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The Influence of Agricultural Price on Stock Markets in Short and Long Run. Evidence from ASEAN

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ABSTRACT

Commodity price volatility affects the stability of countries' exports, input costs for industrial production, the allocation of world capital flows, national economic growth rates and stock markets. This study examines the impact of the agricultural price on the stock market of six Southeast Asian countries, including Malaysia, Indonesia, Thailand, Singapore, Philippines, and Vietnam, during the period from 2007 to 2023. The paper not only uses the dependent variable of agricultural prices, but also uses the control variables of domestic macroeconomic factors including inflation, exchange rate, and interest rate to explain the fluctuations of Southeast Asian stock markets. The Pooled Mean Group (PMG) method to estimate the dynamic heterogeneous panel data model and to verify the correlation between the agricultural price index and the stock market index. According to empirical results, the agricultural price and stock market index have a long-run co-integration relationship. In the short term, the stock market is not affected by agricultural price. In addition, other macroeconomics such as interest rates, exchange rates, inflation rates are also effective on the stock market.

INTRODUCTION

An efficient capital market is essential for economic development. The stock market is a part of the capital market, which plays a pivotal role in the growth of a country and is important in directing idle resources to productive sectors. If the capital market can create instantaneous changes in the flow of money, the stock market is considered the heartbeat of the national economy. Therefore, the movement and development of the economy cannot be without the companionship of the stock market (Mohammed et al., 2009).

The impact of commodity prices on stock markets has been a topic of open macroeconomics research for a long time. Studies by Creti et al. (2013), Drechsel and Tenreyro (2018), Kang et al. (2020) also show that commodity price shocks and stock market volatility are interrelated and affect real economic activity.

Southeast Asian countries are mostly small open economies with high trade deficits, so they are easily affected by fluctuations in global commodity prices. Indeed, the IMF (2015) reported that fluctuations in energy prices, including oil, during the period 2008-2014 had a large impact on stock prices and output

for oil-importing countries in emerging markets, including Southeast Asia. The increased volatility in global commodity prices in 2018-2019 has put inflationary pressures on emerging market economies including Southeast Asian economies and has also had a certain impact on the stock market (IMF, 2020). Fluctuations in global commodity prices also cause global inflation to increase from 4.7 percent in 2021 to 8.8 percent in 2022 but decline to 6.5 percent in 2023 and is forecast to decline to 4.1 percent in 2024 (IMF, 2024). The potential global imbalance in the supply and demand of agricultural products could cause a serious increase in the prices of agricultural products. In this regard, the international prices of agricultural products, which are known as strategic products of the future, are likely to have a significant impact on the economies and financial markets of countries including Southeast Asia. The impact of agricultural commodities on the stock market can be realized through two channels, direct and indirect. Accordingly, the increase or decrease in agricultural commodity prices can cause an increase or decrease in the income of enterprises engaged in agricultural production or marketing listed on the stock exchange, which can directly affect the stock market performance of related enterprises. Furthermore, increases or decreases in agricultural commodity prices affect countries' economic indicators, such as exports, imports, employment, and inflation. Positive or negative developments in macroeconomic indicators arising from these commodities can indirectly cause increases or decreases in stock market indices.

With the increasing integration of economies and the interdependence of commodity markets, agricultural commodity prices have been volatile, becoming more sensitive to innovations in financial markets and tending to have a greater impact on stock prices. Analyzing the spillover of agricultural prices to stock markets can provide useful information about possible alternative investment strategies between stocks and commodities, thus positively affecting asset allocation (Choi and Hammoudeh 2010).

There is empirical evidence that in addition to the influence of domestic macroeconomic factors, Southeast Asian stock markets are also affected by world commodity prices such as gold prices (Ismail M. T., 2017; Ehsan H. et al., 2013), oil prices (Alam, 2013; Fatemeh R. et al. 2016; Sugeng W. et al., 2017; Robiyanto R., 2018), or both gold and oil prices (Hossenidoust, E. et al., 2013). However, these are individual commodities and so far there has been no research document linking world agricultural prices to Southeast Asian stock price indexes. Therefore, this study was conducted to clarify the impact of the world agricultural price index, along with domestic macroeconomic variables, on the stock markets of six selected Southeast Asian countries (including Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam).

