

How Far Will an Islamic Bank with The Largest Asset Elevate?

Masruri Muchtar

Polytechnic of State Finance STAN, Indonesia

masruri.m@pknstan.ac.id

Abstract

Indonesian Islamic banking continues to show positive developments. Banking assets, the amount of financing, and third party funds continues to grow. A critical question arises particularly related to the issue of efficiency and effectiveness. This study is aimed to assess the level of efficiency of Bank Syariah Mandiri (BSM) as an Islamic bank with the largest asset and to analyze factors that affect its level of profitability over the period of 2001-2019. Data Envelope Analysis was employed to assess efficiency and ordinary least square regression was applied for profitability analysis. The results show that the level of efficiency of BSM is categorized high with an average efficiency score of 97.7% but with the average level of profitability of only 1.3%, which is considered as medium. The level of efficiency was at the lowest point in 2003. Non-Performing Financing (NPF), Financing to Deposits Ratio (FDR), Operational Cost to Operational Income (BOPO), and Capital Adequacy Ratio (CAR) simultaneously have a significant effect on the level of profitability, but independently, FDR does not. The results imply that an Islamic bank with a gigantic asset shall give attention to its profitability while maintaining efficiency level.

Keywords: *efficiency, profitability, Islamic bank*

Abstrak

Perbankan syariah Indonesia terus menunjukkan perkembangan positif. Aset perbankan, jumlah pembiayaan, dan dana pihak ketiga terus bertambah. Pertanyaan kritis muncul terutama terkait dengan masalah efisiensi dan efektivitas. Penelitian ini bertujuan untuk menilai tingkat efisiensi Bank Syariah Mandiri (BSM) sebagai bank syariah dengan aset terbesar dan menganalisis faktor-faktor yang mempengaruhi tingkat profitabilitasnya selama periode 2001-2019. Data Envelope Analysis (DEA) digunakan untuk menilai efisiensi sedangkan persamaan regresi untuk analisis profitabilitas. Hasil penelitian menunjukkan tingkat efisiensi BSM tergolong tinggi dengan rata-rata skor efisiensi 97,7% tetapi rata-rata tingkat profitabilitas hanya 1,3% yang tergolong sedang. Tingkat efisiensi berada pada titik terendah pada tahun 2003. Non-Performing Financing (NPF), Financing to Deposits Ratio (FDR), Biaya Operasional terhadap Pendapatan Operasional (BOPO), dan Capital Adequacy Ratio (CAR) secara simultan berpengaruh signifikan terhadap tingkat profitabilitas, namun FDR secara mandiri tidak. Hasil ini mengimplikasikan bahwa bank syariah dengan aset yang besar harus memperhatikan tingkat profitabilitas dengan tetap menjaga efisiensinya.

Kata kunci: *efisiensi, profitabilitas, bank syariah*

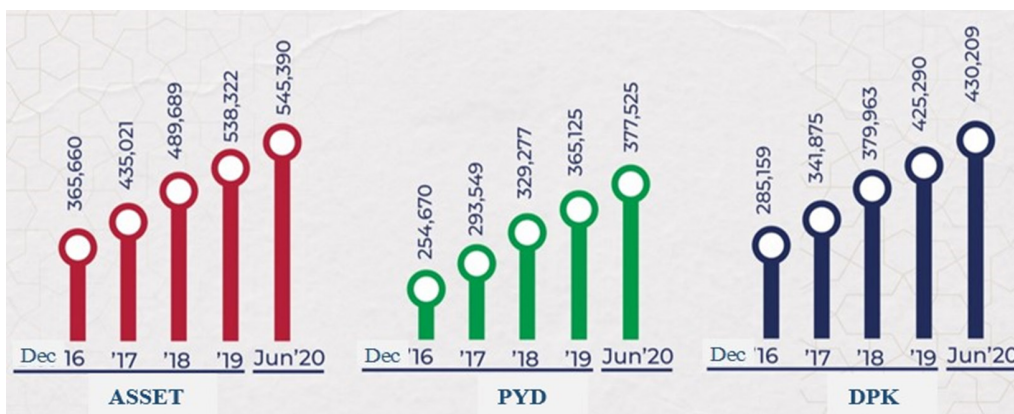
Cara Mengutip:

Muchtar, M. (2021). How Far Will an Islamic Bank With The Largest Asset Elevate? *Esensi: Jurnal Bisnis dan Manajemen*, 11(1), 105–118. <https://doi.org/10.15408/ess.v11i1.20393>.

