**Etikonomi**
Volume 22 (1), 2023: 213 - 232
P-ISSN: 1412-8969; E-ISSN: 2461-0771

# The Contribution of Islamic and Conventional Banks to Financial Stability in Indonesia

**Faaza Fakhrunnas[1*], Katiya Nahda[2], Mohammad Abdul Matin Chowdhury[3]**

**[1]Department of Economics, Faculty of Economics and Business, Universitas Islam Indonesia, Indonesia**
**[2]Department of Management, Faculty of Economics and Business, Universitas Islam Indonesia, Indonesia**
**[3]School of Business, East Delta University, Bangladesh**
E-mail: [1]fakhrunnasfaaza@uii.ac.id, [2]katiya.nahda@uii.ac.id, [3]matin.c@eastdelta.edu.bd

[*)]**Corresponding Author**

***JEL Classification:***
E60
G20
G21

*Received: 20 June 2022*

*1st Revision: 15 December 2022*

*2nd Revision: 27 December 2022*

*Accepted: 30 December 2022*

**Abstract**

This study aims to examine an asymmetric relationship between Islamic and conventional bank contributions to financial stability in Indonesia. Adopting non-linear autoregressive distributed lag (NARDL), the study utilizes time-series data from 2004m1-2021m9, consisting of financial stability as a dependent variable, proxied by non-performing loans (NPLs) and ZSCORE. Islamic and conventional banks as independent variables were measured by total financing and total assets. Furthermore, we used interest rates and inflation as complementary variables. The findings reveal that Islamic and conventional banks affect financial stability in the short and long run. However, conventional banks contribute to financial stability more than Islamic banks. The asymmetric relationship explains that an increase/decrease in the independent variables to the same degree does not have the same impact on the dependent variable. This research implies that the financial authorities need to increase their awareness of the presence of asymmetric relationships when designing monetary policy to achieve and maintain financial stability. Finally, the study also fills the current research gap by measuring the contribution of Islamic and conventional banks to financial stability from an asymmetric relationship viewpoint.

**Keywords:**
Islamic bank; conventional bank; NARDL; financial stability

**How to Cite:**

Fakhrunnas, F., Nahda, K., Chowdhury, M.A.M. (2023). The Contribution of Islamic and Conventional Banks to Financial Stability in Indonesia. *Etikonomi, 22*(1), 213–232. https://doi.org/10.15408/etk.v22i2.26656.

## INTRODUCTION

In the dual banking system, the financial authorities must adequately manage the market in which Islamic and conventional banks co-exist. Therefore, to implement monetary policies, such authorities, such as the central bank, must ensure that the policies are beneficial to all types of banks (Nair & Anand, 2020). Indeed, a dual banking system exhibits better stability than a single banking one (Nosheen & Rashid, 2021). Financial stability is hence an overriding issue that needs to be achieved and maintained by the financial authorities to ensure the soundness of the financial market (Uddin et al., 2017). In addition, the banking system also makes a significant contribution to financial stability. Financial turmoil at the bank level may negatively impact the banking sector and quickly have an effect on financial systems due to a lack of market discipline and excessive lending (Chapra, 2011; Belouafi et al., 2015). Ijaz et al. (2020) demonstrate that bank stability positively affects economic growth, meaning that banking performance, both for Islamic and conventional banks in dual banking systems, plays a vital role in ensuring financial stability.

In theoretical terms, Crockett (1997) defines financial stability as the way in which financial institutions and the market are able to perform smoothly and create a well-functioning financial market. Financial stability differs from monetary stability, which refers to price stability in all economic sectors free from inflation. Beck (2015) refers to financial stability as an essential condition for a sustainable financial expansion, while according to Crockett (1997), financial and monetary stability reciprocally affect each other. If one of them is unstable, it results in an unstable condition for the other.

From a slightly different perspective, Borio (2011) states that financial stability could be achieved by performing two critical activities: creating prudential regulation for individual financial institutions, and controlling price movement through monetary policies. There is a cumulative conjunction in central banking spheres where simultaneously micro and macro prudential policies aim to safeguard financial system stability, enabling it to efficiently allocate resources to the real economy since the crisis in 2008 (Sinha, 2011).

The financial crisis of 2007-2009 demonstrated that banking stability is imperative for the real economy, as banking institutions stimulate entrepreneurship, economic opportunities, and economic growth (Demirgüç-Kunt & Huizinga, 2010). Consequently, to create financial stability, the players in the financial system are not only intermediary institutions, but also regulatory bodies (Borio, 2011). Therefore, both regulation and management of capital flows are required due to their integral volatility, which can result in a cycle of financial instability for beneficiary economies: a rise in capital flows can lead to the appreciation of a currency; a better balance sheet for debtors; more accessible lending settings; an upsurge in non-tradable amounts; and inclusive inflation, hence making a financial risk of an unexpected condition and aiding local financial instability (Atellu et al., 2021; IMF, 2017).

When the financial system is in an unstable condition, Crockett (1997) concludes that financial institutions and markets are not functioning well and finally create conditions


https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v22i1.26656

for price instability, particularly financial asset prices. Moreover, banking sector instability enhances uncertainty regarding future growth of output (Jokipii & Monnin, 2013). In addition, financial instability worsens the fundamental and financial markets, making real economic activity unstable due to economic shock (Mande et al., 2020). Therefore, such stability a goal that needs to be achieved and maintained to create financial soundness. Consequently, financial stability remains the core agenda for policymakers in all economies (Atellu et al., 2021). Financial institutions, such as those in the banking sector, play a pivotal role in financial stability. Because the banking industry is one of the leading players in the financial market, the banking sector is expected to contribute to financial stability in a positive way.

From the empirical viewpoint, many recent studies have been conducted on the issue of financial stability. Concerning stability at the banking level, Kim et al. (2020) state that banks' diversification in their operations increases banking stability. In addition, in a cross-country study Feghali et al. (2021) argue that credit inclusion has a negative effect on banking performance as well as stability. In a different context, Miah et al. (2020) state that charging higher switching fees in Islamic banks has prompted greater market power, but less financial stability.

An earlier study by Ashraf et al. (2016) demonstrated that shareholder concentration motivates banking stability, with higher ownership concentration tending to lead to more significant insolvency risks. Concerning the comparison between Islamic and conventional banks, Olson & Zoubi (2017) found that Islamic ones had a different level of fragility to their conventional counterparts during the global financial crisis (GFC). Islamic banks were more robust in dealing with systematic risk during the financial crisis than conventional ones. However, post-crisis the convergences between banks have narrowed.

These findings are in line with those of Trad et al. (2017) in the MENA region; Asutay & Othman (2020) in the case of Malaysia; Hassan et al. (2019), Safiullah (2021) and Bilgin et al. (2021), who conducted cross-country analysis; and Louhichi et al. (2019), who observed globally that in the competitive market Islamic banks gave considerably more support to banking stability. Nosheen & Rashid (2021) also found that a single banking system was less stable than a dual one, with the presence of Islamic banks attributing to higher stability in 416 banks in 39 countries. In contrast, Raouf & Ahmed (2022) demonstrated that risk governance for Islamic banks was less, thus harming stability. However, their business models include characteristics that increase stability.

