

Transparency and Performance of Central Banks ASEAN countries

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Abstrak— *This paper delves into the increasingly prominent role of central bank transparency in modern monetary policy. It analyzes both theoretical and practical aspects of transparency, examining various methods employed by central banks and assessing the empirical evidence surrounding their effectiveness. The research adopts a structured approach, reviewing theoretical literature on the impact of transparency on both the consequences and performance of monetary policy. It proposes a novel distinction between uncertainty and incentive effects of transparency, providing valuable insights into its nuanced nature. Empirically, the paper utilizes panel data regression with fixed effects to construct a comprehensive index of central bank transparency encompassing political, economic, procedural, policy, and operational aspects. This index is then applied to ten major central banks in ASEAN countries, revealing a diverse landscape of transparency levels and dynamics through detailed analysis of actual information disclosure practices. The key finding suggests a nexus between transparency on inflation, GDP and Interest rate demonstrating that greater openness translates to enhanced effectiveness. Additionally, identifies the Bank of Thailand as the most transparent central bank within the studied group, followed by the Philippines, Indonesia, Singapore, and Malaysia. Laos and Cambodia, conversely, emerge as the least transparent.*

Keywords: Central bank, Transparency, Performance, Transparency index, Inflation, GDP, Interest rate, ASEAN countries.

1. INTRODUCTION

In the realm of monetary policy, the issue of transparency within central banks has sparked heated public and academic debate. The public expects transparency from central banks, whose independence has expanded as a result of deregulation. The burgeoning field of monetary policy research increasingly examines the economic ramifications of heightened transparency, which itself is experiencing an upward trajectory. However, productive discourse surrounding transparency remains hampered by its inherently qualitative nature and the scarcity of robust quantitative metrics to underpin its analysis. As a result, Central banks worldwide have diligently endeavored in recent years to enhance their transparency. For example, the central bank now openly expresses and quantifies its aims and goals, publishes macroeconomic projections, announces interest rate decisions with an immediate explanation, and provides clues about the anticipated conduct of monetary policy in the immediate future. According to (Geraats, 2002), many factors contribute to the increased transparency of central banks. First, it constitutes an integral component of a broader initiative aimed at enhancing governmental receptiveness to public influence. Second, Transparency is considered an essential element of accountability within the context of central bank independence in contemporary times. Transparency has grown to be considered a crucial tool for enabling the general public to determine whether central bankers' activities are consistent with their mandate as central banks have gained increasing independence and control over their procedures throughout time. Third, openness by central banks is considered a technique of supporting markets' smooth responsiveness to policy moves. Monetary policy moves are less likely to be unexpected when a central bank is explicit about its economic outlook and how it relates to its policy position. Fourth, transparency makes the central bank's pledges more believable. It is generally acknowledged that more transparency has significant positive economic effects. According to theoretical models, improved central bank credibility, reputation, and flexibility could lead to lower interest rates as a result of better monetary policy transparency.

Transparency has an impact on economic performance. (Stasavage and Sterne, 2003) discovered a correlation between heightened transparency and a reduced sacrifice ratio, indicative of a decrease in the unemployment cost of disinflation. Additionally, (Eichengreen, 2007) determined that transparency leads to a decline in inflation variability through an analysis of pooled cross-sectional time series regression. The other researcher discerns that the impacts of transparency exert an influence on the magnitude of interest rates. (Ehart & Felcser, 2015) found a strong

association between central bank openness and GDP. The assessment of the central bank's standing hinges upon the inflation expectations held by the general public. The reputation effects stem from the judicious reassessment conducted by the public in response to the actions undertaken by the central bank (Backus & Driffill, 1985; Barro, 1986). The central bank has an important role to manage the transparency that can affect economic performance.

2. METHODS

This research using quantitative descriptive method to ascertain the impact and association of the central bank on economic performance. The time frame of the study covered the years 2017-2021 in five recent years to establish the trend and newest level of central bank transparency, effect and correlation on economic performance. Using annual frequency data in the nations comprising the Association of Southeast Asian Nations (ASEAN) include Cambodia, Indonesia, Laos, Malaysia, Thailand, the Philippines, and Singapore. This study utilizes quantitative data, while the data sources employed in this study are secondary data sources, i.e., data gathered through collecting documents or reports from central bank websites, IMF, world bank and etc, or parties involved in research, they are nonetheless valuable (Sanusi, 2012: 104). The population included in this analysis consists of Asian central banks from 2017 to 2022. Five years of research were done to ascertain the extent of transparency exhibited by central banks and its influence on economic performance. In the course of this investigation, the sample selection was conducted employing the purposive sampling technique.

These criteria are employed in this study:

- a. A central bank that joins the ASEAN community
- b. A central bank updates its data every five years.
- c. Central banks with knowledge of CPI inflation, economic growth, and interest rates.

The data collection process begins with the preliminary research phase, which entails conducting a literature review by reading inflation, GDP, interest rate and central bank transparency related books, periodicals, and other readings. At this stage, an evaluation of the desired data, the availability of data, and a summary of how to collect data are conducted. The subsequent step is to collect all the data required to answer the problem and bolster the quantitative data obtained with additional literature. First, starting from January 2017, the entirety of data disseminated by central banks and pertinent government entities was easily obtainable in the English language. Subsequently, the researcher furnished the transparency index scores along with a corresponding explanation for each central bank to a senior official, typically the chief economist or an equivalent position, and sought their assessment. Lastly, the feedback received was employed to reassess the scores and implement necessary adjustments. A group of benchmarking specialists, Benchmarking network, defines benchmarking as "a performance assessment technique used in combination with improvement projects to measure comparable operating performance and discover best practices." Regression can be a valuable tool for benchmarking because regression allows identifying how practices (the X "transparency") affect performance (the Y "economics performance") In particular best practices are those that improve performance the most. This section delineates the benchmark model, which constitutes a modified iteration of the model introduced by (Ehrmann et al, 2010). The formulation of this model is presented as follows:

$$y_{i,t} = a + \beta x_{i,t} + e$$

Where $Y_{i,t}$ denotes the dependent variable (the dependent variable is economics performance use Inflation (π), interest rate (i), and GDP) analyzing the predictions within a given country (denoted as "i") at a specific time point ("t") involves a detailed examination of forecast quality. This assessment is conducted by evaluating the level of discord among individual forecasters or by assessing forecast accuracy. The quantification of central bank transparency in country i at time t is represented by the variable $x_{i,t}$. Specifically, $x_{i,t}$ encompasses the composite transparency index, any of its five sub-indices, or one of its fifteen components.

