Evaluating the Impact of Economic and Non-Economic Uncertainty on Banking IntermediationFunction: A Comparative Study between Islamic and Conventional Banking in Indonesia

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Abstract. This study analyzes the impact of economic uncertainty on the intermediation function of Islamic banks and conventional banks in Indonesia using time series data from January 2014 to April 2024 using the Autoregression Distributed Lag (ARDL) method. The results show that global uncertainty, measured by the World Uncertainty Index (WUI), has a positive influence on Islamic bank financing growth, but negatively impacts conventional bank credit growth in the short and long term. Furthermore, domestic economic uncertainty, reflected in inflation, has been shown to increase financing growth in both types of banks. Furthermore, the Consumer Confidence Index (CCI) and the rupiah exchange rate against the dollar have a positive influence on conventional bank credit growth, while other variables such as the BI Rate, Global Economic Policy Uncertainty (GEPU), the COVID-19 pandemic, and world oil prices do not affect the growth of Islamic financing or conventional bank credit. Policy implications recommend increasing incentives for Islamic banks and stricter supervision of conventional banks to address economic uncertainty.

Keywords: Credit; Economic Uncertainty; Financing

I. INTRODUCTION

The banking industry plays a vital role in the economy. Banks function as financial intermediaries, facilitating payment systems, providing financial services, and contributing to economic development by providing financing for businesses, supporting entrepreneurship, and facilitating the flow of funds within the economy (Driga & Dura, 2014). Banks not only act as depositories but also as credit providers that support various sectors of the economy as a whole. Stable and healthy banks demonstrate excellent performance that will be able to withstand uncertainty (Dominic et al., 2024). This is because healthy banks are able to manage risk, maintain liquidity, and maintain customer trust, all of which are essential for national economic and financial stability.

Uncertainty is a serious challenge and has become a particular concern, particularly in the financial world, because it can influence the decisions of governments, investors, business actors, and consumer behavior (Balta et al., 2013). Observing and understanding uncertainty allows market participants to identify and assess various risks, including market, credit, and operational risks. According to Keynes (1921) in Dow (2013), uncertainty emphasizes that economic systems cannot be predicted with certainty, many things cannot be measured accurately, and economic rules and behavior are always changing. Therefore, a more flexible and realistic approach is needed in dealing with uncertainty. Observing uncertainty can provide insights into behavioral patterns such as hedging, risk avoidance, and the impact of sentiment on market movements.

Over the past five years, global economic uncertainty has become a major challenge for many countries, companies, and individuals worldwide. In the banking sector, uncertainty can have several significant negative consequences. Uncertainty can lead to decreased investment (Gulen & Ion, 2015), reduced liquidity creation (Dang & Nguyen, 2022), and increased credit *spreads* (Kaviani, Kryzanowski, Maleki, & Savor, 2020). Furthermore, uncertainty can lead to poor decision-making in planning (McDonald & Siegel, 1986). When uncertainty increases, banks tend to be more cautious in disbursing credit or financing, which in turn can hamper economic growth. Decreased investment and lower liquidity creation also reduce banks' ability to support overall economic activity.

However, responses to this uncertainty can differ between conventional and Islamic banks. Bilgin et al. (2020) concluded in their research that conventional banks, which rely heavily on interest rates and traditional financial instruments, are more quickly impacted by global economic uncertainty. On the other hand, Islamic banks, which rely on profit-sharing principles and asset-based transactions, have better protection mechanisms

against economic fluctuations (Hassan & Mollah, 2018). Nevertheless, both types of banks continue to face challenges in maintaining financial stability and performance amid global uncertainty.

Based on the aforementioned conditions, empirical research is needed to expand the academic literature. Unlike previous studies, which generally focused only on crisis periods to compare the impact on Islamic and conventional banks, this study aims to investigate how these differences might be caused by the general level of economic uncertainty, both under normal and crisis conditions. This study also explores the impact of economic uncertainty, using the *World Uncertainty Index* (WUI) as a proxy, on credit growth between Islamic and conventional banks. Previous studies, such as Nadia & Kuncoro (2024) and Aman et al. (2024), show that *Economic Policy Uncertainty* (EPU) causes a decline in credit growth. Therefore , this study provides important new insights into understanding the dynamics of economic uncertainty and its implications for the banking sector, both Islamic and conventional. It can serve as a reference for policymakers and practitioners in managing risk and formulating banking strategies amidst global economic uncertainty.

The structure of this writing includes a literature review for previous research presented in section 2. In this case Data types and sources, research variables, model specifications, and estimation techniques are all covered in Section 3. In the next section , empirical findings and debates are discussed. Then, in the final section , conclusions, implications, and limitations are presented.

II. LITERATURE STUDY

Previous research discussing economic uncertainty on bank risk, credit growth, profitability, and bank stability has shown mixed results. Several researchers have examined the impact of economic uncertainty on the banking sector, including Bordo et al. (2016), Chi & Li (2017), Hu & Gong (2019), Wu et al. (2020), Alessandri & Bottero (2020), Shabir et al. (2021), Wu et al. (2021), Nguyen et al. (2021), Toh & Zhang (2022), Duan et al. (2022), Dang & Nguyen (2022), Shabir et al. (2023), Deng et al. (2023), Hodula et al. (2023), Apergis et al. (2023), and Vuong et al. (2024).

Previous researchers used *the economic policy uncertainty* (EPU) and *world economic uncertainty* (WUI) indices as proxies to analyze the impact of economic uncertainty on the banking sector. The *Economic Policy Uncertainty (EPU)* index was developed by Baker et al. (2016) to measure policy-related economic uncertainty, based on three basic components. The first component measures newspaper coverage of economic uncertainty in policy. The second component refers to a *Congressional Budget Office* (BCO) report that lists federal tax code provisions. The third component refers to a survey from the Federal Reserve Bank of Philadelphia. Baker et al. (2016) found that policy uncertainty is associated with greater stock price volatility, decreased investment , and employment in policy-sensitive sectors such as defense, healthcare, finance, and infrastructure.