INTRODUCTION

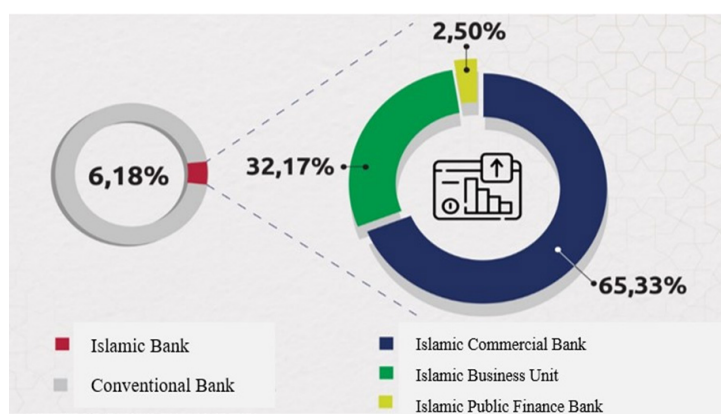
Indonesian Islamic banking continues to show positive developments amid the Covid-19 pandemic. Islamic banking assets, the amount of financing (PYD), and third-party funds (DPK) keeps growing. Until June 2020, Islamic banking assets reached IDR 545.39 trillion or a growth of 9.22% (year on year). In total, the PYD and DPK of Islamic banking also increased to IDR 377.525 trillion and IDR 430.209 trillion, respectively. Figure 1 shows the development of assets, PYD, and DPK over the last four years.

Figure 1. Development of Assets, PYD, and DPK (IDR Trillion)



The market share of Islamic banking had increased to 6.18% in June 2020. This number came from 65.33% of Islamic commercial banks, 32.17% of Islamic business units, and 2.5% of Islamic public finance banks as seen in Figure 2. In term of bank assets, Bank Syariah Mandiri (BSM) managed to occupy the first position with total assets reaching IDR 114.4 trillion. This amount is the highest because its value is more or less equivalent to two times the average assets of other large Islamic banks. BSM was also awarded the Market Leadership Award 2020 for the category of Developing Islamic Banking in Indonesia. The valuation was based on the organizer's scoring of innovation, quantity and quality, cross border, role in industrial development, sharia authenticity, and commitment to sharia economy.

Figure 2. Market Share of Islamic Banking



Source: Financial Service Authority (OJK), June 2020

According to 2019 annually financial report, BSM has made many achievements. In addition to an increase in assets by 14.19%, there was also an increase in the amount of financing, qardh (loans), and receivables by 15.99%. Third-party funds increased by 14.11% and what is quite notable is that BSM's net profit increased by 110.68% from IDR 605 billion in 2018 to IDR 1,275 billion in 2019. In addition, BSM is currently merging with two other state-owned (BUMN) Islamic banks and it is said to make Indonesia have a giant Islamic bank. Total assets of these three largest banks reach 40.39% of the total assets of Indonesian Islamic banking. Discussing performance and achievements obtained by the Islamic bank with the largest asset, a critical question arises. This is particularly related to the issue of efficiency and effectiveness: does BSM have circulated excessive funds to society efficiently and effectively? Efficient means the conformity of results of the comparison between the input used and the output produced, while effective the extent to which a company can generate profits.

Efficiency is such a parameter that theoretically reflects the underlying performance of an entity. The ability to produce maximum output with available inputs is a measure of expected performance. When the efficiency measurement is carried out, banks are faced with the question of how to get the optimal level of output with the existing input level or to obtain a minimum input level with a certain output level. By identifying the input allocation and its output, banks are able to further analyze the cause of the inefficiency. In the long term, efficiency will be able to consistently increase market share in the Islamic banking industry (Rusyiana, 2018). The results of measuring the relative efficiency of the top 100 Islamic banks indicate that the performance of several banks is sub-optimal, suggesting the potential for significant improvements (Mostafa, 2011). Compared to conventional banks, Indonesian Islamic banks have better asset quality and are more stable. Islamic banks are relatively more efficient than conventional banks in terms of overall efficiency as well as technical efficiency (Sakti & Azhar, 2018).

In contrast, conventional banks in Qatar are the most efficient in terms of technical and pure technical efficiencies, while Islamic banks are the most efficient in terms of scale efficiency. Moreover, compared to Islamic banks, conventional and foreign banks recorded a reduction in average technical efficiency (Abdul-Wahab & Haron, 2017). Srairi & Kouki (2012) examined the efficiency of 25 Islamic banks operating in the Gulf countries for the period of 2003-2009 and the findings show that changes in technical efficiency and pure technical efficiency are positively related to equity returns, while changes in scale efficiency have no impact on equity returns.

