Is the Tobacco Stock Still Relevant for Future Investment?

Irni Yunita[1] and Cici Siti Barkah[1*]

[1] School of Economics and Business, Telkom University, Bandung, Indonesia
*cicisitibarkah@student.telkomuniversity.ac.id

Abstract. This study examines the effect of uncertainty index asymmetry on stock market performance in 9 ASEAN countries, focusing on short-term and long-term effects. This study analyzes how fluctuations in Geopolitical Risk (GPR), Economic Policy Uncertainty (EPU), Volatility Index (VIX), and Skewness Index (SKEW) affect ASEAN stock returns. ASEAN countries, which are highly integrated in the global economy, are significantly impacted by global economic phenomena. This study uses the Nonlinear Autoregressive Distributed Lag (NARDL) model to analyze the nonlinear effects of positive and negative changes in the uncertainty index on stock returns. The analyzed data includes monthly closing stock prices and the uncertainty index over 2019M01-2023M12. The results show an impact of GPR, EPU, VIX, and SKEW on ASEAN stock returns, with index increases generally decreasing returns and decreases increasing stock returns. The NARDL model reveals consistent short-term asymmetries across countries and specific long-term asymmetries in some countries. This research highlights the importance of hedging strategies for investors in uncertain ASEAN markets.

Keywords: ASEAN Stock Market, Geopolitical Risk, Economic Policy Uncertainty, Volatility Index, and Skewness Index

1 INTRODUCTION

Uncertainty in the world economy has been identified as the primary cause of the recent global economic slowdown by recent research economy (Choi et al., 2022; Ershov & Tanasova, 2023; Ogbuabor et al., 2023; Sikdar, 2024). Uncertainty has been cited as a major contributing factor to the poorer economic performance of many economies' uncertainty (Bannigidadmath et al., 2024). In the global economy, countries are expected to become more dependent on one another (Salim et al., 2022). Specifically, a string of economic and geopolitical shocks, such as the COVID-19 pandemic (Rizal et al., 2023), the Russian-Ukraine conflict (He et al., 2024), and the Israeli-Palestinian conflict (Zhang et al., 2024), have been identified as having a significant impact on the world's financial markets (Roziq et al., 2024).

Capital markets, now considered to have a strategic role in strengthening economic resilience, have become a focus for many countries (Kang et al., 2020). However, the

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economic resilience of financial markets is acknowledged to be fraught with uncertainty, known as systematic risk, which is inevitable and causes investor anxiety. In times of high uncertainty, the theory of financial economics that states a positive relationship between risk and return is disrupted, and higher returns are demanded by investors to compensate for risk (Prukumpai et al., 2022). Figure 1 illustrates the volatility of the US Stock market through the CBOE Volatility Index (VIX) and SKEW, along with US economic policy uncertainty using the Economy Policy Uncertainty (EPU) Index, and US geopolitical risks gauged by the Geopolitical Risk (GPR) Index. As a key global economic player with significant ties to various regions, the US plays a crucial role in analysing how these indicators affect global financial trends.

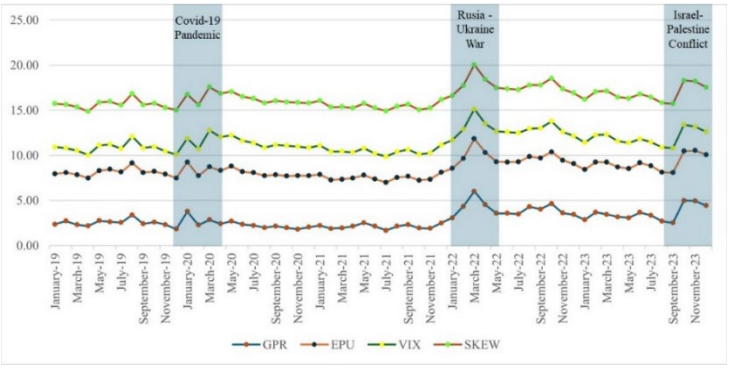

Fig. 1. Uncertainty Global

The Southeast Asian economy is closely linked with the US economy, reflecting the US's role as a global economic leader (Ann, 2023; Le and Tran, 2021). This interdependence became evident during the COVID-19 pandemic, which disrupted economic activity, delayed investment decisions, and reduced business profits, leading to declines in stock prices (Chiang, 2022; Hung et al., 2021). Similarly, the Russia-Ukraine conflict significantly impacted foreign exchange rates in countries heavily dependent on Russian energy and facing considerable EPU (Hossain et al., 2024). Indices measuring uncertainty in the US, such as geopolitical risk and economic policy uncertainty, have also exerted substantial influence on Asian stock markets (Tran and Vo, 2023). These markets often exhibit exaggerated responses to uncertainty shocks, underscoring the global repercussions of geopolitical and economic events (Ali et al., 2023a; Bossman and Gubareva, 2023).

Recent research has examined how conflicts and global economic uncertainty affect economic activity and stock markets in Asia and Palestine (Zhang et al., 2024). Studies on Palestine indicate that varying conflict intensities have modest effects on weekly average prices, revealing nuanced temporal and geographical influences (Ihle et al., 2019). In Southeast Asia, increases in US economic policy uncertainty have been shown to negatively impact stock market returns in Indonesia, Malaysia, and Thailand, while Vietnam tends to respond positively (Puji Lestari et al., 2023). These findings

highlight significant policy implications for the Asia-Pacific region, emphasizing the need to understand and address the asymmetric impacts of uncertainties son market performance and volatility (Tran and Vo, 2023a).

Indices such as the SKEW (Mora-Valencia et al., 2021) and VIX from the CBOE are crucial for understanding market sentiment and volatility in the US stock market (Moran and Liu Berlinda, 2020). The SKEW index measures perceived tail risks, reflecting investor expectations of severe negative outcomes (Cao et al., 2020), while the VIX forecasts future market volatility through options pricing (CBOE, 2023). These indicators provide valuable insights into how economic policy changes and geopolitical tensions influence stock market behavior, including in Southeast Asia, which is also affected by conflicts such as the Palestine-Israel conflict (Zhang et al., 2024). Policymakers and investors rely on these indicators to navigate market volatility and manage risks associated with global economic uncertainties.

Although previous research has highlighted a connection between ASEAN and US markets (Ann, 2023) and the impact of GPRRand EPUUon stock markets, the findings have often been mixed. For example, studies by Machmuddah et al. (2020) and Yang and Yang (2021) found a negative impact of increased Geopolitical Risk (GPR) on stock returns, whereas Umar et al. (2023) dentified a positive effect of GPR, particularly in the defense sector. Similarly, Xu et al. (2021), used predictive regression models to show a negative impact of EPU on stock returns, contrasting with Yang et al. (2021), who reported a positive effect of EPU on future returns. The comparison between VIX and SKEW indices also yielded varied results, with Ghosh and Bouri, (2022) and Mora-Valencia et al. (2021) suggesting that the SKEW index provides deeper insights compared to the VIX, while Cao et al. (2020) argued that the SKEW index is less informative in measuring global uncertainty.

Despite extensive research on the impact of US uncertainty on ASEAN stock markets, it remains underexplored. Previous studies, such as those Liang et al., (2020) and Tran and Vo (2023) have primarily focused on stock prices rather than stock returns. This research seeks to fill this gap by analyzing uncertainties in the US Geopolitical Risk (GPR), Economic Policy Uncertainty (EPU), and fear indices (VIX and SKEW) on stock returns in ASEAN countries.

This study offers two contributions: First, it looks into a topic that hasn't been studied before: how these four indices impact stock returns in nine ASEAN nations. Second, by employing a sample that encompasses three significant international events from the previous five years the COVID-19 pandemic, the Russian-Ukraine incursion, and the Israel-Palestine conflict it adds to the body of knowledge on the impact of US market uncertainty on ASEAN stock markets. The study intends to close this research gap and offer investors and policymakers useful policy insights to mitigate the adverse impact of these uncertainties on stock returns.

2 LITERATURE REVIEW

Rising global uncertainty has slowed economic growth, driven by the interconnectedness of economies, where countries compete for progress while minimizing negative impacts from others (Luk et al., 2020). Many nations now focus on capital markets to bolster economic resilience (Kang et al., 2020). Global events affect both public sectors and global stock markets (Roziq et al., 2024) with capital markets playing a strategic role (Capital Market Law No. 8, 1995). Financial instability, trade conflicts, and political upheavals influence investor confidence (Luk et al., 2020). The contagion theory shows how crises in one country, like the COVID-19 pandemic, spread through trade and financial links (Sghaier et al., 2023). Understanding these transmission mechanisms is crucial for global financial markets, especially in ASEAN. Global financial markets are closely connected, and U.S. policy changes impact global economic stability (Sawitri et al., 2022). Market players monitor both domestic and international markets (Choi et al., 2022) with significant trade ties between ASEAN and the U.S. (U.S. Embassy, 2019).

