Fiscal Policy Effect on Stock Market in ASEAN 5

Brian Jonathan*
*Penulis korespondensi. Ekonomi Pembangunan, Universitas Katolik Parahyangan, Indonesia.

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Email penulis:
6022101026@student.unpar.ac.id*

Abstract

This research is aimed to investigate the effect of fiscal policy on the stock market in ASEAN 5. This paper takes different approach in building the framework of direct and indirect transmission. Alongside choosing ASEAN 5 as sample with the focus of economic integration and SVAR. The finding is as follow: direct transmission was not found, but only central rate in indirect transmission have significant effect on stock market. Fiscal policy has positive relation with direct transmission but negative towards stock market. Bond yield is affected negatively by fiscal primary balance and has a negative impact on stock market index. Central rates have a positive impact by Primary balance and negative impact towards stock market. Lending rate also reacts negatively towards primary balance and negative towards stock market. And consumption has a negative effect on the stock market index. It is found in this study, there is no direct effect but there is indirect transmission by one of the variables within it by fiscal policy on stock market in ASEAN 5.

Abstrak

Penelitian ini bertujuan untuk menyelidiki pengaruh kebijakan fiskal terhadap pasar saham di ASEAN-5 dengan pendekatan yang berbeda dalam membangun kerangka transmisi langsung dan tidak langsung, serta berfokus pada integrasi ekonomi dan model SVAR. Hasil penelitian menunjukkan bahwa transmisi langsung tidak ditemukan, tetapi hanya suku bunga acuan dalam transmisi tidak langsung yang memiliki dampak signifikan terhadap pasar saham. Kebijakan fiskal memiliki hubungan positif terhadap transmisi langsung tetapi negatif terhadap pasar saham. Imbal hasil obligasi dipengaruhi secara negatif oleh keseimbangan fiskal primer dan juga berdampak negatif pada indeks pasar saham. Suku bunga acuan memiliki dampak positif dari keseimbangan fiskal primer tetapi memberikan dampak negatif terhadap pasar saham. Suku bunga pinjaman juga bereaksi negatif terhadap keseimbangan fiskal primer dan berdampak negatif terhadap pasar saham, sementara konsumsi memiliki efek negatif terhadap indeks pasar saham. Studi ini menemukan bahwa tidak ada efek langsung dari kebijakan fiskal terhadap pasar saham di ASEAN-5, namun terdapat transmisi tidak langsung melalui salah satu variabel dalam model tersebut, yang menunjukkan adanya pengaruh kebijakan fiskal terhadap pasar saham di kawasan ini.

Introduction

The aim of this study is to investigate the effect of fiscal policy on the stock market especially in ASEAN 5 (Indonesia, Malaysia, Singapore, Thailand, and Philippines). ASEAN is one example of globalization in a region, where it aims to accelerate economic growth, social improvement, cultural development, and promote peace and regional stability. With a more integrated and cohesive economy, alongside investment cooperation, economic growth in ASEAN is more integrated. This could also affect the stock market and affect other markets (Fatah et al., 2023). Whereas in 2011, ASEAN collaborated to form the ASEAN Exchange to promote the ASEAN capital market. (Asean Exchanges, n.d.). Baek et al. (2021) states the importance of ASEAN 5 in the region due to its significant role in regional and global economic integration. ASEAN-5 has achieved substantial trade integration over the years, benefiting from trade liberalization and participation in global value chains. Example of this significant role and economic integration can be seen from how ASEAN 5 countries have had a similar policy pattern on fiscal budget deficit for the past couple of years. This pattern was shown by (Marimuthu et al., 2021, 1), where for the past three decades, ASEAN has faced a persistent fiscal budget deficit. Lau & Yip (2019) further explain the pattern and the reasonings behind it, the fiscal deficit in ASEAN was found to be positive association with economic growth after the 2008-9 Global Financial Crisis. Fiscal budget deficits in ASEAN are used not only as a stimulus in investment, but also recovering from the crisis.

BUI et al. (2018) explain in their reasonings, allocating financial resources efficiently and signals the effectiveness of fiscal interventions. Policymakers often rely on fiscal policy to stabilize financial markets during periods of distress. Or whether the stock market also plays a part in the recovery of asset prices, including stock market gains, can improve public finances through increased tax revenues (such as capital gains taxes). Specially during financial crisis such as Global Financial Crisis, fiscal policy played a crucial role in boosting investor confidence and stabilizing stock markets when the private sector failed to sustain growth (Foresti & Napolitano., 2017) . The roles of stock prices and/ or returns also known as a leading indicator of real activity and inflation is well-established (Andre et al., 2023).

As of now, Tavares & Valkanov (2001) in BUI et al. (2018) explain there are two ways of how fiscal policy can affect the stock market. The first one is the direct channel of which is through company profits. The second one which is indirect can affect the stock market through multiple ways, which is through higher borrowing, which reduces the attractiveness of stocks relative to bonds (a form of "crowding out"). Bernheim (1989) in Andre et al. (2023) also explain that fiscal policy can impact stock market performance through three main theoretical perspectives: Keynesian, Classical, and Ricardian. Keynesian view works in aggregate demand in influencing stock market. Classical economic theory argues that fiscal expansion can negatively affect stock prices due to the "crowding out". The Ricardian equivalence theory posits that fiscal policy has no impact on stock markets.

Existing literature focuses their research within developed countries or developing countries as a general area. Afonso & Sousa (2011) focused their research between fiscal policy shocks and asset markets in the US/ United States and U.K. Meanwhile BUI et al (2018) investigate deeper into the scope of dynamic between stock market movement and fiscal policy among 12 emerging Asia-Pacific economies. On the other hand, Arin et al (2009) investigate various tax policy innovations on stock market returns in G3 countries; US, Germany and Japan. Lastly Agnello & Sousa (2011) explored the impact of fiscal policy on asset price for ten industrialized. Most literature before this has not fully utilized the full framework and transmission of direct and indirect channels of how fiscal policies can affect the stock market (Afonso & Sousa, 2011; Agnello & Sousa, 2011; Arin et al., 2009; BUI et al., 2018). Few of the existing literature discussed their studies in one specific region or area, especially ASEAN. ATEŞ & ŞANLI (2016) adding that economic integration like EU/ European Union; ASEAN; APEC; etc, provides positive contribution to the economy of the country including the integration.