The World Uncertainty Index (WUI) is a measure that tracks uncertainty worldwide based on country reports from *the Economist Intelligence Unit* . The WUI index was compiled by Ahir et al. (2018) for 143 countries since 1996. Globally, the WUI index spiked near the 9/11 attacks, the SARS outbreak, the Second Gulf War, the Euro debt crisis, and other events. According to Ahir et al. (2018), uncertainty levels are significantly higher in developing countries and are positively associated with economic policy uncertainty and stock market volatility, but negatively with GDP growth.

Economic policy uncertainty negatively impacts the functioning of a country's financial system and hampers financial sector development. This refers to the research findings of Aman et al. (2024) who found that *economic policy uncertainty* (EPU) negatively impacted the functioning of the country's financial system in 22 countries sampled in their study from 2002 to 2021. Another study by Abaidoo & Agyapong (2023) examined the extent to which regulatory policy uncertainty and macroeconomic risk impact financial sector development in 25 developing countries in Sub-Saharan Africa (SSA). Empirical estimates indicate that regulatory policy uncertainty and macroeconomic risk negatively impact or hinder financial sector development in these countries.

Previous research has shown that economic policy uncertainty impacts bank stability. Danisman & Tarazi (2024) found empirical evidence that increasing levels of economic policy uncertainty reduce the stability of commercial banks in the United States (US). Based on these findings, the negative impact of *economic policy uncertainty* (EPU) is weaker for banks with large capitalization and liquidity. Another finding by Nadia & Kuncoro (2024) examined the impact of *world economic uncertainty* (WUI) on bank stability using *the method of moments* (GMM). The results showed that *world economic uncertainty* (WUI) caused a significant decline in bank stability in 1,631 banks in 10 Asian countries from 1994 to 2022.

Vuong et al. (2024) examined the impact of economic uncertainty on bank stability in 157 banks across eight

ASEAN countries, including Indonesia, over the period 2010– 2020. This study used several uncertainty indicators, such as *geopolitical risk* (GPR), *economic policy uncertainty* (EPU), *climate policy uncertainty* (CPU), *world pandemic uncertainty* (WPU), *global supply chain pressure* (GSCP), and *monetary policy uncertainty* (MPU). Their research found that geopolitical risk was positively correlated with bank stability, while economic policy uncertainty, climate policy uncertainty, global pandemic uncertainty, global supply chain pressure, and monetary policy uncertainty negatively impacted bank stability in the ASEAN region.

Desalegn et al. (2023) examined the impact of economic policy uncertainty and bank competition on financial stability in the Chinese banking industry. This study used the *generalized method of moments* , *fixed effects , and ordinary least squares* estimation models . The results found that *economic policy uncertainty* (EPU) had a negative impact on financial stability in the banking sector. Another study by Syed (2024) explored the increase in economic policy uncertainty on banking sector stability in India between 2000 and 2022. Empirical results showed a negative impact of economic policy uncertainty on banking stability. However, strict banking regulations, monitoring, and supervision were able to diversify the negative impact of economic policy uncertainty on banking sector stability in India.

Based on research results, Islamic banks have greater resilience than conventional banks when facing economic uncertainty. Syarifuddin (2022) conducted research on the effect of uncertainty on the stability of Islamic and conventional banks in member countries of the Organization of Islamic Cooperation (OIC). The research used panel data from 201 banks in 16 OIC member countries from 2013 to 2020. Syarifuddin's (2022) research findings showed a decline in bank stability when uncertainty increased, but uncertainty did not significantly impact the stability of Islamic banks. Interestingly, this research finding proves that the prohibition of speculative motives in Islamic banks can maintain their stability during times of uncertainty.

Previous research has found that economic uncertainty impacts credit/financing distribution by banks. Previous research on this topic, including Demir & Danisman (2021), found that economic uncertainty led to a decline in bank credit growth in 19 countries for the period 2010–2019. This finding is supported by Juelsrud & Larsen (2023), who revealed that increased macroeconomic uncertainty can generally reduce bank lending. Furthermore, Kim et al. (2023) found that during times of high uncertainty, companies reduce their credit demand due to delayed investments or decreased creditworthiness.

Ibrahim et al. (2018) analyzed 25 Islamic banks and 114 conventional banks in 10 countries that implement *a dual banking system* . The study aimed to determine whether Islamic banks were able to maintain financing distribution and whether their growth was higher than conventional banks during the crisis. The results showed that Islamic banks maintained their financing, while conventional banks experienced a significant decline in credit growth. Furthermore, Islamic bank financing growth was higher than conventional bank loan growth during the crisis.

Danisman et al. (2020) found empirical evidence that *economic policy uncertainty* (EPU) can hinder bank credit growth in Europe, particularly in cooperative banks. The negative impact of *economic policy uncertainty* (EPU) on credit growth increases with debt maturity. On the other hand, Tabash et al. (2022) examined the influence of *economic policy uncertainty* (EPU) on overall corporate financing decisions. Their findings indicate that *economic policy uncertainty* (EPU) has a negative effect on debt financing. According to Tabash et al. (2022), during times of high economic uncertainty, corporate firms prefer equity and receivables financing.