In the recent past, experts have made substantial use of the EPU index (Farooq et al., 2022). However, when the number of wars, terror attacks, and other like incidents increased, it became necessary to have a backup measure for interpreting geopolitical turmoil, namely the GPR index (Caldara and Iacoviello, 2022). The estimation and nature of these indexes varies fundamentally from one another. The EPU index is calculated by a text-mining process that uses key economic event terms, like "monetary policy, fiscal policy, tax," among others, from the digital achievements of ten major newspapers (Baker et al., 2016). In contrast, the information pertaining to geopolitical tensions, such as "terrorism," "military conflicts," "political tensions," "communal disharmonies," and others, is used to estimate GPR utilizing digital achieves from 11 newspapers (Caldara and Iacoviello, 2022). The fundamental difference between the EPU and GPR indices is that the former represents uncertainty about the actual economy, while the latter represents risk factors associated with conflict and situations resembling war (Kannadhasan and Das, 2020)

Apart from the EPU, the VIX and SKEW indexes are additional uncertainty measures that get interest from the international stock market (Tran and Vo, 2023a). VIX is referred to as the fear gauge due to its tendency to spike when the market experiences stress or uncertainty (CBOE, 2023). This index measures market volatility expectations for the next 30 days, calculated based on the prices of put and call options nearing expiration and traded at various strike prices (CBOE, 2023). VIX provides a general overview of investor sentiment, with a VIX reading above 30 indicating high market uncertainty (Sears, 2022).

On the other hand, the SKEW index offers a quantitative measure to assess and prepare for rare and disruptive events that challenge conventional expectations in the financial landscape (Elyasiani et al., 2021). SKEW is derived from prices of Out of The

Money (OTM) options on the S&P 500, with values ranging between 100-150 (CBOE, 2024). The key difference is that while VIX serves as an alert to risks arising from current events, the SKEW index measures the potential significant impact of rare events, commonly referred to as 'black swan' events (Tran and Vo, 2023a). Previous studies have highlighted the tendency of the US VIX and SKEW indices to influence global stock markets through trade relationship mechanisms (Chen et al., 2019; Elyasiani et al., 2021; Mora-Valencia et al., 2021; Tran and Vo, 2023a).

However, there is a dearth of research on their impact on ASEAN stock returns, with most studies focusing on individual countries. Additionally, the ongoing Israel-Palestine conflict, with its uncertain end, has had widespread global impacts. To understand the short-run and long-run consequences, researchers used the NARDL model to identify the asymmetric impacts of uncertainty on commodity markets and stock returns in nine ASEAN countries. Consequently, this research enriches the literature employing the GPR, EPU, VIX, and SKEW indices to understand how these indices influence ASEAN stock returns. The research hypotheses were formulated as follows:

H1: Geopolitical Risk Index (GPR) has a significant impact on ASEAN stock returns.
H2: Economy Policy Uncertainty Index (EPU) has a significant impact on ASEAN stock returns.
H3: Volatility Index (VIX) has a significant impact on ASEAN stock returns.
H4: Skewness Index (SKEW) has a significant impact on ASEAN stock returns.
H5: Economy Policy Uncertainty (EPU), Geopolitical Risk (GPR), Volatility Index (VIX), Skewness Index (SKEW) have a significant impact on ASEAN stock returns.

3 RESEARCH METHODOLOGY

The asymmetric impact of commodities markets and uncertainty on equities in nine ASEAN markets Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam are examined in this paper. Monthly data from January 2019 through December 2023 was used. The official websites of csx.com, finance.yahoo.com, lsx.com, www.ktzrh.com/myanpix, and investing.com were used to collect stock price data. Geopolitical risk (GPR) was taken from matteoiacoviello.com, while global economic policy uncertainty (EPU) was obtained from www.policyuncertainty.com (accessed on January 8, 2024). VIX and SKEW, two measures of stock market uncertainty, were retrieved from www.cboe.com, the official CBOE website. VIX and SKEW daily data were averaged monthly. With the exception of the GPR index, all data were obtained on January 8, 2024, and transformed into natural logarithm form. As a result, the variables and sources can be described as.

Table 1. Table of research variables, operational definitions, and data sources

Variable	Description	Country	Index	Data Source
Stock Return	Stock return refers to the amount of profit earned from an investment. (Tandelilin, 2017:113).	Cambodia	CSX	csx.com
		Indonesia	LQ45	finance.yahoo.com
		Malaysia	FTSE KLCI	
		Laos	LSX	lsx.com
		Myanmar	MYANPIX	www.ktzrh.com/myanpix
		Philippines	PSEi	investing.com
		Singapore	STI	
		Thailand	SET50	
		Vietnam	VNI 30	
Uncertainty Index	Geopolitical Risk Index	USA	GPR	matteoiacoviello.com
	Economy Policy Uncertainty Index	USA	EPU	policyuncertainty.com
	Vollatility Index	USA	VIX	CBOE
	Skewness Index	USA	SKEW	CBOE

This study calculates the market return of each ASEAN country at monthly t, RETt, presented in logarithmic form then formulated as follows:

$$RET_t = \ln\left(\frac{P_t}{P_{t-1}}\right) \quad (1)$$

Where Pt is the price of month t. The unrestricted error-correction model in the context of linear ARDL takes the following form:

$$\Delta Y_t = \alpha + \theta_1 Y_{t-1} + \delta_{t-1} + \sum_{i-1}^{l} \gamma_i \Delta y_{t-i} + \sum_{i=0}^{m} \pi_i x_{t-i} + \varepsilon_t \quad (2)$$

The intercept denoted by α, γi and πi indicate coefficients for the short-run, θ and δ represent the long-run coefficients, and εt stands for the error term. In the meantime, the NARDL model's nonlinear asymmetric long-run co-integrating regression is represented as follows:

$$Y_t = \sigma^+ x_t^+ + \sigma^- x_t^- + u_t \quad (3)$$

Where σ+ and σ- is long-run coefficient, x_t is independent variable and is divided into its partial sum processes reflecting positive changes (x_t^+) and negative changes (x_t^-). The short-run NARDL asymmetry equation is

$$X_t^+ = \sum_{i=1}^{t} \Delta x_i^+ = \sum_{i=1}^{t} \max(\Delta x_i, 0) \text{ dan } X_t^- = \sum_{i=1}^{t} \Delta x_i^- = \sum_{i=1}^{t} \min(\Delta x_i, 0) \quad (4)$$

By combining models 3 and 4, the NARDL equation in this research is:

$$\begin{aligned} InRet_t = \alpha + {} & \theta_1 InRet_{t-1} + \delta^+ GPR_{t-1}^+ \\ & + \delta^- GPR_{t-1}^- + \delta^+ InEPU_{t-1}^+ + \delta^- InEPU_{t-1}^- + \delta^+ InVIX_{t-1}^+ \\ & + \delta^- InVIX_{t-1}^- + \delta^+ InSKEW_{t-1}^+ + \delta^- InSKEW_{t-1}^- \\ & + \sum_{i-1}^{l} \gamma_i InRet_{t-i} + \sum_{i=0}^{m} (\pi_i^+ \Delta GPR_{t-i}^+ + \pi_i^- \Delta GPR_{t-i}^-) \\ & + \sum_{i=0}^{n} (\pi_i^+ \Delta lnEPU_{t-i}^+ + \pi_i^- \Delta lnEPU_{t-i}^-) + \sum_{i=0}^{o} (\pi_i^+ \Delta lnVIX_{t-i}^+ \\ & + \pi_i^- \Delta lnVIX_{t-i}^-) + \sum_{i=0}^{p} (\pi_i^+ \Delta lnSKEW_{t-i}^+ + \pi_i^- \Delta lnSKEW_{t-i}^-) \\ & + \varepsilon_t \end{aligned} \quad (5)$$

The NARDL research stage involves multiple parts. Firstly, to ascertain whether the data is appropriate for analysis, traditional assumption tests such normality, heteroscedasticity, multicollinearity, and autocorrelation (VIF) are conducted (Geyer Alois, 2021). To verify that every variable is stationary at the I (0) level and maximally stationary at the first difference I (1) level, do the second stationarity test (Unit Root Test) (Shin et al., 2014). Third, use the NARDL model for analysis. Fourth, use the limit Testing Approach to perform a cointegration test and compare the value with the crucial values of the upper limit I (1) and the lower bound I(0) in order to ascertain the long-run asymmetry relationship utilizing the t-bound and F-bound (Pesaran et al., 2001). The cointegration test equation is

$$H_0 : \theta = \delta^+ = \delta^- = 0 \ \boldsymbol{vs}\ H_1 : \theta \neq \delta^+ \neq \delta^- \neq 0 \quad (6)$$

asymmetry relationship is discovered. This involves calculating the positive and negative changes of the independent variables that have been divided in order to identify asymmetric impacts (Shin et al., 2014). The equation for the short-run asymmetry test is:

$$H_0 = \sum_{i=0}^{q-1} \pi^+ = \sum_{i=0}^{q-1} \pi^- \boldsymbol{vs}\ H_1 \sum_{i=0}^{q-1} \pi^+ \neq \sum_{i=0}^{q-1} \pi^- \quad (7)$$

The equation of the long run asymmetry test is:

$$H_0 = \delta^+ = \delta^- \boldsymbol{vs}\ H_0 \neq \delta^+ \neq \delta^- \quad (8)$$

When the Wald test results are significant, it indicates that the asymmetrical relationship is either short- or long-run.

