

Conference Paper

The Comparison of Sound Level of Islamic Banks in Indonesia and Malaysia

Muhamad Nadratuzzaman Hosen and Syafaat Muhari

State Islamic University of Syarif Hidayatullah Jakarta, Indonesia

Abstract

In facing of financial integration in the ASEAN Economic community (AEC) by 2020, Islamic banks in Indonesia must have a high level of continuity of operations to ensure business continuity and increase assets rapidly in order to boost market share of Islamic banking in Indonesia. This study was conducted to analyze the soundness comparison of Islamic banks in Indonesia and Malaysia in order to measure the readiness of Islamic banks in both countries. The study uses data of annual financial statements of 10 Islamic banks in Indonesia and 10 Islamic banks in Malaysia in 2012–2014. The results of this study indicate that Islamic banks in Malaysia are relatively better prepared compared to Islamic banks in Indonesia. Islamic banks in Malaysia have more derivative and liquidity instruments, accomodating regulation from the government, low level of non-performing financing (NPF) and the high public attention makes Islamic banks in Malaysia potentially better to compete on the era of financial integration in the AEC in 2020. In contrast, Islamic banks in Malaysia tend to be more sound than the Islamic banks in Indonesia during the period of 2012–2014.

Keywords: capital, assets quality, management, profitability, liquidity, sensitivity of risks

1. Introduction

The Islamic banking industry in Indonesia had rapidly grown during the period of 2008 to 2013, while before, the growth have been being stagnant since 2014. The stagnation in Islamic banking growth is to affect on the declining assets of Islamic banks compared to the conventional banks in 2015. The growth of Islamic banking assets and market share in Indonesia can be seen in Table 1.1:

Islamic banking in Indonesia is expected to achieve the qualification standard of Qualified ASEAN Bank (QAB) in order to compete with other Islamic banks in ASEAN Region. Almekinders (2015) stated that the financial integration of ASEAN can work with three-dimensional frameworks which should to be completed, namely, the equal

Received: 25 February 2018

Accepted: 26 May 2018

Published: 26 June 2018

Publishing services provided by
Knowledge E

© Muhamad Nadratuzzaman Hosen and Syafaat Muhari. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Selection and Peer-review under the responsibility of the ICIFEB Conference Committee.

 OPEN ACCESS

TABLE 1: Market share of Islamic banking in Indonesia, 2011–2015.

Total Assets	2011	2012	2013	2014	May-2015
National (Rp Billion)	3,652,832	4,262,587	4,954,467	5,615,150	5,837,720
Islamic Banking (Rp Billion)	145,467	195,018	242,376	272,343	272,389
Share of Islamic Banking (%)	3.98	4.58	4.89	4.85	4.67
Growth (%)	49.17	34.06	24.28	12.36	0.02

Source: Financial Services Authority, 2016, data processed

access, equal treatment and equal environment. Banks in ASEAN region have to meet strong and sound capital, meet the prudential regulations at the host country and have a large market share at the country of origin. Implication of financial integration, banking liberalization make tight competition in the banking sector among ASEAN countries following QAB criteria including Islamic banks.

Malaysia has 16 Islamic banks, several of those have big assets and strong capital to be qualified as QAB. On the other hand, the government of Malaysia is ambitious for Malaysia to become the world’s Islamic financial center. Indonesia is one of the potential market for Malaysian Islamic banks considering the enormous Muslim population. Islamic Banking in Malaysia is more advanced than in Indonesia. Although the growth of Islamic banking in Malaysia is lower than in Indonesia, the market share of Islamic banking in Malaysia in December 2015 had reached 22.77 percent of the national banking system (Bank Negara Malaysia: 2016). The growth of Islamic banking assets and market share in Malaysia can be seen in Table 1.2:

TABLE 2: Market share of Islamic banking in Malaysia, 2011–2015.