The transparency index is measured on an annual basis, whereas the survey projections are conducted monthly to ensure data consistency, it is recommended to standardize the frequency by transforming the transparency data into a monthly format and assigning the annual value to each of the selected 12 months. Dincer, Eichengreen & Geraats index examines five independent characteristics of the transparency of the policy-making process. The first component, often referred to as political transparency, emphasizes the central bank's commitment to openly communicating its policy objectives to the public, thereby fostering accountability and trust. In particular whether it discloses quantifiable goals defined targets and the ranking of these objectives. The institutional arrangements, Key determinants of the political dimension of monetary policy include the autonomy

of the central bank and the clear definition of its functions and responsibilities. Furthermore, the economic dimension concerns the central bank's willingness to disseminate monetary policy-related information, such as economic data, projections, and policy models. This transparency facilitates an external review of monetary policy decisions by stakeholders and the public. such as the autonomy of the central bank and the definition of its functions and responsibilities are also crucial elements of the political dimension of openness. The second component economic openness refers to the central bank's willingness to offer monetary policy-related information such as economic data, projections, and policy models. Sharing this information with the public allows for an unbiased external review of monetary policy decision. The third component procedural transparency evaluates how monetary policy decisions are made and whether decision makers adhere to a specified policy guideline or plan. the central bank discloses meeting minutes and voting records that describe how its policy-making committee achieves its decisions.

The extent to which the central bank's policy-making deliberations are transparent can be assessed by examining the level of detail provided in disclosed meeting minutes and voting records. These documents serve as a window into the decision-making process, revealing the rationale and rationale behind policy choices. The fourth distinct aspect, operational transparency focuses on the implementation of monetary policy, specifically whether the central bank publishes its prior forecast failures and examines its past policy mistakes. The five dimensions of policy transparency are concerned with the dissemination of policy determinations, encompassing the timely disclosure of decisions subsequent to committee meetings, the provision of a comprehensive elucidation of these decisions to the public, and the incorporation of indications regarding prospective policy tendencies or predispositions in such explanations. Each of the five dimensions has three elements. Six of the fifteen components receive a score of 0 or 1, while nine receive a score of 0, 1/2, or 1. Greater clarity and disclosure of information are reflected in higher scores. The total or composite index is calculated by adding the sub-indices. The index is created for nine of the world's largest central banks:

Table 01. List of countries in ASEAN

Central Bank of ASEAN countries	
Countries	Code
The National Bank of Cambodia	NBC
Central Bank of Indonesia	BI
Bank of the Lao P.D.R	BOL
Central Bank of Malaysia	BNM
The Bangko Sentral ng Pilipinas	BSP
The Monetary Authority of Singapore	MAS
The Bank of Thailand	BOT

Source: Association of Southeast Asian Nations (<https://asean.org/about-asean/member-states/>)

The data are compiled from information found through publicly available resources, including websites, official statutes, annual reports, and other published documents. papers of as many central banks as possible.

Dependent variable

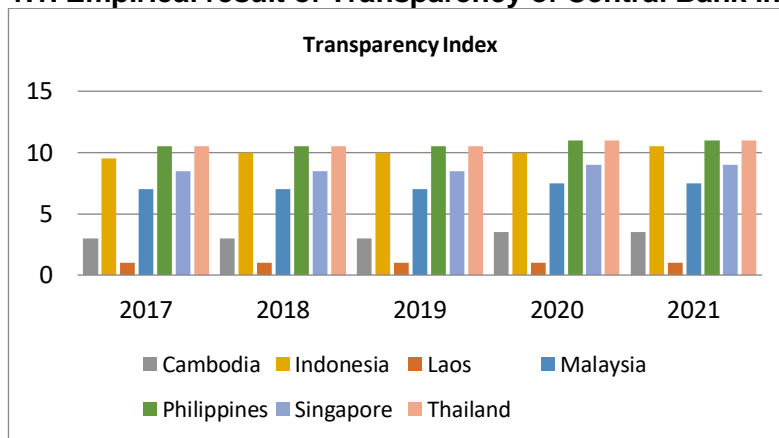
The present study addresses the question of how accurately professional forecasters predict key financial and macroeconomic variables in Asian regions. To assess forecast accuracy, we employ two metrics: the absolute mean errors and the cross-sectional standard deviations of forecasts for interest rates, CPI inflation, and real GDP growth rates particularly in ASEAN countries. Monthly data are provided by Consensus Economics, the International Monetary Fund (IMF), and The World Bank (mostly). Each month, survey respondents for a certain nation provide their projections for interest rates three and twelve months in the future. Monthly forecasts are issued for both the Consumer Price Index (CPI) inflation and the real Gross Domestic Product (GDP) growth rate. Notably, these forecasts project year-end values for the current year and the subsequent year. Non-governmental agencies (independent or university-affiliated research institutes) and economic consultancy corporations give forecasts. Financial institutions comprise the overwhelming majority of participants, encompassing a spectrum ranging from national and regional commercial banks to globally operating investment banks

Independent variable

This study utilizes the most expansive measure of central bank transparency to date, encompassing an extensive range of countries and time periods. This measure builds upon the multi-dimensional transparency index developed by Eijffinger and Geraats (2006), subsequently expanded by Dincer and Eichengreen (2014). Their index has annual measurements for 120 central banks from 1998 to 2010 and continues from 1998 to 2019. The methodology allows for the construction of a transparency index for individual central banks, with 0 indicating lowest levels of transparency and 15 representing the highest levels. The researcher evaluates transparency based on the revised values of This research leverages the comprehensive framework developed by Dincer and Eichengreen (2019), utilizing the composite index, its five sub-indices, and fifteen constituent elements to analyse. The researcher utilized a sub-index of political, economic, operational, procedural, and policy transparency to examine the relationship between transparency and economic performance.