Hassan et al. (2019) explain that better stability and its contribution to financial stability from the Islamic bank side is caused by several factors. First, Islamic banks can utilize money in a well-functioning medium as an exchange rather than in transactions based on a real underlying asset. Second, Islamic banks have different characteristics to conventional ones in terms of product development (Trinh et al., 2020). They are not involved in extended loans, but instead promote real transactions with explicit, fundamental economic activities.

In contrast, in the case of Bangladesh Uddin et al. (2017) found that before, during, and post-crisis, there was no difference between Islamic and conventional bank performance, as they followed almost the same business model. This also confirms that even though Islamic banks are an alternative to the conventional banking business model, they are not free from risk in the financial system. Aysan & Ozturk (2018) state that Islamic banks might not be an appropriate mechanism for eliminating the adverse impact of financial crisis or economic recession.

Trinh et al. (2020) estimated the more robust performance of conventional banks and greater financial stability compared to Islamic banks in 14 countries. Both Islamic and conventional banks were severely affected during the global financial crisis, having the same exposure to systematic risk. This finding is similar to those of Kasri & Azzahra (2020), who used Indonesia as the study object. In the case of Malaysia, Mohamad et al. (2018) explain that conventional banks are more stable than Islamic ones because they Islamic banks have a higher risk of providing financing activities to deficit units. Albaity et al. (2019) also found that Islamic banks in the MENA region were more vulnerable in terms of banking stability.

Kabir et al. (2015) argued that Islamic banks faced higher risk in financing activities for three reasons. First, this was because of the lack of experience of Islamic bankers in identifying financing activity risks, including non-performing financing. Second, the sharia aspect is still considered a burden, preventing banks from operating flexibly and quickly in response to market development. Third, Islamic bank financing still dominantly relies on real estate and construction projects, which need to be diversified, particularly during periods of financial distress.

In general, banking performance affects financial stability. The interconnectedness between banks can weaken the level of stability if a particular bank goes bankrupt (Chen, 2022). Ijaz et al. (2020) explain that less competition supports economic growth and enhances financial stability. Moreover, Rashid et al. (2017) demonstrate that Islamic banks might contribute more to financial stability than conventional ones. This assertion relies on the fact that Islamic banks have more income diversity in financing activities, higher profitability, and a higher investment ratio. All these factors contribute to increased financial stability, as reflected by the value of the stability.

In the case of Saudi Arabia, both Islamic and conventional banks generally contribute to financial stability (Ghassan & Guendouz, 2019). However, Islamic banks tend to be slightly more efficient in strengthening stability as they have more assets and financing diversification. Regarding the East Asian banking sector (Indonesia and Malaysia), Ali et al. (2020) showed an increase in system stability due to the enhanced competition from Islamic banks. A similar finding was obtained by Hassan et al. (2021) in Pakistan's dual banking sector.

In the case of Indonesia, Rizvi et al. (2020) found that Islamic banks contributed to financial stability due to their asset and liability performances. Recent studies on Islamic and conventional banks' contribution to financial stability are dominated by financial


https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v22i1.26656

stability at the banking level (Belouafi et al., 2015). This means that there remains scope to fill the research gap by enriching the current debate on the contribution of the banking sector to financial stability in the dual banking system.

Concerning the importance of the issue of financial stability, this study aims to examine the contribution of Islamic and conventional banks to this with reference to Indonesia. Previous studies have focused on comparing conventional and Islamic bank stability, rather than the contribution of both to the stability of an economy (Bitar et al., 2021; Mateev et al., 2022; Paltrinieri et al., 2021; Safiullah, 2021). Furthermore, the asymmetric influence of Islamic and conventional banks in Indonesia needs to be observed to understand the significance and the direction in which both types of banks contribute to financial stability. There were several reasons for using Indonesia as the object of the study: (1) Indonesia is one of the world's most populous Muslim countries which has a dual banking system (Rizvi et al., 2020); (2) Indonesia had roughly double-digit banking sector growth, particularly in the Islamic sector (Ernst & Young, 2016); (3) the Indonesian banking system is considered to be robust as it is able to address the issue of financial turmoil during times of financial crisis (Khattak et al., 2021).

In relation to previous related studies, the contributions of this study are twofold. First, it considers previous studies in which banking stability was only discussed at the institutional level. Some, such as that of Santosa et al. (2020), explain that Islamic bank stability is affected by macroeconomic conditions. In addition, comparing conventional and Islamic bank stability, Olson & Zoubi (2017), Trad et al. (2017), Asutay & Othman (2020), Hassan et al. (2019), Safiullah (2021), Bilgin et al., (2021) and Louhichi et al., (2019) conclude that Islamic banks are superior in terms of banking stability during financial turmoil and in tight banking competition. However, debate continues concerning the findings of Uddin et al. (2017) and Kasri & Azzahra (2020), who argue that Islamic and conventional banks are the same from the perspective of financial fragility in many economic circumstances. Other studies have obtained different results, such as those of Mohamad et al. (2018) and Albaity et al. (2019), who explain that conventional banks are better off in financial stability while Islamic banks are worse off.

Second, this study also sheds light on the new perspective of the asymmetric influence of Islamic and conventional banks on financial stability in Indonesia. This perspective is believed to be the originality of this study, as other studies, such as those of Chen (2022), Rashid et al. (2017), Ghassan & Guendouz (2019), and Rizvi et al. (2020) did not consider this approach. Although Fakhrunnas et al. (2022) highlight the use of the asymmetric impact on non-performing financing in the Indonesian banking industry, their study only focuses on the impact of macroeconomic factors and does not clearly refer to the contribution of banks to financial stability. Referring to the studies of Bussiere (2012), Gohar et al. (2022) and Elsayed et al. (2022), an increase to a certain degree of the Y variable might have a different impact when the variable experiences a certain level of decrease in another variable. Assuming a

symmetric relationship between the observed variables might create a biased analysis, including in terms of assessment of the determinants of financial stability in the banking system. Therefore, the use of the asymmetric approach is believed to be much more relevant for analyzing the contribution of Islamic and conventional banks to such stability.

The study is believed to be significant in two ways. First, it provides precise information to banking industry stakeholders regarding the asymmetric effect in financing activities and banks' asset size when both variables experience an increase or decrease at a certain level. Second, the financial authorities in Indonesia need to respond and issue policies to address the issue of financial stability when the asymmetric effect of Islamic and conventional banks is evident, with reference to empirical evidence. In addition, the authorities should also assess which type of bank contributes more to financial stability. This assessment could be used to evaluate banking performance from the regulatory body perspective. Finally, after the introduction, the method employed is explained. This is followed by the results and discussion of the findings, and finally the conclusion and recommendations.