1. LITERATURE REVIEW

Girardi D. (2015) studies the correlation of agricultural prices with stock markets. The author discusses the possible role of financial, macroeconomic, and monetary factors in driving this time-varying relationship, with the aim of understanding what has caused the positive correlation between agricultural commodities and stock markets in recent years. While previous studies on commodity correlations have focused on general commodity price indices, this study focuses on specific agricultural commodities (as well as differences between agricultural markets). Conduct a series of univariate Granger causality tests by estimating OLS regressions between the S&P500 index and the agricultural commodity price index along with control variables (interest rate, inflation, exchange rate) for the period from September 2008 to July 2013. The results show that there is a correlation between agricultural price changes and stock market returns. Moreover, the impact of financial instability on the correlation becomes stronger as the proportion of financial investors in the agricultural derivatives market increases.

Baldi L. et al. (2016) focus on commodity financialization and the gradual integration between commodity and financial markets, investigating the extent to which stock market reactions to agricultural commodity price movements and the existence of this phenomenon. To achieve this goal, we use an impulse response function from the perspective of the impact of agricultural commodity prices on the stock market over a symmetrical window before and after the two most significant crises since the new millennium, the dot.com bubble in 2000 and the financial crisis in 2008. We use monthly data from 1970 to 2015 for the S&P500 index with an agricultural price index, a grain price index, and a corn price index. The agricultural price index is a benchmark for evaluating the investment performance of the global agricultural commodity market and includes wheat, corn, soybeans, coffee, sugar, cocoa, and cotton. The grain price index is a

composite index of grain commodity prices, including soybeans, corn, and wheat, while the corn price index reflects the risk/return characteristics of corn, which is the most traded commodity on the market. The overall stock market is represented by the S&P 500 index. Results from the GARCH model show that spillover volatility increased significantly after the 2008 financial crisis, signaling an increasing connection between agricultural commodities and the stock market.

Hernandez J. A. et al. (2020) investigate the spillover of agricultural prices to global and regional stock markets. By applying a directional spillover index and a nonlinear portfolio optimization method. The deployed data sample includes daily frequency prices spanning from March 18, 2009 to February 12, 2019, corresponding to nine agricultural commodities (wheat, corn, soybeans, coffee, sugarcane, sugar beets, cocoa, cotton, lumber) and four global stock market indices, namely MSCI ACWI Index (All World World Stock Index), MSCI AC Americas Index (All Americas Stock Index), MSCI AC Europe Index (All Europe Stock Index), and MSCI Asia ex-Japan Index (All Asia excluding Japan Stock Index). The motivation for selecting the above nine agricultural commodities is that they are the major agricultural commodities traded worldwide, thus together they provide a good representation of the agricultural commodity market and, given the historical negative correlation that agricultural commodities have shown with the stock market, they have the potential to be used by investors to diversify and hedge their equity portfolios. Applying a generalized vector autoregression (GVAR) approach and incorporating a variance decomposition matrix, the results show that the global and regional stock market indices are considered to be largely influenced by cotton and cocoa. The American stock market index is mainly influenced by corn and soybeans. In addition, while the European stock market index is mainly influenced by cotton, the Asia Pacific stock market index is mainly influenced by wheat and coffee. Portfolio optimization shows that sugar, followed by wheat and corn, are the largest contributors to total portfolio risk, while cocoa, followed by timber and cotton, are the lowest contributors to total portfolio risk. Cocoa and timber are the most desirable investments.

İlarslan K. & Yıldız M. (2022) analyzed the impact of international prices of wheat, rice, sugar and beef on the Turkish and Polish stock markets using quantile regression and cointegration regression methods from December 2008 to November 2020. According to the analysis results, it cannot be said that agricultural commodities do not affect the stock market index. In addition, empirical evidence shows that the impact of agricultural commodities on the Turkish stock market is more significant than that on the Polish stock market. This may be due to the fact that the economic ecosystem of Poland is more industrialized than that of Türkiye. Moreover, these findings indicate that agricultural commodities have both similar and different impacts on the stock market indices of these two countries.

