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Portfolio Flows into Indonesia: Push or Pull?

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Abstract

This paper focuses on the dynamic of the portfolio flows into Indonesia. The result of Structural Vector Autoregression (SVAR) model reveals that push factors is more dominant than pull factors in explaining portfolio flows into Indonesia. Portfolio flows into Indonesia are positively correlated with regional's stock market performance and negatively correlated to the federal funds rate. On the pull factors, domestic risk (the Credit Default Swap spread) is more dominant than domestic return (the BI rate) in explaining the flows. Thus, it is important for authorities to have more focus on domestic risk–relative to rate of return–in managing portfolio flows. In addition, the negative impact of the lagged Indonesia stock market index to the capital flows indicates a counter cyclical investment behavior of global investors.

Keywords: Portfolio Flows; VAR

Abstrak

Studi ini mengkaji dinamika arus investasi portofolio Indonesia. Hasil dari model Structural Vector Autoregression (SVAR) menunjukkan bahwa "faktor pendorong" lebih dominan dibandingkan "faktor penarik" dalam menjelaskan pergerakan arus investasi portofolio. Arus investasi portofolio ini berkorelasi positif dengan kinerja pasar saham regional dan berkorelasi negatif dengan tingkat suku bunga the Fed. Untuk faktor penarik, risiko domestik (CDS) menjadi faktor yang dominan dibandingkan imbal hasil (BI rate) yang menguatkan pentingnya manajemen risiko perekonomian domestik dalam stabilisasi arus investasi portofolio. Lebih lanjut, studi ini juga mengindikasikan adanya perilaku kontra siklikal dari investor global.

Kata kunci: Arus Investasi Portofolio; SVAR

JEL classifications: F32; G11

1. Introduction

In 1980's capital flows to Indonesia were dominated by government capital which mainly caused by the underdeveloped financial system and the dominance of state of enterprise in the economy. The trend was reverse in 1990's when private capital began to dominate capital flows to Indonesia. Goeltom (2008) mention three internal factors that attracting capital flows to Indonesia. *First*, domestic saving was inadequate to finance economic development. *Second*, deregulation policy for the banking system and the capital market. *Third*, a stable

macroeconomic conditions and high interest rate differential.

During the same period, there is a tremendous growth in portfolio investment between countries since financial liberalization around mid-1980's. International portfolio diversification has been pushed by the increasing demand of foreign securities in developed and developing countries. After almost two decades of Asian crisis in 1997–1998, the stability of portfolio to developing countries still become a hot topic in academic environment. Indonesia is one of the most interesting example of this phenomenon.

While financial liberalization has been in place for more than two decades, Indonesia still has a relatively small size of market capitalization in the Asia Pacific region (Table 1). The ratio of market capital-

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ization to GDP is only 28–45% which is the smallest among the listed countries. It could be argued that the rise and the fall of Indonesia stock market index correlate with the rise and fall of regional stock market index. Thus, the capital flows into Indonesia, especially portfolio flows could also be affected by regional factors.

Table 2 displays the positive relationship between Indonesia stock market index and the regional stock market index, and between Indonesia stock market index and the global stock market index. The relationship between Indonesia stock market index and regional stock market index is stronger than the relationship between Indonesia stock market index and global stock market index, which is indicated by higher value of correlation, but with the exception of global crisis period. The correlation between Indonesia stock market index and regional stock market index dropped to 0.29 in the period of global crisis, lower than the relationship between Indonesia and global stock market index.

Theoretically and confirmed by empirical studies, there is a negative relationship between portfolio flows into developing countries and interest rate in developed countries especially in the US. The lower the federal funds rate means relatively lower expected return for international investor to invest in United States, thus they will penetrate alternate stock market which relatively has higher interest rate. Hence, the lower the federal funds rate, the higher investment (portfolio flows) to Indonesia. Figure 1 shows little persistence relationship between portfolio flows and federal funds rate. It seems however there is weak relationship between portfolio flows and interest rate differential (BI Rate–FedFund sRate)¹.

In 2005 to 2016, portfolio investment—was the main contributors to the capital flows into Indonesia (Figure 2). Furthermore, FDI is almost always has positive contribution while others investment is mostly negative (outflows) leaving portfolio flows as the prime determinant of the surplus or the deficits of Indonesia capital account. Thus, it would be interesting to know whether the push or the pull factors or whether domestic, regional, or global factors contribute more in explaining portfolio flows into Indonesia.

¹ Later, we use separately the BI rate and the federal funds rate in the model as each variable represent two different factors; the pull and the push.