Bilgin et al. (2021) analyzed the impact of economic uncertainty on credit growth in 58 Islamic banks and 358 conventional banks in 12 countries. Empirical results show that increased economic uncertainty significantly reduces credit levels in conventional banks, but does not significantly impact financing in Islamic banks. Their findings indicate that conventional banks tend to withhold credit during times of increased uncertainty, while Islamic banks maintain financing due to their asset-based nature and risk sharing. This research aligns with the concept of *equity-based financing* (EBF), which prioritizes fairness by sharing risks and benefits (Mukhibad et al., 2023).

Siyamto (2023) examined the correlation between *economic policy uncertainty* (EPU) and financing risk and total financing disbursement at Islamic banks in Indonesia. The research findings indicate a negative correlation between *economic policy uncertainty* (EPU) and financing risk at Islamic banks. This means that when economic policy uncertainty increases, financing risk at Islamic banks decreases. This condition occurs when Islamic banks tighten financing disbursement, thereby minimizing financing risk during times of high economic uncertainty. Furthermore, this study found a positive correlation between *economic policy uncertainty* (EPU) and total financing disbursement at Islamic banks. This positive value indicates that when economic uncertainty increases, the amount of financing provided by Islamic banks will increase.

Boubakri et al. (2023) analyzed lending/financing at conventional and Islamic banks during the Covid-19 pandemic. The research used a sample of 421 banks from 17 countries, including Indonesia. Their research found that the decline in bank lending during the Covid-19 crisis was only significant for conventional banks. Credit growth at Islamic banks was approximately 2.5% faster than conventional banks during the initial phase of the Covid-19 crisis. The superior performance of Islamic banks was evident in countries with high macroprudential practices in the years leading up to the crisis. This demonstrates that Islamic banks are able to maintain their intermediary function amid economic uncertainty, driving economic recovery.

Economic uncertainty also impacts banking liquidity risk. This is based on research by Anis & Hamdi (2022), which analyzed the influence of economic uncertainty on the liquidity risk of Islamic banks in Indonesia. The study found that economic uncertainty significantly and positively impacted Islamic banks' liquidity risk. As uncertainty increases, it has implications for non-performing financing, leading to increased banking liquidity risk. Therefore, policies and regulations are needed to maximize financing distribution for economic recovery, while addressing bank liquidity risk.

Ozili & Arun (2022) investigated the impact of *economic policy uncertainty* (EPU) on several indicators of bank profitability in 22 developed countries. The bank profitability measures used included *net interest margin* , *lending-deposit spread* , *non- interest income* (NII) *ratio* , *return on assets* (ROA), and *return on equity* (ROE). The study's findings revealed that high EPU negatively impacts bank *non-interest income* (NII). This study also revealed that high EPU has a positive effect on bank profitability in Asia and the Americas, as these regions experience high returns on equity during periods of high EPU. Other research by Zhang et al. (2022) found evidence that economic uncertainty significantly increases bank risk and decreases profitability. Furthermore, Ashraf & Shen (2021) found that government economic policy uncertainty has a significant positive relationship with increases in loan interest rates, which are accompanied by the risk of borrower default.

According to Nguyen & Vo (2024), high economic uncertainty has a significant impact on the behavior of companies, banks, and financial markets. Ali et al. (2024) examined the impact of economic policy uncertainty and oil prices on bank stock performance in 12 G20 member countries. The results revealed that the impact of economic policy uncertainty and oil prices on bank stock values varied significantly across the countries sampled in the study. One finding showed that *economic policy uncertainty* (EPU) exhibited an inverse relationship with bank credit growth. This was associated with negative market sentiment, increased volatility, reduced investor confidence, and hesitation in business investment. These factors collectively drove down stock prices, resulting in a strong and negative correlation between economic policy uncertainty and stock prices during the crisis.

Based on previous research findings, research related to the impact of global economic uncertainty on the banking intermediation function in terms of credit distribution or financing in conventional and Islamic banks still has *a research gap* , so further study is needed in Indonesia. Therefore, the author is motivated to explore the use of more comprehensive variables, including *Geopolitical and Policy Uncertainty* , *Market Uncertainty* , and *Economy. Uncertainty* , and *Health and Pandemic Uncertainty* . The empirical analysis will examine the impact of economic uncertainty on the intermediation function of Islamic and conventional banks. The results of this study can be used as evaluation material for the role of the financial sector, particularly the banking industry, in supporting the public economy amidst global economic uncertainty.

III. METHODOLOGY AND DATA

Data Definition and Measurement

This research empirically analyzes the economic uncertainty variables on the intermediation of Islamic banks and conventional banks through a quantitative approach, namely *Autoregression Distributed Lag* (ARDL). This study uses secondary data sourced from Bank Indonesia (BI), the Central Statistics Agency (BPS), Islamic Banking

Statistics (SPS) and Indonesian Banking Statistics (SPI) of the Financial Services Authority (OJK), *the World Uncertainty Index* (WUI), and *the Economic Policy Uncertainty Index* (EPU). The type of data used is *time series data* , namely monthly data, starting from January 2014 to April 2024. In this study, the population used is Islamic Commercial Banks (BUS), Islamic Business Units (UUS), and Conventional Commercial Banks registered with the Financial Services Authority (OJK).

This research uses the total financing disbursement provided by Islamic banks and the total credit disbursement of conventional banks as the dependent variables. The independent variables in this research include *the World Uncertainty Index* (WUI), *Economic Policy Uncertainty* (EPU), world oil prices, inflation, interest rates, exchange rates, the Consumer Confidence Index (CCI), and *Pandemic & Health Uncertainty* using a *dummy variable* during the Covid-19 pandemic. The independent variables in this study are converted into annual growth percentages or *Year on Year* (YoY), and one of the dependent variables is converted into a natural logarithm to facilitate the analysis process, except for variables in percentage or ratio units. Empirical Model and Methodology

The purpose of this research is to examine the impact of economic uncertainty on the intermediation function of Islamic and conventional banks in Indonesia using the *Autoregression Distributed Lag* (ARDL) model. The ARDL model analysis was developed by Pesaran et al. (2001) and Pesaran & Shin (1999). Using the ARDL model, this study presents an analysis of the short-term and long-term relationship between economic uncertainty and bank intermediation functions, represented by financing and credit.