Total Assets	2011	2012	2013	2014	Mei-2015
National (RM Million)	1,781,863	1,875,773	2,043,367	2,219,371	2,279,331
Islamic Banking (RM Juta)	328,649	375,954	426,641	477,055	510,394
Share of Islamic Banking (%)	18.44	20.04	20.88	21.50	22.39
Growth (%)	22.80	14.39	13.48	11.82	6.99

Source: Bank Negara Malaysia, 2016, data processed

The expansion of Malaysian Islamic banks to Indonesia are derived by several advantages such as larger assets, stronger capital, more experience in Islamic banks, strong support from government and big market customer in Indonesia. The Islamic banks and Indonesian government should be aware of the possibility of expansion

based on Table 1.2. Therefore, it is necessary to analyze the indicators that can be used as a reference to anticipate the expansion of Islamic banks from ASEAN countries, especially from Malaysia to Indonesia.

In the beginning of financial integration of the ASEAN Economic Community (MEA) by 2020, Islamic banks in Indonesia must ensure the sustainability of the business and enlarge the market share. Therefore, our research is to analyze and compare Islamic banks' soundness between Indonesia and Malaysia. The soundness instruments are to measure capital, asset quality, management, profitability, liquidity and sensitivity to market risk.

The comparison of sound level of indicators for Islamic banks in Indonesia and Malaysia is expected to be a guide for stakeholders including Islamic banks and Government of Indonesia at ASEAN financial integration in 2020.

Thus, the problem identification at the study are (1) How was the sound level of Islamic banks in Indonesia and Malaysia during the period of 2012–2014?, and, (2) Which component gives the biggest weight to each Islamic banks in both the countries?

One of the method to measure bank soundness is by using CAMEL method. In general, the international banking authority adopts the CAMEL framework as a variable in measuring the sound of banks (Bank Indonesia, 2004). Several studies have been conducted to analyze how big is the effect of CAMEL in predicting bank soundness. Bobbykin (2010) in his research states that the factors that most determine the level of soundness of banks in Ukraine in 2006–2009 is the capital, asset quality and liquidity. Bobbykin also added that the predicted rate of CAMELS reached 91 percent by using *multiperiod logit and hazard models*.

Susyanti *et al.* (2003) conducted a study on CAMEL ratio analysis along with Economic Value Added (EVA) to predict bank soundness. The results show that CAMEL and EVA have predicted 57.1 percent for bankrupt banks, 62.5 percent for difficult banks and 66.7 percent for sound banks. Whalen and Thomson (1988) tested 58 banks in the United States with 22 CAMEL ratios in the period of 1983–1986 and showed that CAMEL could predict 82–90 percent of bank soundness. Thomson (1991) tested the CAMEL ratio's benefit in predicting bank failures in the 1980s in the United States. The results show that as many as 94 percent of failing banks can be predicted 6 and 12 months before the date of bankruptcy and as many as 80 percent of banks fail predictable 42 and 48 months before the date of bankrupt.

There are other studies to measure the level of soundness of Islamic banks in Indonesia, such as the aspect of efficiency by Firdaus and Hosen (2013), Hosen and Rahmawati (2013), Hosen and Muhari (2014), Muhari and Hosen (2013) and Hosen Muhari (2014).

The five aspects that are included in CAMEL are: (1) Capital; (2) Assets Quality; (3) Management; (4) Earning; and (5) Liquidity. Based on PBI No. 6/10/PBI/2004, there is addition of one more aspect: (6) Sensitivity to Market Risk.

2. Research Method

2.1. Description of data

The samples of study are Islamic banks in Indonesia and Malaysia in the period of 2012 to 2014. The data is obtained from the annual report of each banks in Indonesia and Malaysia in the period of study, taken from banks' official website. The authors also collected some macroeconomics data from the central banks of Indonesia and Malaysia through their official websites. The numbers of samples in this study were 10 Indonesian Islamic banks and 10 Islamic banks in Malaysia. The Islamic banks studied in this research are as follow:

TABLE 3: List of Islamic banks.