Reviewing past literature that has well established the relationship between fiscal policy and stock market. In the first literature, BUI et al. (2018) examined the bidirectional relationships between fiscal policy and stock market activities using a panel of 12 emerging Asia-Pacific economies (Bangladesh, China, Fiji, India, Indonesia, Malaysia, Maldives, Papua New Guinea, Philippines, Sri Lanka, Thailand, and Vietnam) from 1990 to 2015. The main finding of this literature is that pro-cyclical behavior is found with both government expenditure and government revenue. On the other hand, a fiscal consolidation attempt has a rewarding effect on stock prices. Tavares & Valkanov (2001) also stated the direct and indirect ways of how a fiscal policy can affect stock market through direct (company profit) and indirect (higher borrowing, which reduces the attractiveness of stocks relative to bonds (a form of "crowding out").

The second literature by Afonso & Sousa (2011) examined the link between fiscal policy shocks and asset markets. They found that spending shocks have: a positive and persistent effect on GDP in the U.S. and in the U.K., while for Germany and Italy, such impact is temporary; a positive and persistent effect on housing prices; a negative effect on stock prices; and mixed effects on the price level. The results suggest that fiscal shocks play a minor role in the asset markets of the U.S. and Germany, and substantially increase the variability of housing and stock prices in the U.K., while government revenue shocks have increased volatility in Italy. A perspective about the effective lower bound or ELB in the stock market is talked about by Andre et al. (2023) in their article titled "Fiscal policy and stock markets at the effective lower bound". They found statistical different impact on government spending shocks across the ELB and non ELB periods. Chen (2021) on the article "The Impact of Monetary and Fiscal Policy on Stock Market Performance: Evidence from Multiple Countries" investigates on the effects of monetary and fiscal policy on stock market performance. Chen (2021) found that the effect of monetary policy on stock market performance varies between countries due to different market expectations.

Arin et al. (2009) investigate the effects of various tax policy innovations on stock market returns. They found that indirect taxes have a larger effect on stock market returns. Whereas Agnello & Sousa (2011) examine the impact of fiscal policy on asset prices for ten industrialized countries (Belgium, Finland, France, Germany, Italy, Netherlands, Portugal, Spain, UK, USA). They found five things; a contractionary impact on output due to crowding-out effects and worsening credit conditions; a recent decline in the effectiveness of fiscal policy; a more prolonged response of asset prices in countries with lower levels of openness; a greater influence of fiscal policy on asset prices in smaller countries; a strong connection between the responsiveness of asset prices to fiscal policy and the size of the government; increased sensitivity of asset prices to fiscal policy shocks following financial deregulation and mortgage liberalization; and significant fiscal multiplier effects during severe housing market downturns. Additionally, the evidence suggests that shifts in equity prices may assist governments in efforts to consolidate public finances. Last, (ROHNER et al., 2021) delve deeper about interest rate changes and stock returns. In one of their discussions, they stated that interest rates have 4 ways of affecting stock returns; portfolio rebalancing, discount rate, capital cost, and consumer demand.

Thus, it is highly relevant to further investigate the impact of fiscal policy on the stock market. This study has a few novelties, one of it aims to build upon the framework introduced by Tavares & Valkanov (2001), as referenced in BUI et al. (2018), which examines both the direct and indirect effects of fiscal policy on stock market performance. While ROHNER (2021) compliment explanation about the effect of interest rate towards stock market. The present research seeks to extend this framework by incorporating the economic activities of the ASEAN-5 countries, a region that has not been thoroughly explored in previous studies. Furthermore, this study will analyze the role of economic integration, such as that of ASEAN, in contributing to regional economic dynamics, as highlighted by ATEŞ & ŞANLI (2016). The inclusion of a new intervening variable is expected to provide additional insights, offering a significant contribution to the existing literature and guiding future research in this area.

Literature Review

First, BUI et al. (2018) examines the bidirectional relationship between fiscal policy and stock market activities in 12 emerging Asia-Pacific economies (Bangladesh, China, Fiji, India, Indonesia, Malaysia, Maldives, Papua New Guinea, Philippines, Sri Lanka, Thailand, and Vietnam) from 1990 to 2015. Mainly to investigate how fiscal policy responds to stock market movements and vice versa. Bui et al (2018) used variables such as budget balance, public debt output gap and stock returns. The main findings are that Fiscal policies in these economies are predominantly pro-cyclical. During economic booms and fall during recessions, the government increases spending, exacerbating the economic cycle. Stock market booms lead to increased government spending and revenues, exacerbating economic cycles. Fiscal consolidation (reducing deficits) positively impacts stock prices, reflecting investor confidence in a government's financial stability, improving overall market sentiment.

Agnello & Sousa (2011) investigates the effects of fiscal policy on asset prices, focusing on ten industrialized countries (Belgium, Finland, France, Germany, Italy, Netherlands, Portugal, Spain, UK, US). Agnello & Sousa (2011) found that positive fiscal shocks temporarily depress stock prices but lead to persistent declines in housing prices. Stock price reductions stem from crowding-out effects, where higher government borrowing raises interest rates, increasing financing costs and lowering business valuations. Housing prices, in contrast, recover more slowly, remaining depressed for longer durations. Fiscal policy also contracts output in the short run, contrary to Keynesian predictions, as rising deficits worsen credit conditions, reducing private investment. The sensitivity of asset prices to fiscal shocks varies across countries. Less open economies experience more persistent effects due to stronger credit market deterioration, while smaller countries exhibit greater asset price sensitivity. Furthermore, the impact of fiscal policy has heightened following financial deregulation and mortgage liberalization, necessitating credible policies to stabilize roles, but governments face trade-offs as stabilizing one asset market can destabilize another, strengthening the need for context-specific fiscal planning.

ATEŞ & ŞANLI (2016) discuss the importance of economic integration such as the European Union (EU) and ASEAN. Economic integration aims to reduce barriers to trade and harmonize national economic policies among member countries. Integration evolves from free trade areas to customs unions, common markets, economic unions, and eventually political unions. ATEŞ & ŞANLI (2016) argues that economic integration has several key highlights; global influence where organizations highlight the importance of both developed and developing countries in the global economy, economic benefits such as fostering trade innovations and growth and the importance of globalization in advancing regional and international cooperations.