4 RESULT

We used data covering the sample period 2019 M01-2023 M12, with start and end dates based purely on data availability at the time of the paper. Natural log scaling is used for all variables except the GPR variable. The following are the results of descriptive statistical testing (see Table.2).

Table 2. Descriptive Statistic

Variable	Obs	Mean	Std, Deviation	Minimum	Maximum
LRET_CAM	60	0,0011	0,0654	-0,1525	0,2995
LRET_IDN	60	-0,0002	0,0531	-0,2410	0,1107
LRET_LAO	60	0,0043	0,0595	-0,1524	0,1827
LRET_MLY	60	-0,0023	0,0285	-0,1142	0,0736
LRET_MYA	60	-0,0018	0,0452	-0,0636	0,2263
LRET_PHL	60	-0,0024	0,0582	-0,2434	0,0970
LRET_SGP	60	0,0009	0,0469	-0,1935	0,1463
LRET_THA	60	-0,0029	0,0532	-0,1707	0,1968
LRET_VIE	60	0,0046	0,0740	-0,3090	0,1580
GPR	60	2,9190	0,9533	1,68	6,01
LEPU	60	5,5953	0,1890	5,23	6,08
LVIX	60	3,0104	0,3043	2,52	4,05
LSKEW	60	4,8792	0,0815	4,74	5,05

Note: "L" denotes the natural logarithm, 'RET' represents stock returns, and the countries included in the sample are abbreviated as follows: CAM for Cambodia, IDN for Indonesia, LAO for Laos, MLY for Malaysia, MYA for Myanmar, PHL for the Philippines, SGP for Singapore, THA for Thailand, and VIE for Vietnam.

According to (see Table 2), Vietnam exhibits the highest average stock return at 0,0046, accompanied by a standard deviation of 0,0740. This indicates that the average return is lower than the standard deviation, suggesting considerable variability in the data (heterogeneity). In contrast, the Geopolitical Risk (GPR) has an average value of 2,9190, with a standard deviation of 0,9533. Since the GPR data is not transformed into natural logarithms, it indicates a more uniform dataset (homogeneity).

Table 3 Classical Assumption Test

Country	Normality: *Jarque-Bera*	Autocorrelation: Obs*R-squared	Heteroskedasticity: Prob. Chi-Square (1)
CSX	4,523373*	1,408561*	0,7417*
LQ45	3,334401*	2,215394*	0,6104*
LSX	0,273331*	1,213352*	0,7836*
FTSE	0,227679*	1,960080*	0,8918*
KLCI			
MYANPIX	1,994042*	1,192512*	0,9148*
PSEi	0,740809*	3,043023*	0,3741*
STI	0,884916*	5,887656*	0,4013*
SET50	2,119815*	0,691763*	0,7321*
VNI	0,967299*	4,012669*	0,7985*

* *Represent the 5 percent significance levels*

Table 4 Correlation Matrix and Multicollinearity

	CSX	LQ45	LSX	FTSE	MYAN	PSEI	STI	SET50	VNI	GPR	LEPU	LVIX	LSKEW
CSX	1.0000												
LQ45	0.3513	1.0000											
LSX	0.0158	0.0948	1.0000										
FTSE	0.3031	0.6697	-0.0799	1.0000									
MYAN	0.0211	-0.1186	0.2695	-0.0758	1.0000								
PSEI	0.3964	0.6604	0.0817	0.5244	-0.2178	1.0000							
STI	0.3387	0.6300	0.0094	0.5595	-0.1825	0.5436	1.0000						
SET50	0.3517	0.6233	0.0663	0.4986	-0.0985	0.5838	0.7134	1.0000					
VNI	0.3533	0.5170	-0.0793	0.4634	-0.1439	0.6249	0.5441	0.5219	1.0000				
GPR	0.0957	-0.0190	0.2147	-0.0026	0.0235	-0.1132	-0.0911	-0.0653	-0.2816	1.0000			
LEPU	0.0946	0.0772	-0.0572	0.0914	0.0562	0.0323	0.0114	0.1348	-0.0866	0.1770	1.0000		
LVIX	-0.1053	-0.1826	0.0507	-0.1676	-0.0605	-0.1602	-0.2309	-0.0568	-0.2494	0.2522	0.5456	1.0000	
LSKEW	-0.3131	0.1946	-0.1047	0.1486	-0.2108	0.0562	0.1059	0.0382	0.2280	-0.1933	-0.4634	-0.1575	1.0000
VIF										1.0977	1.7997	1.5137	1.3272

The classical assumption (see Table 3) shows that all basic statistical assumptions have been met, namely normality, heteroscedasticity, and autocorrelation. In addition, the multicollinearity test (see Table 4) reveals that none of the variables have a high correlation with each other and is evidenced by VIF (Variance Inflation Factor) values that are below the acceptable threshold.

Table 5 Root Test

Variabel	***Augmented DF test***				***Phillips–Perrontest***			
	Level		***First diff.***		***Level***		***First dif.,***	
	ADF T-statistic	***Prob.***	**ADF T-statistic**	***Prob.***	**PP T-statistic**	***Prob.***	**PP T-statistic**	***Prob.***
GPR	-2,8638	**0,0558***	-9,3038	0,0001	-2,7283	**0,0753***	-14,003	0,0004
LN_EPU	-3,6397	0,0078***			-3,5545	0,0098***		
LN_VIX	-3,1085	0,0314**			-3,1428	0,0288**		
LN_SKEW	-2,3539	**0,1592**	-7,7946	0,0008***	-2,2824	**0,1810**	-7,9596	0,0051***
CSX	-6,1430	0,0021***			-8,1288	0,0025***		
LQ45	-6,6332	0,0003***			-6,6001	0,0039***		
LSX	-6,4620	0,0064***			-6,4848	0,0001***		
FTSE KLCI	-7,0514	0,0088***			-9,6264	0,0044***		
MYANPIX	-7,1404	0,0061***			-7,1273	0,0006***		
PSEi	-8,9857	0,0002***			-8,9716	0,0002***		

Variabel	*Augmented DF test*				*Phillips–Perrontest*			
	Level		*First diff.*		*Level*		*First dif.,*	
	ADF T-statistic	***Prob.***	**ADF T-statistic**	***Prob.***	**PP T-statistic**	***Prob.***	**PP T-statistic**	***Prob.***
STI	-8,8916	0,0003***			-8,8927	0,0003***		
SET50	-8,1086	0,0026***			-8,4609	0,0009***		
VNI	-7,5571	0,0015***			-7,5571	0,0015***		

Note :
Signifying significance levels of 10%, 5%, and 1%, respectively, are the symbols *, **,***, and. The Akaike Information Criterion is used to determine the ideal lag lengths (AIC).