No.	Indonesia	No.	Malaysia
1	Bank BCA Syariah (BCAS)	1	Affin Bank (AFB)
2	Bank BNI Syariah (BNIS)	2	Alliance Islamic Bank (AIB)
3	Bank BRI Syariah (BRIS)	3	Al Rajhi Bank (ARB)
4	Bank Muamalat Indonesia (BMI)	4	Asian Finance Bank (ASB)
5	Bank Mega Syariah (BMS)	5	Bank Muamalat Malaysia (BMM)
6	Bank Syariah Bukopin (BSB)	6	Bank Islam Malaysia Berhad (BIMB)
7	Bank Syariah Mandiri (BSM)	7	CIMB Islamic (CIMBI)
8	Bank Victoria Syariah (BVCS)	8	Kuwait Finance House (KFH)
9	Maybank Syariah Indonesia (MBSI)	9	Maybank Islamic (MYBI)
10	Panin Bank Syariah (PNBS)	10	Public Islamic Bank Berhad (PIBB)

2.2. Analysis model

This article analyzed Islamic banking soundness using CAMEL method based on the Bank Indonesia Regulation Number in PBI Number 9/1/PBI/2007, the components that were measured are capital resilience, assets quality, management performance, the level of earning and liquidity, and sensitivity to the market risks. Each component has some indicators, the numbers of indicator for each component are presented in Table 4.

After calculating the financial ratios, the Islamic banking is ranked by the score of ratio at each indicator. The rankings are based on quartile deviation from the samples taken covering 10 Islamic banks in Indonesia and 10 Islamic banks in Malaysia. The quartiles depict the data in a study divided into four groups divided by a minimal to maximal number that can be showed by the graph:



Figure 1: Note: Lowest = smallest data, Highest = highest data, Q_1 = Quartile-1, Q_2 = Quartile-2, Q_3 = Quartile-3.

This rating then summed and showed the final score of Islamic banking soundness. By knowing the position of each indicator of this CAMEL method, the strength and weaknesses for each Islamic banks in Indonesia and Malaysia can be analysed in order to prepare them to face the ASEAN Financial Integration in 2020.

To assess the soundness of banks in this study, the financial performance of Islamic banks is analyzed from the capital, asset quality, management, profitability, liquidity and sensitivity to market risks. To rank the best performance and the lowest, the results of the ratio in this study were divided into four quartiles of the average value of the performance of each ratio in the soundness of Islamic banks, with the top quartile (best performance) getting four points and the lowest quartile (lowest performance) getting one point.

The second research method used in this research is qualitative method. The qualitative method is a type of research the results of which could not be achieved by using statistical procedures or by other quantification methods (Basrowi & Suwandi, 2008).

The addition of this qualitative method is due to many consensuses that several of the research issues are not adequately addressed through quantitative-positivistic methods, but the development of science is somewhat related to changes in the

TABLE 4: CAMEL indicators.

Components	No.	Indicators
Equity	1	Capital Adequacy Ratio (CAR)
	2	Growth Trend of CAR
	3	Internal Bank's ability to add capital
	4	Retained Earnings Ratio
	5	Intensity of Functions of Bank Syariah Agency
	6	Core Capital compared to Mudharabah Fund
	7	Dividend Pay Out Ratio
	8	Access to Capital Resources
Assets	9	Quality of Earning Assets
	10	The Amount of Non-performing Financing
	11	Projected Quality of Productive Assets
	12	Ratio of Asset Trading, Derivatives and FVO to Total Assets
Management	13	Profit Margin Ratio
Earnings	14	Net Operating Revenue
	15	Return on Assets
	16	Operational Efficiency Ratio
	17	Income Generating Ratio
	18	Diversified Revenue
	19	Primary Operating Revenue Projection
	20	Primary Net Margin Operating Ratio
	21	Return on Equity
	22	Composition of Fund Placement on Securities
	23	The Amount of Profit Sharing Fund
	24	Efficiency Based on DEA approach
Liquidity	25	The Amount of Short-term Assets compared to Short-term Liabilities
	26	Sharia Bank Capability in Meeting Short-term Liquidity Needs by Using Short-term Assets, Cash and Secondary Reserve
	27	Dependence of Interbank Funds
Sensitivity to Market Risk	28	Sensitive Asset to Sensitive Liability Ratio
Social	29	Public Education Function
	30	Zakat Allocation Function

broader socio-economic field, so a qualitative approach is needed to adapt to the form of new social reality at the society (Mulyana: 2010).