This study uses the Augmented Dickey-Fuller (ADF) test to test *the unit root* for each research variable. After all variables are free from units at the I(0) or I(1) level, the next test is *bound testing* to determine whether the variables in this study are cointetrated so that long-term relationship analysis can be conducted between variables and to ensure the validity of the model analysis results. The following is the ARDL model for long-term relationships:

$$G\_FINANCING_t = \beta_0 + \beta_1 BI\text{-}RATE_t + \beta_2 COVID_t + \beta_3 EXCH_t + \beta_4 GEPU_t + \beta_5 IKK_t + \beta_6 INF_t + \beta_7 WUI_t + \beta_8 OIL\text{-}PRICE_t + \epsilon_t$$

$$G\_CREDIT_t = \beta 0 + \beta_1 BI\text{-}RATE_t + \beta_2 COVID_t + \beta_3 EXCH_t + \beta_4 GEPU_t + \beta_5 IKK_t + \beta_6 INF_t + \beta_7 WUI_t + \beta_8 OIL\text{-}PRICE_t + \epsilon_t$$

In the short-run equation, the ARDL model is used to describe how the dependent variable interacts with the independent variable over a shorter period of time. These effects are often temporary and can change over time. The short-run model includes lags of both the dependent and independent variables. In general, the short-run model in ARDL in this study is as follows:

$$\Delta G\_FINANCING_t = \alpha_0 + \alpha_1 \Delta G\_FINANCING_{t-1} + \alpha_2 \Delta BI\_RATE_{t-1} + \alpha_3 \Delta COVID_{t-1} + \alpha 4\ \Delta EXCH_{t-1} + \alpha 5\ \Delta GEPU_{t-1} + \alpha 6\ \Delta IKK_{t-1} + \alpha 7\ \Delta INF_{t-1} + \alpha 8\ \Delta WUI_{t-1} + 9\ 1\ \Delta OIL\_PRICE_{n.d} + \delta 1\ \alpha 1\ G\_FINANCING_{t-1} + \delta 2\ BI\_RATE_{t-1} + \delta 3\ COVID_{t-1} + \delta 4\ EXCH_{t-1} + \delta 5\ GEPU_{t-1} + \delta 6\ IKK_{t-1} + \delta 7\ GEPU_{t-1} + \delta 8\ WUI_{t-1} + \delta 9\ OIL\_PRICE_{t-1} + \mu t$$

$$\Delta G\_KREDIT\ t = \alpha\ _0 + \alpha\ _1 \Delta G\_CREDIT\ _{t-1} + \alpha\ _2 \Delta BI\_RATE\ _{t-1} + \alpha\ _3 \Delta COVID\ _{t-1} + \alpha\ _4 \Delta EXCH\ t-1 + \alpha\ 5\ \Delta GEPU\ t-1 + \alpha\ 6\ \Delta IKK\ t-1 + \alpha\ 7\ \Delta INF\ t-1 + \alpha\ 8\ \Delta WUI\ t-1 + 9\ 1\ \Delta OIL\_PRICE\ n.d + \delta\ 1\ \alpha\ 1\ G\_CREDIT\ t-1 + \delta\ 2\ BI\_RATE\ t-1 + \delta\ 3\ COVID\ t-1 + \delta\ 4\ EXCH\ t-1 + \delta\ 5\ GEPU\ t-1 + \delta\ 6\ IKK\ t-1 + \delta\ 7\ GEPU\ t-1 + \delta\ 8\ WUI\ t-1 + \delta\ 9\ OIL\_PRICE\ t-1 + \mu\ t$$

IV. ANALYSIS RESULTS

a. Descriptive Statistics

In Table 2. the results of the statistical description below, provide initial insight into the data used in the study and can understand the central value of the data (*Median*) and the average value (*Mean*). The standard deviation (*Std. Dev*) shows the variability or diversity of the data by showing how far the data is spread from the average. The minimum (*Min* .) and maximum (*Max* .) values indicate the range of the data and indicate its extreme points. The minimum value is the smallest value found in the data and the maximum value is the largest value found in the data. Observations (*Obs* .) namely the number of significant observations in each variable and indicate that this study has sufficient data to conduct a thorough analysis. The compilation of this descriptive statistical tabulation uses *eviews software* .

Table 2. Descriptive Statistical Results

Variables	Mean	Median	Max.	Min.	Std. Dev.	Obs
G_FINANCING	0.010	0.010	0.064	-0.028	0.012	123
G_KREDIT	0.007	0.008	0.032	-0.022	0.011	123
BI_RATE	0.054	0.053	0.078	0.035	0.013	123
COVID	0.317	0.000	1,000	0.000	0.467	123
EXCH	14071	14142	16450	11404	1096	123
GEPU	209,933	215,300	431,610	86,680	72,843	123
IKK	115,033	119,780	128,940	77,310	12,786	123
INFL	0.037	0.033	0.084	0.013	0.017	123
WUI	10,044	10,000	10,960	9,110	0.363	123
OIL_PRICE	63,925	60,300	114,670	18,840	19,824	123

b. Unit Roots Test Results

In the context of the *Autoregressive Distributed Lag* (ARDL) model, the stationarity test or unit root test is used to determine whether the variables to be modeled meet the stationarity requirements for the validity of the model results. One way to test stationarity in ARDL is to use *the Augmented Dickey-Fuller* (ADF) Test, which is to test the hypothesis that a variable has a unit root, which means the data is not stationary. The testing method used to test the stationarity of the data in this study is the ADF (*Augmented Dickey Fuller*) test using a five percent significance level ($\alpha = 5\%$). If the t-

ADF value is smaller than the MacKinnon critical value, it can be interpreted that the data used is stationary data (does not contain a unit root). Testing on these unit roots is carried out at the level up to *the first difference* . The data taken is data that does not contain a unit root, because according to Gujarati (2003: 853) if the data used contains a unit root element, it will be difficult to estimate a model because the data *trend* tends to fluctuate not around its average value.

