



Fed Fund Rate: A Dominant Factor of Portfolio Flows in Southeast Asia

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Abstract: The impact of globalization on cross-country portfolio investment is the high flow of stocks and bonds with the primary goal of taking high yields from rising prices without aiming to own a company. Emerging markets have generally been net recipients of foreign capital in recent decades, including the countries in Southeast Asia consisting of Indonesia, the Philippines, Malaysia, Singapore, and Thailand. The Fed Fund Rate is believed to be the most influential factor in portfolio flows to various emerging market countries. This study will model portfolio equity flows to Southeast Asia over the last 20 years. Model testing uses the moderation analysis process model 4 by Andrew F. Hayes. The findings of this study indicate that the Fed Funds Rate has a greater effect on Southeast Asia's Equity Flows Portfolio than Internal Gross Domestic Product, which indicates the economic strength of a country in Southeast Asia.

Keywords: Emerging Market; Fed Funds Rate; GDP; Portfolio Equity Flows

INTRODUCTION

The rise of global financial markets began in the late 1970s when governments of developed nations began to deregulate foreign exchange and capital markets. In 1979, Britain dismantled the dollar premium investment system, and in 1980, Japan liberalized its foreign exchange market, allowing its citizens to invest in foreign securities. By offering state bonds and listing local stocks directly on international stock exchanges, developing nations such as Brazil, China, India, Korea, and Mexico are taking steps to encourage foreign investment in their capital markets. Moreover, recent advances in telecommunications technology have significantly contributed to the globalization of investment by facilitating cross-border transactions and information dissemination (Eun and Resnik, 2015).

The growth of international financial markets has prompted investors to diversify their portfolios internationally, following the "don't put all your eggs in one basket" principle Markowitz (1952), which is the foundation of investing. Investors diversify their portfolios internationally for the same reason they diversify their portfolios domestically, namely, to reduce the overall portfolio risk by adjusting the portfolio's return based on a certain level of risk.

Some potential benefits make it appealing for investors to diversify their portfolios internationally, namely, the higher the expected return, the lower the variation in the return, the lower the correlation between the return on foreign securities and the return on domestic securities, and the greater the proportion of imported goods and services in their consumption (Bartram and Dufey, 2005).

In the 1970s, when globalization and international investment became crucial, international stock diversification research was initiated (Solnik, 1974; Solnik and Noetzelin, 1982; Black and Litterman, 1991; Jankus, 1998). The primary objective of his research was to determine the relative advantages of diversification when constructing an international stock portfolio by analyzing the magnitude of the constant correlation. Initial research indicates that corporate stock relationships between developed and developing nations provide substantial risk reduction benefits. Further research indicates that a combination of stocks from the United States and Europe produces portfolios with half the risk of well-diversified local stock portfolios in the United States.

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The presence of a comparatively low international correlation suggests that investors have the potential to mitigate portfolio risk to a greater extent through international diversification as opposed to domestic diversification. The extent to which international diversification can effectively mitigate risk is contingent upon the correlation structure among international markets (Eun and Resnik, 2015; Gossel and Beard, 2019; Laurent L. Jacque, 2020; Marino et al., 2021). Emerging markets exhibit a diminished correlation with most developed markets, as well as a reduced correlation within their group. A weak correlation between assets implies that the inclusion of an emerging markets portfolio can potentially decrease risk and yield greater returns, thereby positioning developing nations as prominent recipients of international portfolio investments (Solnik, 1974; Bekaert and Urias, 1999; Driessen and Laeven, 2012; Marino, Nugraha and Waspada, 2024).

Portfolio flows are subject to the influence of various factors, which can be categorized into two main groups: push factors and pull factors (Calvo, Leiderman, and Reinhart, 1996; Koepke, 2018). The primary determinant that exerts the greatest impact on portfolio flows is the interest rate set by the Federal Reserve. There exists a correlation between the interest rate and portfolio flows, wherein an escalation in the interest rate environment tends to have a detrimental effect on portfolio flows, while conversely, a decrease in the interest rate environment tends to have a positive effect on portfolio flows. The user has provided a range of references, specifically (Fernandez-Arias, 1996; Taylor and Sarno, 1997; Chuhan, Claessens and Mamingi, 1998; Baek, 2006; Tille and van Wincoop, 2010; Dahlhaus and Vasishtha, 2014; Feroli et al., 2014; Agarwal, Gu and Prasad, 2020; Camanho, Hau and Rey, 2022).

One of the attractive factors for foreign investment is a country's economic growth as measured by Gross Domestic Product (GDP). This phenomenon can occur due to the tendency of foreign investors to allocate their investments in countries that exhibit strong economic growth and promising prospects (Mankiw N, 2017). There exists a correlation between internal economic growth, as measured by GDP, and the inflow of portfolio investments (De Vita and Kyaw, 2008; Ahmed and Zlate, 2014; Kartal, Ertuğrul and Ulussever, 2022). Southeast Asia is a region that encompasses several emerging countries and is considered a prominent hub for cross-border investment. These emerging countries include Indonesia, Singapore, the Philippines, Thailand, and Malaysia (Onyiriuba, 2016). The inflow of portfolio investments in Southeast Asia over the past two decades has exhibited fluctuations (see Figure 1). This study examines the influence of investors' investment strategies, including the involvement of cross-country investors.