2. Literature Review

Researches on foreign portfolio investment in 1990's shows a significant role of home bias on portfolio investment (Lewis 1999; Karolyi & Stulz 2002). As financial market becomes more integrated and more developed in emerging market the home bias tendency has been declining. This tendency also induced by the declining trend of interest rate in developed countries especially in the US (French & Poterba 1991; Cooper & Kaplanis 1994; Tesar & Werner 1995). Many literatures then focus on two main factors influencing portfolio flows in emerging market whether it is caused by global and regional factors or caused by country specific factors. Country specific factors are so-called 'the pull' while global factors are 'the push' factors (Taylor & Sarno 1997; Fernandez-Arias 1996; Agénor 1998). To be more specific, the pull factors are the level of domestic risk and return, and the push factors are the level of global and regional rate of return.

Since 2000s, developed countries has started to implement extremely low interest rate and unconventional monetary policies. United States, Japan, Sweden, and Switzerland are some of those countries, trying to stimulate their economies in the middle of global economic lethargy. At nearly same time, capital flows surged to emerging markets, raising the importance of 'the push' factors of capital flow. Ahmed & Zlate (2014), used quarterly panel data from 12 emerging countries from Asia and Latin America over the period from 2002 to 2013, which shows that, without putting into account the 'pull' factors, interest rate differentials between the emerging countries and advanced economies are statistically and economically important determinants of private capital inflows.

However, other literatures suggest that push factors are at least as important as pull factors in explaining flows to the emerging markets (Richards 2005). Froot, O'Connell, & Seasholes (2001) stated that the co-movement between returns and flows in emerging market is unable to explain the home bias in international portfolio allocation. Furthermore, Froot, O'Connell, & Seasholes (2001) argue that international portfolio inflows are more strongly correlated within the region than across countries, particularly within Asia region.

Similar evidences found in Fernandez-Arias (1996)

Table 1: Regional Exchange Indicator (In US Billion)

Country	Market Capitalization Value		Market Capitalization % GDP		Number of Listed Domestic Companies	
	2005	2015	2005	2015	2005	2015
Indonesia	81.43	353.27	28.48	40.99	335	521
Philippines	40.15	238.82	38.96	81.80	235	262
Thailand	124.86	348.80	70.80	88.24	504	639
Malaysia	181.24	382.98	126.27	129.29	1020	892
Singapore	316.66	639.96	248.52	218.61	685	483
Australia	804.07	1187.08	115.92	88.62	1643	1989
China	780.76	8188.02	34.59	75.35	1387	2827
Korea, Rep.	718.18	1231.20	79.96	89.36	1620	1948
Japan	4736.51	4894.92	103.60	118.71	3279	3504

Source: World Bank

Table 2: Relationship between Indonesia, Regional, and Global Stock Market Index

MSCI	Correlation							
	2005m10–2008m7		2008m8–2013m4		2013m5–2016m6		whole period	
	MSCIR	MSCIG	MSCIR	MSCIG	MSCIR	MSCIG	MSCIR	MSCIG
	0.93	0.73	0.97	0.83	0.29	0.47	0.86	0.58