Based on Table 3, the test results show that several variables used are stationary at the level (I[0]) and some others are stationary at the *first difference level* (I[1]). Referring to these data characteristics, this means that this study meets the prerequisites for applying the ARDL model to evaluate the impact of economic uncertainty and its implications for Islamic and conventional banking intermediation in Indonesia.

IV.3 Correlation Matrix

In Table 4 below, a correlation matrix is constructed, a table showing the correlation coefficient between each pair of variables in a data set. The correlation coefficient is a statistical measure that indicates the extent to which two variables move together. The correlation coefficient value ranges from -1 to 1.

Table 4. Correlation Matrix

	BI_RATE	**COVID**	**EXCH**	**GEPU**	**IKK**	**INFL**	**WUI**	**OIL_PRICE**
BI_RATE	1,000							
COVID	-0.607	1,000						
EXCH	-0.059	0.375	1,000					
GEPU	-0.407	0.564	0.514	1,000				
IKK	0.281	-0.492	0.068	-0.220	1,000			
INFL	0.687	-0.298	-0.227	-0.393	0.320	1,000		
WUI	0.147	-0.077	-0.071	0.259	0.206	0.133	1,000	
OIL_PRICE	-0.242	0.308	0.465	0.125	0.388	-0.011	-0.132	1,000

A correlation matrix can be used as a first step to detect multicollinearity in regression analysis. Multicollinearity occurs when two or more independent variables in a regression model are highly correlated, which can cause problems in estimating the regression coefficients. Based on Table 4, the results of the correlation matrix test indicate that there are no significant multicollinearity problems because the correlation between the variables used is not very strong.

V. DISCUSSION

i. Bounds Test Results

Table 5 below demonstrates a bound test to examine the existence of a long-term relationship (cointegration) between the variables. Overall, the bound test results show that both models (for both Islamic and conventional banks) demonstrate a long- term relationship between the tested variables. The Islamic bank model demonstrates a stronger relationship based on a significantly higher F-statistic (F-statistic = 4.718) compared to the conventional bank model (F-statistic = 3.968).

ii. ARDL Model Results

Table 6 and Table 7 show the empirical results of the ARDL model for Islamic and conventional banks in the short and long term for each variable.

1. Sharia Bank Model

Based on the estimation results in Table 6, the ARDL estimation results for Islamic banks in the short and long term are presented. In the short term, inflation and global uncertainty variables, as measured by *the World Uncertainty Index* (WUI), have a significant positive effect on the growth of Islamic bank financing (α = 5%). Empirical findings indicate that every 1% increase in inflation will increase Islamic bank financing by 0.7977%, while every 1% increase in global uncertainty will increase Islamic bank financing by 0.0085%. Other variables, such as interest rates, COVID-19, exchange rates, Global Economic Policy Uncertainty (GEPU), the consumer confidence index, and world oil prices, do not show a significant effect on the growth of Islamic bank financing.

Table 6. Summary of Results of the ARDL Model of Islamic Banks

Variable	Coefficient	t-Statistic	Prob.*
Short Run Coefficient			
D(G_FINANCING(-1))	-0.123189	-1.226833	0.2231
D(G_FINANCING(-2))	0.155117	1.578576	0.1179
D(BI_RATE)	0.300338	0.460746	0.6461
D(BI_RATE(-1))	-1.199636	-1.817265	0.0725
D(BI_RATE(-2))	1.039808	1.522567	0.1314
D(COVID)	0.017199	1.428192	0.1567
D(COVID(-1))	-0.012313	-1.077763	0.2841
D(COVID(-2))	0.016631	1.511817	0.1341
D(EXCH)	0.000001	0.132248	0.8951
D(GEPU)	-0.000020	-0.544179	0.5877
D(GEPU(-1))	-0.000058	-1.437117	0.1542
D(GEPU(-2))	-0.00074	-1.928621	0.0569
D(IKK)	0.000137	0.588192	0.5579
D(INFL)	0.439149	1.222349	0.2248
D(INFL(-1))	-0.249896	-0.66259	0.5093
D(INFL(-2))	**0.797734***	2.207606	0.0298
WUI	**0.008456***	2.147362	0.0345
D(OIL_PRICE)	0.00006	0.231203	0.8177
Constant	-0.084105	-2.121621	0.0366
R-squared	0.305639		
Adjusted R-squared	0.166766		
F-statistic	2.200862		

Prob(F-statistic)	0.007917		
Long Run Coefficient			
D(BI_RATE)	0.145144	0.142642	0.8869
D(COVID)	0.022227	1.076214	0.2847
D(EXCH)	0.000007	0.132168	0.8951
D(GEPU)	-0.000157	-1.748927	0.0837
D(IKK)	0.000142	0.588871	0.5574
D(INFL)	1.01954	1.73281	0.0866
WUI	**0.008735***	2.063626	0.0419
D(OIL_PRICE)	0.00006	0.230126	0.8185
Constant	-0.086879	-2.038786	0.0444

Note: (1) *5% (0.05), **1% (0.01%). (2) G_FINANCING is Sharia Bank Financing, BI_Rate is Interest Rate, Covid is Dummy Variable, EXCH is exchange rate, GEPU is Global Economic Policy Uncertainty, IKK is Consumer Confidence Index, INFL is Inflation Rate, WUI is World Uncertainty Index, OIL_PRICE is World Oil Price.