Table 6 Bound Test

Country	Stock Return and GPR		Stock Return and EPU		Stock Return and VIX		Stock Return and SKEW	
	t_{BDM}	F_{pss}	t_{BDM}	F_{pss}	t_{BDM}	F_{pss}	t_{BDM}	F_{pss}
CSX	-6,6237	14,09297	-6,2911	12,7129	-7,5181	18,1160	-6,7693	14,7089
LQ45	-6,5469	13,7273	-6,6977	14,4287	-9,5109	29,0148	-6,9831	15,6842
LSX	-6,7393	14,5891	-6,7399	14,5917	-6,6448	14,1827	-7,2376	16,8144
FTSE KLCI	-7,6365	18,6913	-7,5641	18,3244	-8,1968	21,5347	-7,2652	16,9180
MYANPIX	-6,3579	12,9844	-6,4303	13,2817	-7,1394	16,3494	-6,7622	14,6885
PSEi	-9,9199	31,5155	-9,1114	26,7018	-11,129	39,7306	-9,1311	26,8176
STI	-9,5944	29,5264	-9,7140	30,2674	-6,0940	18,2115	-9,3056	27,8151
SET50	-7,4100	17,5708	-7,1635	16,4718	-9,0702	26,3684	-8,3769	22,5084
VNI	-8,8704	25,2197	-7,9870	20,5180	-8,0720	20,8677	-8,1914	21,5818
Signif,	***t-Bounds Test***				***F-Bounds Test***			
K=2	**I (0)** ***Lower Bound***		**I (1)** ***Upper Bound***		**I (0)** ***Lower Bound***		**I (1)** ***Upper Bound***	
10%	-2,57		-2,91		4,04		4,78	
5%	-2,86		-3,22		4,94		5,73	
1%	-3,43		-3,82		6,84		7,84	

Table 7 Wald Test

Country	***Stock Return and*** **GPR**		***Stock Return and*** **EPU**		***Stock Return and*** **VIX**		***Stock Return and*** **SKEW**	
	W_{LR}	W_{SR}	W_{LR}	W_{SR}	W_{LR}	W_{SR}	W_{LR}	W_{SR}
CSX	4.4708***	11.0159***	82.5893***	14.0628***	14.8771***	4.6802***	15.6831***	10.5449***
LQ45	3.1608*	9.8327***	5.4820**	8.1885***	6.6039**	14.7602***	9.0526***	5.8425***
LSX	7.5955***	4.3620**	10.7307***	3.9106**	-	-	7.0148***	6.3979***
FTSE KLCI	7.1849***	18.5922***	9.4716***	12.1284***	13.4858***	4.8266***	-	5.0932***
MYANPIX	5.5424**	6.3625**	5.7409**	9.2571**	5.0318**	**N/A**	7.4781***	15.7607***
PSEi	-	4.3163**	5.8952**	5.4967**	10.9841***	13.3791***	3.9694**	9.0765***
STI	2.9021*	7.4740***	19.9955***	-	5.7725**	7.8546***	19.4450***	12.1867***
SET50	3.7528*	-	-	21.7860***	6.6300**	15.7615***	-	16.7010***
VNI	8.9702***	9.9482***	7.6243***	10.8826***	16.0718***	23.7665***	13.7583***	6.1211**

Note:
"N/A" signifies that the specified regressor was omitted during the model estimation process
*, **, and *** indicate significant levels of 10 percent, 5 percent, and 1 percent, respectively.
Empty cells denote the absence of statistically significant findings
WLR and WSR represent the Wald test statistics used to evaluate the null hypotheses that there is no long-run or short-run asymmetry, respectively.

Root test for stationarity (see Tab.5) Augmented Dickey-Fuller (ADF) tests (Papa-roditis and Politis, 2018) and Philips-Perron (PP) tests (Phillips and Perron, 1988)

indicate that none of the variables are stationary at the second difference I (2) level. This implies that all country returns are stationary at level I (0) and the first difference I (1) levels (see, e.g, Gheraia, 2022; Sarker et al., 2023). As a result, the study moves on by employing the bounds testing method to the cointegration test. Table 6 shows a stable pattern in the association between ASEAN stock returns and GPR, EPU, VIX, and SKEW: higher levels of uncertainty translate into lower stock returns from 2019 to 2023. The null hypothesis was rejected when the results of the t-bound and F-bound tests showed that the Fpss value was higher than the upper bound and the tBDM value was lower than the upper bound. This shows that the variables are cointegrating, indicating the existence of a long-term nonlinear relationship.

Table 8. Long- and short-run NARDL estimation coefficient results for the impacts of GPR on stock market returns

	Country								
Variabel	**CAM**	**IDN**	**LAO**	**MLY**	**MYA**	**PHL**	**SGP**	**THA**	**VIE**
C	-0.2996	0.3335	0.2310	-0.0015	0.1642	-0.0304	-0.0930	-0.0868	-0.5731
SR_{t-1}	-2.3465***	-1.8522***	-2.1607***	-2.4241***	-1.8684***	-4.0475***	-1.4095***	-1.3176***	-1.3622***
$LGPR^{+}_{t-1}$	-0.1597***		-0.3072***	-0.7037***	-0.0245***		-0.0758**		-0.1774***
$LGPR^{-}_{t-1}$	-0.1925***		-0.0844***	-0.2853**	0.0208***		-0.1003**		-0.1928***
ΔSR_{t-1}		0.7298**	1.0235***	1.4349***	-0.6001***	2.0485***		0.3833**	
ΔGPR^{+}_{t}	0.0310**		0.0524***	0.0301***	-0.0377***	0.0610***	0.0337**		
ΔGPR^{+}_{t-1}	0.1716***		-0.0891***	-0.0240***	-0.0952***	-0.0601***	0.1075***		0.3047**
ΔGPR^{+}_{t-2}	0.1702***	0.0758**		0.0267***	-0.1253***	0.0551***	0.1165***		0.2057**
ΔGPR^{+}_{t-3}		0.0708**		-0.0255**		-0.0844**			
ΔGPR^{-}_{t}	-0.0520**			-0.0167**	0.0518**	-0.0563**			-0.2170***
ΔGPR^{-}_{t-1}	0.1747***	-0.1690***	0.0681***	0.0159**		0.0825***	0.0907***	0.0544**	-0.2110***
ΔGPR^{-}_{t-2}	0.0384**	-0.1232***		-0.0345***	0.0950***				
ΔGPR^{-}_{t-3}	0.0357***		0.0538**	0.0364***	0.0832***	0.1074***	0.0797**		

*, **, and *** indicate significant levels of 10 percent, 5 percent, and 1 percent, respectively.

The results of the long-run analysis of the GPR variable (see Table 8) that stock returns in CAM, LAO, MLY, MYA, SGP and VNI countries decrease by 0.15%, 0.30%, 0.70%, 0.024%, 0.075%, and 0.17% when there is an increase in GPR ($LGPR^{+}$) by 1%. A decrease in the GPR index ($LGPR^{-}$) by 1% makes a decrease in stock returns in CAM, LAO, MALAY and SGP countries by 0.19%, 0.03%, 0.70%, and 0.10% but makes an increase in stock returns in MYA and VIE by 0.02% and 0.19%. Meanwhile increase in the GPR index (ΔGPR^{+}) by 1% makes a decrease in stock returns in LAO, MLY, MYA, PHL by 0.08%, 0.02%, 0.09%, and 0.06%, however, stock returns in CAM, SGP and VIE have increased by 0.17%, 0.10% and 0.03%. Furthermore, in the short-run when the GPR index decreased (ΔGPR^{-}) at lag 1 by 1%, it increased stock returns in CAM, IDN, LAO, MLY, PHL, SGP, THA, and VIE by 0.17%, 0.16%, 0.06%, 0.01%, 0.08%, 0.09%, 0.05% and 0.21%.

Table 9. Long- and short-run NARDL estimation coefficient results for the impacts of EPU on stock market returns

	Country								
Variabel	**CAM**	**IDN**	**LAO**	**MLY**	**MYA**	**PHL**	**SGP**	**THA**	**VIE**
$LEPU^{+}_{t-1}$	-0.2488***	0.0667**	-0.6776***	0.0508**	-0.3138**	-0.3570**	-0.2176***	0.1579**	-0.2379***
$LEPU^{-}_{t-1}$	-0.4111**	0.1692***	0.1988**	0.3155**	-0.3137**	1.0021**	0.5797***		0.2130***
$\Delta lnEPU^{+}_{t}$	0.1871**	-0.3351***		0.1043**	-0.2258***			-0.0772***	
$\Delta lnEPU^{+}_{t-1}$	-0.4666***	-0.4037***	0.3338***	-0.1198**		0.2688**			0.1306**
$\Delta lnEPU^{+}_{t-2}$	-0.40251***		0.3261***			0.3568***		0.1721**	-0.0866**
$\Delta lnEPU^{+}_{t-3}$	-0.2812***	0.3638***				0.2940**			
$\Delta lnEPU^{-}_{t}$	0.2151**	0.2083**	0.2999**		0.2346**	0.5023***		-0.2051**	0.2653**
$\Delta lnEPU^{-}_{t-1}$	0.3201***	-0.2995***	0.3272**			-0.5337***	-0.3027**	0.2089**	0.2529**
$\Delta lnEPU^{-}_{t-2}$	0.3068***	-0.1480**		-1.5587**	0.1988**		-0.1225**		0.2853**
$\Delta lnEPU^{-}_{t-3}$		-0.1612**		-0.1237**	1.0346***		-0.2337***		

*, **, and *** indicate significant levels of 10 percent, 5 percent, and 1 percent, respectively.