The qualitative research technique used in this research is structured interview. Structured interviews are the interview method where the interviewers set their own issues and questions to be asked for the purpose of finding answers to hypotheses. This type is done in situations where all representative samples are asked with the

same important question. All subjects are considered to have equal opportunities to answer the questions (Basrowi & Suwandi, 2008).

3. Result and Discussion

3.1. The soundness of Islamic bank in 2012

TABLE 5: The soundness of Islamic banks in 2012.

Rank	Bank	Score	Country	Rank	Bank	Score	Country
1	BCAS	74.79	I	11	MBSI	57.83	I
2	PNBS	72.42	I	12	ARB	56.79	M
3	MYBI	71.96	M	13	BMM	55.25	M
4	PIBB	71.33	M	14	BMI	54.04	I
5	KFH	69.38	M	15	BNIS	53.58	I
6	AIB	68.96	M	16	BMS	53.38	I
7	CIMBI	67.25	M	17	BSM	52.96	I
8	BIMB	66.71	M	18	BRIS	51.71	I
9	AFB	62.50	M	19	ASB	50.79	M
10	BVCS	59.29	I	20	BSB	45.88	I

Source: data processed, *I = Indonesia, M = Malaysia

Based on Table 5, it can be seen that from rank 3 to 9 are Malaysian banks. However, the first and second are Islamic banks from Indonesia, namely, Bank BCA Syariah and Bank Panin Syariah, while the Victoria Islamic Bank was ranked 10th. Three Islamic banks with lowest sound performance are Bank BRI Syariah, Asian Finance Bank and Bank Syariah Bukopin. Based on Table 5, it can be concluded that the sound level of Islamic banks in Malaysia is much better than the Islamic banks in Indonesia in 2012.

The sound level of Islamic banks in Malaysia is better because the liquidity and sensitivity to market risks at Islamic banks in Malaysia is much better than the Islamic banks in Indonesia in 2012. The Islamic banks in Malaysia have more derivative assets products and more diverse, and thus the Islamic banks in Malaysia have liquid instruments that can be used to anticipate the withdrawal of funds or needs of cash in large amount of money.

In terms of sensitivity to market risks, only 3 of 10 Islamic banks in Malaysia have *negative relative gap*, while in Indonesia all of the Islamic banks have *negative relative gap*. The *negative relative gap* indicates that Islamic banks are vulnerable to the changes in interest rates. *Negative relative gap* occurs because of financing that cannot be repricing such as bai' contract based like murabaha financing that is much higher than the savings that use profit-loss-sharing-based contract like mudharabah which is flexible on interest rates. Nowadays, the structure of Assets-Liability in Islamic banks in Indonesia is dominated by murabahah in assets and mudarabah in liquidity leading to cause wider negative relative gap in Islamic banks.

3.2. The soundness of Islamic bank in 2013

TABLE 6: The soundness of Islamic banks in 2013.

Rank	Bank	Score	Country	Rank	Bank	Score	Country
1	BCAS	73.96	I	11	BNIS	58.17	I
2	PIBB	72.46	M	12	BMI	57.92	I
3	AIB	68.00	M	13	ARB	54.63	M
4	KFH	67.29	M	14	MYBS	54.25	I
5	BIMB	66.71	M	15	BMM	53.50	M
6	MYBI	64.79	M	16	ASB	53.38	M
7	CIMBI	62.38	M	17	BMS	50.13	I
8	BVCS	61.25	I	18	BRIS	49.63	I
9	AFB	58.71	M	19	BSM	46.88	I
10	PNBS	58.21	I	20	BSB	41.29	I