## METHODS

In measuring the contribution of Islamic and conventional banks to financial stability in Indonesia, this study adopts time-series data retrieved from the Indonesian Financial Service Authority (OJK) from January 2004 to September 2021 and from Indonesian Statistics and the Central Bank of Indonesia. They are the most extended data that can be retrieved from the available resources. The theoretical framework proposed by Crockett (1997) and Borio (2011) is employed, who posit that the presence of financial institutions determines stability in the financial system. The study model is as follows:

$$FS_t = \beta_0 + \beta_1 IBFin_t + \beta_2 IBSIZE_t + \beta_3 CBFin_t + \beta_4 CBSIZE_t + \beta_5 Int_t + \beta_7 Inf_t + \varepsilon_t \quad (1)$$

Where FS stands for financial stability at time t. It is measured based on Hassan et al. (2019), who adopt credit risk to measure financial stability, proxied by non-performing loans (NPL) (Louhichi et al., 2019). Another proxy suggested by Korbi & Bougatef (2016) and Rashid et al. (2017) is ZSCORE. In addition, the independent variables that explain bank financing (IBFin for Islamic banks and CBFin for conventional banks) and size (IBSIZE for Islamic banks and CBSIZE for conventional banks) are used to represent Islamic banks (IBs) and conventional banks (CBs). The complementary variables adopt the interest rate (Int) and inflation (Inf). A definition and interpretation of the observed variables are given in Table 1.


https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v22i1.26656

**Table 1. Explanation of the Variables**

| Variable | Estimation | Interpretation |
|---|---|---|
| NPL | The percentage of non-performing loans in the Indonesian banking system (on a monthly basis). | A higher NPL level reflects a lower level of financial stability in the banking system and vice versa. |
| ZSCORE | The sum of return on assets (ROA) plus equity, both are divided by the standard deviation of ROA | A higher ZSCORE reflects a higher level of financial stability in the banking system and vice versa. |
| IBFin | The log of the total financing of Islamic banks in Indonesia (on a monthly basis). | A higher IBFin reflects a higher presence of IB in terms of financing activities and vice versa. |
| IBSIZE | The log of the total assets of Islamic banks in Indonesia (on a monthly basis). | A higher IBSIZE reflects a higher presence of IB in terms of size in the banking system and vice versa. |
| CBFin | The log of the total financing of conventional banks in Indonesia (on a monthly basis). | A higher CBFin reflects a higher presence of CB in terms of financing activities and vice versa. |
| CBSIZE | The log of the total assets of conventional banks in Indonesia (on a monthly basis). | A higher CBSIZE reflects a higher presence of CB in terms of size in the banking system and vice versa. |
| Int | The overnight interest rate of the Central Bank of Indonesia (on a monthly basis). | A higher Int reflects a higher cost of borrowing in the financial market and vice versa. |
| Inf | The rate of inflation in Indonesia (on a monthly basis). | A higher Inf reflects a greater increase in the price of the goods and services and vice versa. |

The non-linear autoregressive distributed lag (NARDL) model was used to examine the presence of asymmetric relationships between the variables, following the proposal of Shin and Greenwood-Nimmo (2014). The NARDL model for the study is as follows:

$$\begin{aligned}\Delta \mathrm{FS}_t = {} & a_0 + a_1\,\Delta \mathrm{FS}_{t-1} + a_2\,\Delta POSIB_{t-1} + a_3\,\Delta NEGIB_{t-1} + a_4\,\Delta POSCB_{t-1} \\ & + a_5\,\Delta NEGCB_{t-1} + a_6\,\Delta \mathrm{Int}_{t-1} + a_7\,\Delta \mathrm{Inf}_{t-1} + \sum_{i=1}^{n} \Theta_{1i}\,\Delta \mathrm{FS}_{t-1} \\ & + \sum_{i=1}^{n} \Theta_{2i}\,\Delta POSIB_{t-1} + \Theta_{3i}\,\Delta NEGIB_{t-1} \\ & + \sum_{i=1}^{n} \Theta_{4i}\,\Delta POSCB_{t-1} + \Theta_{5i}\,\Delta NEGCB_{t-1} \\ & + \sum_{i=1}^{n} \Theta_{6i}\,\Delta \mathrm{Int}_{t-1} + \sum_{i=1}^{n} \Theta_{7i}\,\Delta \mathrm{Inf}_{t-1} + \mu_t \end{aligned} \quad (2)$$

As mentioned above, IB reflects the presence of Islamic banks, while CB reflects that of conventional banks. Therefore, the positive (POS) and negative (NEG) variables in Equation 2 are obtained from:

$$POSIB_t = \sum_{i=1}^{n} \Delta IB_t^+ = \max(IB_t,0) \quad (3)$$

$$NEGIB_t = \sum_{i=1}^{n} \Delta IB_t^- = \max(IB_t, 0) \quad (4)$$

$$POSCB_t = \sum_{i=1}^{n} \Delta CB_t^+ = \max(CB_t,0) \quad (5)$$

$$NEGCB_t = \sum_{i=1}^{n} \Delta CB_t^- = \max(CB_t, 0) \quad (6)$$

In addition, to estimate the NARDL model, the steps taken were similar to autoregressive-distributed lag (ARDL), as also explained by Shin & Greenwood-Nimmo (2014). The first step was to calculate the unit-root test proposed by Dickey & Fuller (1979) and Phillips & Perron (1988) to assess the stationary level. Second, bound testing cointegration was conducted, as suggested by Pesaran et al. (2001), and finally a Wald test was conducted to examine the presence of asymmetric relationships. To check the robustness of the data, Sriyana & Ge (2019) explain that the cumulative sum (CUSUM) then needs to be tested with an alpha level of 0.05 (5%).

## RESULT AND DISCUSSIONS

Table 2 gives a description of the variables used in the study. It can be seen that the average NPL in the Indonesian banking system over the observation period is 3.24%, which is considered to be low, even though in July 2006 it reached 8.42%. The average of another financial stability proxy, ZSCORE, is 1434.93; the higher this is, the lower the risk of bankruptcy.

**Table 2. Descriptive Statistics**

| Variable | All Periods | | | | |
|---|---|---|---|---|---|
| | **Mean** | **Med** | **Max** | **Min** | **Std. Dev.** |
| NPL | 3.24% | 2.12% | 8.42% | 1.27% | 2.09% |
| ZSCORE | 1434.93 | 179.1519 | 142347.5 | 3.279598 | 9956.965 |
| IBFin | IDR 117,862 | IDR 138,066 | IDR 250,698 | IDR 5,764 | IDR 81,202 |
| IBSIZE | IDR 161,718 | IDR 143,746 | IDR 429,733 | IDR 8,757 | IDR 124,404 |
| CBFin | IDR 2,754,945 | IDR 2,555,928 | IDR 5,553,170 | IDR 432,466 | IDR 1,738,563 |
| CBSIZE | IDR 4,295,516 | IDR 3,924,059 | IDR 9,063,823 | IDR 1,135,765 | IDR 2,432,253 |
| Int | 6.79% | 6.63% | 12.75% | 3.50% | 2.06% |
| Inf | 5.70% | 4.70% | 18.38% | 1.32% | 3.48% |

Note: the IBFin, IBSIZE, CBFin and CBSIZE are in billion IDR

In addition, the average level of financing in Islamic banks is IDR 117,862, while for conventional banks this is IDR 2,754,945. The average level of Islamic and conventional bank assets are IDR 161,718 and IDR 4,295,516 respectively. The mean value of bank financing and size indicates that Islamic banks are less developed in terms of the level of financing and size. This is possibly because Islamic banks only emerged


https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v22i1.26656

on the Indonesian banking industry scene in 1992, with the establishment of Bank of Muamalat, whereas conventional banks had already existed for many years. Furthermore, the rate of inflation is lower, at approximately 1%, compared to the interest rate issued by the Central Bank of Indonesia.

