Impact of Investment Deposit and Profit-Loss Sharing Financing on Islamic Bank Stability

Titi Dewi Warninda

{titi.dewi@uinjkt.ac.id}

Universitas Islam Negeri Syarif Hidayatullah Jakarta

Abstract. Unlike the conventional banks, Islamic banks have a Profit-Loss Sharing system in the deposit fund, which is Investment Deposit, based on Mudarabah contract. Some literature argues that the profit-loss sharing system in Islamic banks, especially in the form of Investment Deposits, has an important role in maintaining bank financial stability. Meanwhile, another strand of literature states that investment deposits are treated in a similar way to fixed return deposits, where banking risks are entirely borne by the bank's capital. This study aims to determine empirically the impact of Investment Deposits on the stability of Islamic banks. It also analyses whether profit-loss sharing financing influences the role of Investment Deposit in strengthening Islamic banks' stability. Using the data of Islamic banks in Indonesia, this study also analyzes whether the impact is robust during financial crisis periods. The results of this study indicate that Investment Deposit has a non-linear reverse U-shaped impact on the stability of Islamic bank. The results also show that the profit-loss sharing financing and the global financial crisis have no effect on the impact of Investment Deposit on Islamic bank stability.

Keywords: Islamic bank; Profit-Loss Sharing; Investment Deposit

1 Introduction

The financial system is perceived to be stable if economic mechanisms to assess, allocate, and manage financial risks (such as credit, liquidity, counterparty, and market risks) work well enough to contribute to performance. In other words, financial stability is the financial system's ability to facilitate and improve economic processes, manage risks, and reduce shocks (Schinasi, 2004).

The global financial crisis has led to the failure of some conventional banks and led to the increase of interest in the business model of Islamic banks (Bourkhis & Nabi, 2013). Some researchers argue that Islamic banks may become an alternative model of conventional systems (Ouerghi, 2014). There are opinions that the theoretical model in Islamic banks can fill the failure of conventional banks in maintaining stability (Ali, 2007; Chapra, 2011; Čihák & Hesse, 2010). This is because Islamic banks have different characteristics from conventional banks.

The main characteristic that distinguishes Islamic banks from conventional banks is the profit-loss sharing (PLS) system (Hamza & Saadaoui, 2013). On the asset side, the PLS system is manifested in Mudarabah and Musharakah contracts (Dar & Presley, 2000). Both Mudarabah and Musharakah contracts drive Islamic banks to act as the provider of funds (*Rab al-mal*) that distribute funds to borrowers or entrepreneurs (*Mudarib*). Theoretically, since Islamic banks provide the funds, they are entitled to share the profits and losses incurred by *Mudarib* (Abedifar et al., 2013).

On the liability side, Islamic banks normally use the PLS system in the form of an Investment Deposit which is a deposit using Mudarabah contracts. Mudarabah contracts on the liability side drive the bank to act as an entrepreneur (*Mudarib*) that manages deposit accounts of customers. In return, the customers (owner of the fund) will receive profit (loss) sharing that is proportional to the amount of fund invested in the bank.

In the form of partnership structure, Investment Deposits give no guarantee on capital preservation and fixed income. Therefore, it becomes a risky product as the underlying contract is based on a profit-loss sharing system, which is profits are acquired only when the investments are profitable, while capital can be depreciated or even diminished if the investment ends in losses (Rosly & Zaini, 2008).

Some researchers claim that Islamic banks are more stable than conventional banks because of the Islamic finance characteristics. In Islamic finance, there is always a close relationship between financial flow and productivity which will protect Islamic banks from potential risks arising from speculative financial activities and excessive lending that are part of the root cause of the global financial crisis (Ahmed, 2010). Islamic finance does not allow interest payments (riba), speculations, and illicit activities. Islamic finance is also based on profit and loss sharing on the asset and liability sides, and it requires that all transactions are based on real economic transactions involving tangible assets (Beck, Demirgüç-Kunt, & Merrouche, 2013).

In profit-loss sharing system financing, the return of financial assets is determined by real sector return. So, in a growing economy, Islamic banks will always get a net positive return. Islamic banks will participate directly in production and trade through profit-loss sharing system financing (Alaro & I., 2011).