Afonso & Sousa (2011) explore the relationship between fiscal policy and asset markets in the U.S., U.K., Germany, and Italy, revealing significant cross-country differences. Government spending shocks generally boost GDP, with persistent positive effects in the U.S. and U.K. but temporary and sometimes negative effects in Germany and Italy. Spending also raises housing prices with a lag but negatively impacts stock prices. Revenue shocks initially depress GDP but later stabilize it, with mixed effects on asset markets: they lower housing prices in the U.S. and Italy but raise them in the U.K. and Germany. Taxes modestly increase stock prices by reducing sovereign risk but raise unemployment due to their contractionary nature. Debt feedback amplifies fiscal policy's long-term effects on GDP and interest rates, while fiscal shocks contribute more to asset price volatility in the U.K. and Italy than in the U.S. and Germany. Effective fiscal strategies must account for country-specific economic structures and institutional settings to ensure stabilization.

Andre et al. (2023) aimed for deeper understanding in the impact of a government spending shock on stock returns in a panel of ten Euro area countries (Austria, Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, Portugal and Spain) and US at the effective lower bound (ELB). government spending shocks have a significantly stronger and more prolonged positive impact on stock returns during the effective lower bound (ELB) period compared to normal times, with the effect becoming statistically significant between the 7th and 12th quarters after the shock. In contrast, during normal periods, the response of stock returns to fiscal shocks is weak and

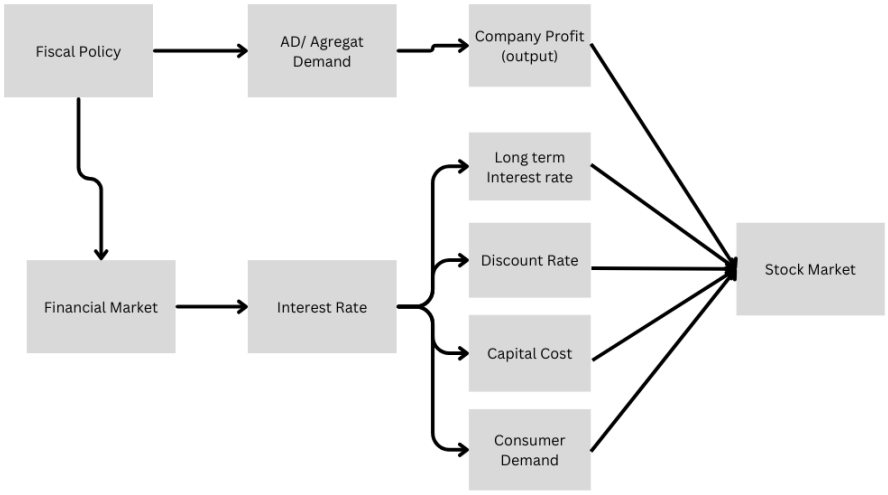
statistically insignificant. The study also reveals that fiscal expansion at the ELB leads to a significant decline in the shadow short rate (SSR), indicating a constrained monetary policy environment where fiscal policy becomes more effective. In the U.S., however, government spending shocks do not produce statistically significant effects on stock returns in either normal or ELB periods, suggesting that fiscal policy has a limited influence on U.S. stock markets. These findings imply that policymakers in the Euro area can leverage fiscal expansion to stimulate stock markets when monetary policy is constrained, while in the U.S., fiscal policy is not a reliable tool for influencing market performance.

Bernheim (1989) in Andre et al. (2023) explain that fiscal policy can impact stock market performance through three main theoretical perspectives: Keynesian, Classical, and Ricardian. The Keynesian view suggests that government spending can stimulate aggregate demand, leading to economic growth and higher stock prices, driven by increased consumer confidence, consumption, and corporate earnings. In contrast, Classical economic theory argues that fiscal expansion can negatively affect stock prices due to the "crowding out" effect, where government borrowing raises real interest rates by competing for funds with the private sector. The Ricardian equivalence theory posits that fiscal policy has no impact on stock markets, as rational households anticipate future tax increases to repay government debt and adjust their savings accordingly, neutralizing any demand changes.

Same theoretical of Keynesian, classical and Ricardian are also used by Chen (2021) that explores the effects of monetary and fiscal policy on stock market performance from Australia, China, 11 member countries of the Eurozone (combined) and the United States. The Australian stock market showed limited response to changes in cash rates by the Reserve Bank of Australia (RBA), especially before 2012. The Shanghai Stock Exchange (SSE) displayed significant responses to monetary policy changes, particularly during economic downturns. Chinese markets were more volatile during expansionary policies, reflecting heightened investor sensitivity during uncertain periods. The impact of fiscal policy in Eurozone countries varied depending on economic conditions. Countries with more predictable policy announcements (Australia) experienced less market volatility, while those with surprise announcements (China) saw heightened sensitivity. Investor sentiment and trust in government debt sustainability play critical roles in how fiscal policy influences stock markets. Fiscal policy did not have a direct impact on the U.S. stock market but influenced it indirectly via money supply. Increased government spending boosted money supply, reducing real interest rates and making stocks a more attractive investment compared to bank savings or Treasury bonds. This indirect mechanism highlights the interconnectedness of fiscal and monetary policies in affecting stock market behavior.