To begin the NARDL analysis, augmented Dickey-Fuller (ADF) and Philip-Perron (PP) were applied in the unit-root test to assess the level of stationarity, as proposed by Dickey & Fuller (1979) and Phillips & Perron (1988). Shin & Greenwood-Nimmo (2014) suggest that the level of stationarity in the unit-root test can be of a different order, but no higher than the second order. As shown in Table 3, the level of stationarity for NPF, ZSCORE, and Int are in level, while the others are in first difference. It can hence be concluded that the NARDL model can be applied because of the existence of a stationary level in level and in first difference in the model used.

**Table 3. Results of Unit Root Test**

| Variable | At Level | | First Difference | | Stationary level |
|---|---|---|---|---|---|
| | ADF | PP | ADF | PP | |
| NPF | -1.66* | -1.67* | -7.46*** | -14.89*** | In Level |
| Z-Score | -14.46*** | -14.48*** | -12.07*** | -108.26*** | In Level |
| IBFin | -1.52 | -1.68 | -13.12*** | -13.23*** | 1st Difference |
| IBSIZE | -1.83 | -1.79 | -14.91*** | -14.91*** | 1st Difference |
| CBFin | -1.52 | -1.68 | -13.12*** | -13.23*** | 1st Difference |
| CBSIZE | -1.83 | -1.79 | -14.91*** | -14.91*** | 1st Difference |
| Int | -3.92** | -2.85 | -6.64*** | -6.43*** | In Level |
| Inf | -1.04 | -1.38 | -6.96*** | -11.96*** | 1st Difference |

Note: ***,** and * indicate significance levels of 1%, 5% and 10% respectively.

The NARDL results in the short run are shown in Appendix 1. In the diagnostic test, co-integration exists in the model, reflecting that it has a long-run relationship. In addition, the Wald test also revealed that the model generally has an asymmetric relationship and that each change in the observed variable in the positive or negative direction also has an asymmetric relationship. According to the results, each positive or negative change in the independent variables has no symmetric effect on the financial stability variable.

These findings are in line with those of Elsayed et al. (2022) and Bussiere (2012), who concluded that independent variables might have an asymmetric relationship by referring to the different impacts when there is a change in the increase or decrease of the exogenous variable in relation to endogenous variables. The alignment of the results also confirms the theoretical frameworks of Crockett (1997) and Borio (2011), who posit that the presence of financial institutions such as the bank simultaneously affects financial stability.

Regarding the separate influence of each of the independent variables on the dependent variable, it can be seen that in the short run in Model 1, an additional increase in Islamic bank financing has a positive and significant relationship with a change in NPL, but this is in the opposite direction with regard to the influence of a decrease of Islamic bank financing on NPL after an adjustment process in the longer lag. In addition, the values of IBSIZE_P and IBSIZE_N have a positive relationship with NPL. In contrast, the presence of conventional banks in terms of financing activities has a different influence to that of Islamic banks when there is an increase or decrease in NPL. An increase in the positive and negative values of conventional bank size also has a negative relationship with NPL.

According to the findings, in terms of financing activities, Islamic banks tend to reduce the level of financial stability by contributing to an increase (or decrease) in the rate of NPL in the banking system when financing activities increase (or decrease). On the other hand, conventional banks, either in terms of financing or banking assets, reduce the rate of NPL in the banking system. This finding contradicts those of Rashid et al. (2017) and Rizvi et al. (2020), who found that Islamic banks contributed more to financial stability than conventional ones. In relation to this situation, Islamic banks possibly undertake financing activities that involve less prudent risk management compared to their counterparts, as predicted by Mohamad et al. (2018) and Kasri & Azzahra (2020).

In Model 2, an additional increase (or decrease) in the financing activities of Islamic banks has a negative (or positive) value on ZSCORE. In terms of banking size, the influence is roughly the same as financing activities, even though in the certain lag of adjustment influence in the short run, the effect is in a different direction. For conventional banking, a change in negative or positive financing levels increases or decreases the level of ZSCORE changes respectively. Moreover, both increases and decreases in conventional banking size have a positive relationship with ZSCORE.

The finding explains that the presence of Islamic banks increases the level of bankruptcy risk. It also emphasizes the results of Model 1, in which the presence of conventional banks increases financial stability, but that this not the case for Islamic banks. Therefore, the bank significantly affects financial stability, as described by Chen (2022). However, Ghassan & Guendouz (2019) found that the contribution of both banks to financial stability did not exist in the short run. Albaity et al. (2019) also support this result with their argument that Islamic banks are more vulnerable, particularly in their performance. The rationale for this argument is that Islamic banks are still considered to lack risk management, which leads to more risk exposure in banking operations. On the other hand, as concluded by Mohamad et al. (2018), conventional banks are more stable in their operations, particularly in managing bankruptcy risk, and can consequently contribute to stability of the financial system.