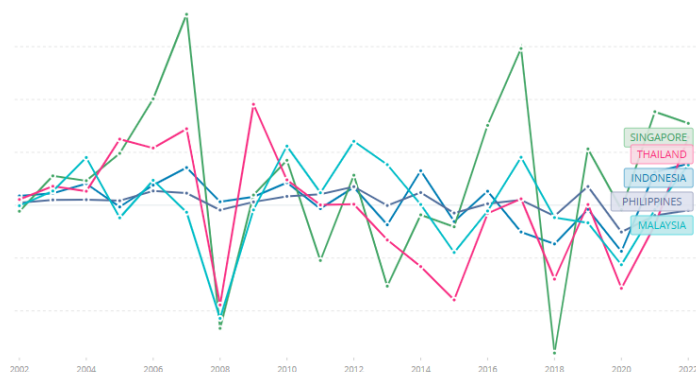


Figure 1. Portfolio Equity Flows to Southeast Asia 2022-2022

Source: Source: Processed data (2023)



The inflow of portfolio investments into Southeast Asian countries is subject to various influencing factors, among which the Gross Domestic Product (GDP) holds significance. The relationship between the rate of economic growth, specifically the Gross Domestic Product (GDP), in Indonesia and the inflow of foreign capital for portfolio investment is found to have a positive and significant impact (Bado, Samudera and Ma'ruf, 2019; Zainuri, 2021; Aslam, Alim and Khan, 2022).

The influence of portfolio flows on Southeast Asia as an emerging market country is primarily driven by movements in the Fed funds rate (Passari and Rey, 2015; Sarili, 2015). When the Federal Reserve increases its interest rate, there is a tendency for foreign investors to divest their investments from developing nations like Indonesia and allocate them toward the United States, as the latter provides a comparatively higher rate of return. On the contrary, in instances where the Federal Reserve reduces its interest rate, there is a tendency for foreign investors to redirect their investments towards emerging economies like Indonesia, driven by the prospect of attaining a comparatively higher rate of return.

METHODS

The design of this paper uses the conditional process model using a path analysis based on OLS (Ordinary Least Square) regression and the bootstrap method using the SPSS and PROCESS statistical tools version 4.2 by Andrew F. Hayes 4th model. Conditional process analysis describes and understands conditional properties through mechanisms that transmit the influence between variables (Hayes, 2018). The variables used in this study consisted of 3 variables consisting of 1 exogenous, one mediator, and one endogenous variable. As the most dominant variable, Fed Fund Rate is used as a predictor/independent variable, GDP as a mediator variable, and Portfolio Equity Flows as a Dependent variable.

The data utilized in this study consist of secondary data sources, including the Fed Fund Rate, GDP, and portfolio equity flows. The data about the Fed fund rate encompasses information regarding the fluctuations in the central interest rate administered by the Federal Reserve. The Gross Domestic Product (GDP) serves as an indicator of the magnitude of a nation's economy. Portfolio equity flows, on the other hand, represent the influx of investment funds in the form of equity into a country. It is worth noting that both GDP and portfolio equity flows are measured in terms of dollar exchange units. The data utilized in this study was sourced from reputable international institutions, namely the World Bank and the International Monetary Fund (IMF). The dataset encompassed five Southeast Asian countries, namely Indonesia, Malaysia, the Philippines, Thailand, and Singapore. The time frame for the data collection spanned from 2002 to 2022.

RESULTS AND DISCUSSION

The analysis output indicates that the Fed Funds Rate has a significant impact on GDP (sig value of 0.016) and Portfolio Equity Flows (sig value of 0.028). The impact of GDP on Portfolio Equity Flows was found to be 0.645, indicating that there was no significant impact. The effect of the Fed Funds Rate on Portfolio Equity Flows through GDP has a total effect of 76.9481, with details of a direct effect of 73.3808 and an indirect effect of 3.5673. In the mediation test, while the total effect or direct is significant, it is found that the indirect effect (b) has a sig of 0.64. Furthermore, there is a value of 0 between the Lower Bound and Upper Bound on the Confidence Interval, indicating that there is no mediation in the model.