Source: data processed, *I = Indonesia, M = Malaysia

Based on Table 6, it can be seen that from rank 2 to 7 and rank 9 are Malaysian banks. However, the first rank is an Islamic bank from Indonesia, namely, Bank BCA Syariah, while Bank Victoria Syariah and Bank Panin Syariah rank 8 and 10, respectively. Three Islamic banks with lowest sound performance are Indonesian Islamic banks, namely, Bank BRI Syariah, Bank Syariah Mandiri and Bank Syariah Bukopin. Based on Table 6, it can be concluded that the sound level of Islamic banks in Malaysia is much better than the Islamic banks in Indonesia.

The sound level of Islamic banks in Malaysia are better because the liquidity and sensitivity to market risks of Islamic banks in Malaysia were much better than the

Islamic banks in Indonesia in 2013. Other factors that influenced the soundness of Islamic banks in Malaysia in 2013 are that the quality of the assets managed by Islamic banks in Malaysia was better than the Islamic banks in Indonesia. This is reflected in the level of non-performing financing (NPF) from Islamic banks in Malaysia that were lower when compared to level of NPF at Islamic banks in Indonesia.

3.3. The soundness of Islamic bank in 2014

TABLE 7: The soundness of Islamic banks in 2014.

Rank	Bank	Score	Country	Rank	Bank	Score	Country
1	BCAS	75.08	I	11	BNIS	58.83	I
2	MYBI	70.92	M	12	KFH	58.79	M
3	PIBB	69.79	M	13	BMM	56.29	M
4	CIMBI	68.71	M	14	MYBS	55.25	I
5	BIMB	68.58	M	15	BSM	55.08	I
6	AFB	66.29	M	16	BRIS	54.08	I
7	ARB	65.71	M	17	BMS	51.50	I
8	PNBS	65.46	I	18	BVCS	51.08	I
9	AFB	65.00	M	19	BSB	48.54	I
10	AIB	63.92	M	20	BMI	47.88	I

Source: data processed, *I = Indonesia, M = Malaysia

Based on Table 7, it can be seen that from rank 2 to 7 and rank 9 to 10 are Malaysian banks. However, the first rank is an Islamic bank from Indonesia, namely, Bank BCA Syariah, while Panin Bank Syariah was ranked at 8. Three Islamic banks with the lowest sound performance are Indonesian Islamic banks, namely, Bank Victoria Syariah, Bank Syariah Bukopin and Bank Muamalat Indonesia. Based on Table 7, it can be concluded that the sound level of Islamic banks in Malaysia is much better than the Islamic banks in Indonesia.

The sound level of Islamic banks in Malaysia is much better because the liquidity and sensitivity to market risks in the Islamic banks in Malaysia were much better than the Islamic banks in Indonesia in 2014. Other factor that influence that the soundness of Islamic banks in Malaysia is better than in Indonesia was that the quality of the assets managed by Islamic banks in Malaysia was better than the Islamic banks in Indonesia.

In 2014, the profitability of Islamic banks in Malaysia showed a better performance when compared to the Islamic banks in Indonesia. Because of the decline in macroeconomic in Indonesia and the declining quality of assets at Islamic banks in Indonesia, these declined the profitability of Islamic banks.

Based on the analysis of the soundness of Islamic banks in Indonesia and Malaysia, it can be concluded that the performance of Islamic banks in Indonesia has decreased from 2012 to 2014, except for bank BCA Syariah. In the same period, the performance of Islamic banks in Malaysia also suffered from declination, but the decline experienced by the Islamic Bank in Indonesia is sharper. In 2012, the Islamic banks in Indonesia on average performed less only in liquidity and market-sensitivity variables as compared to Islamic banks from Malaysia. In 2013, the asset quality then performed less too than the Islamic banks in Malaysia, and until 2014 the profitability of Islamic banks in Indonesia remained lower in performance than the Islamic banks in Malaysia.