https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v22i1.26656

**Table 4. Results of the Long-run Relationship**

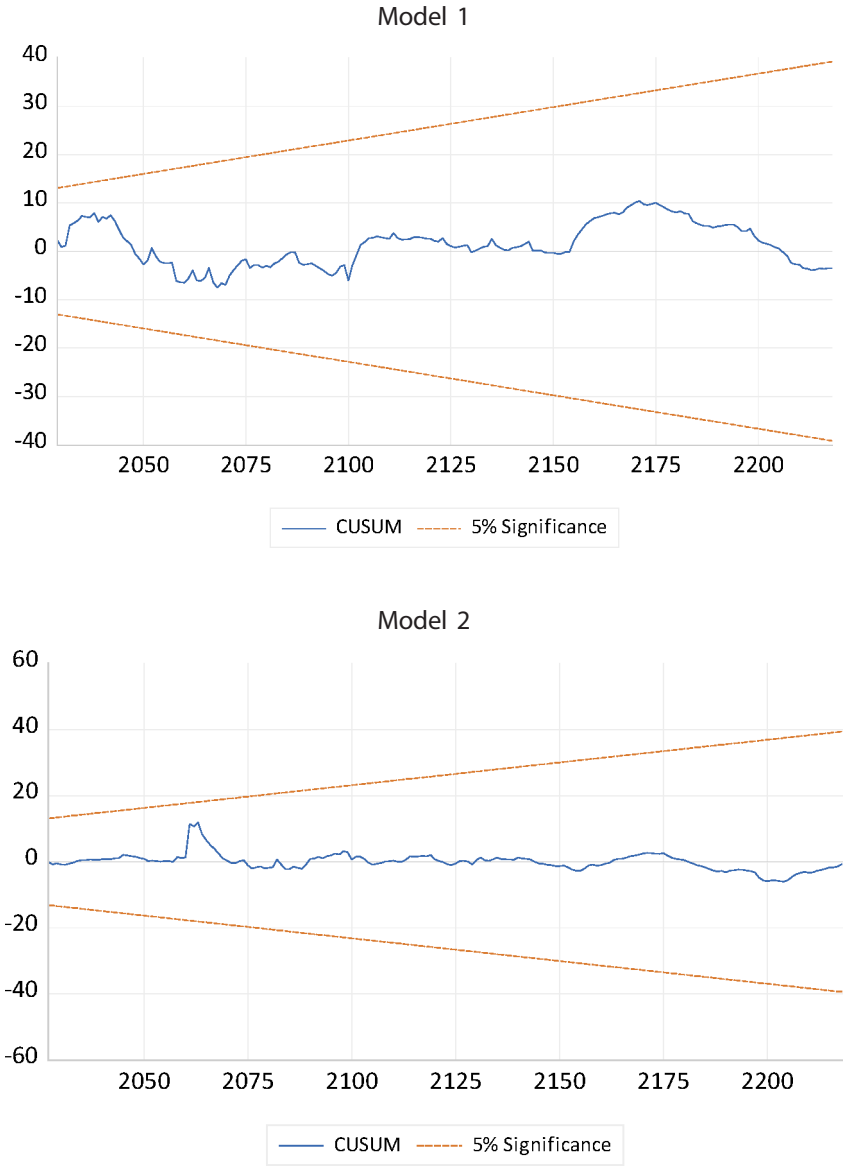
| Variable | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | Coeff | t-Stat | Coeff | t-Stat |
| C | 5.67 | 10.23*** | -9448.71 | -0.60 |
| NPL(-1) | -0.39 | -10.33*** | | |
| ZSCORE(-1) | | | -1.78 | -9.64*** |
| IBFin_P(-1) | -0.48 | -0.62 | 94056.65 | 3.25*** |
| IBFin_N(-1) | 0.50 | 1.14 | -15623.45 | -1.11 |
| IBSIZE_P(-1) | -2.50 | -3.17*** | -180860.50 | -5.34*** |
| IBSIZE_N(-1) | -0.72 | -1.04 | 2393.15 | 0.10 |
| CBFin_P(-1) | -2.98 | -3.85*** | 120194.70 | 4.32*** |
| CBFin_N(-1) | -2.39 | -1.26 | -171221.10 | -2.98*** |
| CBSIZE_P(-1) | 9.05 | 6.72*** | 10115.65 | 0.22 |
| CBSIZE_N(-1) | 13.25 | 4.33*** | 64850.84 | 0.75 |
| INT(-1) | -0.09 | -2.65** | -595.22 | -0.54 |
| INF(-1) | 0.07 | 5.01*** | 1603.86 | 3.18*** |

Note: ***,**,and * indicate levels of significance of 1%, 5% and 10% respectively.

In the long run, only CBFin_P has a negative and significant relationship with change in NPL. Furthermore, when other Islamic bank variables do not have a significant influence in Model 1, an increase in the negative and positive value of change in conventional bank size has a positive relationship with change in NPL. In Model 2, IBFin_P has a positive and significant relationship with change in the ZSCORE value, while an increase in Islamic bank size is in the opposite direction to the dependent variable. Moreover, an increase (or decrease) in conventional bank financing has a significant relationship with an increase (or decrease) in the level of bankruptcy risk.

However, an increase (or decrease) in conventional bank assets does not have a significant influence on the ZSCORE value. Based on this finding, in the long-run relationship, the results are in line with Ghassan & Guendouz (2019), who conclude that both types of banks have contribute to stability in the financial system. The level of stability in banking operations might be the same as that found by Uddin et al. (2017), which ultimately makes the same contribution to financial stability in the long run. This argument relies on the same business model and a banking approach that practices deposit-taking based on the dual banking system, even though the contracts used in funding and financing activities are different.

**Figure 1. CUSUM Stability Test**




When the number of coefficients is used to measure the impact, the degree of influence is stronger for conventional banks than Islamic ones. In addition, the impacts of conventional banks are generally much stronger on the NPL rate than that of their conventional counterparts. This finding is different from those of Rashid et al. (2017), who demonstrated that Islamic banks contribute much more to financial stability than conventional ones. Moreover, in the long run, the level of fragility of Islamic banks is possibly no better than that of conventional banks. This is discussed by Albaity et al. (2019), who emphasize that Islamic banks need to increase their capacity to generate profit and to address the systematic risk that might appear in the financial system.

The finding also particularly explains that an increase in Islamic bank size reduces any change in the NPL rate in the banking system. Olson & Zoubi (2017), Trad et al. (2017) in relation to the MENA region; Asutay & Othman (2020) in the case of


https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v22i1.26656

Malaysia; Hassan et al. (2019), Safiullah (2021), and Bilgin et al. (2021) argue that the greater stability of Islamic banks might be because if they are larger, this also supports a decrease of the NPL rate in the banking system. Therefore, the contribution of Islamic banks to financial stability, as argued by Rizvi et al. (2020), might be achieved when they are bigger and can finally perform well in income and risk diversification. In this case, as claimed by Hassan et al. (2019), Islamic banks might become well-functioning financial intermediaries with a better quality of financing.

Finally, to check the stability of the data, according to the CUSUM stability test suggested by Sriyana & Ge (2019), it can be seen that the data move within the red lines during the observation period at the level of 5% significance. This result indicates that the data are stable, and that the results of the study can be considered robust.

## CONCLUSION

The study aimed to examine the contribution of Islamic and conventional banks to financial stability from the perspective of an asymmetric approach. The study findings reveal that an asymmetric relationship exists regarding how the presence of Islamic and conventional banks affects the financial stability of the Indonesian banking system. Moreover, in the short-run relationship, Islamic banks make a lower contribution to financial stability than their conventional counterparts. However, in the long run, the contribution of Islamic banks is better than in the short run, even though conventional banks continue to have a more substantial influence on financial stability. Referring to the long-run period, Islamic banks still has a high possibility of contributing to financial stability as long as their size can be increased.

Therefore, as a policy implication, it is suggested that the financial authorities should be aware of the emerging asymmetric relationship between Islamic and conventional banks and financial stability. Several policies need to be developed to ensure financial stability and development of the banking industry. This could be achieved by promoting more prudent risk management; encouraging Islamic banks to expand in size, which may need regulation incentives; and finally, by ensuring that all financial policies increase the financial soundness of the banking system. Finally, the authors acknowledge that this study has limitations and room for improvement, particularly in the use of samples. Hence, it is suggested that the future research should increase the sample size by using cross-country analysis to capture the existence of an asymmetric relationship between the presence of Islamic and conventional banks and stability in the financial market.

## ACKNOWLEDGMENTS

We gratefully acknowledge the support from Direktorat Penelitian dan Pengabdian Masyarakat (DPPM) Universitas Islam Indonesia No:10/Dir/DPPM/70/Pen.Unggulan/III/2021 and for providing a research grant for the study.

## REFERENCES

Albaity, M., Mallek, R. S., & Noman, A. H. M. (2019). Competition and Bank Stability in the MENA Region: The Moderating Effect of Islamic Versus Conventional Banks. *Emerging Markets Review*, *38*, 310–325. https://doi.org/10.1016/j.ememar.2019.01.003.

Ali, M., Haroon, O., Rizvi, S. A. R., & Azmi, W. (2020). Stability versus fragility: New evidence from 84 banks. *Studies in Economics and Finance*, *38*(2), 441–453. https://doi.org/10.1108/SEF-04-2020-0109

Ashraf, D., Ramady, M., & Albinali, K. (2016). Financial Fragility of Banks, Ownership Structure and Income Diversification: Empirical Evidence from the GCC Region. *Research in International Business and Finance*, *38*, 56–68. https://doi.org/10.1016/j.ribaf.2016.03.010.