3. RESULTS AND DISCUSSION

Figure 1.1. Empirical result of Transparency of Central Bank in ASEAN



According to the graph, there is a different value of the transparency index in ASEAN countries, the most transparent countries are the central banks of Thailand (Bank of Thailand, BOT), the Philippines (Bangko Sentral ng Pilipinas, BSP), Indonesia (Bank Indonesia, BI), and Singapore (Monetary Authority of Singapore, MAS), along with Bank Negara Malaysia (BNM). Otherwise, the most not transparent of central is the central bank of Laos and the central bank of Cambodia.

The central bank of Cambodia

The Cambodian central bank's commitment to political accountability is bolstered by its adherence to principles of transparency. This commitment manifests in two ways: (a) the formulation of a transparent and well-defined monetary policy framework outlining the bank's objectives, including explicit prioritization in the case of multiple objectives, and (b) the maintenance of open and institutionalized channels of communication with the government. However, the central bank of Cambodia has the lowest transparency index because it failed to publish basic economic data that is necessary for the implementation of monetary policy, it did not disclose the macroeconomic model(s) it uses for policy analysis, and it also did not regularly publish its macroeconomic forecasts. In both economic data and procedural transparency the central bank of Cambodia does not present a detailed description of policy considerations or an explicit policy rule or strategy that outlines its monetary policy framework (or explanations in the case of a single central banker), and also did not immediately explain how each choice about the level of its primary operating instrument or goal was accomplished. Additionally, the central bank of Cambodia does not routinely assess the degree to which its primary policy operating targets (if any) have been met, it does not routinely provide information on (unexpected) macroeconomic disturbances that have an impact on the policy transmission process, while the framework may implicitly consider macroeconomic objectives in policy formulation, a dedicated and ongoing assessment of policy outcomes in relation to these objectives is not routinely conducted.

The central bank of Indonesia

The existence of a formally articulated statement of monetary policy objectives, including a transparent prioritization mechanism in instances of conflicting goals, coupled with well-defined communication channels or other established institutional arrangements between the monetary authorities and the government, fosters both policy clarity and effective coordination. The central bank of Indonesia has a perfect value for political transparency. Additionally, as part of operational openness, the central bank evaluated regularly whether or not its primary policy operating aims have been met. It also regularly shares information on (unexpected) macroeconomic disruptions that have an impact on the policy transmission process. When policy decisions about changes to the primary operating instrument or aim are immediately publicized and the central bank includes an explanation, the interest in policy transparency rises from 0.5% to 1.0%. However, procedural transparency is not particularly strong at the Indonesian central bank. The central bank failed to explain how each decision on the level of its primary operating instrument or target was achieved and failed to provide a thorough account of policy considerations within a reasonable time frame (or an explanation in the case of a single central banker). In financial transparency the Indonesian central bank also declined to divulge the macroeconomic model(s) it employs for policy analysis and operational openness, and it did not routinely offer an assessment of the policy's effectiveness in light of its macroeconomic goals.

The central bank of Laos

The central region of Laos has the lowest transparency index, and nearly none of the transparency indicators were completed. In terms of economics transparency, they received This central bank received a score of 0 due to the absence of several key transparency practices. First, essential economic data relevant to monetary policy conduct was not publicly available. Second, the bank did not disclose the macroeconomic model(s) it utilizes for policy analysis. Third, regular publication of macroeconomic forecasts was not undertaken. Finally, the bank lacked an explicit policy rule or strategy outlining its monetary policy framework nor did it provide a comprehensive account of policy deliberations (or explanations in the case of a single central banker) within a reasonable amount of time, nor did it disclose how each decision on the level of its principal operating instrument or target was reached. The central bank's operational transparency score is zero due to the absence of regular evaluations. Specifically, it does not assess the extent to which its primary policy objectives have been achieved, nor does it routinely analyze unanticipated macroeconomic shocks impacting the policy transmission mechanism. Furthermore, it fails to provide ongoing evaluations of policy outcomes relative to its broader macroeconomic objectives. In terms of policy transparency, the Central Bank of Laos exhibits a complete lack of openness (scoring zero points). This is manifested by the absence of prompt announcements regarding adjustments to the primary operating instrument or target, a lack of accompanying explanations when policy decisions are communicated, and the failure to disclose either an explicit policy inclination following each meeting or a clear indication of likely future actions (at least on a quarterly basis). In addition, the central bank of Laos has less political transparency because the absence of a formal statement of monetary policy objectives, along with the lack of prioritization among potential goals, creates ambiguity and potential for conflict within the policymaking process. Furthermore, the absence of explicit institutional arrangements for contact between monetary authorities and the government raises concerns about transparency and accountability.

Central bank of Malaysia

The Malaysian central bank places a high value on operational transparency because it regularly assesses whether or not the attainment of all primary policy operating targets was observed alongside the consistent provision of data on unforeseen macroeconomic shocks impacting the transmission mechanism of policy interventions. In addition, Adherence to an open and clearly articulated policy rule or strategy constitutes a cornerstone of the Malaysian central bank's approach to monetary policy, fostering public trust and informed market analysis. However, Malaysia's central bank still does not place enough value on policy transparency because three or four out among the five key variables necessary for monetary policy implementation, only public quarterly time series are readily available. Numerical central bank forecasts for inflation and/or output exhibit lower publication frequency, exceeding quarterly intervals. During policy announcements, the central bank only provides a cursory explanation. Malaysia's central bank likewise has the lowest or no value in procedural transparency since the central bank has no voting records, or only after a significant lag of more than eight weeks, the opaqueness of monetary policymaking in this context is significant. The central bank deliberates (or, in the case of a single policymaker, explains) monetary policy

actions within a limited timeframe, and voting records, if available, are released with a substantial time lag, obscuring the decision-making process behind key instrument or target adjustments. Policy transparency is further impeded by the absence of a formally stated and explicitly prioritized set of monetary policy objectives (in the case of multiple objectives). Similarly, economic transparency is lacking due to the non-disclosure of the bank's macroeconomic model(s) employed for policy analysis. Finally, operational transparency is deficient, as the bank does not regularly conduct or present evaluations of policy outcomes in relation to its established macroeconomic objectives.