The long-run impact between the EPU variable and stock returns in various countries can be seen (see Tab. 9). When there is an increase in EPU ($LEPU^{+}$) by 1%, it causes a decrease in stock returns in CAM -0.24%, LAO -0.06%, MYA -0.31%, PHL -0.35%, SGP -0.21% and VIE -0.23%, however, in contrast to IDN, MLY, and THA which experienced an increase of 0.06%, 0.05%, and 0.15%. Then with a decrease in EPU ($LEPU^{-}$) of 1%, it increased stock returns in ASEAN except in CAM and MYA which decreased by -0.41% and -0.31%. Regarding the short-run analysis when the EPU increases (ΔEPU^{+}) by 1%, it gives a different impact in each time period but constantly makes an increase in stock returns in LAO, PHL and THA. Unlike the case if there is a decrease in EPU (ΔEPU^{-}) of 1% constantly making a decrease in stock returns in IDN, MLY and SGP.

Table 10. Long- and short-run NARDL estimation coefficient results for the impacts of VIX on stock market returns

	Country								
Variabel	**CAM**	**IDN**	**LAO**	**MLY**	**MYA**	**PHL**	**SGP**	**THA**	**VIE**
$\Delta lnVIX^{+}_{t-1}$	-0.1193***	-0.0708**		-0.0402**	-0.2899***	-0.3105**	0.1182***	-0.0659**	-0.1292**
$\Delta lnVIX^{+}_{t-1}$	0.3429**	0.0168**		0.0349**	0.2642**	-1.2113***	-0.2093***	0.1721**	0.3047***
$nVIX^{+}_{t}$	-0.3085***	-0.2406***		-0.1700***		-0.4063***	-0.2187***	-0.1675***	
$nVIX^{+}_{t-1}$				0.0889***				-0.1450***	-0.4989***
	-0.2365***		-0.1412**	-0.0608***		-0.2442***		0.1431***	-0.3350**
$\Delta lnVIX^{+}_{t-3}$		-0.1627**		0.0577**			-0.2093***	-0.1038***	-0.2043**
$\Delta lnVIX^{-}_{t}$		0.3260**		-0.0696**		-0.4440**	0.1182***	-0.1675***	-0.5146***
$\Delta lnVIX^{-}_{t-1}$	-0.5993***							0.0657**	-0.4003**
$\Delta lnVIX^{-}_{t-2}$	-0.1850**			0.0854***		0.4463***	0.1629***	0.0702**	
$\Delta lnVIX^{-}_{t-3}$		0.2996**							

With the exception of Singapore (SGP) and Laos (LAO), which show increases in stock returns of 0.11% and 0,1%, respectively, a 1% spike in the VIX index (LVIX+) over the long term (see Tab.10) results in lower market returns in ASEAN nations. In contrast, stock returns in ASEAN nations rise in response to a 1% drop in the VIX index (LVIX-), with the exception of Singapore (SGP) and the Philippines (PHL), where market returns fall by 0,20% and 1,21%, respectively. Table 10 presents the short-run study, which indicates that all ASEAN nations have a fall in stock returns with a 1% increase in VIX (ΔVIX+), with the exception of Myanmar (MYA), which sees an increase of 0.08%. Moreover, a 1% drop in the VIX (ΔVIX-) causes the stock returns in Singapore (SGP) to rise by 0.11% and in Indonesia (IDN) by 0,32%.

Table 11. Long- and short-run NARDL estimation coefficient results for the impacts of SKEW on stock market returns

	Country								
Variabel	**CAM**	**IDN**	**LAO**	**MLY**	**MYA**	**PHL**	**SGP**	**THA**	**VIE**
$LSKEW^{+}_{t-1}$	-0.8879***	-0.2974***	-0.5271***		-0.4979***	-1.0761**	-0.3751**		-0.2445***
$LSKEW^{-}_{t-1}$	-1.0138***	-0.3307***	-1.9758***	0.3855**	0.5200***	-1.4256***	-0.5288**		0.3599**
$\Delta lnSKEW^{+}_{t}$	-1.2557***		-1.6572***		0.0702***		-0.5288**	-0.6991***	
$\Delta lnSKEW^{+}_{t-1}$		-0.8340***		0.6838***	1.2151***		-0.8146**		-0.6771**
$\Delta lnSKEW^{+}_{t-2}$	0.7492**	-0.5988***	1.0009**			0.9877***		-1.5660**	-0.4270***
$\Delta lnSKEW^{+}_{t-3}$	1.1389***	-0.3653**				0.9217***		-1.3895**	
$\Delta lnSKEW^{-}_{t}$	-0.6376**	0.8305***	-0.9973**	1.6896***	0.7149**	-0.8431***	0.5241***	1.2325***	1.5613***
$\Delta lnSKEW^{-}_{t-1}$		1.5666***	1.7274***		-0.5905**	1.0362***	-0.6138**	1.2405***	-1.4095***
$\Delta lnSKEW^{-}_{t-2}$	-1.6068***	-0.7480***		1.6765***		-0.9124***	-0.6531**		-2.1646***
$\Delta lnSKEW^{-}_{t-3}$			1.1396**			-0.4795**	0.6528**		-1.3871***

* , **, and *** indicate significant levels of 10 percent, 5 percent, and 1 percent, respectively.

It is observed that in the long run (see Table 11), a 1% increase in the SKEW index ($LSKEW^{+}$) results in a decrease in stock returns across ASEAN countries, except for Malaysia (MLY) and Thailand (THA), where it leads to insignificant increases of 0.14% and 0.002%, respectively. Conversely, a 1% decrease in the SKEW index ($LSKEW^{-}$) leads to an increase in stock returns in Malaysia (MLY), Myanmar (MYA), and Vietnam (VIE) by 0.38%, 0.52%, and 0.17%, respectively. In the short run, as shown in panel B, a 1% increase in the SKEW index ($\Delta SKEW^{+}$) has varying impacts over time but consistently results in a 1.07% increase in stock returns in Myanmar (MYA). If the SKEW index ($\Delta SKEW^{-}$) decreases by 1%, it consistently leads to an increase in stock returns in Malaysia (MLY) by 1.68% and in Thailand (THA) by 1.23%, with varying impacts observed in other countries over time.

Table 12 Simultaneous impact of GPR, EPU, VIX and SKEW on ASEAN stock returns

Dependent Variable	*F-Statistic*	*Prob.*
CSX	12.17719	0.000011
LQ45	7.779531	0.000033
LSX	5.482975	0.000039
FTSE KLCI	12.55949	0.000009
MYANPIX	7.080880	0.000002
PSEi	10.33717	0.000029
STI	11.23840	0.001859
SET50	12.02075	0.000029
VNI	18.46427	0.001280

Based on the outcomes of the simultaneous (see Table 12) hypothesis test (F test) detailed (see Tab.12), it is evident that all calculated F-statistical probability values are <0.05, with the overall F-statistic exceeding the critical F-table value of 2.53069. Consequently, this study accepts hypothesis (H5) by the researcher, indicating that the Geopolitical Risk Index (GPR), Economy Policy Uncertainty Index (EPU), Volatility Index (VIX), and Skewness Index (SKEW) collectively exert a significant simultaneous impact on ASEAN Stock Exchange returns during the period spanning 2019-2023.

5 DISCUSSION

The impact of geopolitical risk (GPR) on ASEAN stock market return. The long-term analysis (see Table 8) reveals that an increase in the GPR index significantly decreases stock returns in ASEAN countries, including Cambodia, Laos, Malaysia, Myanmar, Singapore, and Vietnam. Conversely, a reduction in the GPR index generally results in a notable rise in stock returns. However, in Myanmar and Vietnam, a decrease in the GPR index significantly boosts stock returns (Ahmed et al., 2023). Therefore, investing in stocks over the long term in Cambodia, Laos, Malaysia, Myanmar, Singapore, and Vietnam during times of heightened geopolitical tension may not provide effective protection (Ali et al., 2023b). Understanding the adverse effects of geopolitical risk (GPR) is essential for investors, especially those involved in medium- to long-term investment strategies (Yang and Yang, 2021a). In the short term, an increase in the GPR index tends to lead to higher stock returns in Cambodia, Indonesia, Singapore, and Vietnam, while a decrease in the GPR similarly results in increased stock returns in these countries.