Asutay, M., & Othman, J. (2020). Alternative Measures for Predicting Financial Distress in the Case of Malaysian Islamic Banks: Assessing the Impact of Global Financial Crisis. *Journal of Islamic Accounting and Business Research*, *11*(9), 1827–1845. https://doi.org/10.1108/JIABR-12-2019-0223.

Atellu, A. R., Muriu, P., & Sule, O. (2021). Do Bank Regulations Matter for Financial Stability? Evidence from a Developing Economy. *Journal of Financial Regulation and Compliance*, *29*(5), 514–532. https://doi.org/10.1108/JFRC-12-2020-0114.

Aysan, A. F., & Ozturk, H. (2018). Does Islamic Banking offer a Natural Hedge for Business Cycles? Evidence from a Dual Banking System. *Journal of Financial Stability*, *36*, 22–38. https://doi.org/10.1016/j.jfs.2018.02.005.

Beck, T. (2015). Cross-Border Banking and Financial Deepening: The African Experience. *Journal of African Economies*, *24*(1), 32–45. https://doi.org/10.1093/jae/eju028.

Belouafi, A., Bourakba, C., & Saci, K. (2015). Islamic Finance and Financial Stability: A Review of the Literature. *JKAU: Islamic Economics*, *28*(2), 3–44.

Bilgin, M. H., Danisman, G. O., Demir, E., & Amine Tarazi. (2021). Economic Uncertainty and Bank Stability: Conventional vs Islamic Banking. *Journal of Financial Stability*, *56*, 100911.

Bitar, M., Naceur, S. Ben, Ayadi, R., & Walker, T. (2021). Basel Compliance and Financial Stability: Evidence from Islamic Banks. *Journal of Financial Services Research*, *60*(1), 81–134. https://doi.org/10.1007/s10693-020-00337-6.

Borio, C. (2011). Rediscovering the Macroeconomic Roots of Financial Stability Policy: Journey, Challenges, and a Way Forward. *BIS Working Paper No. 354.*

Bussiere, M. (2012). Exchange Rate Pass-through to Trade Prices: The Role of Nonlinearities and Asymmetries. *Oxford Bulletin of Economics and Statistics*, *75*, 731–758. https://doi.org/10.1111/j.1468-0084.2012.00711.

Chapra, M. (2011). The Global Financial Crisis: Some Suggestions for Reform of the Global Financial Architecture in the Light of Islamic Finance. *Thunderbird International Business Review, 53*(5), 565-579.

Chen, Y. (2022). Bank Interconnectedness and Financial Stability: The Role of Bank Capital. *Journal of Financial Stability*, *61*, 101019. https://doi.org/10.1016/j.jfs.2022.101019.


https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v22i1.26656

Crockett, A. (1996). The Theory and Practice of Financial Stability. *De Economist*, *144*, 531–568.

Demirgüç-Kunt, A., & Huizinga, H. (2010). Bank Activity and Funding Strategies: The Impact on Risk and Returns. *Journal of Financial Economics*, *98*(3), 626–650. https://doi.org/10.1016/j.jfineco.2010.06.004.

Dickey, D. A., & Fuller, W. A. (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root. *Journal of the American Statistical Association*, *74*(366), 427-431.

Elsayed, A. H., Naifar, N., & Nasreen, S. (2022). Financial Stability and Monetary Policy Reaction: Evidence from the GCC Countries. *Quarterly Review of Economics and Finance*, *87,* 396-405. https://doi.org/10.1016/j.qref.2022.03.003.

Ernst & Young (2016). *World Islamic Banking Competitiveness Report 2016.* Retrieved from https://ceif.iba.edu.pk/pdf/EY-orldIslamicBankingCompetitivenessReport2016.pdf.

Fakhrunnas, F., Nugrohowati, R. N. I., Haron, R., & Anto, M. B. H. (2022). The Determinants of Non-Performing Loans in the Indonesian Banking Industry: An Asymmetric Approach Before and During the Pandemic Crisis. *SAGE Open*, *12*(2), 1–13. https://doi.org/10.1177/21582440221102421.

Feghali, K., Mora, N., & Nassif, P. (2021). Financial Inclusion, Bank Market Structure, and Financial Stability: International Evidence. *Quarterly Review of Economics and Finance*, *80*, 236–257. https://doi.org/10.1016/j.qref.2021.01.007.

Ghassan, H. B., & Guendouz, A. A. (2019). Panel Modeling of Z-score: Evidence from Islamic and Conventional Saudi Banks. *International Journal of Islamic and Middle Eastern Finance and Management*, *12*(3), 448–468. https://doi.org/10.1108/IMEFM-04-2018-0122.

Gohar, R., Chang, B. H., Derindag, O. F., & Abro, Z. (2022). Nexus between Consumption, Income and Price Changes: Asymmetric Evidence from NARDL Mode. *Etikonomi*, *21*(2), 213–228. https://doi.org/10.15408/etk.v21i2.23339.

Hassan, M. K., Ijaz, M. S., & Khan, M. H. (2021). Bank Competition–Stability Relations in Pakistan: A Comparison between Islamic and Conventional Banks. *International Journal of Business and Society*, *22*(2), 532–545. https://doi.org/10.33736/ijbs.3733.2021.

Hassan, M. K., Khan, A., & Paltrinieri, A. (2019). Liquidity Risk, Credit Risk and Stability in Islamic and Conventional Banks. *Research in International Business and Finance, 48,* 17-31.. https://doi.org/10.1016/j.ribaf.2018.10.006.

Ijaz, S., Hassan, A., Tarazi, A., & Fraz, A. (2020). Linking Bank Competition, Financial Stability, and Economic Ggrowth. *Journal of Business Economics and Management*, *21*(1), 200–221. https://doi.org/10.3846/jbem.2020.11761

IMF (2017). Increasing Resilience to Large and Volatile Capital Flows: The Role of Macroprudential Policies. *IMF Working Paper.*

Jokipii, T., & Monnin, P. (2013). The Impact of Banking Sector Stability on the Real Economy. *Journal of International Money and Finance*, *32*, 1–16. https://doi.org/10.1016/j.jimonfin.2012.02.008.

Kabir, M. N., Worthington, A., & Gupta, R. (2015). Comparative Credit Risk in Islamic and Conventional Bank. *Pacific Basin Finance Journal*, *34*, 327–353. https://doi.org/10.1016/j.pacfin.2015.06.001.

Kasri, R. a., & Azzahra, C. (2020). View of Do Islamic Banks More Stable than Conventional Banks_ Evidence from Indonesia. *Jurnal Ekonomi & Ekonomi Islam*, *6*(2), 149–164.

Khattak, M. A., Hamid, B. A., Islam, M. U., & Ali, M. (2021). Competition, Diversification, and Stability in the Indonesian Banking System. *Bulletin of Monetary,Economics and Banking*, *Special Issue*, 59–88.