Ascarya & Yumanita (2006) conducted a research on Islamic banking in Indonesia during 2000-2004 period. The results show that the technical relative efficiency of Islamic banks with the intermediation approach is 100%, while with the production approach is 85%. Likewise, the relative efficiency in scale from the intermediation approach is 87% and from production approach is 97%. They claimed that the production approach of Islamic banks decreases technical efficiency but increase scale efficiency because at that time, Islamic banks were aggressively expanding by opening new offices.

The major constraints impeding Islamic banking growth include labor costs (Anagnostopoulos et al., 2020). Manpower evaluation and control of costs, income, and

assets using mathematical programming methods make it easier for managers to make decisions. Data Envelopment Analysis (DEA) has been widely used in recent years as a powerful tool for evaluating decision-making units (DMU) performance based on relative efficiency regarding input and output parameters (Kamyab et al., 2020). Ascarya & Yumanita (2008) measured and compared the level of efficiency of Islamic banks in Indonesia and Malaysia. Using DEA, they argued that Islamic Banks in Malaysia and Indonesia showed a convergence in input and output characteristics, where deposits and labor were still inefficient and must be a top priority for improvement. Input variables consist of labor cost, fixed assets, and total deposits, while the output variable consists of total loans and other sources of income.

Sufian & Kamarudin (2015) also used the non-parametric DEA method to examine the revenue, cost, and profit efficiencies of Malaysia, Indonesia, and Brunei Islamic banks over the period of 2006-2011. They found that Islamic banks had not fully used the inputs efficiently to produce the same outputs. The three input variables consist of deposits, labor, and physical capital, while two output variables are loans and investment.

Another important issue about Islamic Bank is the level of profitability. Profitability is a company's ability to gain profit from its business (Suntoto, 2013). Tabari et al. (2013) argued that profitability is a parameter that indicates management approach and the competitive position of a bank in a market-based banking. Return on equity (ROE) and return on assets (ROA) are two of the most important measures for determining level of profitability of a bank. ROE is measured by dividing the net income to total equity, while ROA is a type of return-on-investment ratio which indicates profitability in comparison to the total assets and determines how well a bank is performing. ROA is calculated by dividing the net profit with the total assets. Compared to ROE, ROA tends to show how effectively a bank takes advantage of the basic income of its assets. This is considered as the most popular way of comparing banks to each other.

Hosen & Rahmawati (2016) used ROA to estimate profitability for five Islamic banks in Indonesia in 2010-2013. They analyze whether the Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), Operational Cost Operational Income (BOPO), and Capital Adequacy Ratio (CAR) affect the level of profitability of Islamic banks. The findings show that all variables simultaneously have a significant influence on ROA of those five Islamic banks. In case of BSM, CAR independently has no significant effect on profitability. Nasution et al. (2019) also argued that CAR, NPF, FDR, and BOPO simultaneously have a significant effect on ROA in Islamic banking in Indonesia during the period of 2005-2018. In addition, Wasiuzzaman & Hanimas (2013) and Haron (2004) claimed that CAR has a significant effect on the profitability of Islamic banks.

Although many studies comprehensively have discussed the topic of efficiency in Islamic banking, there has no study that deeply explains this issue, particularly for a single entity. Previous studies mostly assessed level of efficiency by comparing several Islamic banks then evaluated all of them. This study is slightly different because it compares and evaluates the level of efficiency of a single entity between years in a certain period of time. This paper intently digs out when efficiency of an Islamic bank reaches its lowest point and thoroughly evaluates it. Moreover, it is important to examine what factors affect its profitability.

Based on the previous explanation, this study combined and modified some variables from Ascarya & Yumanita (2008) and Sufian & Kamarudin (2015) to assess level of efficiency by employing DEA. To analyze factors that affect the level of profitability, this paper used ordinary least square (OLS) regression by adopting the research conducted by Hosen & Rahmawati (2016). The measurement of efficiency and profitability of BSM is crucial since it has the largest asset among Islamic banks in Indonesia. The merge of BSM with two other Islamic banks is also an interesting thing to discuss. Yet, this study focuses only on issue of cost efficiency and level of profitability. The purposes of conducting this study are to measure the cost efficiency level of an Islamic bank with the largest asset in Indonesia for the period of 2001-2019 and to analyze the components of input and output that affect the level of cost efficiency. This paper also examines whether the Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), Operational Cost Operational Income (BOPO), and Capital Adequacy Ratio (CAR) affect the level of profitability.

METHOD

Efficiency emerges with the concept of microeconomic theory, namely the producer theory and consumer theory (Ascarya & Yumanita, 2006). They argued that producers tend to maximize profits and minimize costs while consumers have a tendency to maximize their utility or level of satisfaction. The concepts used in defining the input-output relationship in the behavior of the financial industry in parametric and non-parametric methods are (i) the production approach, (ii) the intermediation approach, and (iii) the asset approach. Ascarya & Yumanita (2006) distinguish this concept as follows.