This suggests that these four countries may offer a robust hedge during periods of intensified geopolitical uncertainty. However, this indicates a possible divergence between short-term market returns and changes in geopolitical or policy-related uncertainties. Nonetheless, the heightened uncertainty and stress in the financial system can still impact stock price volatility (Korsah et al., 2024). In contrast, in Laos, Malaysia, Myanmar, and the Philippines, an increase in the GPR index is associated with lower stock returns, likely due to frequent news about conflict and terrorism leading investors to overestimate risk and react excessively by selling (Rizal et al., 2023), thus reducing

short-term stock returns. Consequently, this study supports hypothesis H1, asserting that the Geopolitical Risk Index (GPR) significantly affects ASEAN stock exchange returns from 2019 to 2023. These findings align with previous research (Korsah et al., 2024; Tran and Vo, 2023a; Yang and Yang, 2021)

The impact of Economic Policy Uncertainty (EPU) on ASEAN stock market return. The model estimation results (see Tab. 9) when there is an increase in the EPU index can reduce ASEAN stock returns in the long run in 7 countries, however, in Malaysia and Thailand an increase in EPU can increase stock returns. Then a decrease in the EPU index increases stock returns in 6 ASEAN countries except in Cambodia and Myanmar. This decline in stock returns aligns with the theory that heightened economic uncertainty prompts a flight-to-safety response among investors, who shift their portfolios away from high-risk assets like stocks to safer alternatives (Lehnert, 2022). This behavior contributes to stock market fluctuations and a decrease in stock returns (Aslanidis et al., 2020).

Similar to the findings related to the Geopolitical Risk Index (GPR), these results indicate that markets frequently exhibit an overreaction to Economic Policy Uncertainty (EPU) shocks, causing stock prices to diverge from their intrinsic value (C. Chiang, 2020). In the short run, the Economic Policy Uncertainty (EPU) exerts varying influences depending on the timing of its occurrence, as each country requires time to respond to emerging uncertainties. Specifically, in the short run, an increase in EPU (ΔEPU+) elicits significant reactions from all ASEAN countries. Conversely, when there is a decrease in EPU (ΔEPU-), all ASEAN countries are similarly affected due to the prevailing political stability at that time.

This phenomenon can be explained by the signal precision theory proposed by (Veronesi and Lubos, 2017), which posits that uncertainty signals impacting the stock market originate from established formal institutions, such as government policies. This aligns with the observation that policy uncertainty in the USA often serves as a major source of economic uncertainty (Almustafa et al., 2023). At certain times, a decrease in the Economic Policy Uncertainty (EPU) index does not immediately result in increased stock returns. This indicates that the market requires time to react positively to reduced EPU. Consequently, the positive impacts of decreased policy uncertainty are reflected in stock returns in subsequent periods. Thus, the proposed hypothesis H2, which posits that the EPU has a significant impact on the returns of the ASEAN stock exchange from 2019 to 2023, is accepted. These findings are consistent with the research conducted by (Almustafa et al., 2023; Korsah et al., 2024; Tran and Vo, 2023a; Xu et al., 2021).

The impact of Volaitility Index (VIX) on ASEAN stock market return. Based on the analysis (see Table 10), it is observed that in the long term, variations in the VIX affect stock returns in all ASEAN countries except Laos, regardless of whether the VIX rises or falls. Generally, an increase in the VIX (LVIX+) leads to a decrease in stock returns in seven ASEAN countries, excluding Laos and Singapore. Conversely, a decrease in the VIX (LVIX-) results in higher stock returns in six ASEAN countries, except Singapore, Laos, and the Philippines. This suggests that investors should consider

greater diversification or hedging during times of high uncertainty and manage their risk

exposure during periods of low uncertainty (Ashraf, 2020; Ding et al., 2021; Fasanya et al., 2021).

In the short term, a rise in the VIX index (ΔVIX+) leads to a decrease in stock returns across ASEAN countries. This indicates that a high VIX reflects a pessimistic view of the US economy, which can negatively impact ASEAN economies through trade links. Essentially, a high VIX can generate negative sentiment and cause significant selloffs in ASEAN markets, resulting in reduced stock returns (Rizal et al., 2023). Sentiment is a crucial factor in market dynamics. While traditional capital asset pricing models focus on compensating investors for risk-taking, the influence of sentiment on market volatility can introduce uncertainty and lower returns (Abakah et al., 2024).

If investors do not receive adequate risk premiums relative to expected volatility, they may withdraw from the market, intensifying volatility. This cycle can lead to bearish trends and impede market growth. Empirical analysis of conditional volatility indicates that negative sentiment has a more pronounced effect than positive sentiment. This asymmetry suggests that during positive sentiment periods, investors are more active in seeking higher returns, potentially leading to speculative behavior and market overvaluation (P H and Rishad, 2020). According to the Wald test (see Table 7), seven out of nine countries display asymmetric impacts, showing that ASEAN stock markets respond more significantly to VIX increases (bad news) than to decreases (good news). Thus, the research supports H3, confirming that the Volatility Index (VIX) has a substantial impact on ASEAN stock market returns. These results are consistent with previous studies (Apergis et al., 2023; Tran and Vo, 2023a).

The impact of Skewness Index (SKEW) on ASEAN stock market return. Based on the findings (see Tab.11) an increase in skewness (ΔSKEW+) led to decreased stock returns across seven ASEAN countries, with exceptions noted in Thailand and Malaysia. Conversely, a decrease in skewness (ΔSKEW-) corresponded to increased stock returns in Malaysia, Myanmar, and Vietnam. However, in Cambodia, Indonesia, Laos, the Philippines, and Singapore, decreases in skewness coincided with declines in stock returns. These variations may stem from unique local factors that render stock markets in these countries more sensitive to skewness index fluctuations than others Cao et al. (2020). In the short run (see Tab.11) an increase in skewness (ΔSKEW+) consistently reduces stock returns in Indonesia, Singapore, Thailand, Malaysia, and Vietnam. In contrast, in Cambodia, Laos, Myanmar, and the Philippines, an increase in skewness leads to higher stock returns. This divergence can be attributed to the nascent stage of stock markets in Cambodia, Laos, and Myanmar, where market dynamics and investor participation differ significantly from more mature markets. This observation aligns with Yunita et al., (2022) suggesting that markets promptly react to significant announcements due to their efficient nature, swiftly incorporating relevant information into price adjustments. Hence, despite the general association between increased skewness and decreased stock returns, the varied responses observed across these countries

underscore the intricate interplay between market uncertainty and investor behavior within distinct economic contexts. Consequently, the researcher supports H4, posited in the study, indicating that the Skewness Index (SKEW) significantly influences ASEAN stock exchange returns during the period of 2019-2023. These findings diverge from previous research (Cao et al., 2020; Elyasiani et al., 2021).

Simultaneous impact of GPR, EPU, VIX and SKEW on ASEAN stock returns. Simultaneously, or collectively (see Table 12), means that these variables not only individually influence the observed outcomes but also interact complexly with each other in affecting the phenomenon or final outcome. In the context of this study, the finding that the uncertainty global collectively influence ASEAN Stock Exchange Returns for the years 2019-2023 indicates that the combination of these indices, which affect geopolitical uncertainty, economic policy, market volatility, and skewness distribution, collectively plays a significant role in determining ASEAN stock market performance during the studied period. In other words, the outcomes of each index do not occur in isolation but rather mutually influence and contribute to shaping the overall dynamics of the ASEAN stock market.

6 CONCLUSION AND RECOMMENDATION

This study reveals that several risk indices including the Geopolitical Risk Index (GPR), Economic Policy Uncertainty Index (EPU), Volatility Index (VIX), and Skewness Index (SKEW) significantly impact stock returns on ASEAN exchanges between 2019 and 2023. It concludes that both geopolitical risk and economic policy uncertainty have substantial effects on ASEAN stock market returns. Over the long term, heightened geopolitical risk generally leads to lower stock returns, although there are regional differences. Conversely, in the short term, countries such as Cambodia, Indonesia, Singapore, and Vietnam may actually experience positive effects from increased geopolitical risk. Economic policy uncertainty generally reduces stock returns over the long term, though Malaysia and Thailand show exceptions. These results indicate that investors should account for geopolitical and economic policy risks when making investment decisions in the ASEAN region. The varying responses of different countries to these risks underscore the need for an investment strategy that is finely tuned to regional specifics.