Kim, H., Batten, J. A., & Ryu, D. (2020). Financial Crisis, Bank Diversification, and Financial Stability: OECD Countries. *International Review of Economics and Finance*, *65*, 94–104. https://doi.org/10.1016/j.iref.2019.08.009.

Korbi, F., & Bougatef, K. (2016). Regulatory Capital and Stability of Islamic and Conventional Banks. *International Journal of Islamic and Middle Eastern Finance and Management*, *10*(3), 312–330. https://doi.org/10.1108/IMEFM-06-2016-0079.

Louhichi, A., Louati, S., & Boujelbene, Y. (2019). Market-Power, Stability and Risk-taking: An Analysis Surrounding the Riba-Free Banking. *Review of Accounting and Finance*, *18*(1), 2–24. https://doi.org/10.1108/RAF-07-2016-0114.

Mande, B. T., Salisu, A. A., Jimoh, A. N., Dosumu, F., & Adamu, G. H. (2020). Financial Stability and Income Growth in Emerging Markets. *Bulletin of Monetary Economics and Banking*, *23*(2), 201–220.

Mateev, M., Moudud-Ul-Huq, S., Sahyouni, A., & Tariq, M. U. (2022). Capital Regulation, Competition and Risk-taking: Policy Implications for Banking Sector Stability in the MENA Region. *Research in International Business and Finance*, *60*, 101579. https://doi.org/10.1016/j.ribaf.2021.101579.

Miah, M. D., Kabir, M. N., & Safiullah, M. (2020). Switching Costs in Islamic Banking: The Impact on Market Power and Financial Stability. *Journal of Behavioral and Experimental Finance*, *28*, 100409. https://doi.org/10.1016/j.jbef.2020.100409.

Mohamad, A. A. S., Mohamad, M. T., & Hashim, S. A. (2018). Islamic Versus Conventional Banking: Characteristics and Stability Analysis of the Malaysian Banking Sector. In Rahman, A. A. (Ed). *New Developments in Islamic Economics: Examples from Southeast Asia,* 197–214. https://doi.org/10.1108/978-1-78756-283-720181013.

Nair, A. R., & Anand, B. (2020). Monetary Policy and Financial Stability: Should Central Bank Lean against the Wind? *Central Bank Review*, *20*(3), 133–142. https://doi.org/10.1016/j.cbrev.2020.03.006.

Nosheen, & Rashid, A. (2021). Financial Soundness of Single versus Dual Banking System: Explaining the Role of Islamic Banks. *Portuguese Economic Journal*, *20*(1), 99–127. https://doi.org/10.1007/s10258-019-00171-2.

Olson, D., & Zoubi, T. (2017). Convergence in Bank Performance for Commercial and Islamic Banks During and After the Global Financial Crisis. *Quarterly Review of Economics and Finance*, *65*, 71–87. https://doi.org/10.1016/j.qref.2016.06.013.


https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v22i1.26656

Paltrinieri, A., Dreassi, A., Rossi, S., & Khan, A. (2021). Risk-Adjusted Profitability and Stability of Islamic and Conventional Banks: Does Revenue Diversification Matter? *Global Finance Journal*, *50*, 100517. https://doi.org/10.1016/j.gfj.2020.100517.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds Testing Approaches to the Analysis of Level Relationships. *Journal of Applied Econometrics*, *16*(3), 289–326. https://doi.org/10.1002/jae.616.

Phillips, P., & Perron, P. (1988). Testing for a Unit Root in Time Series Regression. *Biometrika, 75*(2), 335–346.

Raouf, H., & Ahmed, H. (2022). Risk Governance and Financial Stability: A Comparative Study of Conventional and Islamic Banks in the GCC. *Global Finance Journal*, *52*, 100599. https://doi.org/10.1016/j.gfj.2020.100599.

Rashid, A., Yousaf, S., & Khaleequzzaman, M. (2017). Does Islamic Banking Really Strengthen Financial Stability? Empirical Evidence from Pakistan. *International Journal of Islamic and Middle Eastern Finance and Management*, *10*(2), 130–148. https://doi.org/10.1108/IMEFM-11-2015-0137.

Rizvi, S. A. R., Narayan, P. K., Sakti, A., & Syarifuddin, F. (2020). Role of Islamic Banks in Indonesian Banking Industry: An Empirical Exploration. *Pacific Basin Finance Journal*, *62,* 101117. https://doi.org/10.1016/j.pacfin.2019.02.002.

Safiullah, M. (2021). Financial Stability Efficiency of Islamic and Conventional Banks. *Pacific Basin Finance Journal*, *68*, 101587. https://doi.org/10.1016/j.pacfin.2021.101587.

Santosa, P. W., Setianingrum, A., & Huda, N. (2020). The Relationship of Macro-risk Indicators, Internal Factors, and Risk Profile of Islamic Banking in Indonesia. *Etikonomi*, *19*(2), 221–236. https://doi.org/10.15408/etk.v19i2.15528.

Shin, Y., & Greenwood-Nimmo, M. (2014). Modelling Asymmetric Cointegration and Dynamic Multipliers in a Nonlinear ARDL Famework. In Sickels, R., & Horrace, W. (Eds.) *Festschrift in Honor of Peter Schmidt: Econometric Methods and Applications*. Berlin: Springer.

Sinha, A. (2011). Financial Sector Regulation for Growth, Equity and Stability. *Proceedings of a Conference, Bank for International Settlements.*

Sriyana, J., & Ge, J. J. (2019). Asymmetric Responses of Fiscal Policy to the Inflation Rate in Indonesia. *Economics Bulletin*, *39*(3), 1701–1713.

Trad, N., Rachdi, H., Hakimi, A., & Guesmi, K. (2017). Banking Stability in the MENA Region During the Global Financial Crisis and the European Sovereign Debt Debacle. *Journal of Risk Finance*, *18*(4), 381–397. https://doi.org/10.1108/JRF-10-2016-0134.

Trinh, V. Q., Elnahass, M., Salama, A., & Izzeldin, M. (2020). Board Busyness, Performance and Financial Stability: Does Bank Type Matter? *European Journal of Finance*, *26*(7–8), 774–801. https://doi.org/10.1080/1351847X.2019.1636842.

Uddin, A., Chowdhury, M. A. F., & Islam, M. N. (2017). Resiliency between Islamic and Conventional Banks in Bangladesh: Dynamic GMM and Quantile Regression Approaches. *International Journal of Islamic and Middle Eastern Finance and Management*, *34*(10), 400–418. https://doi.org/10.1108/mf.2008.00934jaa.001.