Some researchers argue that the profit-loss sharing (PLS) system in Islamic banks has an important role in maintaining bank financial stability (Ali, 2007; Bourkhis & Nabi, 2013; Čihák & Hesse, 2010; Zia & Ahmed, 2014). As an intermediary institution between the capital surplus and the capital deficit, Islamic bank delivers the PLS system deposit (Investment Deposit) to PLS system financing (Mudarabah and Musharakah financing). Neither the principal nor the rate of return of the Investment Deposit is guaranteed, and the profit and loss on the asset side will be distributed to the liability side. So, if the asset value decreases (increases), the liability value will also decrease (increase). PLS systems (especially on the liability side) will allow Islamic banks to transfer credit risks from their asset side to the liability side (Investment Deposit). Hence, the PLS system will allow the bank to maintain its net worth under difficult economic situations. Meanwhile, Rosly and Zaini (2008) argue that Investment Deposits have been treated in a similar way to fixed deposits, where banking risks are entirely borne by the bank's capital.

Given the different characteristics between Islamic and conventional banks, some researchers have researched whether there is a difference in financial stability between Islamic and conventional banks, especially in the period around the global financial crisis. The results of Bourkhis & Nabi (2013); Mirza, Rahat, & Reddy (2015); Rahim & Zakaria (2013); Shahid & Abbas (2012), show that the stability of Islamic banks is higher than that of conventional banks. Čihák & Hesse (2010) and Okumus & Artar (2012) found that small Islamic banks tend to be more stable than small commercial banks, and large commercial banks tend to be more stable than large Islamic banks. In contrast, Mollah, Hassan, Al Farooque, & Mobarek (2017) state that conventional banks are more stable than Islamic banks. Meanwhile, Altaee, Talo, & Adam (2013) and Abedifar et al. (2013) concluded that there is no difference between Islamic and conventional banks' stability.

Some studies analyze the determinants of Islamic bank stability. Ibrahim & Rizvi (2017) study about the influence of bank size on Islamic bank stability from 13 countries and the nonlinearity of the influence. The influence of bank's market share was studied by Mirzaei (2011) in Middle Eastern countries, and Okumus & Artar (2012) in the GCC countries. Rahman, Ibrahim, & Meera (2009) investigate the influence of lending structure in the real estate sector on Islamic bank stability in Malaysia. Previous research also finds some variables that influence Islamic bank stability, among others are bank's capital, efficiency, and liquidity (Mirzaei, 2011), bank's income diversity (Čihák & Hesse, 2010), GDP growth and inflation rate (Rahim & Zakaria, 2013), and exchange rate (Čihák & Hesse, 2010).

Based on literature reviews, this research attempts to contribute to the literature by answering three questions empirically. Firstly, whether Investment Deposit strengthens Islamic bank stability (Ali, 2007; Bourkhis & Nabi, 2013; Čihák & Hesse, 2010; Zia & Ahmed, 2014). Secondly, whether the financial crisis periods influence the role of Investment Deposit in strengthening Islamic banks' stability. Thirdly, for further investigation, whether profit-loss sharing financing influences the role of Investment Deposit in strengthening Islamic banks' stability.

The differences of this research from previous research are as follows: it analyses empirically the linear and non-linear impact of the liability side of the PLS system (Investment Deposit) on Islamic bank stability and whether the impact is robust in the financial crisis period. For further analysis, it also investigates whether PLS financing will make the influence of Investment Deposit on Islamic bank stability becomes higher. The results of this research are expected to provide more comprehensive evidence on the impact of the PLS system on Islamic bank stability.

2 Methods

Indonesia is a country with the largest Muslim population in the world (Toro & Dewi, 2014) so that its existence in the development of Islamic finance is very important. Therefore, this study uses data from Islamic banks in Indonesia. The sample consists of Islamic banks that provide information on Investment Deposit data. This study uses unbalanced panel data from Islamic bank financial reports for the period of 2006 to 2018. The data was collected from each of the Islamic banks' websites and the World Bank's website.