VIX indicates a negative short-run impact on stock returns across ASEAN countries, while SKEW significantly affects stock returns, where its increase generally decreases returns in most countries. In conclusion, this study affirms that GPR, EPU, VIX, and SKEW collectively have a substantial influence on ASEAN stock exchange returns throughout the study period. This study uses the NARDL approach to examine the asymmetric effect of uncertainty (good news vs bad news) on stock returns. The data analyzed comes from 9 ASEAN countries during the 2019-2023 period. With ASEAN countries being affected by US uncertainty, it means that ASEAN has an increasingly important role in international trade, especially with the US. In contrast to traditional

finance theory that assumes investors will be rational investors because in reality investors in the ASEAN region tend to overreact.

These findings underscore the importance for investors to incorporate geopolitical and economic policy risks into their decision-making processes when investing in the ASEAN region. The varying responses of different countries to these risks emphasize the need for a nuanced investment approach tailored to regional dynamics. Firstly, employing a diversification strategy across multiple ASEAN countries can mitigate the impact of geopolitical and economic uncertainties on investment portfolios. By spreading investments, losses in one country can potentially be balanced by gains in others. Secondly, utilizing risk management tools such as options and futures can provide effective hedging against geopolitical and economic policy risks, safeguarding portfolios from adverse market movements during periods of heightened uncertainty. Thirdly, continuous monitoring and analysis of geopolitical developments and economic policies are essential. Investors should leverage advanced analytics and real-time data to make informed decisions and promptly adjust their strategies in response to evolving risks. Finally, advocating for transparent and consistent economic policies through collaboration between investors, financial institutions, and policymakers can enhance market stability and create a more predictable investment environment.

REFERENCES

1. Abakah, E. J. A., Abdullah, M., Yousaf, I., Kumar Tiwari, A., & Li, Y. (2024). Economic sanctions sentiment and global stock markets. Journal of International Financial Markets, Institutions and Money, 91, 101910. https://doi.org/10.1016/j.intfin.2023.101910
2. Ahmed, S., Hasan, M. M., & Kamal, M. R. (2023). Russia–Ukraine crisis: The effects on the European stock market. European Financial Management, 29(4), 1078–1118. https://doi.org/10.1111/eufm.12386
3. Ali, S. R. M., Anik, K. I., Hasan, M. N., & Kamal, M. R. (2023a). Geopolitical threats, equity returns, and optimal hedging. International Review of Financial Analysis, 90, 102835. https://doi.org/10.1016/j.irfa.2023.102835
4. Almustafa, H., Jabbouri, I., & Kijkasiwat, P. (2023). Economic Policy Uncertainty, Financial Leverage, and Corporate Investment: Evidence from U.S. Firms. Economies, 11(2), 37. https://doi.org/10.3390/economies11020037
5. Ann, L. S. (2023). Southeast Asian Views on the United States: Perceptions Versus Objective Reality (1st ed.). ISEAS - Yusof Ishak Institute.
6. Apergis, N., Mustafa, G., & Malik, S. (2023). The role of the COVID-19 pandemic in US market volatility: Evidence from the VIX index. The Quarterly Review of Economics and Finance, 89, 27–35. https://doi.org/10.1016/j.qref.2023.03.004
7. Ashraf, B. N. (2020). Economic impact of government interventions during the COVID-19 pandemic: International evidence from financial markets. Journal of Behavioral and Experimental Finance, 27, 100371. https://doi.org/10.1016/j.jbef.2020.100371
8. Aslanidis, N., Christiansen, C., & Savva, C. S. (2020). Flight-to-safety and the risk-return trade-off: European evidence. Finance Research Letters, 35, 101294. https://doi.org/10.1016/j.frl.2019.09.009

9. Baker, S. R., Bloom, N., & Davis, S. J. (2016). Measuring Economic Policy Uncertainty. The Quarterly Journal of Economics, 131(4), 1593–1636. https://doi.org/10.1093/qje/qjw024
10. Bannigidadmath, D., Ridhwan, M., & Indawan, F. (2024). Global Uncertainty and Economic Growth – Evidence from Pandemic Periods. Emerging Markets Finance and Trade, 60(2), 345–357. https://doi.org/10.1080/1540496X.2023.2213377
11. Bossman, A., & Gubareva, M. (2023). Asymmetric impacts of geopolitical risk on stock markets: A comparative analysis of the E7 and G7 equities during the Russian-Ukrainian conflict. Heliyon, 9(2), e13626. https://doi.org/10.1016/j.heliyon.2023.e13626
12. C. Chiang, T. (2020). Economic policy uncertainty and stock returns—evidence from the Japanese market. Quantitative Finance and Economics, 4(3), 430–458. https://doi.org/10.3934/QFE.2020020
13. Caldara, D., & Iacoviello, M. (2022). Measuring Geopolitical Risk. American Economic Review, 112(4), 1194–1225. https://doi.org/10.1257/aer.20191823
14. Cao, J., Ruan, X., & Zhang, W. (2020). Inferring information from the S&P 500, CBOE VIX, and CBOE SKEW indices. Journal of Futures Markets, 40(6), 945–973. https://doi.org/10.1002/fut.22093
15. CBOE. (2023, October 28). Making Sense of the VIX Index: An Indicator of Expected Market Volatility. Www.Cboe.Com.
16. CBOE. (2024, April 25). CBOE. Https://Www.Cboe.Com/.
17. Chen, J., Jiang, F., Xue, S., & Yao, J. (2019). The world predictive power of U.S. equity market skewness risk. Journal of International Money and Finance, 96, 210–227. https://doi.org/10.1016/j.jimonfin.2019.05.003
18. Chiang, T. C. (2022). Evidence of Economic Policy Uncertainty and COVID-19 Pandemic on Global Stock Returns. Journal of Risk and Financial Management, 15(1), 28. https://doi.org/10.3390/jrfm15010028
19. Choi, S. H., Kang, Y. J., & Choi, K. (2022). Economic Uncertainty and Value Relevance of Accounting Information. Korean Accounting Review, 47(2), 33–67. https://doi.org/10.24056/KAR.2022.04.002
20. Ding, Q., Huang, J., & Chen, J. (2021). Dynamic and frequency-domain risk spillovers among oil, gold, and foreign exchange markets: Evidence from implied volatility. Energy Economics, 102, 105514. https://doi.org/10.1016/j.eneco.2021.105514
21. Elyasiani, E., Gambarelli, L., & Muzzioli, S. (2021). The skewness index: uncovering the relationship with volatility and market returns. Applied Economics, 53(31), 3619–3635. https://doi.org/10.1080/00036846.2021.1884837
22. Ershov, M., & Tanasova, A. (2023). Modern World Economy: Some Aspects of Systemic Changers. Spatial Economics, 19(4), 145–169. https://doi.org/10.14530/se.2023.4.145-169
23. Farooq, U., Gillani, S., Subhani, B. H., & Shafiq, M. N. (2022). Economic policy uncertainty and environmental degradation: the moderating role of political stability. Environmental Science and Pollution Research, 30(7), 18785–18797. https://doi.org/10.1007/s11356-022-23479-7
24. Fasanya, I. O., Adekoya, O. B., & Adetokunbo, A. M. (2021). On the connection between oil and global foreign exchange markets: The role of economic policy uncertainty. Resources Policy, 72, 102110. https://doi.org/10.1016/j.resourpol.2021.102110
25. Fitrizal Salim, D., Iradianty, A., Titik Kristanti, F., & Candraningtias, W. (2022). Smart beta portfolio investment strategy during the COVID-19 pandemic in Indonesia. Investment Management and Financial Innovations, 19(3), 302–311. https://doi.org/10.21511/imfi.19(3).2022.25
26. Geyer Alois. (2021). Basic Financial Econometrics, (1st ed., Vol. 1). Wirthchafts University.