The production approach sees the financial institution as a producer of deposit and loan. The input used in this approach is the amount of labor, capital expenditures on fixed assets, and other relevant materials. Meanwhile, the output is the sum of deposit, loan, and other related transactions. The intermediation approach views a financial institution as an intermediary converting and transferring financial assets and surplus units to deficit units. The inputs required are labor and capital costs as well as interest payments on deposits. Output is measured by loan.

The asset approach perceives the primary function of a financial institution as a loan creator. Asset efficiency measures the ability of banks to invest funds in the form of credit, securities, and other alternative assets as output. Input is measured by the price of labor, the price of funds, and the price of physical capital. Based on the description above, the intermediation approach emphasizes on bank operation while running the mediation function to distribute savings from the public in the form of loan. It defines a financial institution as an intermediary and it tends to be more appropriate for the purpose of assessing an Islamic bank compared to other approaches. This study mainly adopts a modified intermediation approach that reflects the activities of Islamic banks as carried out by Ascarya & Yumanita (2006).

Therefore, it is assumed that Islamic banks provide financing services (Y_1) and earn income (Y_2) by using third-party funds (X_1), labors (X_2), and asset (X_3). This study measures the level of efficiency of BSM for the period of 2001-2019 by using the Data Envelopment Analysis (DEA) method. DEA, as a non-parametric estimation technique, is robust in estimating the true cost and revenue frontiers and associated economic measures

including data sets even without a single output and is also less affected by distributional assumptions (Parman & Featherstone, 2019). The variables used as input and output are seen in Table 1 as follows.

Table 1. Variables of Input and Output

I/O	Symbol	Definition	Source
X ₁	Third party fund	Giro, savings, deposits	Balance sheet
X ₂	Personnel Expenses	Labor cost	Income Statement
X ₃	Asset	Total asset	Balance sheet
Y ₁	Financing	Total amount of financing	Balance sheet
Y ₂	Income	Income earned by the bank as <i>mudharib</i>	Income Statement

Source: Processed Data, 2020

The author obtained the input and output variable data above from the Financial Services Authority (OJK) Publication Report that can be accessed from its official website. After conforming the data to BSM annual company report, the author then performed data processing.

DEA is a non-parametric method that uses a linear programming model to calculate the ratio of output to input for all units being compared and it was first introduced by Charnes et al. (1978) which is used to evaluate the performance of an activity in an entity unit namely decision making unit (DMU).

In general, the measurement of efficiency is formulated using the following model:

$$\text{Efficiency} = \frac{\text{Total Output}}{\text{Total Input}}$$

Adopting Ascarya & Yumanita (2006), efficiency measurement is mathematically formulated as follows:

$$\text{Efficiency of DMU}_0 = \frac{\sum_{k=1}^p \mu_k y_{k0}}{\sum_{i=1}^m v_i x_{i0}}$$

Where:

- DMU = decision making unit;
- n = DMU will be evaluated;
- m = different inputs;
- p = different outputs;
- μ_k = average of total output
- v_i = average of total input
- x_{ij} = total input I consumed
- y_{kj} = total output k produced

Analysis for measuring efficiency will be carried out within two steps. First, the calculation of efficiency with the constant return to scale (CRS) approach was first developed by Charnes et al. (1978). Assumption of this model is that the ratio between the addition of input and output is remain the same, meaning that the addition of input x times will cause the output to increase by x times. Later, the measurement of efficiency with the variable return to scale (VRS) method which was introduced by Banker et al. (1984). The assumption of this model is that the ratio between the addition of input and output is not the same, meaning that the addition of input x times will not cause the output to increase by x times, it can be smaller or greater than x times.

In term of profitability, this study conducts an analysis of some factors that affect the level of profitability of BSM by using ROA as an indicator. This study adopts Hosen & Rahmawati (2016) to examine whether Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), Operational Cost Operational Income (BOPO), and Capital Adequacy Ratio (CAR) affect ROA.

To analyze some factors that affect the level of profitability, the authors use ordinary least square (OLS) regression assisted by the EViews 11 software. By adopting research conducted by Hosen & Rahmawati (2016), research model as follows:

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y : ROA (Return On Asset)

X_1 : NPF (Non-Performing Financing)

X_2 : FDR (Financing to Deposits Ratio)

X_3 : BOPO (Operasional Cost/Operasional Income)

X_4 : CAR (Capital Adequacy Ratio)

There are several steps in this research. First, the data went through a classic assumption test starting from normality test, heteroscedasticity test, multicollinearity test, and autocorrelation test. Second, using simple linear regression, this study tested hypothesis partially to show the relation between the independent variables and dependent variable. Lastly, use multiple linear regression to show the relation between the independent variables and dependent variable simultaneously.

