied and the United States, except Malaysia and Thailand in 2015 achieved negative interest rate differences. This shows that the interest rates of the eight ASEAN countries studied were greater than the interest rates of the United States. If the difference in interest rates from the two countries is higher, it will increase the value of capital flight. Conversely, if the difference in interest rates from the two countries gets smaller, it will reduce the value of capital flight. Although domestic interest rates offer a higher rate of profit, there is also a high level of risk, namely the high risk of failure in the payment of the interest rates they offer. As we know that capital flight is based on speculative motives to avoid large losses if investors hold assets in the country.

The results of this study are in line with the theory of interest rate parity which states that investors compare returns from domestic markets with results from international markets. The difference in interest rates of a country against other countries shows that there are differences in the benefits provided by an investment instrument offered in both. In addition, based on the theory of interest rate differences in the Mundell-Fleming model states that the interest rate of a country is determined by the world interest rate. The flow of international capital will influence domestic interest rates to adjust the size of the world interest rate that is the reference. So, when a country's interest rates are higher it will certainly offer a higher level of profit as well. However, investors will compare the country's interest rates with world interest rates (a reference country in this case the United States). Because US \$ is a global currency where foreign exchange reserves of almost all countries in the world use US \$. With the change in US interest rates, then as a global currency it will certainly affect the world financial market. The greater development of modern financial services systems of ASEAN countries and greater integration with capital-rich regions, including three major countries in Asia (China, Japan and Korea), can attract large amounts of capital into ASEAN countries even when global interest rates are gradually increasing. However, this attraction cannot be exploited by the developing countries of the ASEAN region, because the modern financial system in these countries has not been integrated so that even though the interest rate offered is higher than

the world interest rate, the risk of investment failure is also high so it is risky to invest in domestic areas (International Monetary Fund, 2015). The results of this study are consistent with previous research (eg. Cuddington, 1986; Pastor, 1987; Vespignani, 2008; Okoli & Akujobi, 2009; and Aziz et al. 2017), which states that differences in interest rates have a positive effect on capital flight. The implication of this study is that it is necessary to improve the management of domestic investment risk and tighten capital traffic control.

CONCLUSION

This study estimates the amount of capital flight and explains the factors that influence it. Several arguments have been discussed to illustrate the importance of capital flight in ASEAN countries. The most important determinant is foreign debt. If you look at the composition of foreign debt in Asean countries, it shows a growing value, which is the reason for the large capital flight in ASEAN. The implication is that policy makers in ASEAN countries should focus on controlling the country's foreign debt to reduce capital flight. Economic growth, differences in interest rates, inflation and the growth of foreign debt have a positive effect unless the exchange rate has a negative effect. The exchange rate is getting stronger, causing higher capital flight.

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