It can be seen that from 2012 to 2014, the Islamic banks in Malaysia were sounder because they had more liquidity instruments compared to the Islamic banks in Indonesia. In addition, the Islamic banks in Malaysia are relatively stronger in facing the ASEAN Financial Integration, given the more diversified financial asset that could be repriced such as *mudaraba*, *Ijara* and *Ijara muntahiya bit Tamlik (IMBT)*. On the other hand, all Islamic banks in Indonesia from 2012 to 2014 had assets that could not be repriced since many of them used *murabahah* contract in financing, while the fund used *mudharaba* contract.

Thus, if the interest rate is increase, the Islamic banks' revenue sharing for third party fund is increased because it is peers to the conventional banks, while at the same time financing based on *murabaha* contract cannot be in repricing so that it increases the risks and can lowers the level of Net Operating Margin (NOM) of the Islamic banks in Indonesia. At the end of 2014, there were five Islamic banks that had positive relative gap in the sample, namely, Maybank Islamic, KFH Bank, Affin Bank, Alliance Islamic Bank and Asian Finance Bank, of which the fifth bank had quite strong resistance to the market.

In terms of liquidity, Islamic banks in Indonesia are still shortage of liquidity instruments when compared with Islamic banks in Malaysia. It can be seen from the liquidity score of Islamic banks in Malaysia that were higher than the Islamic banks in Indonesia. Islamic banks in Malaysia have more diversified liquidity instruments than Islamic banks in Indonesia. One of the instruments that is often used in Malaysia as a liquidity instrument is that a *murabaha* commodities is not currently used in Indonesia. With this

murabaha commodities, Islamic banks in Malaysia have sufficient liquidity instruments to anticipate business risks that might occur.

4. Conclusion

The level of soundness of the Islamic banks in Malaysia is better than in Indonesia because the liquidity and sensitivity to market risks at Islamic banks in Malaysia were much better than the Islamic banks in Indonesia in 2012. The Islamic banks in Malaysia have more products diversification and thus, Islamic banks in Malaysia have many liquid instruments which can be used to anticipate the withdrawal of funds or needs of cash in large amount of money.

In terms of sensitivity to market risks, only 3 of 10 Islamic banks in Malaysia have *negative relative gap*, while in Indonesia all of the Islamic banks have *negative relative gap*. The *negative relative gap* indicates that Islamic banks are vulnerable to the changes in interest rates. *Negative relative gap* occurs because of financing that cannot be repriced such as bai' contractbased like murabaha financing which is much higher than the savings that use profit-loss-sharing-based contract like mudharabah which is flexible on interest rates. Nowadays, the structure of Assets-Liability in Islamic banks of Indonesia is dominated by murabahah in assets and mudarabah in liquidity leading to causing wider negative relative gap in Islamic banks.

The level of soundness of the Islamic banks in Malaysia is better than the Islamic banks in Indonesia because the liquidity and sensitivity to market risks of Islamic banks in Malaysia were much better than the Islamic banks in Indonesia in 2013. Other factors that influence the soundness of Islamic banks in Malaysia in 2013 are that the quality of the assets managed by Islamic banks in Malaysia was better than the Islamic banks in Indonesia. This is reflected in the level of NPF from Islamic banks in Malaysia that were lower when compared to level of NPF at Islamic banks in Indonesia.

In 2014, the profitability of Islamic banks in Malaysia showed a better performance when compared to the Islamic banks in Indonesia. Because of the decline in macroeconomic in Indonesia and declining quality of assets at Islamic banks in Indonesia, these decline the profitability of Islamic banks.

When viewed since 2012 and 2014, the Islamic banks in Malaysia are more sound because they have more liquidity instruments compared to the Islamic banks in Indonesia. In addition, the Islamic banks in Malaysia are relatively stronger to face the ASEAN Financial Integration given the more diversified financial asset that can be repriced such as mudaraba, Ijara and Ijara muntahiya bit Tamlik (IMBT). On the

other hand, all Islamic banks in Indonesia from 2012 to 2014 had assets that could not be repriced since many of them used murabahah in financing, while the fund used mudharaba contract.