RESULTS AND DISCUSSION

DEA Test Results

Before discussing the results, Table 2 describes the descriptive statistics of each input and output variable used in this study. Based on Table 2, the mean value of financing is 30,208 with maximum and minimum values of 653 and 73,300, respectively. Income has a mean value of 1,930 with a maximum value of 8.418 and a minimum value of 108. Asset has a mean value of 21,799, a maximum value of 112,291, and a minimum value of 933. Labors have a mean value of 18,063, a maximum value of 2,084,091, and a minimum value of 83,945. Meanwhile, third-party fund has minimum and maximum values of 475 and 92,290, respectively, with a mean value of 482,805. All these amounts are in IDR millions.

Table 2. Descriptive Statistics of Input and Output Variables

Indicators	Output (IDR million)			Input (IDR million)	
	Financing	Income	Asset	Labors	Third Party Fund
Mean	30,208	1,930	21,799	18,063	482,805
Min	653	108	933	83,945	475
Max	73,300	8,418	112,291	2,084,091	92,290
Std. Dev	24,424	2,776	35,445	639,576	30,454

Source: Processed Data, 2020

This research used an output-oriented approach, which has an output maximization objective function, assuming constant return to scale (CRS) analysis. Assumption of this model is that the ratio between the addition of input and output remains the same, meaning that the addition of input x times will cause the output to increase by x times. Using DEAP-xp1, this study conducted data processing and then analyzed the results. An efficiency score was generated based on the output orientation. A bank is efficient when the efficiency score is close to 100% and inefficient when it is smaller. Based on the result, we can identify in what periods BSM performances are deemed efficient and inefficient. The efficient output was used as a benchmark for other inefficient periods to optimize the use of the resulting input and output. Hosen & Rahmawati (2016) defined a categorization of cost efficiency as shown in Table 3.

Table 3. Category of Cost Efficiency

Level of Cost Efficiency	Category
65% - 85%	Low Efficiency
86% - 96%	Medium Efficiency
97% - 100%	High Efficiency

Source: Hosen & Rahmawati (2016)

Table 4. Efficiency Score of BSM-CRS

Year	Efficiency Score	Year	Efficiency Score
2001	1.000	2011	0.914
2002	0.943	2012	1.000
2003	0.819	2013	0.970
2004	1.000	2014	0.906
2005	1.000	2015	0.904
2006	0.994	2016	0.878
2007	1.000	2017	0.865
2008	1.000	2018	0.849
2009	0.933	2019	0.842
2010	0.918	Mean = 0.933, Std. Dev = 0.061	

Source: Processed Data, 2020

Based on Table 4, it can be seen that BSM has an average efficiency value of 93.3% with a standard deviation of efficiency of 0.061. During the 2001-2019 period, BSM is

categorized in the medium efficiency and high efficiency levels because almost during each year, the efficiency score is above 85%. BSM is categorized in the low efficiency only in 2003 (81.9%), 2018 (84.9%), and 2019 (84.2%).

After analyzing the results of the CRS efficiency, then this study assesses the level of efficiency based on VRS approach. The assumption of this model is that the ratio between the addition of input and output is not the same, meaning that the addition of input x times will not cause the output to increase by x times, it can be smaller or greater than x times. As seen in Table 5, the efficiency score of BSM with VRS approach fluctuates, but overall, the score is higher than the CRS approach.

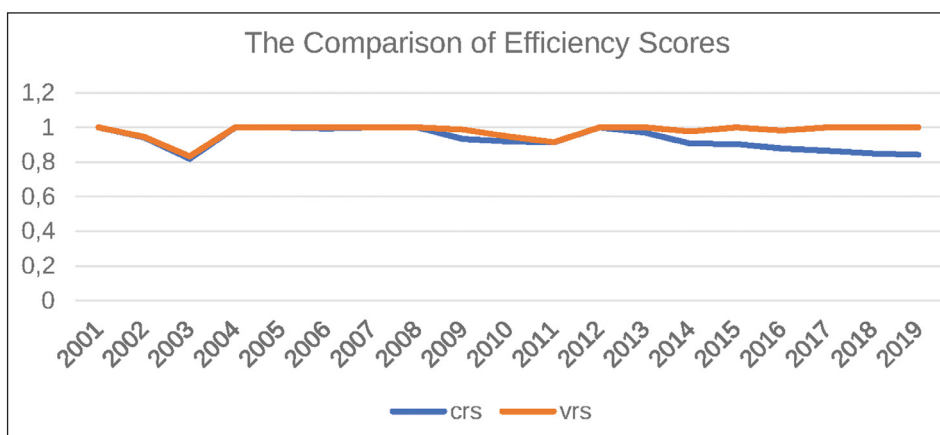
Table 5. Efficiency Score of BSM-VRS

Year	Efficiency Score	Year	Efficiency Score
2001	1.000	2011	0.915
2002	0.945	2012	1.000
2003	0.833	2013	1.000
2004	1.000	2014	0.976
2005	1.000	2015	1.000
2006	1.000	2016	0.982
2007	1.000	2017	1.000
2008	1.000	2018	1.000
2009	0.987	2019	1.000
2010	0.947	Mean = 0.978, Std. Dev = 0.041	