Source: Author's calculation

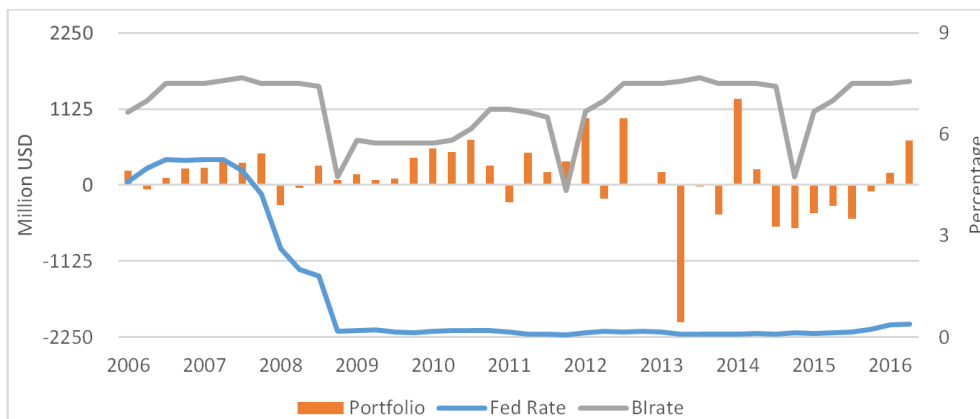


Figure 1: Portfolio Flows, the Federal Funds Rate, and PUAB

Source: SEKI, www.bi.go.id

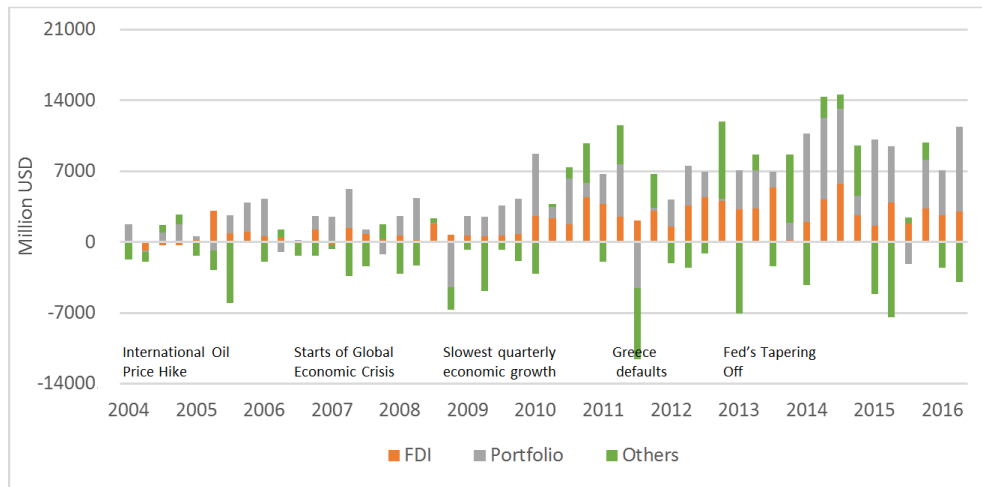


Figure 2: Composition of Capital Flows

Source: SEKI, www.bi.go.id

that used panel data from 13 middle income countries, quarterly data from 1989–1992. Portfolio flows into those middle income countries were closely related to the creditworthiness of the country, however, the creditworthiness itself was heavily influenced by global economic condition. Taylor & Sarno (1997) used monthly data from 1988–1992 in 44 countries, developed and developing economies, found that not only the inflows were affected by international investors, but also local stock price.

3. Method

The set of variables that we use to represent the pull factors are country economic risk-return, which is proxied by Credit Default Swap spread, domestic interest rate (BI–Indonesia Central Bank Rate), and stock market performance (MSCII). While the set of variables that represented the push factors are the federal funds rate, MSCI of Global and Regional Index (MSCIG and MSCIR). We use monthly data from October 2005 to July 2016. The main reason on choosing this period is that Bank Indonesia formally introduced BI rate in October 2005 and to review capital flows in the last decade.

We analyze the data using VAR method. We divide the variables in the data sets into two classifications, the endogenous variable and the exogenous variable (See Figure 3). The endogenous variables in the Structural VAR system are the internal country

specific factors which are portfolio flows PF, Bank Indonesia rate BIrate, and Indonesia stock market performance MSCII.

On another hand, the exogenous variables are the Credit Default Swap spread (CDS), and the external factors which are the federal funds rate (FEDFUND), ASEAN stock market performance (MSCIR), and global stock market performance (MSCIG). Crisis dummy variable also treated as exogenous variable. The classification for exogenous variables have rational backgrounds since Indonesia portfolio flows and stock market are relatively small in the region, and definitely have no influence to global market and federal funds rate.

When significant, Bank Indonesia rate and Indonesia stock market performance are expected to have positive effect on net portfolio flows to Indonesia. Higher Bank Indonesia rate signals international investor that the expected return by investing in Indonesia will be higher, thus there will be a surge of investment flows to Indonesia. Increasing Indonesia stock market performance also indicates better economic condition and higher expected return in Indonesia, hence the higher portfolio flows into Indonesia.

As aforementioned, the federal funds rate is expected to be negatively correlated with portfolio flows into Indonesia, since higher federal funds rate means higher expected returns in United States. The correlation of portfolio and regional stock market performance or global stock market perfor-

mance depend on their relationship type with Indonesia stock market. If regional or global stock market is the substitute for Indonesia stock market, then it is expected to have negative coefficient on both variables. On the other hand, if they are complementary with Indonesia, they would have positive coefficient on their variables.

Credit Default Swaps is a financial swap agreement that the seller of the CDS will compensate the buyer in the event of a loan default by the debtor. In simple words, CDS is insurance against investment default. The price of CDS is referred to as its 'CDS spread'. Thus, as how common insurance works – higher risk, higher price – the lower the quality of the investment, i.e. higher risk to default, less stable balance sheet, etc., the higher the price of its CDS. Therefore, increasing CDS spread in Indonesia, which indicates higher risk environment in Indonesia, will decrease the portfolio flows into Indonesia. Hence, we can conclude that, in theory, there should be negative causation between Indonesia CDS spread and net portfolio flows into Indonesia.