This research employs Eq. (1) and Eq. (2) to test the impact of Investment Deposits and the Global Financial Crisis on Islamic bank stability. Each equation is estimated using Random-Effect panel data regression with robust standard error.

$$Z-score_{i,t} = \beta_0 + \beta_1 INV_{i,t} + \sum \gamma_n CONTROL + e_{i,t} \tag{1}$$

$$Z-score_{i,t} = \beta_0 + \beta_1 INV_{i,t} + \beta_2 CRISIS_{i,t} + \sum \gamma_n CONTROL + e_{i,t} \tag{2}$$

To strengthen the analysis, this research adds a non-linear effect of Investment Deposit and profit-loss sharing (PLS) financing impact on Islamic bank stability. The equations are as follows:

$$Z-score_{i,t} = \beta_0 + \beta_1 INV_{i,t} + \beta_2 INV_{i,t}^2 + \sum \gamma_n CONTROL + e_{i,t} \tag{3}$$

$$Z-score_{i,t} = \beta_0 + \beta_1 INV_{i,t} + \beta_2 INV_{i,t}^2 + \beta_3 PLS_{i,t} + \sum \gamma_n CONTROL + e_{i,t} \tag{4}$$

The bank stability indicator is the Z-score (Kohler, 2015), which is defined as:

$$Z-score_{it} = \frac{ROA_{it} + CAR_{it}}{SDROA_{ip}} \tag{5}$$

where ROA is the return-on-assets and CAR is the ratio of total equity over total assets of bank i in year t. SDROA denotes each bank's standard deviation of the ROA. It is calculated over the whole sample period p, which is 3-year rolling windows of ROA.

Z-score is a log Z-score, measures bank stability. It is inversely related to the probability of a bank's insolvency, i.e., the probability that the value of its assets becomes lower than the value of the debt (Čihák & Hesse, 2010). The higher the Z-score indicates a lower probability of bank insolvency risk and greater bank stability (Chiaramonte, Croci, & Poli, 2015).

According to Čihák & Hesse (2010), Z-score is an objective measure of financial institution soundness. This is because Z-score focuses on the risk of insolvency which is the risk that the bank runs out of capital. Z-score can be applied to banks that use a high risk/high return strategy or a low risk/low return strategy, where both strategies produce the same risk-adjusted return. If an institution chooses to have a lower risk-adjusted return, the institution can still have the same or higher Z-score value if it has higher capitalization. Hence, Z-score provides an objective measure of soundness (Čihák & Hesse, 2010).

INV is Investment Deposit over total assets. CRISIS is a crisis dummy to represent the possible influence of the Global Financial Crisis. The dummy equals 1 for the financial statement years

of 2008 and 2009 (Louhichi & Boujelbene, 2016). PLS is the ratio of PLS financing to total financing.

CONTROL represents control variables which consist of bank-level and country-level control variables. Bank-level control variables are: (1) FDR is Financing to Deposit Ratio (Atoi, 2018); (2) LLR is loan loss reserves to gross total financing (Messai & Jouini, 2013). Country-level control variables are: (1) GDP is GDP growth (Chaibi & Ftiti, 2015); (2) RIR is Real Interest Rate (Köhler, 2015); (3) INF is Inflation rate (Mirzaei, 2011).

3 Result and Discussions

Table 1 shows the descriptive statistics of this research. It can be seen in Table 1 that the average level of Islamic bank stability (Z-SCORE) is 1.487542. It means that most Islamic banks have good stability. The highest level of stability is 2.7968 and the lowest level is -0.5728. While the Z-score standard deviation value is 0.5989797. The negative value of the minimum value of stability means that some Islamic banks have a high probability of bank insolvency risk.

Table 1. Descriptive Statistics

	Mean	Std. Dev.	Min	Max
Z-SCORE	1.487542	0.5989797	-0.5728	2.7968
INV	0.7123823	0.058065	0.5537	0.8924
LLR	0.0226177	0.0232003	0.0039	0.1938
FDR	0.8935076	0.0812117	0.7187	1.2388
INF	0.0490987	0.0139902	0.032	0.1023
GDP	0.0533468	0.0049319	0.0463	0.0622
RIR	0.0641987	0.0274674	-0.0385	0.0922
PLS	0.3810494	0.2223519	0.0058	0.9252

It can be seen in Table 1 that the average proportion of Investment Deposit (INV) is 71.2%. The lowest and highest proportion of Investment Deposits are 55.37% and 89.24% respectively. The standard deviation value is 0.058065. The high value of the average Investment Deposit proportion indicates that most deposits in Islamic banks are in the form of Investment Deposit,

which is using a profit-loss sharing agreement. The lowest value of the Investment Deposit proportion shows that all Islamic banks have an Investment Deposit proportion of more than 50%.