The central bank of the Philippines

To ensure predictable and effective monetary policy, central banks rely on a well-defined policy framework encompassing: (i) a formalized statement of policy objectives, with explicit prioritization of goals; (ii) quantifiable metrics for assessing progress towards the primary objective(s); and (iii) structured institutional interactions between the monetary authorities and the government, fostering coordination and accountability. The central bank of the Philippines has a higher value of the transparency index in political transparency. In terms of policy transparency, further enhancing transparency, the central bank's policy analysis is demonstrably guided by the disclosure of the employed macroeconomic model(s). Additionally, procedural clarity is secured through the articulation of an explicit policy rule or strategy encompassing the central bank's monetary policy framework. In terms of operational transparency, the central bank routinely assesses the degree to which its primary policy operating targets (if any) have been met. Additionally, economic transparency is less important because three or four out of the five variables that are essential economic data relevant to monetary policy decisions are made readily accessible at quarterly frequencies and the central bank releases its own macroeconomic forecasts on a more frequent basis than quarterly basis, and the central bank provides a thorough justification for its policy decisions. However, the Philippine central bank failed in procedural transparency, failing to disclose voting records or to disclose how each decision on the level of its primary operating instrument or target was reached only after a significant delay (more than eight weeks). Additionally, in procedural transparency, the central bank did not, or did not do so very frequently (at less than an annual frequency), Critique the alignment between the policy's consequences and its preordained macroeconomic objectives.

The central bank of Singapore

Despite publicly releasing its own macroeconomic forecast targets, the Central Bank of Singapore (MAS) scores amongst the lowest in terms of transparency (8, rising to 9 in 2020) regarding the disclosure of the specific macroeconomic model(s) it utilizes for policy analysis. While the Monetary Authority of Singapore (MAS) exhibits commendable strengths in certain areas of transparency, namely economic information disclosure (particularly regarding the employed macroeconomic models for policy analysis), procedural clarity (including regular assessments of target achievement), and policy communication (prompt announcements and explanations of adjustments to the main operating instrument), its overall transparency picture is nuanced. Procedural transparency suffers from the absence of consistent policy outcome evaluations in relation to pre-established macroeconomic objectives. Additionally, operational transparency remains limited, as the MAS refrains from divulging explicit policy inclinations or future action indications following policy meetings.

The central bank of Thailand

Thailand's central bank has the most open policies of any ASEAN central bank, but it falls short in procedural transparency due to its failure to frequently offer an appraisal of policy outcomes in light of its macroeconomic objectives. However, certain forms of openness are more valuable than others. For example, demonstrating commitment to economic transparency, the Bank of Thailand (BOT) engages in several key practices. Firstly, the BOT regularly publishes its own macroeconomic projections, fostering public understanding of its economic assessments. Secondly, the Bank discloses the macroeconomic model(s) it utilizes for policy analysis, enhancing the comprehensibility and accountability of its decision-making processes. Furthermore, the BOT exhibits operational transparency through regular evaluations of policy target achievement and the dissemination of information on unexpected macroeconomic disturbances. Notably, the Bank also adheres to procedural transparency by implementing an explicit policy rule or strategy for its monetary policy framework. Additionally, the BOT provides timely and comprehensive accounts of policy

deliberations, bolstering public trust and facilitating informed scrutiny. Empirical results of the impact of Transparency on Economics Performance

Inflation

Table 02. ANOVA

ANOVA ^a						
Model	Sum of Squares	df	Mean Square	F	Sig.	
Regression	3563184.09	5	712636.82	37.06	<,001 ^b	
Residual	557656.31	29	19229.53			
Total	4120840.40	34				
a. Dependent Variable: Inflation						
b. Predictors: (Constant), Policy, Political, Operational, Procedural, Economics						

Source: SPSS output by author calculations

Based on table, the resulting can be said that this multiple regression model is feasible to use, and the independent variables which are policy transparency, economic transparency, operational transparency, procedure transparency, and policy transparency have a simultaneous influence on inflation. (Geraats, 2002) posits that the motives for and effects of transparency can vary significantly across its five key dimensions – political, economic, procedural, policy, and operational. Theoretical arguments suggest that procedural transparency may act as a moderator of decision-making quality, while policy transparency may positively influence the efficiency of interest rate setting. Political, economic, and operational transparency may increase the credibility of low-inflation monetary policy. There may be some degree of substitutability given that different facets of transparency may have a similar impact. However, as evidenced by the theoretical literature, such substitutability is not simple. For instance, (Geraats, 2005) demonstrates that while greater economic transparency encourages the central bank to spend on its reputation and reduces inflation, it has the reverse effect when it comes to preferences. Inflation and central bank transparency have a negative association, according to the Eijffinger-Geraats index for 2001.