Karjbundit B. (2022) proposed to determine the price of agricultural commodities in the Thai stock market during the period 2000-2020. The correlation between assets under extreme market conditions (tail dependence) is important to classify financial assets as safe haven assets. The agricultural commodities considered in this study are the most active asset classes in the market (grains, oilseeds, other soft commodities, and mixed commodities). The results show that agricultural assets have a clearer correlation with the Thai stock market. Agricultural commodities, including wheat, oats, and canola, can play a strong safe haven role in the Thai stock market, according to the lowest percentile cross-sectional data (bearish market). According to the results of the overall percentile (normal situation), wheat, corn, canola, soybeans, and sugar can all be used as hedges. Therefore, including these specific agricultural commodities (Safe Havens or Hedges) in a Thai equity portfolio will help reduce risk and boost performance in both normal and extreme recessionary scenarios. This section illustrates how to present quotes in text, footnotes, equations, tables, and figures.

In summary, studies by Girardi D. (2015), Baldi L. et al. (2016), Hernandez J. A. et al. (2020), İlarslan K. & Yıldız M. (2022), Karjbundit B. (2022) through modeling the influence of agricultural commodity prices on stock markets have shown the same results. The next steps in this study are to examine the impact of agricultural prices on Southeast Asian stock markets in the short and long run.

2. DATA AND METHODOLOGY

2.1 Research data

This study uses mounthly data from ASEAN6 countries including Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam from 2007 to 2023. The stock market index data have been collected from the Stock Exchange of Thailand (SET) index (Thailand), the Kuala Lumpur Composite Index (KLSE) index (Malaysia), Financial Times Share Index (FTSI) (Singapore), Philippine Stock Exchange (PSE), and the Jakarta Composite Index (JKSE) (Indonesia), and the Ho Chi Minh Stock Exchange (HSX). The data of interest rate, inflation rate, exchange rate, gross domestis product is taken from International Financial Statistics published by International Monetary Fund.

2.2 Research methodology

The paper used the PMG method proposed by Pesaran et al. (1999) to consider a lower degree of heterogeneity, as it imposes homogeneity in the long-run coefficients while still allowing for heterogeneity in the short-run coefficients and error variances. Based on the research of Al-Mamun M. (2013), Mahmood S. et al. (2017), Megaravalli A. and Sampagnaro G. (2018), the mean group (MG) model of Pesaran and Smith (1995), the pooled mean group (PMG) model developed by Pesaran and Shin (1999) the dynamic heterogeneous panel regression can be integrated into the error correction model using the ARDL (p, q) technique of spontaneous distributed lags, where p is the lag of the dependent variable, q is the lag of the independent variables and is stated as follows:

$$\Delta SI_{i,t} = \sum_{j=1}^{p-1} \gamma_j^i \Delta SI_{i,t-j} + \sum_{j=0}^{q-1} \delta_j^i \Delta X_{i,t-j}^{API+\cdots} + \varphi^i \left[SI_{i,t-1} - \left\{ \beta_0^i + \beta_1^i \Delta X_{i,t-j}^{API+\cdots} \right\} \right] + \varepsilon_{i,t-1}$$

Where, SI is the stock market index, X is a set of independent variables including agricultural prices and domestic macro variables (exchange rate, inflation rate, country interest rate), γ and δ denote the short-run coefficients of the dependent and independent variables respectively, β are the long-run coefficients and φ is the coefficient of the speed of adjustment to long-run equilibrium. The subscripts i and t represent the country and time respectively. The terms in square brackets of the above equations contain the long-run growth regression, including the long-run coefficients of the vector X.

3. RESULTS OF RESEARCH

3.1 Descriptive statistics

The descriptive statistics results show that the dependent variable SI has the highest value of 1.2221, while the lowest value is -0.6763, the mean value is 0.0507, with a standard deviation of 0.2371. The data distribution of the independent variables is also presented. API representing agricultural prices has the highest value of 0.3662, the lowest is only -0.2694, the mean value is 0.0131, the standard deviation is 0.3255. For the macro variables used in the model, it is noteworthy that the interest rate (IR) has quite large fluctuations with a standard deviation of 0.1241, which is quite different from the remaining variables.