The long-term ARDL estimation results indicate that the *World Uncertainty Index (WUI)* variable (α = 5%) has a significant positive effect on the growth of Islamic bank financing. This means that a 1% increase *in the World Uncertainty Index* will increase Islamic bank financing by 0.0087%. Other variables, such as interest rates, COVID-19, exchange rates, Global Economic Policy Uncertainty (GEPU), consumer confidence index, inflation, and world oil prices, do not significantly influence the long-term growth of Islamic bank financing.

2. Conventional banking model

Table 7 shows the results of ARDL model testing for conventional banks in the short and long term. The short-term model shows that the exchange rate (α = 1%), consumer confidence index (α = 5%), and inflation (α = 5%) variables have a significant positive effect on conventional bank credit growth. The exchange rate variable has a dominant influence with significance at several lags. Based on the empirical results, every 1% increase in the exchange rate will increase conventional bank credit by 0.00001%. Then, every 1% increase in the consumer confidence index will increase conventional bank credit by 0.0003%, while every 1% increase in inflation will increase conventional bank credit by 0.4666%. Meanwhile, global uncertainty as measured by *the World Uncertainty Index* (WUI) (α = 5%) has a significant negative effect on conventional bank credit growth. This means that every 1% increase in *the World Uncertainty Index* (WUI) will reduce conventional bank credit by 0.0066%. However, in the short term, the interest rate, COVID-19, *Global Economic Policy Uncertainty (GEPU), and world oil prices* variables do not have a significant impact on conventional bank credit growth.

Table 7. Summary of Conventional Bank ARDL Model Results

Variables	Coefficient	t-Statistic	Prob.*
Short Run Coefficient			
D(G_CREDIT(-1))	-0.160315	-1.478975	0.1428
D(BI_RATE)	0.071534	0.192389	0.8479
D(COVID)	0.00604	0.86123	0.3915
D(EXCH)	**0.00001****	3.780341	0.0003
D(EXCH(-1))	0.00001	1.843308	0.0687
D(EXCH(-2))	0.00000	0.014572	0.9884
D(EXCH(-3))	0.00000	0.95674	0.3414
D(EXCH(-4))	0.00001**	2.636574	0.0099
D(GEPU)	0.00001	0.532006	0.5961
D(IKK)	**0.000346***	2.336908	0.0218
D(IKK(-1))	0.000055	0.366258	0.7151
D(IKK(-2))	0.000262	1.749726	0.0837
D(INFL)	**0.466552***	2.386225	0.0192
D(INFL(-1))	0.373006*	1,809,474	0.0739
WUI	-0.001602	-0.580473	0.5631
WUI(-1)	-0.000257	-0.079829	0.9366
WUI(-2)	-0.002372	-0.736877	0.4632
WUI(-3)	-0.001538	-0.465666	0.6426
WUI(-4)	**-0.00661***	-2.314586	0.0231
D(OIL_PRICE)	0.000031	0.214755	0.8305
Constant	0.124901	3.892622	0.0002
R-squared	0.482297		
Adjusted R-squared	0.3619		
F-statistic	4.005913		
Prob(F-statistic)	0.000003		
Long Run Coefficient			
D(BI_RATE)	0.06165	0.192852	0.8475
D(COVID)	0.005205	0.843124	0.4015
D(EXCH)	**0.00002****	3.143916	0.0023
D(GEPU)	0.00001	0.537076	0.5926
D(IKK)	**0.000571****	2.506098	0.0141
D(INFL)	**0.72356****	3.189341	0.002
WUI	**-0.01712****	-4.05149	0.0001
D(OIL_PRICE)	0.000026	0.215057	0.8302
Constant	0.107644	4.033199	0.0001

Note: (1) Significant *5% (0.05), **1% (0.01%). (2) G_KREDIT is Conventional Bank Credit, BI_Rate is Interest Rate, Covid is Dummy Variable, EXCH is exchange rate, GEPU is Global Economic Policy Uncertainty, IKK is Consumer Confidence Index, INFL is Inflation Rate, WUI is World Uncertainty Index, OIL_PRICE is World Oil Price.

The results of the ARDL model estimation of conventional banks in the long term show that the exchange rate, consumer confidence index, and inflation variables have a significant positive effect on conventional bank credit growth at a significance level of 1%. Based on empirical results, every 1% increase in the exchange rate will increase conventional bank credit by 0.00002%. Then, every 1% increase in the consumer confidence index will increase conventional bank credit by 0.0006%, while every 1% increase in inflation will increase conventional bank credit by 0.7236%. *The World Uncertainty Index (WUI)* variable (α = 1%) has a significant negative effect on conventional bank credit growth . This means that every 1% increase *in the World Uncertainty Index* (WUI) will reduce conventional bank credit by 0.0171%. On the other hand, the variables of interest rates, COVID-19, *Global Economic Policy Uncertainty* (GEPU), and world oil prices did not show a significant influence on conventional bank credit growth in the long term.

b. Discussion of Main Findings

Based on the findings of the ARDL estimation model, researchers obtained several key findings to evaluate the impact of uncertainty both from the geopolitical and global policy perspectives, market uncertainty, uncertainty in domestic economic conditions, and uncertainty in the pandemic on Islamic and conventional banking intermediation in Indonesia.