According to (Dincer & Eichengreen, 2007) there is a link between inflation and central bank transparency that is unfavorable. It suggests that transparency in monetary policy has longer-lasting macroeconomic implications in addition to these effects on the financial markets. (Siklos, 2003) indicates that inflation targeting and the publication of an inflation report tend to dramatically lower inflation estimates using a panel of 11 nations as a sample. Additionally, using data from up to 87 different nations as a sample, Cohortareas, Georgios, & David Stasavage (2002a, 2002b, 2003) resent proof demonstrating that the issuance of forward-looking analyses by central banks leads to a reduction in average inflation and a decrease in the sacrifice ratio. Transparency reduces inflation variability in a pooled cross-section time series regression, according to (Dincer and Eichengreen, 2007) findings regarding the link between transparency and financial fragility are tempered by the introduction of fixed effects. This raises the possibility that the observed correlation may be driven by omitted variables or other time-invariant confounders, rather than a direct causal relationship. According to (Geraats, 2002), increasing economic openness will aid in containing inflation. The public will be better able to understand the monetary policy that the central bank is implementing if it is better informed about the economic projections made by the central bank. A Barro-Gordon type of model is used by Westelius (2005) to demonstrate how poor transparency increases the likelihood that inflation will remain constant in a neoclassical economy. Since central banks have the freedom to determine their own monetary policies, the public is aware of the possibility and motivation for them to exploit the philipps curve trade-off.

According to Jensen (2002), a forward-looking model may benefit from a medium level of transparency. When the central bank is honest about the control failures, according to his New Keynesian model, the public may more easily decipher the intents of the institution. Expectations of inflation rise, and as a result, inflation becomes more responsive to monetary policy decisions made by the central bank. This will almost certainly lead to the central bank paying greater attention to

inflation, which is advantageous for a central bank with low credibility but could be unfavorable for a central bank with high credibility. When it comes to transparency, stabilizing output results in higher inflation costs. Using the Eijffinger-Geraats index for 2001, Demertzis and Hallett (2003) provide empirical evidence suggesting a negative association between the variability of inflation and the degree of transparency exhibited by central banks. Other research suggests that when central banks announce numerical inflation targets, Interindividual discrepancies in inflationary expectations show a declining trend. (e.g., Mankiw, Reis, and Wolfers 2004; Levin, Natalucci, and Piger 2004). Others assert that increased transparency should be linked to less persistent inflation, as long as monetary policy is seen as more credible and market players do not predict future inflation based on existing inflation. Similar questions about the nonlinear effects of central bank transparency on inflation persistence have been raised by Cruikshank, Eijffinger, and Hoogduin (2008) they found that persistence initially decreased as transparency increased, suggesting an ideal level of transparency for central banks. Furthermore, when central bank goals are clear, transparency encourages them to be pursued. This analysis posits that the implementation of inflation-control targets establishes a robust framework for enhanced political and economic decision-making. Subsequently, this fosters a more resilient long-term economic landscape. Furthermore, it empowers central banks with operational autonomy, enabling them to adopt a more prudent and, consequently, a more sustainable monetary policy stance (Aguir & Smida, 2015).

Correlation Test

The strength of the association between two variables can be measured with the help of a tool called a correlation test.

Table 03. Correlation between transparency and inflation in ASEAN from 2017-2021

		Political	Economic	Procedural	Operational	Policy	Inflation
Political	Pearson Correlation	1	.53**	.45**	.51**	-19	.78**
	Sig. (1-tailed)		<,001	.003	<,001	.25	<,001
Economic	Pearson Correlation	.53**	1	.45**	.69**	.37*	.41**
	Sig. (1-tailed)	<,001		.003	<,001	.014	.008
Procedural	Pearson Correlation	.45**	.45**	1	.42**	.31*	.62**
	Sig. (1-tailed)	.003	.003		.006	.034	<,001
Operational	Pearson Correlation	.51**	.69**	.42**	1	-16	.68**
	Sig. (1-tailed)	<,100	<,101	.006		.182	<,001
Policy	Pearson Correlation	-19	.37*	.31*	-16	1	-29
	Sig. (1-tailed)	.25	.014	.034	.18		.043
Inflation	Pearson Correlation	.78**	.41**	.62**	.68**	-29	1
	Sig. (1-tailed)	<,100	.008	<,001	<,100	.043	

****.** Correlation is significant at the 0.01 level (1-tailed)

***.** Correlation is significant at the 0,05 level (1-tailed)

Source: SPSS output by author calculations

a. Correlation of Political transparency and Inflation

According to the output table, the correlation coefficient between political transparency and inflation is (r) = 0.78, indicating a perfect association or correlation with a high degree of

closeness.

b. Correlation of Economic transparency and Inflation

The value of the correlation between economic transparency and inflation is $(r) = 0.41$, which means that they go together perfectly or have a weak correlation.

c. Correlation of Procedural and Inflation

The output table shows that the correlation coefficient between procedural transparency and inflation is $(r) = 0.62$, which is either a perfect match or enough of a match to be significant.

d. Correlation of Operational transparency and inflation

Inflation and procedural transparency have a correlation coefficient of $(r) = 0.68$, which indicates either a perfect match or a close enough match to be statistically significant.

e. Correlation of Policy transparency and inflation

The correlation between economic transparency and inflation is $(r) = -0.29$, indicating that they have a completely negative correlation or a poor correlation.

Economic Growth

Table 04. ANOVA

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1385634038969.22	5	2771268077 9384.44	67. 39	<,00 1 ^b
Residual	11926830111217.96	29	4112700038 35102.27		
Total	15049023400814.01	34			

a. Dependent Variable: GDP

b. Predictors: (Constant), Policy, Political, Operational, Procedural, Economics

Source: SPSS output by authors calculations

Based on the table, the resulting significance value is 0.001 smaller than 0.05. Thus, it can be said that this multiple regression model is feasible to use, and the independent variables which are policy transparency, economic transparency, operational transparency, procedure transparency, and policy transparency have a simultaneous influence on inflation. According to the findings of (Dincer & Eichengreen, 2014), GDP predictions react only minimally to transparency and communication. The majority of economists concur that increased monetary policy transparency is desirable because it enables the private sector to make better that is, welfare-improving and more informed decisions. Transparency enhancements in emerging and developing economies alike (Blinder, 1998). Transparency of monetary policy tends to be higher for advanced-country central banks throughout the period analyzed, and the temporal profiles vary by economic development, with the majority of the increase for high-middle-income nations coming at the outset. Singapore, the Philippines, and Thailand, whose central banks expanded their transparency significantly over this period, are among the countries driving this development. Transparency tends to be higher in richer, more developed nation groupings, but this does not appear to be the case for high-middle-income and low-middle-income countries.