Meanwhile, for the bank-level control variables, the average percentage of Loan Loss Reserves (LLR) is 2.26%, and it ranges from 0.39% to 19.38%. The average proportion of Financing to Deposit Ratio (FDR) is 89.35%, and it varies from 71.87% to 123.88%.

The average value of the country-level control variable which is the rate of Inflation (INF) is 4.9%, and it ranges between 3.2% and 10.23%. The average growth of GDP is 5.3% and it ranges from 4.6% to 6.2%. The Real Interest Rate (RIR) has an average percentage of 6.4% and it varies from -3.8% to 9.2%.

Table 1 also shows that the average proportion of profit-loss sharing financing (PLS) is 38.1%. The minimum and maximum proportions are 0.58% and 92.5% respectively. The low value of the average PLS financing proportion indicates that most of the financing in Islamic banks in Indonesia is in the form of fixed-return financing. It is in accordance with the study by Warninda, Rokhim, & Ekaputra (2019) that Islamic banks in Southeast Asia, South Asia, and Middle Eastern disbursed a low proportion of PLS financing.

The results in Table 1 show the imbalance between the proportion of PLS contracts on the asset side and the liability side of Islamic banks. The proportion of PLS contracts on the liability side is high, but Islamic banks tend to have a low proportion of PLS contracts on the asset side. Return on the asset side tends to be in the form of fixed-rate return while on the liability side is in the form of profit-loss sharing.

Table 2 shows the correlation matrix of the variables used in this research. The correlations between the independent variables are smaller than 80%. It indicates no multicollinearity problem in this research.

Table 2. Correlation Matrix

	Z-SCORE	INV	LLR	FDR	INF	GDP	RIR	PLS
Z-SCORE	1.000							
INV	-0.270	1.000						
LLR	-0.444	0.318	1.000					
FDR	-0.125	0.001	-0.111	1.000				
INF	0.156	-0.149	-0.196	0.131	1.000			
GDP	0.192	0.102	-0.200	0.270	0.104	1.000		

RIR	0.074	0.015	0.028	0.111	-0.571	-0.272	1.000	
PLS	-0.076	0.259	0.052	0.018	-0.236	-0.146	0.118	1.000

Table 3 shows the regression results of Investment Deposit impact on Islamic bank stability. Based on Equation (1), the results In Table 3 column (1) show that Investment Deposit has a negative and significant effect on Islamic bank stability. The negative effect of the Investment Deposit shows that the higher the proportion of deposits with a Mudarabah contract, the lower the stability of Islamic banks. This result does not support the strand of literature that argues that the profit-loss sharing (PLS) system in Islamic banks has an important role in maintaining bank financial stability (Ali, 2007; Bourkhis & Nabi, 2013; Čihák & Hesse, 2010; Zia & Ahmed, 2014). Meanwhile, the results of this study tend to support the argument of Rosly & Zaini (2008) that Investment Deposit does not really support the reduction of Islamic bank risk.

Based on Equation (2), Table 3 column (2) adds the global financial crisis (CRI) variable to the equation. The results show that the global financial crisis (CRI) does not affect Islamic bank stability. This result supports the study of Warninda, Ekaputra, & Rokhim (2019) where the global financial crisis has no impact on Islamic bank non-performing financing. Meanwhile, the results in column (2) support the results in column (1) that Investment Deposit has a negative and significant effect on Islamic bank stability. The impact of Investment Deposit on Islamic bank stability still robust in the periods of the global financial crisis.

Table 3. Regression Results of Investment Deposit and Global Financial Crisis Impacts on Islamic Banks Stability

	Random-Effect	
	(1)	(2)
	Coefficient (std.error)	Coefficient (std.error)
Constant	2.558599	2.671076
	(1.18996)**	(1.24272)**
INV	-3.179025	-3.233228
	(1.230329)***	(1.192152)***
LLR	-6.457987	-6.338411
	(2.386206)***	(2.396934)***
FDR	-1.253113	-1.13546

	(0.2540056)***	(0.2632442)***
INF	10.66823	10.44586
	(5.761223)*	(5.77875)*
GDP	27.64809	24.99057
	(11.65692)**	(15.26367)
RIR	6.899323	6.462559
	(3.188575)**	(3.614144)*
CRI		-.0889068
		(0.2003449)
R-sq	0.3179	0.3103
No. of Obs. (bank-year)	79	79