Table 1. Descriptive statistics of the variables

Variable name	*Number of observations*	*Mean value*	*Standard deviation*	*Maximum value*	*Minimum value*
SI	1,152	0.0507	0.2371	-0.6763	1.0221
API	1,152	0.0131	0.1347	-0.2694	0.3662
ER	1,152	0.0144	0.0707	-0.2208	0.3589
CPI	1,152	0.0350	0.0400	-0.0443	0.2832
IR	1,152	-0.0195	0.1241	-0.5081	0.8113

Source: Authors' caculation

3.2 Panel unit root test and panel cointegration test

3.2.1 Panel unit root test

There are four different types of unit root tests performed, namely Breitung (2000); Im, Pesaran and Shin (2003), also known as IPS; ADF-Fisher and Philips Perron-PP (1999). Specifically, Breitung tests the common unit root assumption for all countries, i.e. ρi= ρ; Im, Pesaran and Shin (2003), ADF-Fisher, Philips Perron (PP) presented by Maddala and Wu (1999) allows for different unit root tests for each country. The unit root test results are presented both in the original order and in the first difference order.

The test results show that each variable is non-stationary at the same level of integration (Table 2). When performing unit root tests at the root level, the agricultural price index is only stationary at the root level at the 5% significance level in the IPS test and 10% in the Fisher-ADF test.

Table 2. Results of stationarity test

Level	*Breitung*	*IPS*	*Fisher-ADF*	*Fisher-PP*
SI	-0.5054	-4.0431	7.3974	-8.4647
	0.2061	0.2578	0.2412	0.5043
API	3.4042	-6.4852**	-8.4701*	6.1847
	0.2291	0.0327	0.0508	0.2961
ER	-1.7543*	-2.8435*	4.8031**	3.6968
	0.0516	0.0713	0.0325	0.3426
CPI	3.1503	-3.9145	6.2581	5.9068***
	0.5102	0.2912	0.9634	0.0019
IR	-4.0096	-1.4271	3.2847***	3.8249***
	0.1478	0.1058	0.0032	0.0051
1st difference	*Breitung*	*IPS*	*Fisher-ADF*	*Fisher-PP*
SI	-13.6203***	-24.6112***	75.0156***	81.8391***
	0.0000	0.0000	0.0000	0.0000
API	-16.3588***	-21.7349***	68.2603***	81.3351***
	0.0000	0.0000	0.0000	0.0000
ER	-14.1288***	-26.2394***	78.0763***	86.3065***
	0.0000	0.0000	0.0000	0.0000
CPI	-15.8217***	-32.4368***	52.6707***	83.6819***
	0.0000	-0.0000	0.0000	0.0000
IR	-13.5903***	-25.3455***	74.0236***	55.6902***
	0.0000	0.0000	0.0000	0.0000

Note: those in ( ) are standard errors; *, **, and *** denote significance at 10%, 5%, and 1% levels.
Source: Authors' caculation

Applying the unit root test for the first-order differences of the variables, the results show that all variables are stationary at the 1% significance level. Thus, the unit root test results indicate that each variable has a different level of integration in the order of integration 0, i.e. I(0) and in the order of integration 1, i.e. I(1), or there are variables that are stationary at order 0, and there are variables that are stationary at order 1. Based on the mixed stationarity of I(0) and I(1) of the variables, the study continues to conduct the panel data cointegration test in the next section.

3.2.2 Panel cointegration test

The results of Westerlund's (2007) test for cointegration between the Southeast Asian stock market index (SI) with the agricultural price index (API) and other macroeconomic variables including, the exchange rate between domestic currency and the US dollar (ER), the consumer price index (CPI), and the lending

rate (IR). To select the optimal lag length, the study relies on the minimum value of Akaike's Information Criterion (AIC). Westerlund (2007) uses four statistics to test the existence of cointegration. For the group statistics G_t and G_α, the null hypothesis is "there is no cointegration for cross-sectional units" and the alternative hypothesis is "there is no cointegration in some units, but there is cointegration in some other units". Similarly, the statistical H_0 hypothesis for the Pt and Pα groups indicates that the information for all panels is "there is no cointegration for all cross-sectional units" and the alternative hypothesis H_1 is "there is cointegration for all cross-sectional units"

Table 3. Westerlund Panel Cointegration Test, *(Dependent variable: SI)*

Variables		*Gt*	*Gα*	*Pt*	*Pα*
API	Value	-4.087	-38.033	-11.791	-39.585
	P	0.0000	0.0000	0.0000	0.0000
ER	Value	-3.662	-34.373	-11.920	-45.522
	P	0.0000	0.0000	0.0000	0.0000
CPI	Value	-3.512	-33.442	-8.387	-33.519
	P	0.0000	0.0000	0.0000	0.0000
IR	Value	-3.625	-33.814	-11.745	-44.261
	P	0.0000	0.0000	0.0000	0.0000