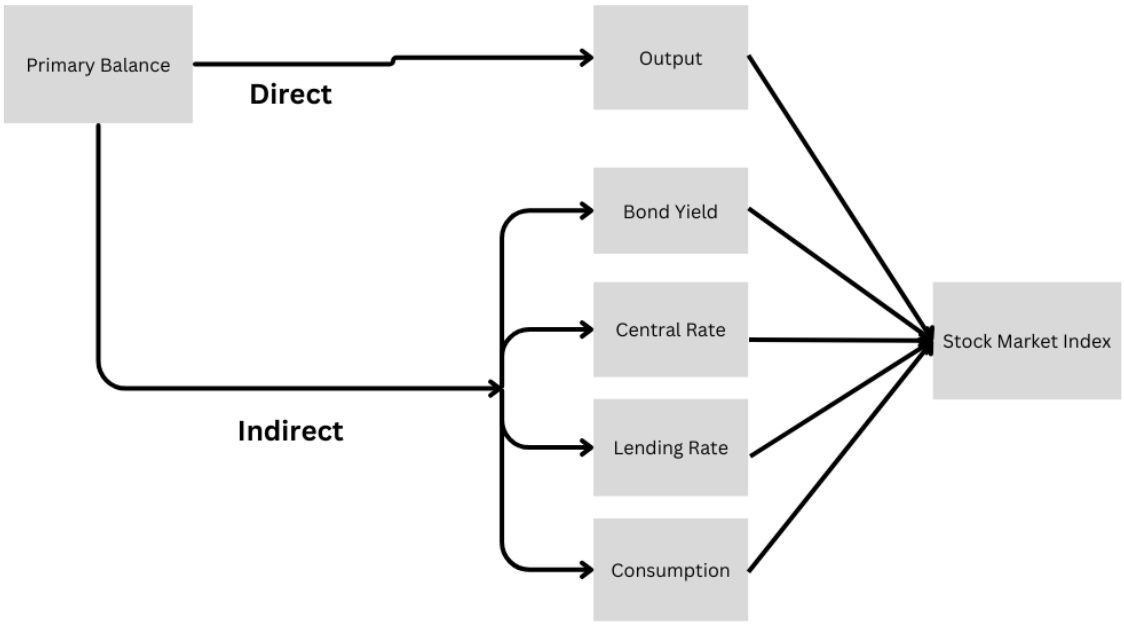
Tavares and Valkanov (2001) dwelved towards how fiscal policy impacts financial markets, especially asset prices. Two channels were highlighted, direct and indirect channels. Direct channels work directly through fiscal policy on financial assets, which influence corporate profits, investment, and consumer demand. Indirect channel involves broader macroeconomic mechanisms where fiscal policy indirectly impacts asset prices via its effects on economic growth and cash flows. Fiscal policy, such as when fiscal deficits happen, can increase interest rates through higher borrowing, which reduces the attractiveness of stocks relative to bonds (a form of "crowding out"). ROHNER et al. (2021) explain how interest rate can influence stock market through 4 channels. First being portfolio rebalancing, when bond yields decline, investors shift funds into the stock market for better returns, driving up stock prices, and vice versa (Benigno, 2016). Discount rate where interest rates impact the discount rate used in equity valuation models like NPV, directly affecting stock prices (Chen & Hu, 2015; Benigno, 2016). Capital Costs or Interest rate changes alter companies' capital costs, especially for highly leveraged firms, affecting expected future cash flows (Benigno, 2016). Last being consumer demand, higher interest rates reduce the spending of indebted consumers, which may lower corporate profits and stock prices. Visualization of this transmission can be seen in figure 1 and 2. Figure 1 being a visualization with complete transmission as what the theory states. Whereas figure 2 visualized the transmission but with variables in play.

Figure 1. Framework



Source: Tavares & Valkanov (2001) and ROHNER et al. (2021) processed in Adobe Photoshop

Figure 2. Framework with Variables



Source: Tavares & Valkanov (2001) and ROHNER et al. (2021) processed in Adobe Photoshop

Methodology

This research uses Tavares & Valkanov (2001) direct and indirect transmission in examining the fiscal policy effect on the stock market. Direct transmission influences the stock market directly through company, which can be seen by aggregate demand. And within the indirect transmission, it was explained that fiscal policy indirectly impacts asset prices via its effects on economic growth and cash flows. Fiscal policy, such as when fiscal deficits happen, can increase interest rates through higher borrowing, which reduces the attractiveness of stocks relative to bonds (a form of "crowding out"). To summarize it, fiscal policy affects the stock market through the financial market, then interest rates and finally stock market. To explain the relation or connection between interest rate and stock market, ROHNER et al. (2021) explained the relation between interest rate and stock market through 4 different channels; portfolio rebalancing, discount rate, capital cost, and consumer demand.

The SVAR model of fiscal policy transmission to the stock market is built on figure 1 & 2 alongside several indicators and variables. First, we defined the indicators and variables needed to represent the direct and indirect transmission. These include fiscal policy shocks (FPt) that is represented by Primary Balance or balance (PBt), aggregate demand (ADt) or output (Ot), and the four sub-channels of indirect transmission: portfolio rebalancing (PRt) or bond yield (BYt), capital cost (CCt) or Lending rate (LRt), consumer demand (CDt) or consumption (Ct), and discount rate (DRt) or centrat rate (CRt). Finally, the stock market (SMt) represents the dependent variable, capturing the cumulative effects of both pathways.
Below is the model and the matrix for SVAR:

$$PB_t = \beta 10 + \beta 11 PBt$$

$$O_t = \beta 20 + \beta 21 PBt + \beta 22 Ot$$

$$BY_t = \beta 30 + \beta 31 PBt + \beta 32 BYt$$

$$CR_t = \beta 40 + \beta 41 PBt + \beta 42 CRt$$

$$LR_t = \beta 50 + \beta 51 PBt + \beta 52 LRt$$

$$C_t = \beta 60 + \beta 61 PBt + \beta 62 Ct$$

$$SM_t = \beta 70 + \beta 71 PBt + \beta 72 Ot + \beta 73 BYt + \beta 74 CRt + \beta 75 LRt + \beta 76 Ct + \beta 77 SMt$$

$$\begin{bmatrix} PBt \\ Ot \\ BYt \\ CRt \\ LRt \\ Ct \\ SMt \end{bmatrix} = \begin{bmatrix} \beta_{10} \\ \beta_{20} \\ \beta_{30} \\ \beta_{40} \\ \beta_{50} \\ \beta_{60} \\ \beta_{70} \end{bmatrix} + \begin{bmatrix} \beta_{11} & 0 & 0 & 0 & 0 & 0 & 0 \\ \beta_{21} & \beta_{22} & 0 & 0 & 0 & 0 & 0 \\ \beta_{31} & 0 & \beta_{33} & 0 & 0 & 0 & 0 \\ \beta_{41} & 0 & 0 & \beta_{44} & 0 & 0 & 0 \\ \beta_{51} & 0 & 0 & 0 & \beta_{55} & 0 & 0 \\ \beta_{61} & 0 & 0 & 0 & 0 & \beta_{66} & 0 \\ 0 & \beta_{72} & \beta_{73} & \beta_{74} & \beta_{75} & \beta_{76} & \beta_{77} \end{bmatrix} \begin{bmatrix} PB_{t-1} \\ O_{t-1} \\ BY_{t-1} \\ CR_{t-1} \\ LR_{t-1} \\ C_{t-1} \\ SM_{t-1} \end{bmatrix} + \begin{bmatrix} \varepsilon_{t1} \\ \varepsilon_{t2} \\ \varepsilon_{t3} \\ \varepsilon_{t4} \\ \varepsilon_{t5} \\ \varepsilon_{t6} \\ \varepsilon_{t7} \end{bmatrix}$$