First, global uncertainty can be measured using the *World Uncertainty Index* (WUI). The WUI is an indicator of global uncertainty encompassing various economic, political, and social aspects globally. Empirically, the WUI has a positive influence on the growth of Islamic bank financing in both the short and long term. This finding suggests that increasing global uncertainty tends to encourage investors and businesses to choose a safer and more stable financial system (Chapra, 2008). Islamic bank transactions are typically based on real assets (*Asset-Backed Financing*), meaning that the underlying assets provide transparency, reduce speculative risk, and support financial system stability, especially during times of uncertainty. This aligns with the basic principles of Islamic finance, including the prohibition of usury, investment in risk-sharing, and financing based on real assets (Juhro et al., 2020). These findings align with those of Ibrahim et al. (2018), Bilgin et al. (2021), and Boubakri et al. (2023), and Siyamto (2023), who stated that economic uncertainty does not have a significant impact on Islamic bank financing. On the other hand, the WUI variable has a negative impact on conventional bank credit growth in both the short and long term. In conditions of global uncertainty, conventional banks face higher credit risks and are more vulnerable to global conditions. Furthermore, given the larger *market share of conventional banks compared to Islamic banks, they are more affected by global economic fluctuations*. These empirical results align with research by Danisman et al. (2020),

Demir & Danisman (2021), Bilgin et al. (2021), Juelsrud & Larsen (2023), and Kim et al. (2023), which explains that conventional banks tend to withhold credit during times of increasing global uncertainty.

Second, inflation is a crucial macroeconomic variable that can impact the stability and operation of the financial system, including decisions regarding credit distribution and financing. Empirical results show that inflation has a positive impact on the growth of financing in both Islamic and conventional banks. During periods of inflation, both individuals and companies often face rising living costs and operational costs. This can increase the demand for financing or credit, as companies require additional capital to address higher costs, while individuals require loans to meet their daily needs. This research aligns with research by Zarrouk et al. (2016) and Rashid, A., & Khalid, S. (2020), which found that inflation positively impacts both conventional and Islamic bank credit. Inflation can positively impact both in certain contexts, particularly in terms of increasing bank income from financing and credit activities related to adjustments to macroeconomic conditions such as inflation.

Third, the exchange rate is an indicator reflecting uncertainty *in* the domestic economy, where changes or volatility significantly impact credit. The researchers' findings indicate that in the short and long term, the rupiah exchange rate against the dollar has a positive influence on credit growth in conventional banks. The researchers believe that the weakening of the rupiah against the US dollar can open up positive opportunities for conventional bank credit growth. With more competitive prices for Indonesian products in the international market, export competitiveness increases, boosting exporters' income and creating additional needs for working capital and investment (OJK, 2014). This could potentially increase credit demand in the banking sector, although further evaluation is needed to mitigate the risks. These research findings align with research by Tandris et al. (2014), which found that the exchange rate against the dollar has a positive influence on bank credit, while the exchange rate against the dollar has no significant effect on Islamic banks (Mutamimah et al., 2012).

Fourth, the Consumer Confidence Index (CCI) is an economic indicator that measures the level of consumer confidence in current economic conditions and future prospects. An increase in the CCI typically indicates that consumers are optimistic about the economy and have greater confidence in their future income. Empirical results show that the CCI has a positive effect on conventional bank credit in both the short and long term. This condition is driven by increased consumption, increased investment spending, and better economic conditions, thus driving credit demand (Mynaříková et al., 2023) . In general, high consumer confidence can trigger an increase in credit activity, which in turn supports further economic growth. This research is in line with İlhan, A. (2024) who stated that IKK has a positive influence on credit growth.

Fifth, our research found that the BI Rate , *Global Economic Policy Uncertainty* (GEPU), COVID-19, and global oil prices did not affect the growth of Islamic financing or conventional bank credit in either the short or long term. This finding contradicts previous research, such as that conducted by Baker, Bloom, & Davis (2016), which showed that global economic policy uncertainty, through GEPU, significantly

impacted credit growth, and Goodell (2020), who found that the COVID-19 pandemic affected liquidity and credit. Furthermore, Nugroho & Yanuarti (2020) also found that BI Rate fluctuations significantly impacted credit growth in conventional and Islamic banks. However, in the context of our research, these four variables did not show a direct impact on the growth of either type of financing.

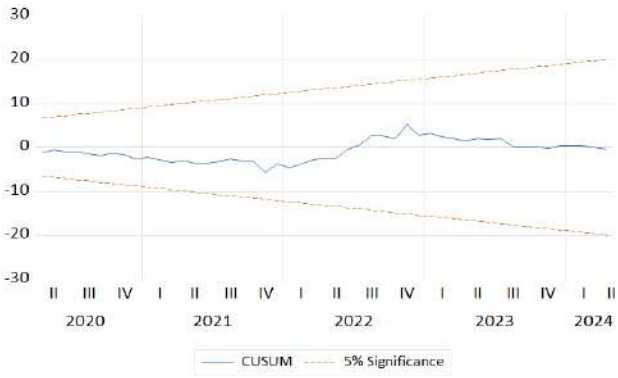
c. Diagnostic Tests

Next, this study tested the selected model. Diagnostics consisted of the Breusch-Pagan test for heteroscedasticity and the Breusch-Godfrey test for autocorrelation. The following table shows the results of the diagnostic tests, which indicate that the residuals are independent, homoscedastic, and do not suffer from non-functional misspecification. Furthermore, the CUSUM line is within the limits, indicating that the CUSUM and CUSUM square plots, respectively, confirm the stability of the ARDL estimation model at the 5% significance level. This is shown in Figures XX and XX below.