In terms of liquidity, Islamic banks in Indonesia are still short of liquidity instruments when compared with Islamic banks in Malaysia. It can be seen from the fact that the liquidity scores of Islamic banks in Malaysia were higher than the Islamic banks in Indonesia. Islamic banks in Malaysia have more diversified liquidity instruments than Islamic banks in Indonesia. One of the instruments that are often used in Malaysia as a liquidity instrument is murabaha commodities, which is not currently used in Indonesia. With this murabaha commodities, Islamic banks in Malaysia have sufficient liquidity instruments to anticipate business risks that might occur.

Regulators, in particular, the Financial Services Authority (FSA), Bank Indonesia (BI) and the Ministry of Finance must accommodate the needs of the Islamic financial industry. This can be done by providing incentives such as down-payment discount or tax incentives. Liquidity instruments of Islamic banks in Indonesia are still low compared to Malaysia. Commodity stocks that have been stated by fatwa of Indonesia Ulama Council (IUC) were not allowed to be operated by the Regulator, but it is urgently needed by the Islamic finance industry. As a comparison, Islamic banks in Malaysia benefited greatly from the liquidity instrument, such as Sharia commodities. Therefore, the regulator is expected to allow this liquidity instrument because it is an innovative product to develop Islamic financial industries.

Islamic banking in Malaysia is relatively more prepared compared to Indonesia. Islamic banks in Malaysia have more derivative and liquidity instruments, the regulation of the government is very supportive and accommodative, the NPF is Low and the public of Malaysia have high attention and interest which makes Islamic banks in Malaysia ready to compete in the era of financial integration in the ASEAN Economic Community (AEC) in 2020.

References

- [1] Abdillah, R., Hosen, M.N., and S., Muhari. (2016). "The Determinant Factor of Islamic Bank's Profitability and Liquidity in Indonesia." *Knowledge Horizons-Economics*, Vol.8, No.2, 140-147.
- [2] Afiatun, P. and K.S. Wiryono. (2010). "Efficiency and Productivity of Indonesian Islamic Banking." *Jurnal Manajemen Teknologi*, Vol.9, No.3, 264-278.

- [3] Akhtar, M.F., K. Ali, and S. Sadaqat. (2011). "Factors Influencing the Profitability of Islamic Banks of Pakistan." *International Research Journal of Finance and Economics* Issue 66, 125-132.
- [4] Almekinders, G., et. al. (2015). "ASEAN Financial Integration". *IMF Working Paper* No. WP/15/34.
- [5] Almilia, L. S. and W. Herdiningtyas. (2005). "Analisis Rasio CAMEL terhadap Prediksi Kondisi Bermasalah pada Lembaga Perbankan Periode 2000 – 2002." *Jurnal Akuntansi dan Keuangan*, Vol 7, No. 2, 1-27.
- [6] Aryati, T., and S. Balafif. (2007). "Analisis Faktor yang Mempengaruhi Tingkat Kesehatan Bank dengan Regresi Logit." *Jurnal The WINNERS*, Vol.8, No.2, 111-125.
- [7] Ariffin, N., M. S. Archer, and R.A.A. Karim. (2006). "Risk Reporting of Islamic Banks: Evidence from Empirical Research." *Jurnal Eksis*, Vol. 2 No. 1, 27-37.
- [8] Aryati, T. and S. Balafif. (2007). "Analisis Faktor yang Mempengaruhi Tingkat Kesehatan Bank dengan Regresi Logit." *Journal The Winners*, Vol. 8 No. 2, 111-125.
- [9] Bobykin, L. (2010). "Ukrainian Bank Failure Prediction Using Efficiency Measures." *Thesis MA in Economic, Kyiv School of Economics*. (Not Published).
- [10] Ehrhardt, M. C and E.F. Brigham. (2011). "Financial Management: Theory and Practice." *Mason, Ohio: South-Western Cengage Learning*.
- [11] Firdaus, M.F. and M. N. Hosen. (2013). "Measurement of Efficiency and Soundness of Islamic Bank Using Two-Stage Data Envelopment Analysis and Modified CAMELS." *Journal of Islamic Banking and Finance*, Vol.30, No.3, 32-48.
- [12] Firdaus, M. F. and M. N. Hosen. (2013). "Efisiensi Bank Umum Syariah Menggunakan Pendekatan Two Stage- Data Envelopment Analysis." *Buletin Ekonomi Moneter dan Perbankan*, October 2013.
- [13] Hosen, M. N. and R. Rahmawati. (2014). "Analisis Efisiensi, Profitabilitas dan Kesehatan Bank Umum Syariah di Indonesia Periode 2010-2013." *Finance & Banking Journal*, Vol.16, No.2, 207-227.
- [14] Hosen, M. N. and S. Muhari. (2014). "Analysis of The Efficiency Level of Shariah Rural Bank in Indonesia using DEA and its correlation with CAMEL." *Journal of Islamic Banking and Finance*, Vol.31, No.4, 80-102.
- [15] Hosen, M. N. & S. Muhari. (2013). "Efficiency of the Sharia Rural Bank in Indonesia Lead to Modified CAMEL." *International Journal of Academic Research in Economics and Management Sciences*, Vol.2, No.5, 34-53.
- [16] Kothari, C.R. (2004). "Research Methodology: Methods & Techniques." *New Delhi: New Age International*.