This is the model for lag 1 within the SVAR matrix. But if later found that lag 2 is better than author will opt to use lag 2. These are based on leg length criteria test of SVAR. Then if lag 2 are preferred, then the SVAR matrix will change into lag 2.

$$\begin{bmatrix} PBt \\ Ot \\ BYt \\ CRt \\ LRt \\ Ct \\ SMt \end{bmatrix} = \begin{bmatrix} \beta_{10} \\ \beta_{20} \\ \beta_{30} \\ \beta_{40} \\ \beta_{50} \\ \beta_{60} \\ \beta_{70} \end{bmatrix} + \begin{bmatrix} \beta_{11} & 0 & 0 & 0 & 0 & 0 & 0 \\ \beta_{21} & \beta_{22} & 0 & 0 & 0 & 0 & 0 \\ \beta_{31} & 0 & \beta_{33} & 0 & 0 & 0 & 0 \\ \beta_{41} & 0 & 0 & \beta_{44} & 0 & 0 & 0 \\ \beta_{51} & 0 & 0 & 0 & \beta_{55} & 0 & 0 \\ \beta_{61} & 0 & 0 & 0 & 0 & \beta_{66} & 0 \\ 0 & \beta_{72} & \beta_{73} & \beta_{74} & \beta_{75} & \beta_{76} & \beta_{77} \end{bmatrix} \begin{bmatrix} PB_{t-1} \\ O_{t-1} \\ BY_{t-1} \\ CR_{t-1} \\ LR_{t-1} \\ C_{t-1} \\ SM_{t-1} \end{bmatrix}$$
$$+ \begin{bmatrix} \beta_{11} & 0 & 0 & 0 & 0 & 0 & 0 \\ \beta_{21} & \beta_{22} & 0 & 0 & 0 & 0 & 0 \\ \beta_{31} & 0 & \beta_{33} & 0 & 0 & 0 & 0 \\ \beta_{41} & 0 & 0 & \beta_{44} & 0 & 0 & 0 \\ \beta_{51} & 0 & 0 & 0 & \beta_{55} & 0 & 0 \\ \beta_{61} & 0 & 0 & 0 & 0 & \beta_{66} & 0 \\ 0 & \beta_{72} & \beta_{73} & \beta_{74} & \beta_{75} & \beta_{76} & \beta_{77} \end{bmatrix} \begin{bmatrix} PB_{t-2} \\ O_{t-2} \\ BY_{t-2} \\ CR_{t-2} \\ LR_{t-2} \\ C_{t-2} \\ SM_{t-2} \end{bmatrix} + \begin{bmatrix} \varepsilon_{t1} \\ \varepsilon_{t2} \\ \varepsilon_{t3} \\ \varepsilon_{t4} \\ \varepsilon_{t5} \\ \varepsilon_{t6} \\ \varepsilon_{t7} \end{bmatrix}$$

Table 1. Data and Variables

Variable	Definition	Unit	Source
Government/ Fiscal Primary Balance (balance/ PBt)	(Government Spending - Government Revenue)/ GDP	US Dollar	IMF
Stock Market Index (SM/ SMt)	Stock market index which tracks the performance of all companies listed	Point	tradingeconomics
Output (Ot)	Manufacturing output	US Dollar	macrotrends
Discount Rate (rate/ CRt)	Capital rate of each country	Percent	World Bank
Lending rate (credit/ LRt)	Central bank lending facility rate.	Percent	World Bank
Consumption (Ct)	Households and NPISHs final consumption expenditure per capita	US Dollar	World Bank
10Y Bond Yield (yield/ BYt)	Yield required by investors to loan funds to governments reflects inflation expectations and the likelihood that the debt will be repaid.	Percent	tradingeconomics

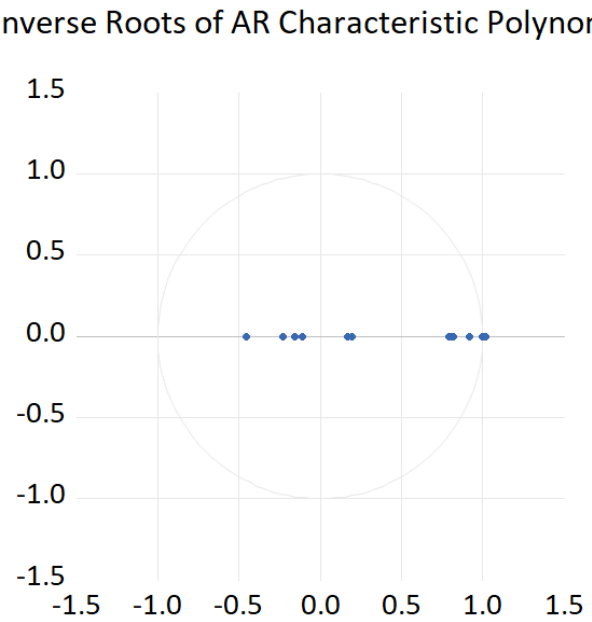
Source: Processed by author

This research uses SVAR/ Structured Vector Auto Regression to regress the model and examine the effect of fiscal policy on the stock market. Using ASEAN as population and ASEAN 5 (Indonesia, Malaysia, Singapore, Thailand, and Philippines) as the sample in this research. The data used in this research is annually and ranges from 1993 until 2023. Table 1 shows us the data and variables that are used in this research. Government or fiscal primary balance combine 3 data from IMF and process it with the primary balance formula: (Government Spending - Government Revenue)/ GDP. Stock market index and 10 Year Bond Yield of each ASEAN 5 countries that have been compiled by tradingeconomics. Manufacturing output of a country by macrotrends. Discount rate, lending rate and consumption rate per capita of a country provided by databanks of World Bank.