27. Gheraia, Z. (2022). The Asymmetric Impact of COVID-19 Pandemic on the Crude Oil-stock Markets Nexus in KSA: Evidence from a NARDL Model. International Journal of Energy Economics and Policy, 12(6), 137–145. https://doi.org/10.32479/ijeep.12811
28. Ghosh, B., & Bouri, E. (2022). Long Memory and Fractality in the Universe of Volatility Indices. Complexity, 2022, 1–8. https://doi.org/10.1155/2022/6728432
29. He, C., Li, Y., Wang, T., & Shah, S. A. (2024). Is cryptocurrency a hedging tool during economic policy uncertainty? An empirical investigation. Humanities and Social Sciences Communications, 11(1), 73. https://doi.org/10.1057/s41599-023-02532-x
30. Hossain, A. T., Masum, A.-A., & Saadi, S. (2024). The impact of geopolitical risks on foreign exchange markets: Evidence from the Russia–Ukraine war. Finance Research Letters, 59, 104750. https://doi.org/10.1016/j.frl.2023.104750
31. Hung, D. Van, Hue, N. T. M., & Duong, V. T. (2021). The Impact of COVID-19 on Stock Market Returns in Vietnam. Journal of Risk and Financial Management, 14(9), 441. https://doi.org/10.3390/jrfm14090441
32. Ihle, R., El-Jafari, M. K., & von Cramon-Taubadel, S. (2019). EFFECTS OF POLITICAL INSTABILITY ON THE VOLATILITY OF PALESTINIAN FOOD PRICES. New Medit, 18(3), 59–76. https://doi.org/10.30682/nm1903e
33. Kang, W., Ratti, R. A., & Vespignani, J. (2020). Impact of global uncertainty on the global economy and large developed and developing economies. Applied Economics, 52(22), 2392–2407. https://doi.org/10.1080/00036846.2019.1690629
34. Kannadhasan, M., & Das, D. (2020). Do Asian emerging stock markets react to international economic policy uncertainty and geopolitical risk alike? A quantile regression approach. Finance Research Letters, 34, 101276. https://doi.org/10.1016/j.frl.2019.08.024
35. Korsah, D., Amewu, G., & Osei Achampong, K. (2024). The impact of geopolitical risks, financial stress, economic policy uncertainty on African stock markets returns and volatilities: wavelet coherence analysis. Journal of Humanities and Applied Social Sciences. https://doi.org/10.1108/JHASS-12-2023-0172
36. Le, A.-T., & Tran, T. P. (2021). Does geopolitical risk matter for corporate investment? Evidence from emerging countries in Asia. Journal of Multinational Financial Management, 62, 100703. https://doi.org/10.1016/j.mulfin.2021.100703
37. Lehnert, T. (2022). Flight-to-safety and retail investor behavior. International Review of Financial Analysis, 81, 102142. https://doi.org/10.1016/j.irfa.2022.102142
38. Liang, C. C., Troy, C., & Rouyer, E. (2020). U.S. uncertainty and Asian stock prices: Evidence from the asymmetric NARDL model. The North American Journal of Economics and Finance, 51, 101046. https://doi.org/10.1016/j.najef.2019.101046
39. Luk, P., Cheng, M., Ng, P., & Wong, K. (2020). Economic policy uncertainty spillovers in small open economies: The case of Hong Kong. Pacific Economic Review, 25(1), 21–46. https://doi.org/10.1111/1468-0106.12283
40. Machmuddah, Z., Utomo, St. D., Suhartono, E., Ali, S., & Ali Ghulam, W. (2020). Stock Market Reaction to COVID-19: Evidence in Customer Goods Sector with the Implication for Open Innovation. Journal of Open Innovation: Technology, Market, and Complexity, 6(4), 99. https://doi.org/10.3390/joitmc6040099
41. Moran, M. T., & Liu Berlinda. (2020). The VIX Index and Volatility-Based Global Indexes and Trading Instruments. CFA Institute Research Foundation Briefs, April 2020.
42. Mora-Valencia, A., Rodríguez-Raga, S., & Vanegas, E. (2021). Skew index: Descriptive analysis, predictive power, and short-term forecast. The North American Journal of Economics and Finance, 56, 101356. https://doi.org/10.1016/j.najef.2020.101356
43. Ogbuabor, J. E., Ogbonna, O. E., Anthony-Orji, O. I., Ekeocha, D. O., & Ojonta, O. I. (2023). Symmetric or Asymmetric: How is Economic Growth Responding to Global

Economic Uncertainty in Africa's Oil Exporters? Prague Economic Papers, 32(4), 446–472. https://doi.org/10.18267/j.pep.836
44. P H, H., & Rishad, A. (2020). An empirical examination of investor sentiment and stock market volatility: evidence from India. Financial Innovation, 6(1), 34. https://doi.org/10.1186/s40854-020-00198-x
45. Paparoditis, E., & Politis, D. N. (2018). The asymptotic size and power of the augmented Dickey–Fuller test for a unit root. Econometric Reviews, 37(9), 955–973. https://doi.org/10.1080/00927872.2016.1178887
46. Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3), 289–326. https://doi.org/10.1002/jae.616
47. Phillips, P. C. B., & Perron, P. (1988). Testing for a unit root in time series regression. Biometrika, 75(2), 335–346. https://doi.org/10.1093/biomet/75.2.335
48. Prukumpai, S., Sethapramote, Y., & Luangaram, P. (2022). Political Uncertainty and the Thai Stock Market. Southeast Asian Journal of Economics , 10(3), 227–257.
49. Puji Lestari, N., Rofic, M., & Utami, Y. (2023). Riding or challenging the waves: Uncovering the volatility of Southeast Asian stock markets amidst global uncertainties. Journal of Eastern European and Central Asian Research (JEECAR), 10(5), 841–854. https://doi.org/10.15549/jeecar.v10i5.1317
50. Rizal, N. A., Kumar, R. B., & Gurrib, I. (2023). Stock Return Prediction Model in Indonesia. Jurnal Manajemen Indonesia, 23(3), 350. https://doi.org/10.25124/jmi.v23i3.6622
51. Roziq, T. A., Shukri, J. M., Kusairi, S., & Sanusi, N. A. (2024). The effect of macro variables on Indonesian stock exchanges in pandemic COVID-19. Asian Journal of Economic Modelling, 12(1), 1–18. https://doi.org/10.55493/5009.v12i1.4976
52. Sarker, P. K., Lau, C. K. M., & Pradhan, A. K. (2023). Asymmetric effects of climate policy uncertainty and energy prices on bitcoin prices. Innovation and Green Development, 2(2), 100048. https://doi.org/10.1016/j.igd.2023.100048
53. Sawitri, Syamni, G., Ansari, R., Rasyimah, & Husaini. (2022). Exchange Rate, Stock Return, and Bond Return in Indonesia: An ARDL Approach. Jurnal Keuangan Dan Perbankan , 26(4 October 2022), 874–891.
54. Sears, S. (2022, March 1). What to Do Now That the VIX—the Market's Fear Gauge—Has Crossed 30. Https://Www.Barrons.Com/.
55. Sghaier, N., Kouki, M., & Messaoud, S. Ben. (2023). Further evidence of contagion effect between the Chinese and the G20 stock markets during the COVID-19 pandemic: A time-varying copula approach. Cogent Economics & Finance, 11(1). https://doi.org/10.1080/23322039.2023.2210363
56. Shin, Y., Yu, B., & Greenwood-Nimmo, M. (2014). Modelling Asymmetric Cointegration and Dynamic Multipliers in a Nonlinear ARDL Framework. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.1807745
57. Sikdar, S. (2024). "Imminent" Global Recession: Some Reflections. In Contemporary Issues in International Trade (pp. 3–8). Emerald Publishing Limited. https://doi.org/10.1108/978-1-83797-320-020241001
58. Tran, M. P.-B., & Vo, D. H. (2023). Asia-Pacific stock market return and volatility in the uncertain world: Evidence from the nonlinear autoregressive distributed lag approach. PLOS ONE, 18(5), e0285279. https://doi.org/10.1371/journal.pone.0285279
59. Umar, Z., Bossman, A., Choi, S.-Y., & Teplova, T. (2023). The relationship between global risk aversion and returns from safe-haven assets. Finance Research Letters, 51. https://doi.org/10.1016/j.frl.2022.103444
60. U.S. Embassy. (2019). Lembar Fakta: Amerika Serikat dan ASEAN – Kemitraan Abadi.

61. Veronesi, P., & Lubos, P. (2017). Explaining the puzzle of high policy uncertainty and low market volatility.
62. Xu, Y., Wang, J., Chen, Z., & Liang, C. (2021). Economic policy uncertainty and stock market returns: New evidence. The North American Journal of Economics and Finance, 58. https://doi.org/10.1016/j.najef.2021.101525
63. Yang, J., & Yang, C. (2021). The impact of mixed-frequency geopolitical risk on stock market returns. Economic Analysis and Policy, 72, 226–240. https://doi.org/10.1016/j.eap.2021.08.008
64. Yang, J., Yang, C., & Hu, X. (2021). Economic policy uncertainty dispersion and excess returns: Evidence from China. Finance Research Letters, 40, 101714. https://doi.org/10.1016/j.frl.2020.101714
65. Yunita, I., Pratama, Diputra, & Maia. (2022). Effects of the Announcement of the Covid-19 Status Change on Stock Prices in the LQ45 Index of the Indonesia Stock Exchange in the Period of February - August 2020. Budapest International Research (BIRCI Journal), 5.
66. Zhang, Y., Zhang, Y., Ren, X., & Jin, M. (2024). Geopolitical risk exposure and stock returns: Evidence from China. Finance Research Letters, 64, 105479. https://doi.org/10.1016/j.frl.2024.105479