According to Crujisen et al., (2010), this is a significant change from the majority of the earliest research on transparency, which concentrated on composite measurements and aggregate effects of enhanced knowledge regarding the policymaking process and outcomes. While substantial evidence suggests that monetary policy and economic performance indicators improve with increased overall transparency, we know surprisingly little about the implications of individual policy changes that would bring us closer to identifying the elusive, optimally transparent central bank. The conclusion by Crujisen and Eijffinger's (2011) finding of a significant positive correlation between central bank transparency and the accuracy of GDP or consumption forecasts can be interpreted as suggestive evidence for the effectiveness of monetary policy, a concept that has been the subject of ongoing debate in academic discourse. An alternate interpretation links the significance of the relationship to the direct channel function of the central bank's real variable forecasts. This alternate interpretation appears more feasible, given a significant positive influence of openness as manifested in real variable specifications appears to be most prevalent when transparency

assessments rely on the economic sub-index." Notably, the economic sub-index of transparency, or more properly its component, reflects whether the central bank publishes projections, but these forecasts need not be on real variables. To have a greater understanding of the relevance of the second interpretation, it is necessary to use specific information regarding the factors that central banks forecast. The Dincer, Eichengreen & Geraats index reveals that, of the analyzed forecasted variables, the influence of increased openness on short rate projections is the most robust. Measure the degree of transparency using the Minegishi Courn'ede index and discover that the majority of dimensions of transparency have a strong positive effect on the GDP projection. The two discoveries listed above contribute to prior understanding. The results of the Minegishi-Courn'ede indicators indicate the operation of the indirect channel and provide indirect evidence of the efficacy of monetary policy. Then there is an urgent need to explain and defend policy decisions. Central banks worldwide have exhibited a gradual increase in transparency initiatives, driven by the rationale that optimal levels of disclosure on policy decisions and underlying motivations can bolster economic performance. Numerous studies demonstrate that transparency is beneficial to society and can lead to improved economic outcomes. Another investigates. The finding of a strong association between central bank transparency and GDP or consumption projections by Demertzis & Hallett (2007) could be regarded as indirect evidence for the effectiveness of the monetary policy, a topic that is frequently disputed in the literature. An alternate interpretation links the significance of the relationship to the direct channel function of the central bank's real variable forecasts. The preponderance of evidence, notably the restricted occurrence of significant positive associations between transparency and real variables only within specifications employing the economic sub-index for transparency assessment, lends credence to this alternative interpretation. The results indicate that GDP per capita is a strong predictor of total openness. There is reason to believe that the level of openness should increase with the general level of economic and institutional progress, which is represented by per capita income. Countries with higher scores for rule of law, political system stability, voice and accountability, and government efficiency are characterized by more transparent central bank operations. Countries with more open (democratic) political systems also have a greater likelihood of having transparent central banks.

Correlation test

The strength of the association between two variables can be measured with the help of a tool called a correlation test.

Table 5. Correlation between transparency and Economics growth in ASEAN from 2017-2021

		Political	Economics	Procedural	Operational	Policy	GDP
Political	Pearson Correlation	1	.534**	.450**	.508**	-.118	-.772
	Sig. (1-tailed)		<.001	.007	.002	.499	<.001
Economics	Pearson Correlation	.534**	1	.451**	.685**	.373*	-.324
	Sig. (1-tailed)	<.001		.007	<.001	.027	.057
Procedural	Pearson Correlation	.450**	.451**	1	.424*	.312	-.467
	Sig. (1-tailed)	.007	.007		00.11	.068	.005
Operational	Pearson Correlation	.508**	.685**	.424*	1	-.158	-.697
	Sig. (1-tailed)	.002	<.001	.011		.364	<.001
Policy	Pearson Correlation	-.118	.373	.312	-.158	1	.220
	Sig. (1-tailed)	.449	.027	.068	.364		.203
GDP	Pearson Correlation	-.772	-.324	-.467	-.697	.220	1
	Sig. (1-tailed)	<.001	.057	.005	<.001	.203	

****.** Correlation is significant at the 0.01 level (1-tailed)

*****. Correlation is significant at the 0,05 level (1-tailed)

Source: SPSS output by author calculations

- a. Correlation of Political transparency and GDP
According to the output table, the correlation coefficient between political transparency and GDP (r) = -0.772, indicating a negative perfect association or correlation with a high degree of closeness.
- b. Correlation of Economic transparency and GDP
The value of the correlation between economic transparency and GDP is (r)= -0.324, which means that they go together negatively perfectly or have a weak correlation.
- c. Correlation of Procedural and GDP
The output table shows that the correlation coefficient between procedural transparency and GDP (r) = -0.467, which is either a negative perfect match or enough of a match to be significant.
- d. Correlation of Operational transparency and GDP
GDP and procedural transparency have a correlation coefficient of (r) = -0.697, which indicates either a negative perfect match or a close enough match to be statistically significant.
- e. Correlation of Policy transparency and GDP
The correlation between economic transparency and GDP is (r)= 100, indicating that they have a complete correlation or a perfect correlation.

INTEREST RATE

Table 6. ANOVA

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	80585.86	5	16117.17	6.99	<,001 ^b
Residual	66914.14	29	2307.38		
Total	147500.00	34			

a. Dependent Variable: Interest_rate
b. Predictors: (Constant), Policy, Political, Operational, Procedural, Economics

Source: SPSS output by author calculatios

Based on the table, it can be said that this multiple regression model is feasible to use, and the independent variables which are Policy Transparency, Economic Transparency, Operational Transparency, Procedure Transparency, and Policy Transparency have a simultaneous influence on the interest rate. Transparency in monetary policy could reduce interest rates by boosting the trust, repute, and adaptability of central banks, according to theoretical models. When controlling for macroeconomic factors. Crujisen & Eijffinger (2011) find evidence that many gains in transparency have been connected with considerable decreases in interest rates. Transparency may intuitively influence the level of interest rates. The implementation of transparent monetary policy frameworks fosters clarity regarding policy decisions taken to address economic shocks. This enhanced transparency facilitates private sector inference of the central bank's inflation target through a direct alignment of policy choices and their associated outcomes. Furthermore, for central banks facing credibility challenges, transparency serves as a valuable tool for bolstering their reputation. Additionally, transparent communication may equip the central bank with greater flexibility in stabilizing economic shocks through short-term interest rate adjustments, mitigating potential reputational damage in the form of higher long-term nominal interest rates. In theory, the motives and effects of transparency may vary for each of the five dimensions (Geraats, 2002).