Source: Authors' caculation

When the P-value of the statistics obtained are all < α (5%), the null hypothesis H_0 that there is no cointegration of all statistics was rejected. Accordingly, cointegration was achieved in all models for all countries (Table 3). Thus, at the 1% significance level, agricultural commodity prices and all other macroeconomic variables including MSCI global stock index, exchange rate, domestic consumer price index and lending interest rate are all cointegrated with the stock market index of the selected countries. Therefore, the model applied in the study suggests the possibility of long-term and short-term correlation between Southeast Asian stock markets and agricultural prices and other macroeconomic variables.

3.3 Panel ARDL approach

The results of the PMG model show that the agricultural price index has a positive long-term impact on the Southeast Asian stock market at the 1% significance level, but no impact in the short term. The results of the MG model determine that the agricultural price index variable has a negative impact on the stock market index in the long term and is insignificant in the short term.

The Hausman test (Yerdelen, 2013) is used to select the MG or PMG estimator, with the hypothesis H_0 that the PMG estimator is more effective than the MG estimator, then the p-value > α significance level (5%), so this hypothesis cannot be rejected. Thus, it can be concluded that PMG is a more effective estimator than MG to assess the impact of the agricultural price index on the Southeast Asian stock market index, so the following analysis will be based on the results of the PMG model.

Table 4. Results of the Panel ARDL model

Dependent variable: LSI	*PMG*		*MG*	
	Coefficients	Std. Error	Coefficients	Std. Error
Long Run				
API	0.137***	0.190	0.128**	0.120
ER	-1.256***	1.320	-1.093*	0.402
CPI	1.586**	1.638	1.396	1.068
IR	-0.352**	0.610	-0.292	0.501
Short Run				

Adjustment	-0.163***	0.026	-0.199***	0.103
ΔAPI	0.086	0.124	0.094	0.121
ΔER	1.017***	0.331	-0.897***	0.341
ΔCPI	-1.218*	0.678	-1.325**	0.664
ΔIR	-0.848*	0.514	-0.860	0.508
ΔSI(-1)	-0.206*	0.157	-0.179*	0.165
C (constant)	0.103**	0.108	0.100*	0.106
Observation	1,140		1,140	
Num. of countries	6		6	
Hausman Test	6.13			
Pvalue	0.4007			

Note: *, **, and *** denote significance at 10%, 5%, and 1% levels
Source: Authors' caculation

Agricultural prices have a slight positive impact on the stock price index in the long term but no impact in the short term. Accordingly, when the agricultural price index increases, it will adjust the Southeast Asian stock market index to increase in the long term. Southeast Asian countries are strong exporters of agricultural products such as rice, coffee, rubber, wood, cotton, etc. Therefore, the increase in prices of these goods in the world has more or less the effect of stimulating export growth, increasing revenue and profits for companies exporting the corresponding products, thereby also affecting the stock prices of these companies and creating positive impacts on the stock price index of Southeast Asian countries. In particular, Thailand and Vietnam are always in the group of three countries exporting the most rice in the world, accounting for 55% of the total world rice demand, so for these two countries, when the world rice price increases, it will have a positive impact on the stock prices of rice exporting companies. However, this impact is not significant for selected Southeast Asian countries because apart from Indonesia, where rice production has exceeded domestic demand since 2017 and is moving towards export, the rice supply of the Philippines and Singapore depends largely on imports, while Malaysia has gradually increased domestic rice cultivation to import only a portion of the world's rice. Some Southeast Asian countries have become major coffee exporters, such as Indonesia and Vietnam, the world's two leading coffee producers, contributing 18% and 6% respectively to global output, while Thailand continues to attract business and investment due to increasing demand for coffee, and the Philippines is also stepping up competition in the coffee export industry. Rubber trees are grown mainly in Southeast Asian countries, Africa and a small part in the Americas. According to the report of the Association of Natural Rubber Producing Countries, Thailand, Indonesia, Malaysia and Vietnam are the largest rubber producing countries with a total production output accounting for about 70% of the global rubber supply. Therefore, the increase in world rubber prices also has a positive impact on the stock prices of exporting companies in this field.