Results and Discussion

We start by subjecting our SVAR equation towards lag length criteria test (see table 2), where it was determined that 2 lag are the best for the model. Through Inverse Roots of AR Characteristics Polynomial test (see figure 3), indicates potential unstableness in our SVAR model. Figure 4 shows us a framework with 2 lag in account. Tabel 3 shows us the results of the regression and table 4 shows us Granger Causality Test. Figure 4 shows us how the regression results cooperated into the framework visualization. And lastly figure 5 & 6 shows us the impulse response to better shows us how variables affect others over period of time.

Figure 3. Inverse Roots of AR Characteristics Polynomial



Source: Eviews 12

Table 2. Lag Length Criteria

Lag	LogL**	LR	FPE	AIC	SC	HQ
0	-4475.7	NA	1.74E+33	96.40158	96.5922	96.47855
1	-3666.1	1479.89	1.37E+26	80.04486	81.56986*	80.66061
2	-3577.6	148.4881*	5.96e+25*	79.1949*	82.0543	80.3494*

Source: Eviews 12

The following Tabel 3 & 4 and figure 4 shows us the results of regression. Where it can be seen that primary balance of fiscal have significant and positive results towards output and central rate. But only central rate in indirect transmission that significantly affect stock market index in a negative coefficient. None of the variables from direct and indirect transmission significantly affect the stock market index except for central rate.

Table 3. Results of SVAR

Variables	PBt	Ot	Ct	LRt	CRt	BYt	SMt
PBt(-1)	0.6682	1.25E+11	4977.701	-3.2572	-2.677	11.7328	0
	[6.1876]	[2.8329]***	[1.8415]*	[-1.0491]	[-0.4172]	[1.9958]**	
PBt(-2)	0.12696	-1.21E+11	-3288.23	4.66884	14.2898	-6.3189	0
	[1.1388]	[-2.6737]***	[-1.1794]	[1.4604]	[2.1239]**	[-1.0158]	
Ot(-1)	0	1.1924	0	0	0	0	-9.21E-09
		[11.7391]					[-1.3414]
Ot(-2)	0	-0.1744	0.00E+00	0	0	0	
		[-1.6706]					[1.2118]
Ct(-1)	0	0	0.8528	0	0	0	-0.1112
			[7.9283]				[-0.8137]
Ct(-2)	0	0	0.1536	0	0	0	0.0986
			[1.4239]				[0.7203]
LRt(-1)	0	0	0	1.1127	0	0	118.0741

				[12.6095]			[1.00164]
LRt(-2)	0	0.00E+00	0	-0.1799	0	0	-14.9138
				[-2.1453]			[-0.16808]
CRt(-1)	0	0	0	0	0.5633	0	122.5596
					[6.9277]		[2.0824]**
CRt(-2)	0	0.00E+00	0	0	0.1802	0	-155.961
					[2.317]		[-2.6246]**
Byt(-1)	0	0	0	0	0	0.6864	10.2571
						[8.2861]	[0.1941]
Byt(-2)	0	0	0	0	0	0.0892	-9.5334
						[1.1358]	[-0.1718]
SMt(-1)	0	0	0	0	0	0	0.5448
							[6.3336]
SMt(-2)	0	0	0	0	0	0	0.4524
							[5.1426]
C	0.00289	1.84E+09	86.0465	0.4013	0.8003	0.8352	-176.936
	[1.3407]	[1.2561]	[1.3309]	[2.7545]	[3.8501]	[3.618]	[-0.9144]
R-squared	0.5974	9.81E-01	0.9961	0.9603	0.7585	0.8116	0.9382
Sum sq. resids	0.0375	5.32E+21	16235773	32.9797	125.016	110.853	27977759
Mean dependent	0.00959	9.49E+10	6094.853	6.8127	3.5029	4.6712	3083.146

Source: Eviews 12

Note: first column (Coefficient), second column (t-stat), (*) significant at 10% or t-stat 1.66, (**) significant at 5% or t-stat 1.984, (***) significant at 1% or t-stat 2.62

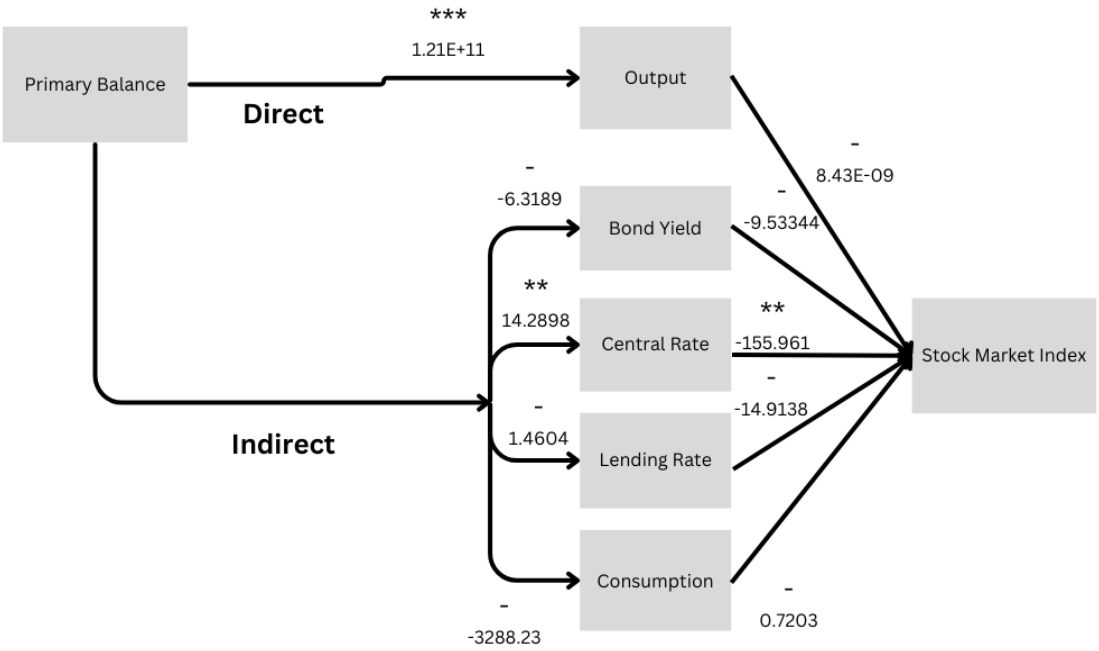
Table 4 shows the results of Granger causality based on SVAR. From the estimation, the direction of causality is obtained, with PB_t affecting O_t, By_t, and CR_t. Furthermore, only CR_t significantly affects SM_t. The Granger Causality Test informs us of the transmission path from PB_t to SM_t. This transmission path is visualized more clearly in Figure 4. The path of fiscal policy influence on the stock market is indirect.