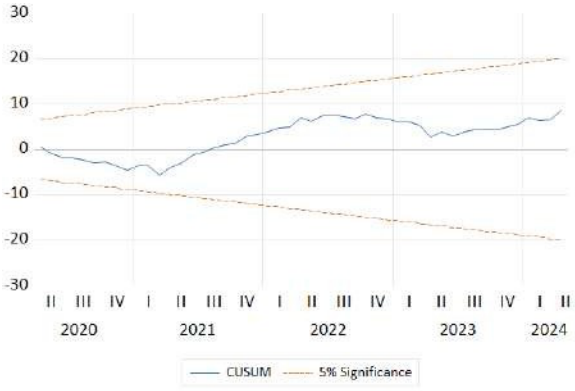
Normality and Heteroscedasticity Test Table

Specification	F Statistic	p-value
a. Islamic Bank		
Breusch-Godfrey Serial Correlation LM Test:	0.127477	0.8543
Heteroskedasticity Test: Breusch-Pagan-Godfrey	0.400547	0.9774
b. Conventional Banks		
Breusch-Godfrey Serial Correlation LM Test:	2.046062	0.0833
Heteroskedasticity Test: Breusch-Pagan-Godfrey	0.927061	0.5233

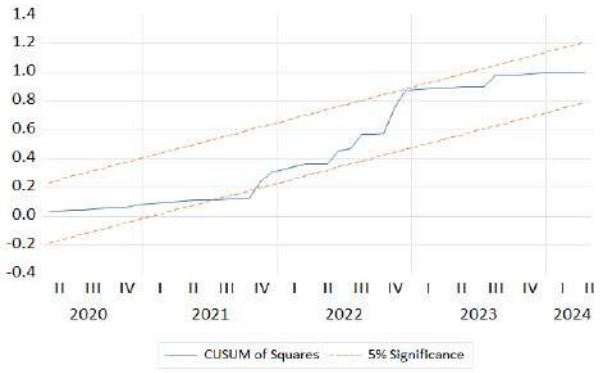
CUSUM Analysis Test Results for Sharia Banks



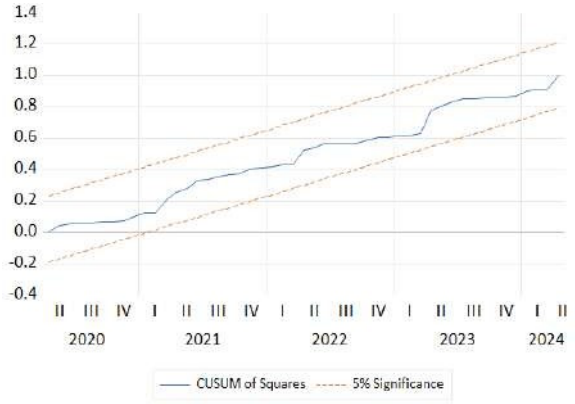
CUSUM Analysis Test Results for Conventional Bank Test



CUSUM Square Test Analysis Test Results for Sharia Banks



CUSUM SquareTest Analysis Test Results for Conventional Banks



VI. CONCLUSION

This study found that global uncertainty, as measured by *the World Uncertainty Index* (WUI), has different impacts on Islamic and conventional banking in Indonesia. Global uncertainty tends to drive the growth of Islamic bank financing in both the short and long term, as investors and business actors prefer a stable and ethical financial system. Conversely, conventional banks are more vulnerable to global uncertainty, which leads to a decline in credit growth. Furthermore, inflation has a positive effect on the growth of Islamic bank financing and conventional bank credit, as consumers and businesses are encouraged to secure financing or credit before prices rise further.

Other findings indicate that the rupiah exchange rate against the US dollar has a positive impact on credit growth in conventional banks, but does not significantly affect financing in Islamic banks. The Consumer Confidence Index (CCI) also shows a positive effect on conventional bank credit growth, while other variables such as the BI Rate , *Global Economic Policy Uncertainty* (GEPU), the COVID-19 pandemic, and global oil prices do not significantly impact the growth of Islamic financing and conventional credit. These results indicate that Islamic banking is more resistant to global uncertainty, while conventional banking is more influenced by domestic macroeconomic conditions.

VII. POLICY RECOMMENDATIONS

Based on the research findings above, here are some policy recommendations that can be intended for relevant regulators in Indonesia:

1. Enhanced protection for Islamic banks: Given that Islamic banks tend to be more stable and attract more financing during times of global uncertainty, relevant regulators could consider providing additional incentives or protections for

Islamic banks. This could include increasing deposit guarantee limits or prioritizing them in bank restructuring policies in the event of a crisis. This measure could strengthen the competitiveness of Islamic banks and support the stability of the national financial system.

2. In the face of global economic uncertainty, Islamic banks must adopt adaptive strategies in financing distribution. First, focus on stable market segments that are resilient to global economic fluctuations. Second, improve the quality of risk management and conduct in-depth risk analysis before granting financing to potential customers. Third, diversify financing portfolios and develop flexible financing products in terms of terms, payment structures, and contract terms to help customers navigate economic uncertainty. Fifth, consistent application of Sharia principles can increase customer trust and help banks maintain a good reputation.

3. Close monitoring of conventional banks: Given that conventional banks are more vulnerable to global uncertainty and exchange rate fluctuations, regulators need to closely monitor liquidity and credit risk in conventional banks, particularly in uncertain global economic conditions. Relevant regulators could consider developing risk-based supervisory mechanisms that are more adaptive to macroeconomic changes, including strengthening the *stress testing framework* to account for global and domestic uncertainty scenarios.

4. Conventional banks need to adopt a strategic approach to lending to manage risks and capitalize on opportunities amidst global economic uncertainty. First, improve credit risk analysis, including analysis of economic fluctuations, market volatility, and potential geopolitical impacts. Second, diversify credit portfolios and implement stricter credit criteria. Third, develop adaptive credit products tailored to borrower needs in various economic conditions. Fourth, manage currency and commodity risks using hedging instruments . Fifth, increase transparency and communication with borrowers regarding credit conditions to build greater trust.

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