4. Result and Analysis

Based on the unit root test that all variables are stationary at level, the result of the Unrestricted VAR is as shown in Table 3².

Table 3: Estimation Result

Dep Var:	PF	
	Coefficient	Standard Error
Constant	-1024.42	850.82
PF _{t-1}	-0.01	0.10
PF _{t-2}	-0.09	0.10
Blrate _{t-1}	-367.02	298.58
Blrate _{t-2}	462.76	287.13
MSCII _{t-1}	-0.62**	0.31
MSCII _{t-2}	0.11	0.27
CDS	-1.17*	0.67
MSCIG	0.64	0.50
MSCIR	2.28**	1.18
FEDRATE	-223.33***	76.52
No. Obs	102	
R ²	0.1486	
P>chi ²	0.0584	

Note: *** signifies coefficient significant at the 1% level, ** signifies 5%, and * signifies 10%

²Through selection of lag-length criteria and stability test, we choose the lag-2 VAR is the best model.

The estimation on Table 3 shows that among the variables used to explain the movement of portfolio flows into Indonesia, the significant variables are regional stock market index (MSCIR), and the fed-rate (FEDRATE), Credit Default Swaps spread (CDS), and Indonesia stock market index (MSCII) while lagged net portfolio, Bank Indonesia rate (BIrate), and global stock market index (MSCIG) do not affect the movement of portfolio flows significantly. The federal funds rate is the variable that affect the portfolio flows into Indonesia the most, with the highest confidence level of significance, 99%. The negative value this variable is expected, which shows that portfolio flows into Indonesia is very affected by policies in United states. Meanwhile, increases of regional stock market index positively affects portfolio flows into Indonesia, significantly in 95% confidence level, which means that ASEAN stock market and Indonesia stock market are complementary to each other.

The result also shows that CDS spread in Indonesia has negative effect on portfolio flows into Indonesia, as expected. Higher CDS spread means higher risk in Indonesia stock environment, thus decreasing portfolio flows into Indonesia. Meanwhile, the negative impact of the lagged Indonesia stock market index to the capital flows indicates a counter cyclical investment behavior of global investors.

From the above equation, we see that portfolio flows into Indonesia is not significantly correlated with BI rate and the lagged portfolio flows. On the other hand, it has a highly significant negative correlation with the federal funds rate and a significant positive correlation with regional stock market performance. Thus, we can conclude that portfolio flows into Indonesia is relatively more dependent on 'push' factors, rather than 'pull' factors.

5. Conclusions

The contribution of portfolio investment to capital flows into Indonesia has been magnified since global economic crisis in 2008. Ever since, its magnitude and volatility determines the net in and out of capital flows. It is thus crucial to study the dynamic of portfolio flows into Indonesia.

The result of SVAR model reveals that push factors or external global factors explain portfolio flows into

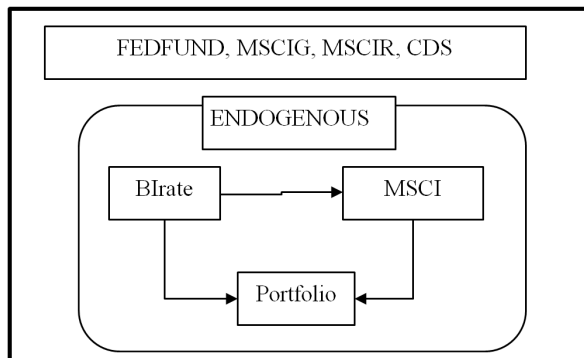


Figure 3: The SVAR Model

Indonesia. The effect of US interest rate still has a significant reversed effect on Indonesia portfolio. It confirms the tendency that the flows to developing countries possibly due to the declining interest rate in developed countries. It also has more linkage to the regional than to the global stock market's performance. Moreover, a strong performance of lagged domestic stock market performance has reversed effect in the following period implies a counter cyclical investment behavior of global investors. Finally, BI rate as Bank Indonesia's monetary instrument has a weak correlation to the flows.

It is therefore important for Bank Indonesia to give attention to the domestic risk and to set BI rate that is in line with the principle of risk reduction. In other words, in attracting foreign investors increasing domestic rate of return while putting domestic economy in a riskier state is not effective and should never be a policy option. Furthermore, our study confirms that focusing on the federal funds rate is necessary in managing portfolio flows. Along with this, Bank Indonesia needs to focus more on the dynamic of regional economy especially ASEAN stock market performance rather than global economy as a whole.

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