Table 4. Granger Causality Test

Variables	Chi Sq	P-Value
PBt -> Ot	8.44855	0.0146
PBt -> Byt	4.81576	0.09
PBt -> LRt	2.16917	0.338
PBt -> CRt	9.04769	0.0108
PBt -> Ct	3.59728	0.1655
Ot->SMt	2.08796	0.3521
Byt->SMt	0.04671	0.9769
LRt->SMt	2.94776	0.229
CRt->SMt	8.95158	0.0114
Ct->SMt	1.63058	0.4425

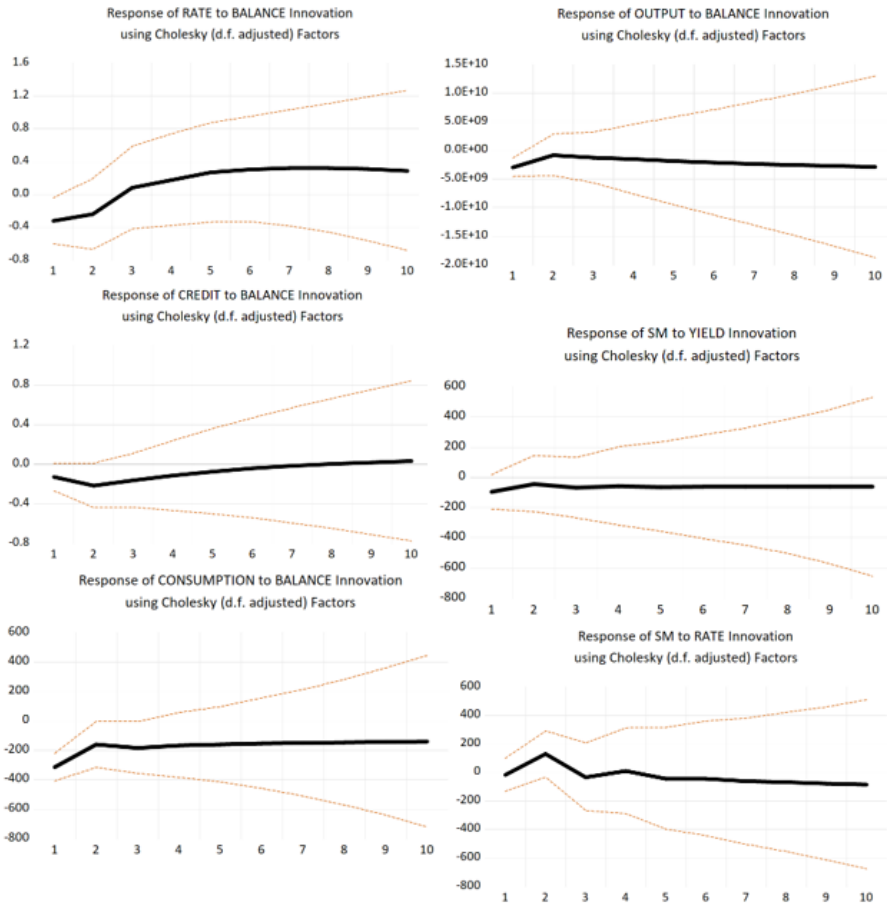
Source: Eviews 12

Figure 4. Framework with Results (2 Lag)



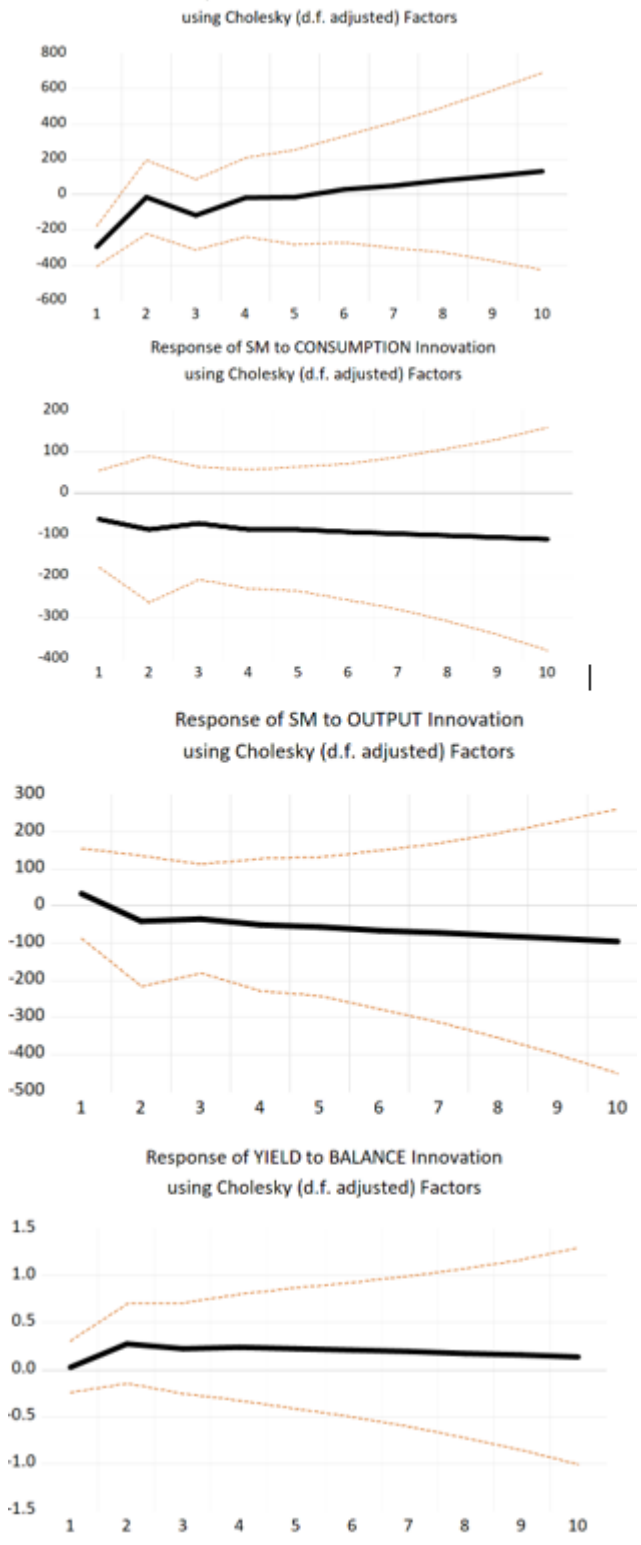
Source: Regressed in Eviews 12 (Notes: (-) shows not significance, (*) significance at 10%, (**) significance at 5%, (***) significance at 1%, (number) coefficient).