- [17] Muhari, S. and M. N. Hosen. (2014). "Tingkat Efisiensi BPRS di Indonesia: Perbandingan Metode SFA dengan DEA dan Hubungannya dengan CAMEL." *Jurnal Keuangan dan Perbankan*, Vol.18, No.2, 307-328.
- [18] Muhari, S. and M. N. Hosen. (2013). "Analisis Tingkat Efisiensi BPRS di Indonesia dengan Menggunakan Metode Data Envelopmet Analysis (DEA) dan Hubungannya dengan CAMEL." *Paper presented in Konferensi Nasional Riset Manajemen VII, held by PPM School of Management in Sriwijaya University Palembang, November 27, 2013.*
- [19] Muljawan, D. (2005). "A Design for Islamic Banking Rating System: An Integrated Approach." *Paper presented at the 6th International Conference at Islamic Economics, Banking and Finance, organised by Islamic Research and Training Institute-Islamic Development Bank, Bank Indonesia, and Ministry of Finance Republic of Indonesia.*
- [20] Sumantri & J. Teddy. (2010). "Manfaat Rasio Keuangan dalam Memprediksi Kepailitan Bank Nasional." *Jurnal Bisnis dan Akuntansi*, Vol. 12 No. 1, 39-52.
- [21] Supriyanto, Ti. (2014). "Konsep Rate of Profit Perspektif Ekonomi Islam (Aplikasi di Bank Syariah)." *Dissertation of School of Postgraduate at Syariaf Hidayatullah State Islamic University of Jakarta.* (Not Published).
- [22] Susyanti, J., I, Triyuwono, and M.U. Burhan. (2003). "Indikasi Potensi Economic Value Added dan Analisis Rasio CAMEL dalam Memprediksi Kesehatan Bank yang Listing di Bursa Efek Jakarta." *Jurnal Aplikasi Manajemen*, Vol. 1 No. 3, 460-484.
- [23] Thomson, J., B. (1991). "Predicting Bank Failures in 1980s." *Economic Review*. Vol. 27, Second Quarter, 9-20.
- [24] Whalen, G and Thomson, J., B. (1988). "Using Fianancial Data to Identify Changes in Bank Condition." *Economic Review*. *Second Quarter*, 17-26.
- [25] Widiharto, R., C. (2008). "Analisis Pengaruh Rasio Keuangan terhadap Prediksi Kondisi Bermasalah Bank Perkreditan Rakyat." *Master Thesis of Diponegoro University.* (Not Published).