Members of the ASEAN Furniture Industry Council (AFIC) all share the view that ASEAN is a region with many outstanding advantages in terms of raw materials, production, distribution, and market size to develop the wood and furniture industry. As evidence for this view, Mr. Emmanuel Padiernos, Chairman of AFIC, said that the export figures for wooden furniture of the entire ASEAN bloc in 2021 reached 12.1 billion USD out of the total export value of 150 billion USD globally. By 2022, Indonesia, Malaysia, the Philippines, Thailand and Vietnam will be fast-growing Southeast Asian furniture suppliers with two-thirds of their production capacity prioritized for export. The region's wood furniture export ratio is about 66%, more than double the world average (about 30%). It is estimated that Southeast Asia's wood and furniture production capacity will meet 5% of total furniture consumption in the US and 2% in Western Europe. This shows that ASEAN is a major wood furniture production center in the world, so when global agricultural prices increase, it will bring better profitability to wood industry enterprises and improve the stock prices of companies in this industry. In addition, although global agricultural prices fluctuate over a long period of time, it will create difficulties for companies importing milk powder, cereals and oils to produce milk, animal feed, cooking oil, etc. because most of the input materials are imported. This leads to the challenge

of higher input costs for these producers, which may have some negative impacts on their operations. However, perhaps due to the successful hedging strategies of the companies, specifically those with raw material supply contracts, based on their business models. Furthermore, they pass on most of the raw material prices directly to their selling prices, thereby ensuring that their profit margins remain unchanged, this is still not enough to affect the stock market index. Therefore, in the short run, the stock markets of the Southeast Asian group of countries are not affected by agricultural prices, which is also consistent with the studies of Kang J. S. et al. (2013), Baldi L. et al. (2016). Thus, the possibility of price arbitrage is eliminated and the stock markets of the selected Southeast Asian countries can be considered informationally efficient for agricultural prices in the short run.

Other macroeconomic variables also have different implications for the stock markets of each Southeast Asian country.

CONCLUSION

The results show that agricultural prices affect Southeast Asian stock markets in the long run but are not significant in the short run. Therefore, any study that does not include commodity prices will miss an important variable in the regression analysis. Policy makers need to monitor agricultural prices to forecast their potential impact on Southeast Asian stock markets when any changes occur. In particular, agricultural prices do not affect the Southeast Asian stock market index in the short run, the policy implication of this finding is that changes in agricultural prices cannot predict Southeast Asian stock market prices, the possibility of arbitrage is eliminated and the stock markets of the countries can be considered informationally efficient with respect to agricultural prices. This also has important policy implications for domestic and foreign institutional investors and portfolio managers as the above finding can assist in structuring tightly traded portfolios. Thus, the movement of capital markets cannot be separated from the fluctuations in commodity prices. Understanding the importance of the relationship between agricultural prices and stock market developments in Southeast Asian countries is expected to be important information for investors in diversifying financial asset risks and taking intermediate steps to minimize losses due to fluctuations in world commodity prices. At the same time, the results show that the impact of agricultural prices on stock markets can provide useful information for investors and portfolio managers to identify markets that are most vulnerable to external shocks, thereby reallocating capital and adjusting their short- or long-term capital.

Domestic macroeconomic factors including exchange rates, inflation rates, and lending rates also have long-term impacts on the stock markets of Southeast Asian countries. The inflation rate also has a negative impact on the stock market in the short term and a positive impact in the long term. This result implies that although rising inflation represents economic instability, negatively affecting the stock market in the short term, in the long term, the market will allocate resources efficiently by adjusting to the general increase in prices. Stocks are a good hedge against inflation, but only in the long term. In the short term, inflation and stock prices can have an inverse relationship. Rising inflation can cause stock prices to fall, and vice versa. Indeed, there is evidence that stock markets have long protected investors from inflation risks.

In short, to maintain healthy domestic stock markets, the governments of each selected Southeast Asian country need to develop appropriate strategies in monitoring agricultural prices, global stock indexes, and controlling domestic macroeconomic factors. In fact, the authorities are doing their best to stabilize their economies and seek the highest possible growth, but still within the safest options. With accurate estimates of these relationships, ASEAN central banks can develop competitive and credible policies that can influence the health of their economies as well as convince more capital to flow into their countries' stock markets. Furthermore, increasing transparency and consistency of policies while providing prudence to deal with short-term volatility and long-term stability are essential, before the benefits of controlling macroeconomic variables can be realized.

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