Source: Processed Data, 2020

BSM had an average efficiency value of 97.8% with a standard deviation of efficiency of 0.041 during the 2001-2019 period. Based on this fact, BSM had an efficiency level that is categorized in the medium efficiency and high efficiency because almost during each year, the efficiency score is above 85%. BSM is categorized in the low efficiency only in 2003 (83,3%). These results are consistent with the BSM efficiency scores calculated using the CRS approach. When the two CRS and VRS approaches are combined, the comparison of efficiency scores appears as in Figure 3.

Figure 3. The Comparison of Efficiency Scores-CRS and VRS



From Figure 3, levels of efficiency are mostly high and medium. This result is in line with a study conducted by Hosen & Rahmawati (2016) that cost efficiency of BSM is categorized medium. Firdaus & Hosen (2013) also claimed that average score of BSM is 92.60%, which is considered high. The level of efficiency is considered insufficient only in 2003 because the efficiency score is 81,9% (CRS) and 83,3% (VRS). Both CRS and VRS show similar pattern in early period as expected but quite different in the last five years. If the efficiency score = 1, it means in that period BSM operates at the best scale efficiency measure. If the score is less than 1, it means there is inefficiency in that period. Thus, the value (1-scale) indicates the inefficiency of BSM. Based on this finding, BSM needs to evaluate why there are still DMUs that have not reached the optimum point, especially in 2003, which has the lowest efficiency score.

If we deeply investigate BSM Financial Report in 2003, there was a significant increase in input, namely third-party fund (235%), labor costs (202%), and assets (211%) to more than twice from the previous year but this was not followed by the same increase in output, namely income and total financing, which only increased by 171% and 190%, respectively. Furthermore, if we scrutinize the 2003 balance sheet, it is found that BSM issued securities worth IDR 200 billion. Compared to the previous year, 2002, there was no issuance of investment securities. There was also a tremendous increase in total asset in 2003, so the value became IDR 3,422 trillion. In 2002, the asset value was only IDR 1,622 million. The author did not have additional information related to the purchase or transaction regarding to BSM fixed assets during that period, so a comprehensive evaluation of this significant increase cannot be carried out precisely.

Regarding the personnel expense issue, there was a decrease in labor costs in 2004, which only amounted to IDR 83,945 million. This figure is far from the labor cost in 2005, which almost doubled, amounting to IDR 152,577 million. This condition caused inefficiency in 2003 since the score was at the lowest position. These findings confirmed the research conducted by Anagnostopoulos et al. (2020) that the major constraints impeding Islamic banking growth include labor costs. There was a significant increase in inputs, namely assets, labor costs, and third-party funds (DPK) in 2003 but the resulting outputs, which are income and total financing, had not been able to keep up with their pace. Ascarya & Yumanita (2006) argued that one of the drawbacks in using DEA is that it is very sensitive to extreme value or observations. In addition, the results should be cautiously interpreted in terms of variability of characteristics, size, and limited number of observations. This gap condition needs the attention of BSM management to make an in-depth evaluation.

Using DEA based on data from 2001 to 2019, it is highly critical to increase the output side, namely income and the amount of financing. There are some alternatives: potential income from Wadiah Certificate of Bank Indonesia (SWBI), placement of fund to other Islamic Banks, fee-based income, and earning from security investments. From the input side, BSM shall maintain and increase the level of efficiency by reducing labor costs or other unnecessary expenses. Decision related to all aspects of cost policy must be consistent with the organization strategic goals and future organizational development needs.

Profitability Analysis

For assessing level of profitability, the descriptive statistic for independent dan dependent variables used in this study can be seen in Table 6. The mean value of the first variable, ROA, is 1.36, with maximum and minimum values of 0.17 and 3.58, respectively. The second variable, NPF, has a mean value of 4.03 with a maximum value of 6.94 and a minimum value of 2.42. FDR as the third variable has a mean value of 83.48, a maximum value of 94.40, and a minimum value of 74.55. BOPO has a mean value of 83.57, a maximum value of 100.60, and a minimum value of 73.00. Meanwhile, CAR has minimum and maximum values of 10.57 and 63.18, respectively, with a mean value of 15.71.