Figure 5. Impulse Response



Source: Eviews 12

Figure 6. Impulse Response



Source: Eviews 12

Several key trends can be observed from figure 5 and 6. For instance, rate to balance, output to balance, credit to balance, yield to balance showing lasting positive effects. Balance influencing central rate/ central rate starting to react from period 3, gradually increasing before peaking at period 7 and starting gradual descend. same can be seen from fiscal primary balance affecting bond yield from period 1 but gradually descending across time. Credit rate on the other hand reacted towards fiscal primary balance shocks quite late at 7th or 8th period and keeps ascending. Stock market index or sm to central rate, sm to lending rate rise initially but drop after a few periods. SM

to central rate exhibits a brief positive response that diminishes after a few periods. Notably, SM to bond yield and SM to output shows a reaction at period 1 but immediately descend under 0 at period 2. Stock market index got affected or starting to react to central rate at period 1 but starting to descend below 0 at period 3. Indicating the affect of central rate dissipates only after 3 periods. Different story however can be seen from lending rate having no reaction only after the 5th period and getting stronger period after period showing a delayed affect towards stock market index. The rest of the variables doesn't react on the value above 0 over the period of 10.

The results are different from what Andre et al. (2023) found in their discussion on impulse response that the Euro Area impulse responses show delayed but persistent effects on stock markets, becoming significant after 7–12 quarters. While ours found a positive or starting to react towards fiscal policy and other variables at 3rd-7th periods but eventually dissipate. While some having immediate affect but immediately starting to have a dismissing reaction after certain periods. Same as what BUI et al. (2018) uncovers that Stock prices in emerging Asia-Pacific economies decline sharply following expansionary fiscal shocks but recover after a few quarters. Procyclical fiscal behavior amplifies market volatility, as fiscal expansion during booms exacerbates overheating and crowding-out effects.

Fiscal primary balance has a positive influence towards direct transmission and central rate as part of indirect transmission, however output as a part of direct transmission has a negative impact on the stock market. Opposing what Bernheim (1989) states on how fiscal policy can positively impact aggregate demand and stock market, where fiscal primary balance has a positive effect on output but negative affect from output to stock market index. This finding is in line with what Agnello & Sousa (2011), where they found that positive fiscal shocks temporarily depress stock prices but lead to persistent declines in housing prices; fiscal policy has a contractionary effect on output, primarily through crowding-out effects and worsened credit conditions. Within indirect affect, only central rates have significant reaction towards balance and significant but negative coefficient towards stock market index. This are aligned with what Bernheim (1989) stated within the classical theory about fiscal expansion can negatively affect stock prices due to the "crowding out" effect, where government borrowing raises real interest rates by competing for funds with the private sector. In theory, both central rate and lending rate is aligned with ROHNER et al. (2021). Difference in results when lag 1 and lag 2 are introduced can be from the short term and delayed impacts after feedback mechanism has occurred (see table 3). For example, BUI et al. (2018) found that Pro-cyclical fiscal policies in emerging markets cause short-term impacts (lag 1) as governments adjust spending to economic cycles. Longer-term effects are limited by fiscal constraints. Stock market impacts are indirect and delayed, as fiscal policy affects corporate earnings, consumption, and investor confidence over time. As in ours, fiscal policies can immediately affect stock market or affecting the stock market over time such as crowding-out effect.

Conclusion and Implication

The aim of this study is to investigate the effect of fiscal policy on the stock market especially in ASEAN 5 (Indonesia, Malaysia, Singapore, Thailand, and Philippines). In this paper we use a SVAR method to investigate the relation between each variable within a framework. This relationship is examined using a data panel consisting of 5 ASEAN countries. The analysis also seeks to see how the stock market in ASEAN functions as one zone of economic integration. The results show that direct transmission doesn't have significancy in affecting stock market index. However, fiscal primary balance has a positive influence towards direct transmission. Output is affected positively by fiscal primary balance and has a negative impact (non-significant) on stock market index. On other hand indirect transmission does affect stock market index significantly but only through central rate. Central rate got affected by primary balance positively but negative towards stock market index. Lending rate also reacts negatively towards primary balance and negative towards stock market. And consumption has a negative effect on the stock market index. The findings are different from previous study (BUI et al., 2018; Agnello & Sousa, 2011; Afonso & Sousa, 2011; ROHNER et al., 2021; Andre et al., 2023), where in this research fiscal policy influence variables

before stock market, but have difference influence on stock market index except for central rate that are aligned with (Afonso & Sousa, 2011; Bernheim, 1989).

This paper has several implications. First, this paper has a weakness in capturing the volatility of stock market influenced by variables in the transmission due to the use of annual data. The model that are used in this research can be seen as quite unstable as seen from figure 3. In order to address this, further testing and research is needed to confirm the validity of these findings like using quarterly data to capture the volatility of stock market. The transmission might suggest another factor influencing stock market outside of fiscal policy. And, government or policy makers can make use of the information presented in this research to better design a policy to better the stock market.

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