Note: * significant at 10%; ** significant at 5%; *** significant at 1%

Meanwhile, for the control variables, the results in Table 3 show that all bank-level and country-level control variables have impacts on Islamic bank stability. Loan Loss Reserves (LLR) and Financing to Deposit Ratio (FDR) have a negative influence on Islamic bank stability. Whereas, Inflation rate, GDP growth, and Real Interest Rate have a positive influence on Islamic bank risk. The results in column (2) also support the results in column (1) except for the influence of GDP growth that shows no influence in column (2).

Based on Equation (3), in Table 4 column (1), to strengthen the analysis, a non-linear influence of Investment Deposit is added, to see if there is a nonlinear effect of Investment Deposit on Islamic bank stability. Meanwhile, based on Equation (4), in Table 4 column (2), profit-loss sharing (PLS) financing is added to see whether it can strengthen the impact of Invetment Deposit on Islamic bank stability.

The results in Table 4 column (1) indicate that Investment Deposit has a significant linear and non-linear effect on Islamic bank stability. It shows that Investment Deposit has a reverse U-shaped non-linear impact on Islamic bank stability. The reverse U-shaped non-linear impact of Investment Deposit indicates that there might be an optimum proportion of Investment Deposit that will maximize Islamic bank stability. The reverse U-shaped non-linear impact shows that an increase in the proportion of deposits with a Mudarabah contract (Investment Deposit) will increase Islamic bank stability, but after a certain maximum point, unfortunately, the increasing proportion of Investment Deposit will reduce Islamic bank stability.

The approximate Investment Deposit optimum proportion can be calculated using the partial derivative of Z-score with respect to INV and set it equals to zero. Based on the

estimated coefficients of Equation (3) as presented in Table 4 column (1), Islamic bank stability is optimum when the Investment Deposit proportion is around 65.37% of the total deposits. Based on the estimated coefficients of Equation (4) as presented in Table 4 column (2), the optimum of Islamic bank stability is when the proportion of Investment Deposit is around 64.35% of the total deposits. Then, the approximate Investment Deposit optimum proportion is around 65%. This approximate optimum proportion is quite high, but it is lower than the average proportion of the Investment Deposit of Islamic banks which is 71.2% as presented in Table 1.

Table 4. Regression Results of Non-linear Impacts of Investment Deposit and PLS Financing on Islamic Banks Stability

	Random-Effect	
	(1)	(2)
	Coefficient	Coefficient
	(std.error)	(std error)
Constant	-9.21248	-8.431734
	(3.18405)***	(3.015759)***
INV	30.98155	28.30096
	(10.24366)***	(9.779901)***
INV^2	-23.69626	-21.99068
	(7.181943)***	(6.824694)***
PLS		0.1367687
		(0.4651104)
LLR	-5.672806	-5.408848
	(1.248866)***	(1.336401)***
FDR	-1.992337	-1.798186
	(0.2776834)***	(0.2506817)***
INF	11.82557	11.76963
	(5.631873)**	(5.57711)**
GDP	30.42914	30.83017
	(9.735531)***	(10.81695)***
RIR	6.672066	6.70379

	(2.685363)**	(2.708078)**
R-sq	0.4031	0.3996
No. of Obs. (bank-year)	79	79

Note: * significant at 10%; ** significant at 5%; *** significant at 1%

Meanwhile, in Table 4 column (2), the regression results show that the profit-loss sharing (PLS) financing does not have a significant effect on the stability of Islamic banks. It can be due to the small proportion of PLS financing distributed by Islamic banks, then it has no significant impact. Column (2) in Table 4 also shows that Investment Deposit has a significant linear and non-linear influence on the stability of Islamic banks, which is a reverse U-shaped non-linear influence. Therefore, this result strengthens the results in column (1).