Table 6. Descriptive Statistics for Profitability Analysis

Indicators	Dependent variable		Independent Variable		
	ROA	NPF	FDR	BOPO	CAR
Mean	1.36	4.03	83.48	83.57	15.71
Min	0.17	2.42	74.55	73.00	10.57
Max	3.58	6.94	94.40	100.60	63.18
Std. Dev	0.92	1.43	6.08	8.27	12.31

Source: Processed Data, 2020

Profitability is the company's ability to gain profit from his business (Suntoto, 2013). Tabari et al. (2013) argued profitability is a parameter that indicates management approach and the competitive position of a bank in a market-based banking. These parameters help banks to accept some degree of risk. Return on asset (ROA) is a ratio that shows the company's ability to use all assets to generate profits. Hosen & Rahmawati (2016) categorized levels of profitability in Table 7.

Table 7. Category of Profitability

Level of Profitability	Category
0% - 0.99%	Low Profitability
1.00% - 1.99%	Medium Profitability
2.00% - ∞	High Profitability

Source: Hosen & Rahmawati, 2016

This study analyzed some factors namely NPF, FDR, BOPO, and CAR that affect the level of profitability of Bank Syariah Mandiri (BSM) by using ROA as an indicator as detailed in Table 8. From Table 8, levels of profitability in BSM look diverse and evenly distributed across all categories, namely low profitability (0%-0.99%), medium profitability (1%-1.99%), and high profitability (2%-∞). The average level of profitability is 1.36% and categorized as medium.

Before testing the hypothesis, the OLS classic assumption test was carried out. The results showed that the data were normally distributed and there was no autocorrelation, heteroscedasticity symptoms, and multicollinearity. The hypothesis results are presented in Table 9. Based on Table 9, the coefficient of R-squared determination is 85%. The table also

shows that the independent variables, NPF, FDR, BOPO, and CAR, used in the research model are able to explain the variation in the dependent variable, ROA, by 85%. Meanwhile, the remaining 15% is influenced or explained by other variables and not included in this model. Since sample size is limited (n<30), this study applied the central limit theorem that allows the author to use a normal distribution data for some meaningful applications (Triola, 2011).

Table 8. Level of Profitability in BSM

Year	Level of Profitability	Year	Level of Profitability
2001	3.30%	2011	1.95%
2002	3.58%	2012	2.25%
2003	1.04%	2013	1.53%
2004	2.86%	2014	0.17%
2005	1.83%	2015	0.56%
2006	1.10%	2016	0.59%
2007	1.53%	2017	0.59%
2008	1.83%	2018	0.88%
2009	2.23%	2019	1.69%
2010	2.21%	Average = 1.36%	

Source: Annual Report of BSM, 2020

Table 9. Statistical Testing Results

Variable	Statistical Test			
	Coefficient	Std. Error	t-Statistic	Prob.
C	6.976022	2.793184	2.497517	0.0256
X ₁	-0.16371	0.073888	-2.2157	0.0438
X ₂	0.00525	0.022535	0.232953	0.8192
X ₃	-0.07058	0.01526	-4.62509	0.0004
X ₄	0.049256	0.008982	5.48394	0.0001
R-squared	0.848729		Sample	19
Adjusted R-squared	0.805509		S.E. of regression	0.415695
F-Statistic	19.63731		Durbin-Watson stat	2.299957
Prob(F-Statistic)	0.000013			

Source: Processed Data with EViews, 2020

Based on Table 9, the research regression equation can be made as follows.

$$Y = 6,976 - 0,164NPF + 0,005FDR - 0,071BOPO + 0,049CAR + \epsilon$$

From the results of regression testing, the value of Prob (F-Statistic) = 0.0000 is below the value of $\alpha=5\%$, so there is sufficient evidence that the NPF, FDR, BOPO, and CAR variables simultaneously and significantly affect ROA. This finding confirmed the study conducted by Hosen & Rahmawati (2016) that the aforementioned variables simultaneously have a significant influence on the profitability of the BSM.

When using t-test results, there is sufficient evidence that each of the NPF, BOPO, and CAR variables independently has a significant effect on the level of profitability (ROA). This result is in line with the study conducted by Abdillah et al. (2016) that BOPO and

CAR have significant effect on profitability. Only the FDR variable has no significant effect on the level of profitability (ROA). Non-Performing Financing (NPF) has a significant negative effect on the level of profitability (ROA). Likewise, BOPO, or the ratio of operating costs and operating income, has a significantly negative effect on the level of profitability (ROA). In contrast to NPF and BOPO, CAR has a significant positive effect on the level of profitability (ROA).