## Appendix 1. Results of the Short-run Relationship

| Variable | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | Coeff | t-Stat | Coeff | t-Stat |
| DNPL(-3) | 0.18 | 3.62*** | | |
| DNPL(-9) | 0.13 | 2.40** | | |
| DNPL(-10) | 0.18 | 3.34*** | | |
| DNPL(-12) | 0.28 | 5.16*** | | |
| DZSCORE(-1) | | | 0.53 | 3.26*** |
| DZSCORE(-2) | | | 0.51 | 3.57*** |
| DZSCORE(-3) | | | 0.39 | 3.69*** |
| DZSCORE(-4) | | | 0.12 | 1.91* |
| DZSCORE(-12) | | | -0.12 | -2.99*** |
| DIBFin_P | 4.72 | 3.57*** | | |
| DIBFin_P(-1) | | | -91580.09 | -1.71* |
| DIBFin_P(-2) | | | -116394.70 | -2.13** |
| DIBFin_P(-3) | 3.71 | 2.75** | -91489.19 | -1.80* |
| DIBFin_P(-4) | 7.04 | 5.29*** | | |
| DIBFin_P(-5) | 2.80 | 2.17** | -124542.60 | -2.51** |
| DIBFin_P(-6) | | | -210643.80 | -4.15*** |
| DIBFin_N | -1.48 | -2.13** | | |
| DIBFin_N(-2) | 1.08 | 1.76* | 36615.04 | 1.62 |
| DIBFin_N(-3) | | | 68685.06 | 2.96*** |
| DIBFin_N(-5) | | | 62688.37 | 2.68** |
| DIBFin_N(-9) | 2.51 | 3.96*** | | |
| DIBFin_N(-10) | 1.06 | 1.70* | | |
| DIBFin_N(-11) | 1.09 | 1.71* | | |
| DIBFin_N(-12) | 1.33 | 1.98* | | |
| DIBSIZE_P | | | -96709.39 | -2.70** |
| DIBSIZE_P(-1) | 2.27 | 2.09** | 138648.10 | 3.10*** |
| DIBSIZE_P(-2) | | | 200329.90 | 4.39*** |
| DIBSIZE_P(-3) | | | 97961.64 | 2.08** |
| DIBSIZE_P(-4) | | | 134122.80 | 3.45*** |
| DIBSIZE_P(-5) | | | 158348.30 | 3.81*** |
| DIBSIZE_P(-6) | -3.03 | -3.28*** | 256820.40 | 5.98*** |
| DIBSIZE_P(-7) | -3.75 | -3.58*** | 83841.75 | 2.36** |
| DIBSIZE_P(-8) | | | 103596.50 | 4.01*** |
| DIBSIZE_P(-9) | | | 145569.80 | 5.09*** |
| DIBSIZE_P(-11) | 3.42 | 4.84*** | | |
| DIBSIZE_P(-12) | 1.17 | 1.58*8 | | |
| DIBSIZE_N | 7.32 | 4.39*** | 104116.00 | 1.92** |
| DIBSIZE_N(-1) | 3.69 | 2.24** | -106472.80 | -2.31*** |
| DIBSIZE_N(-2) | | | -132131.00 | -2.17** |
| DIBSIZE_N(-5) | | | -145216.00 | -2.72** |
| DIBSIZE_N(-7) | 7.04 | 5.90*** | | |


https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v22i1.26656

| Variable | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | Coeff | t-Stat | Coeff | t-Stat |
| DIBSIZE_N(-8) | 5.24 | 4.28*** | | |
| DIBSIZE_N(-9) | 4.75 | 4.70*** | 81284.84 | 1.99* |
| DIBSIZE_N(-11) | -4.59 | -4.19*** | -77263.48 | -2.12** |
| DIBSIZE_N(-12) | -3.72 | -3.24*** | | |
| DCBFin_P | -11.62 | -5.13*** | 265371.20 | 2.85** |
| DCBFin_P(-1) | -6.43 | -2.67** | -195499.30 | -2.03** |
| DCBFin_P(-4) | | | 190643.30 | 2.05** |
| DCBFin_P(-8) | -8.91 | -3.87*** | | |
| DCBFin_P(-9) | | | -204177.80 | -2.63** |
| DCBFin_P(-10) | -4.08 | -1.93* | -272387.10 | -2.60** |
| DCBFin_P(-11) | -6.85 | -3.27** | | |
| DCBFin_N(-1) | 9.21 | 1.92* | | |
| DCBFin_N(-2) | | | -403717.00 | -2.34** |
| DCBFin_N(-3) | | | 570516.60 | 3.68*** |
| DCBFin_N(-5) | -10.89 | -2.73** | 312385.50 | 2.24** |
| DCBFin_N(-6) | -13.14 | -2.84** | | |
| DCBFin_N(-8) | 20.45 | 4.26*** | | |
| DCBFin_N(-11) | | | 334416.60 | 2.02* |
| DCBSIZE_P | | | 233326.50 | 2.80** |
| DCBSIZE_P(-1) | | | 395530.40 | 4.36*** |
| DCBSIZE_P(-2) | -9.74 | -4.59*** | | |
| DCBSIZE_P(-3) | -12.48 | -6.45*** | | |
| DCBSIZE_P(-4) | | | 363502.90 | 4.07*** |
| DCBSIZE_P(-8) | | | 145243.40 | 2.35** |
| DCBSIZE_P(-10) | | | 253815.90 | 2.90*** |
| DCBSIZE_P(-11) | | | 158638.10 | 2.45** |
| DCBSIZE_P(-12) | -4.10 | -2.30** | | |
| DCBSIZE_N | -24.76 | -5.46*** | | |
| DCBSIZE_N(-1) | -29.46 | -5.17*** | | |
| DCBSIZE_N(-2) | -18.51 | -4.46*** | 523956.10 | 2.95*** |
| DCBSIZE_N(-3) | -7.53 | -1.86* | | |
| DCBSIZE_N(-4) | -11.76 | -3.15*** | | |
| DCBSIZE_N(-6) | 7.18 | 1.81* | | |
| DCBSIZE_N(-7) | -15.47 | -3.99*** | | |
| DCBSIZE_N(-8) | -16.92 | -3.86*** | | |
| DCBSIZE_N(-9) | | | -501171.40 | -3.50*** |
| DCBSIZE_N(-10) | -8.81 | -2.55** | | |
| DCBSIZE_N(-12) | 21.46 | 5.14*** | | |
| DINT(-2) | | | -6849.19 | -2.09** |
| DINT(-3) | 0.18 | 1.84* | | |
| DINT(-4) | 0.26 | 2.81** | | |
| DINT(-6) | -0.22 | -2.40** | | |

| Variable | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | **Coeff** | **t-Stat** | **Coeff** | **t-Stat** |
| DINT(-7) | | | 9049.64 | 2.57** |
| DINT(-8) | -0.19 | -2.01* | | |
| DINT(-11) | 0.30 | 3.07*** | | |
| DINF | 0.03 | 1.79* | | |
| DINF(-2) | | | -1143.75 | -1.81* |
| DINF(-8) | | | -1966.54 | -2.99*** |
| DINT(-10) | 0.27 | 2.65** | | |
| DINF(-11) | -0.07 | -3.76*** | -1820.92 | -3.19*** |
| R-squared | 0.78 | | 0.83 | |
| Adjusted R-squared | 0.68 | | 0.75 | |
| F-statistic | 7.29*** | | 10.36*** | |
| Durbin-Watson stat | 1.93 | | 1.96 | |
| Cointegration Test | 17.13*** | | 13.21*** | |
| F-stat Asymmetric | 43.94*** | | 10.66*** | |
| Long-Run Positive Asymmetric | 12.11*** | | 19.32*** | |
| Long-Run Negative Asymmetric | 6.63*** | | 3.54** | |

Note: ***,** and * indicate levels of significance of 1%, 5% and 10% respectively.


https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v22i1.26656