The decreasing of Islamic bank stability after a certain optimum point of Investment Deposit proportion is not a good sign because most of the Islamic banks have a high proportion of Investment Deposit and the PLS system is the system that distinguished Islamic bank from a conventional bank. It needs more investigation why after a certain maximum point, an increasing proportion of Investment Deposits will lower Islamic bank stability. It can be caused by the Investment Deposit that has been treated in a similar way to fixed deposits, where banking risks are entirely borne by the bank's capital (Rosly and Zaini, 2008). It may also be caused by the imbalance of the proportion of PLS contracts in the asset side and the liability side of Islamic banks. Islamic banks have a high proportion of PLS contracts on the liability side but tend to have a low proportion of PLS contracts on the asset side. Then, Islamic banks can not maximize the advantages of the PLS system.

4 Conclusion

Based on the results and discussions, several conclusions can be drawn, Investment Deposit has a linear and non-linear effect on Islamic bank stability, which is a reverse U-shaped non-linear impact. It means that increasing the proportion of Investment Deposits will increase Islamic bank stability, but after a certain maximum point, it will decrease the stability of Islamic banks. Based on the result of this study, the approximate optimum Investment Deposit proportion is 65%. This research also shows that the global financial crisis and PLS financing have no influence on the effect of Investment Deposit on Islamic bank stability.

Based on this research, the greater the proportion of Investment Deposits, at some point will reduce the stability of Islamic banks. Even though as we know, most of the deposits in Islamic banks are in the form of Investment Deposits or profit-loss sharing agreements that comply with sharia law. Further research is needed to analyze how the Islamic bank should manage the Investment Deposit so that a greater Investment Deposit will not reduce Islamic bank stability.

References

[1] Abedifar, P., Molyneux, P., & Tarazi, A.: Risk in Islamic Banking. Review of Finance. Vol. 17(6), pp. 2035–2096 (2013)

[2] Ahmed, A.: Global Financial Crisis: an Islamic Finance Perspective. International Journal of Islamic and Middle Eastern Finance and Management. Vol. 3(4), pp. 306–320 (2010)

[3] Alaro, A.-R. a., & I., M. H.: Financial Engineering and Financial Stability: The Role of Islamic Financial System. Journal of Islamic Economics, Banking and Finance. Vol. 7(1), pp. 25–38 (2011)

[4] Ali, S. S.: Financial Distress and Bank Failure: Lessons From Closure Of Ihlas Finans in Turkey. Islamic Economic Studies. Vol. 14(1–2), pp. 1–52 (2007)

[5] Altaee, H. H., Talo, I. M. A., & Adam, M. H.: Testing the Financial Stability of Banks in GCC Countries: Pre and Post Financial Crisis. International Journal of Business and Social Research. Vol. 3(4), pp. 93–105 (2013)

[6] Atoi, N. V.: Non-performing Loan and Its Effects on Banking Stability : Evidence from National and International Licensed Banks in Nigeria. CBN Journal of Applied Statistics. Vol. 9(2), pp. 43–74 (2018)

[7] Beck, T., Demirgüç-Kunt, A., & Merrouche, O.: Islamic vs. Conventional Banking: Business Model, Efficiency and Stability. Journal of Banking and Finance. Vol. 37(2), pp. 433–447 (2013)

[8] Bourkhis, K., & Nabi, M. S.: Islamic and Conventional Banks' Soundness during The 2007-2008 Financial Crisis. Review of Financial Economics. Vol. 22(2), pp. 68–77 (2013)

[9] Chaibi, H., & Ftiti, Z.: Credit Risk Determinants: Evidence from a Cross-Country Study. Research in International Business and Finance. Vol. 33, pp. 1–16 (2015)

[10] Chapra, M. U.: The Global Financial Crisis : Can Islamic Finance Help Minimize the Severity and Frequency of Such a Crisis in the Future ? Islamic Economics and Finance. Vol. 10(4), pp. 135–142 (2011)

[11] Chiaramonte, L., Croci, E., & Poli, F.: Should We Trust the Z-Score? Evidence from the European Banking Industry. Global Finance Journal. Vol. 28, pp. 111–131 (2015)

[12] Cihak, M., & Hesse, H.: Islamic Banks and Financial Stability in the GCC: An Empirical Analysis. Istanbul Ticaret Universitesi Sosyal Dergisi Yil, pp. 147–164 (2008)

[13] Čihák, M., & Hesse, H.: Islamic Banks and Financial Stability: An Empirical Analysis. Journal of Financial Services Research. Vol. 38(2), pp. 95–113 (2010)