Theoretical propositions indicate that transparency in political, economic, and operational aspects may enhance the credibility of monetary policy aimed at maintaining low inflation. Furthermore, procedural transparency is posited to elevate the caliber of decision-making, while policy transparency is anticipated to augment the effectiveness of interest rate determination. The possibility of a degree of substitutability is suggested by the fact that various degrees of transparency may have similar effects. Nonetheless, the theoretical literature demonstrates that such substitutability is not simple. Geraats's (2002) exhaustive survey illustrates the wide variety of theoretical conclusions in the literature, depending on the feature addressed and the model's structure. Transparency regarding supply shocks, for instance, is negative when it influences the contemporaneous aggregate supply equation, as it impedes output stability. Moreover, the public disclosure of noisy information (e.g., a highly unclear future interest rate path) may increase variability and decrease social utility if actors disregard private information to coordinate their activities (Morris & Shin, 2002). Transparency offers central banks greater freedom to counteract economic shocks, but it also increases interest rate volatility. If the financial industry is structurally weak, a significant move in interest rates could precipitate a crisis. Therefore, with a weak financial sector, transparency should be implemented with prudence.

Geraats (2005) argues that within his theoretical framework, increased transparency of the central bank's economic forecasts enhances the information content of the interest rate as a signal of the central bank's preferred policy stance. Lower interest rates may be regarded as an indication of central banks' enhanced credibility and adaptability. Transparency affords the central bank greater freedom to counteract economic shocks because it does not compromise its credibility. This stabilization policy has no impact on long-term inflation expectations or nominal long-term interest rates because the private sector is aware when the central bank's measures are intended to counteract economic shocks. Empirical research by Siklos (2004) posits a negative correlation between explicit inflation targeting and nominal interest rates across policy, short-term, and long-term maturities. This study reaffirms this association, but identifies potential caveats. Increased transparency appears to generally have a dampening effect on interest rates, although the mechanisms at play differ across maturities. While measures enhancing central bank flexibility may lead to lower policy and short-term rates, those impacting long-term expectations through reputational channels may introduce trade-offs in terms of overall interest rate management. Numerous transparency events have a substantial impact on the policy, and short-term and/or long-term interest rates in the eurozone (Hahn, 2002). Each central bank demonstrates that transparency has had a substantial impact on interest rates. According to Oikonomou et al., (2021), the increase in economic transparency has been accompanied by a decline in interest rates, but the effect is not statistically significant. Hahn (2002), find that significantly lower interest rates have coincided with the increased transparency of policy. Changes in the framework of monetary policy have had major effects on interest rates. The initial boost in policy transparency has caused interest rates to rise. Overall, the rise in transparency has had a substantial impact on the level of interest rates. Greater openness is connected with a considerable decrease in the policy, short-term, and/or long-term interest rate, however, there may be instances of a significant increase. Controlling for macroeconomic variables, the empirical literature provides mixed evidence on the causal effect of central bank transparency on interest rates. Surprisingly, increased transparency is frequently accompanied by economically substantial interest rate decreases. The findings of Faust & Svensson (2001) imply that increased transparency in central bank operations has the potential to yield significant benefits both in terms of policy flexibility and reputational standing.

According to Walsh (2007) When controlling for macroeconomic factors, it is discovered that gains in transparency tend to be related to substantial decreases in interest rates. Theoretical models indicate that monetary policy transparency has the potential to improve the central banks' credibility, reputation, and adaptability, which should result in lower interest rates. These effects of transparency ought to have an impact on interest rates. Enhanced central bank transparency can yield two distinct advantages within the realm of monetary policy management. Firstly, increased transparency would facilitate a disassociation between short-term policy adjustments and long-term nominal interest rate fluctuations. This flexibility would enable the central bank to enact policy changes, such as lowering short-term interest rates, in response to economic shocks without simultaneously jeopardizing its credibility by triggering an undesired rise in long-term nominal rates. Secondly, a more transparent central bank fosters lower inflation expectations among market participants. This dampening effect on inflationary pressures can subsequently translate into a reduction in long-term nominal interest

rates. In conclusion, transparency emerges as a potent tool for central banks, empowering them to navigate economic fluctuations with greater dexterity while maintaining market confidence. In addition, it may have a positive reputation effect that reduces inflation expectations and the nominal interest rate over the long term. Consequently, it is possible to differentiate between the effects of transparency on flexibility and reputation.

Table 7. Correlation between transparency and Interest rate in ASEAN from 2017-2021

		Political	Economic	Procedural	Operational	Policy	Interest rate
Political	Pearson Correlation	1	.534**	.450**	.508**	-118	.390*
	Sig. (1-tailed)		<.001	.007	.002	.499	<.020
Economic	Pearson Correlation	.534**	1	.451**	.685**	.373*	-.182
	Sig. (1-tailed)	<.001		.007	<.001	.027	.296
Procedural	Pearson Correlation	.450**	.451**	1	.424*	.312	.219
	Sig. (1-tailed)	.007	.007		.0011	.068	.206
Operational	Pearson Correlation	.508**	.685**	.424*	1	-.158	.258
	Sig. (1-tailed)	.002	<.001	.011		.364	.135
Policy	Pearson Correlation	-118	.373	.312	-.158	1	-.427
	Sig. (1-tailed)	.449	.027	.068	.364		.011
Interest rate	Pearson Correlation	.390*	-.182	.219	.258	-.427	1
	Sig. (1-tailed)	.020	.296	.206	.135	.011	