Table 1. Summary of Results of the Conditional Process on the Fed Funds Rate on Portfolio Equity Flows in Southeast Asia

Variable	GDP				Portfolio Flows				
	coeff	se	t(F)	p	Coeff	se	t(F)	p	
FFR	a	-4305	1760.3	-2.4453	0.016c'	73.3808	32.906	2.23	0.028
GDP					b	-0.0008	0.0018	-0.4628	0.645
Constant		436.86	35.485	12.3111	0.00	-0.0912	1.0138	-0.09	0.929
R square		0.0549	66315	-5.9796	0.016	0.0556	21.901	2.9999	0.054

Source: Processed data (2023)

Table 2. Total, Direct, and Indirect Influence Fed Funds Rate to Portfolio Equity Flows

Relationship	Total Effect	Direct Effect	Indirect Effect	Confidence Interval		Conclusion
				Lower Bound	Upper Bound	
FFR - GDP - Portfolio Flows	76.9481 (0.0175)	73.3808 (0.0279)	3.5673	-7.2932	14.1886	No Mediation

Source: Processed data (2023)

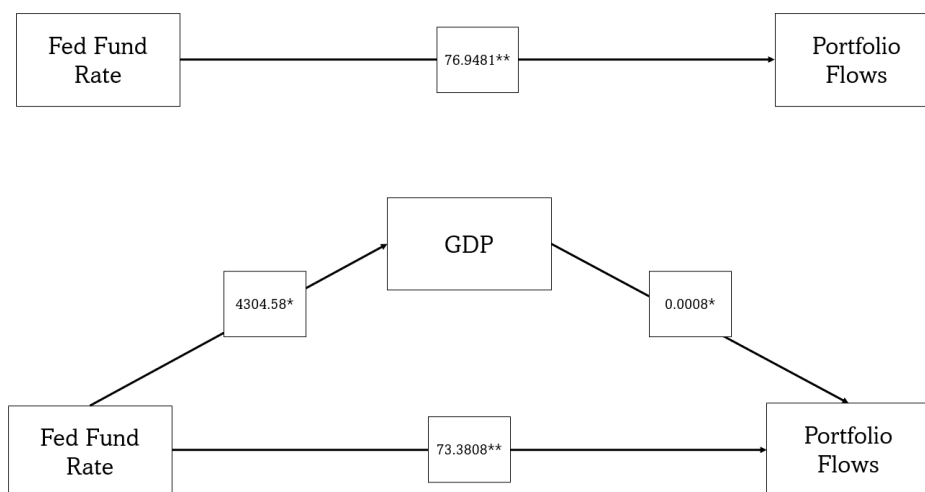


Figure 2. FED Model

Source: Processed data (2023)

The findings confirm that the fed fund rate is a dominant factor in the flow of portfolios to various emerging countries (Fernandez-Arias, 1996; Taylor and Sarno, 1997; Chuhan, Claessens and Mamingi, 1998; Baek, 2006; Tille and van Wincoop, 2010; Dahlhaus and Vasishtha, 2014; Feroli et al., 2014; Bannier, Heyden and Tillmann, 2019; Marino, Nugraha and Waspada, 2024). Information about the state of the economy is expertly provided by the Fed. It is one of the economic indicators and financial market drivers that has a major influence on asset prices because of the way the market will respond to its policy signals (Ehrmann and Fratzscher, 2007; Vayid, 2013; Padhan and



Prabheesh, 2021). The Fed Model, a popular instrument used by significant financial institutions like Prudential, ING, and J. P. Morgan, is the link between Fed policy and the capital markets. Prominent market players adopt and elevate the Fed model to a premier investor valuation instrument for determining whether to purchase bonds or stocks (Schnidman and MacMillan, 2016). The U.S., European, and even global equity markets will be greatly impacted by the Fed's contractionary monetary policy (Ehrmann and Fratzscher, 2007). Equity analysts have recently witnessed the steady influence of Fed rates on equity markets, indicating that Fed rates have emerged as crucial information for comprehending portfolio flows (Schnidman and MacMillan, 2016).

Another finding from this study shows that portfolio flows to Southeast Asia are not influenced by GDP, unlike the dominant research that says portfolio flows are affected by GDP (De Vita and Kyaw, 2008; Ahmed and Zlate, 2014; Afonso et al., 2022). Domestic economies projected by GDP do not influence portfolio flows; they only occurred during the 2007–2008 global crisis and the post-crisis recovery period in 2009–2010 (Fratzscher, 2012; Achtziger et al., 2015; Bathia et al., 2020; Chari, Dilts Stedman and Lundblad, 2022; Boonman, 2023).

CONCLUSION

The last two decades' worth of portfolio flows to Southeast Asia support earlier conclusions that the Fed funds rate is the primary driver of portfolio flows to developing nations. It is noteworthy to observe that portfolio flows to Southeast Asia remain unaffected by the GDP of the region. The findings of this study indicate that the Fed Funds Rate has a greater effect on Southeast Asia's Equity Flows Portfolio than Internal Gross Domestic Product, which indicates the economic strength of a country in Southeast Asia. This study's shortcoming concerns its exclusive reliance on data from developing Southeast Asian nations during a comparatively brief 20-year period. As such, the study's capacity to determine a more accurate correlation between the GDP, the Portfolio, and the Fed Fund Rate is limited. It is advised that future research broaden the scope of the study period and include more developing nations to address this limitation.

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