[14] Dar, H. A., & Presley, J. R.: Lack of Profit Loss Sharing in Islamic Banking : Management and Control Imbalances. International Journal of Islamic Financial Services. Vol. 2(00), pp. 9–12 (2000)

[15] Hamza, H., & Saadaoui, Z.: Investment Deposits, Risk-Taking and Capital Decisions in Islamic Banks. Studies in Economics and Finance. Vol. 30(3), pp. 244–265 (2013)

[16] Ibrahim, M. H., & Rizvi, S. A. R.: Do We Need Bigger Islamic Banks? An Assessment of Bank Stability. Journal of Multinational Financial Management. Vol. 40, pp. 77–91 (2017)

[17] Köhler, M.: Which Banks are More Risky ? The Impact of Business Models on Bank Stability. Journal of Financial Stability. Vol. 16, pp. 195–197 (2015)

[18] Louhichi, A., & Boujelbene, Y.: Credit Risk, Managerial Behaviour and Macroeconomic Equilibrium within Dual Banking Systems: Interest-Free vs. Interest-Based Banking Industries. Research in International Business and Finance. Vol. 38, pp. 104–121 (2016)

[19] Messai, A. S., & Jouini, F.: Micro and Macro Determinants of Non-performing Loans. International Journal of Economics and Financial Issues. Vol. 3(4), pp. 852–860 (2013)

[20] Mirza, N., Rahat, B., & Reddy, K.: Business Dynamics, Efficiency, Asset Quality and Stability: The Case of Financial Intermediaries in Pakistan. Economic Modelling. Vol. 46, pp. 358–363 (2015)

[21] Mirzaei, A.: The Effect of Market Power on Stability and Performance of Islamic and Conventional Banks. Islamic Economic Studies. Vol. 18(1), pp. 45–82 (2011)

[22] Mollah, S., Hassan, M. K., Al Farooque, O., & Mobarek, A.: The Governance, Risk-Taking, and Performance of Islamic Banks. Journal of Financial Services Research. Vol. 51(2), pp. 195–219 (2017)

[23] Ouerghi, F.: Are Islamic Banks More Resilient to Global Financial Crisis than Conventional Banks? Asian Economic and Financial Review. Vol. 4(7), pp. 941–955 (2014)

[24] Rahim, S. R. M., & Zakaria, R. H.: Comparison on Stability Between Islamic and Conventional Banks in Malaysia. Journal of Islamic Economics, Banking and Finance. Vol. 9(3), pp. 131–149 (2013)

[25] Rahman, A. A., Ibrahim, M., & Meera, A. K. M.: Lending Structure and Bank Insolvency Risk : A Comparative Study between Islamic and Conventional Banks. Journal of Business & Policy Research. Vol. 4(2), pp. 189–211 (2009)

[26] Rosly, S. A., & Zaini, M. A. M.: Risk-Return Analysis of Islamic Banks Investment Deposits and Shareholders Fund. Managerial Finance. Vol. 34(10), pp. 695–707 (2008)

[27] Schinasi, G. J.: Defining Financial Stability. IMF Working Papers. Vol. 04(187), p. 1 (2004)

[28] Shahid, M. ., & Abbas, Z.: Financial Stability of Islamic Banking in Pakistan: An Empirical Study. African Journal of Business Management. Vol. 6(10), pp. 3706–3714 (2012)

[29] Toro, M. J. S., & Dewi, T. A. C.: The Investigation of the Profitability of Momentum Strategy Implementation in Islamic Stocks in Indonesia. South East Asia Journal of Contemporary Business, Economics and Law. Vol. 5(1), pp. 51–55 (2014)

[30] Warninda, T. D., Ekaputra, I. A., & Rokhim, R.: Do Mudarabah and Musharakah Financing Impact Islamic Bank Credit Risk Differently? Research in International Business and Finance. Vol. 49(March), pp. 166–175 (2019)

[31] Warninda, T. D., Rokhim, R., & Ekaputra, I. A.: Islamic Bank Profit-Loss Sharing Financing and Earnings Volatility. Pertanika Journals Social Sciences & Humanities. Vol. 27, pp. 229–239 (2019)

[32] Zia, A., & Ahmed, N.: Growth of Islamic Banking in Middle East and South Asian Countries. International Journal of Management, Accounting and Economics. Vol. 1(3), pp. 215–229 (2014)