****.** Correlation is significant at the 0.01 level (1-tailed)

***.** Correlation is significant at the 0,05 level (1-tailed)

Source: SPSS output by author calculations

- a. Correlation of Political transparency and interest rate
The correlation coefficient between political transparency and interest rate (r) = 0.390, indicating a negative perfect association or weak correlation
- b. Correlation of Economic transparency and interest rate
The value of the correlation between economic transparency and interest rate is (r) = -0.182, which means that they go together negatively perfectly or have a weak correlation.
- c. Correlation of Procedural and interest rate
The correlation coefficient between procedural transparency and interest rate (r) = 0.219, which is either a positive perfect correlation or enough correlation
- d. Correlation of Operational transparency and interest rate
Interest rate and procedural transparency have a correlation coefficient of (r) = 0.258, which indicates either a positive perfect match or enough correlation
- e. Correlation of Policy transparency and interest rate
The correlation between economic transparency and interest rate is (r) = 100, indicating that they have a complete correlation or a perfect correlation.

CONCLUSION

The ASEAN countries have different levels of transparency. The most transparent central bank is the central bank of Thailand, followed by the central banks of the Philippines, Indonesia, Singapore, and Malaysia. The central banks of Laos and Cambodia are the least transparent of all the central banks investigated. I analyzed the effect of transparency on economic performance. First, in this research I found that transparency has a significant and sizeable effect on inflation, GDP, and interest rates. My results indicate that policy, political, operational, procedural, and economic openness may explain 15,9% of inflation. Using the ANOVA test I found that the significant value is 0,001 or below 5% so, independent variables which are political, economic, operational, procedure, and policy transparency have a simultaneous influence on inflation. Procedural transparency, revealing the internal decision-making processes of central banks, may enhance the quality of policy outcomes by facilitating stakeholder scrutiny and fostering internal discipline. Conversely, policy transparency, focusing on clear communication of future monetary policy directions, may increase the efficiency of interest rate setting by reducing private sector uncertainty and anchoring expectations. Furthermore, the implementation of broader political, economic, and operational transparency measures is postulated to bolster the credibility of low-inflationary monetary policy frameworks by fostering public trust and enhancing the accountability of central banks. In the correlation test, I found that political transparency has a strong correlation with inflation. Economics, procedural and operational transparency have a weak correlation with inflation and policy transparency has a negative or poor correlation with inflation. My result of correlation in this research is similar to Dincer & Eichengreen (2007), finding a link between inflation and central bank transparency.

Second, we discovered that transparency in politics, economic, operations, procedure, and, policy may explain for 7,8% of GDP's. Using the ANOVA test value of 0.01%, I prove that political, economic, operational, process, and policy transparency may have a significant impact on GDP. According to the findings, per capita GDP is a major predictor of total transparency. There is reason to expect that the rate of improvement will increase with the general level of economic and institutional development, as measured by per capita income countries with higher scores for rule of law, political system stability, voice and accountability, and government efficiency are characterized by more transparent central bank operations like the central bank of Thailand, the Philippines, Singapore, and Indonesia. Political, economic, operational, and procedural openness have a negative association or a moderate correlation with GDP, whereas policy transparency has a positive correlation or a perfect correlation. Third, in terms of interest rates, my findings suggest that policy, political, operational, procedural, and economic openness may explain 11,3% of the interest rate. Using the ANOVA test, I find that the significant value is 0.001 or less than 5%, indicating that independent variables such as politics, economics, operations, procedures, and policy transparency may have an impact on the interest rate at the same time. This suggested that monetary policy transparency has the potential to boost central banks' credibility, reputability, and agility, thereby leading to lower interest rates. My findings are consistent with the findings of Crujisen and Eijffinger (2011), who found that transparency may intuitively influence the level of interest rates. However, policy transparency could have a considerable impact on interest rates. In politics and economics, I discover a negative/weak link between sub-index transparency and interest rate, while procedural and operational openness have a positive or sufficient correlation and policy transparency has a perfect correlation. On the basis of controlling for macroeconomic variables, there is generally a negative link between central bank transparency and the level of interest rates. It is surprising that increased transparency is frequently accompanied by economically substantial interest rate decreases.

Transparency in monetary policy has longer-lasting macroeconomic implications. Because of the reputational penalties associated with unwarranted policy changes, monetary officials are disciplined with transparency. It can help make policy more predictable, preventing stance changes from disrupting the financial markets. The influence of a predictable policy on the real economy increases with the rate at which it is absorbed into financial variables. Transparency is seen by the vast majority of central banks as an essential component of their monetary policy framework. Transparency forces central bankers to exercise self-control by compelling them to offer consistent arguments for monetary policy actions. To ensure that public decisions are rational, policymakers must justify their own rationality. By disclosing their economic models and projections, politicians are increasingly compelled to make decisions accordance with their mandate, as the public is better able to identify deviations. This leads the policymakers' reputations to rapidly suffer from inconsistency. Therefore,

transparency (especially economic and operational transparency) enhances the incentives of policymakers and mitigates inflation bias concerns. Hence, transparency makes policy results more predictable. Additionally, monetary policy actions become more predictable when rapid explanations of policy decisions and indicators of probable future policy moves are offered (i.e. policy transparency). Publication of the monetary policy approach and quick dissemination of meeting votes and minutes increases the predictability of monetary policy measures (i.e. procedural transparency). Consequently, this enables the private sector to learn how monetary policy responds consistently to economic developments and shocks, resulting in more accurate expectations for future policy. This study demonstrates the influence and correlation of the sub-index of transparency on inflation, GDP, and interest rate, but it also raises the question of the effect and correlation of the sub-index of transparency on employment as a component of economic performance. To better comprehend the influence and correlation of openness on economic performance, additional research is necessary to evaluate the effect and correlation of transparency on employment.

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