The findings imply that financing to deposit ratio (FDR) does not have a significant effect on the level of profitability (ROA). This result was appropriated with a research conducted by Hosen & Rahmawati (2016) that FDR did not affect BSM profitability in the period of January 2010 to December 2013. This means either the large or small amount of financing distributed to the public, which comes from a number of funds collected, will not significantly affect the level of profitability. As a consequence, BSM shall not be highly concerned with the amount of funds financed compared to the amount of deposits since this condition will not significantly affect the level of profitability.

CONCLUSION

As an Islamic bank with the largest asset in Indonesia, the level of efficiency of BSM is categorized as high because it has an average efficiency score of 97.8%. Either CRS or VRS shows similar pattern in the early period but quite different for last five years. The level of efficiency was at its lowest point in 2003 due to a significant increase in inputs, namely assets, labor costs, and third-party funds (DPK) while the resulting outputs, which are income and total financing, have not been able to keep up with their pace.

The average level of profitability of BSM is 1.36% and categorized as medium. NPF, FDR, BOPO, and CAR simultaneously have a significant effect on the level of ROA. However, independently, FDR has no significant effect on ROA. This research implies that BSM shall increase the ROA by thoroughly evaluating the fluctuation of some financial ratio such as NPF, BOPO, and CAR. Ultimately, an Islamic bank with a gigantic asset shall give attention to its profitability while maintaining its efficiency level.

REFERENCES

- Abdillah, R., Hosen, M. N., & Muhari, S. (2016). The Determinants Factor of Islamic Bank's Profitability and Liquidity in Indonesia. *Knowledge Horizons. Economics*, 8(2), 140-147.
- Abdul-Wahab, A. H., & Haron, R. (2017). Efficiency of Qatari Banking Industry: an Empirical Investigation. *International Journal of Bank Marketing*, 35(2), 298-318. <https://doi.org/http://dx.doi.org/10.1108/IJBM-07-2016-0090>
- Anagnostopoulos, I., Noikokyris, E., & Giannopoulos, G. (2020). A Meta-Crisis Banking Efficiency: Study in The MENA Region. *Journal of Islamic Accounting and Business Research*, 11(9), 2087-2112. <https://doi.org/10.1108/JIABR-12-2019-0235>
- Ascarya., & Yumanita, D. (2008). Comparing The Efficiency of Islamic Banks in Malaysia and Indonesia. *Buletin Ekonomi Moneter dan Perbankan*, 11(2), 95-105.
- Ascarya, & Yumanita, D. (2006). Analisis Efisiensi Perbankan Syariah di Indonesia. *TAZKIA Islamic Finance and Business Review*, 1(2), 91-100.

- Banker, R. D., Charnes, A., and Cooper, W. W. (1984). Some Models for Estimating Technical and Scale Inefficiency in Data Envelopment Analysis. *Management Science*, 30(9), 1078-1092.
- Charnes, A., Cooper, W.W., and Rhodes, E. (1978). Measuring the Efficiency of Decision Making Units. *European Journal of Operation Research*, 2, 429-444.
- Firdaus, M. F., & Hosen, M. N. (2013). Efficiency of Islamic Banks Using Two Stage Approach of Data Envelopment Analysis. *Bulletin of Monetary, Economics and Banking*, 16(2), 155-176.
- Haron, S. (2004). Determinants of Islamic Bank Profitability. *KLBS Working Paper Series No.02*.
- Hosen, M. N., & Rahmawati, R. (2016). Efficiency and Profitability on Indonesian Islamic Banking Industry. *Al-Iqtishad: Journal of Islamic Economics*, 8(1), 33-48. <https://doi.org/10.15408/aiq.v8i1.2507>
- Kamyab, P., Mozaffari, M. R., Gerami, J., & Wanke, P. F. (2020). Two-Stage Incentives System for Commercial Banks Based on Centralized Resource Allocation Model in DEA-R. *International Journal of Productivity and Performance Management*, 70(2), 427-458. <https://doi.org/10.1108/IJPPM-11-2018-0396>.
- Mostafa, M. M. (2011). Modeling Islamic Banks' Efficiency: a Non-Parametric Frontier Approach. *International Journal of Islamic and Middle Eastern Finance and Management*, 4(1), 7-29. <https://doi.org/10.1108/17538391111122186>
- Nasution, L. N., Novalina, A., & Faried, A. I. (2019). Financial Performance and Profitability of Islamic Banking on Economic Growth In Indonesia. *1st International Halal Conference & Exhibition 2019*, 28-34.
- Parman, B. J., & Featherstone, A. M. (2019). A Comparison of Parametric and Nonparametric Estimation Methods for Cost Frontiers and Economic Measures. *Journal of Applied Economics*, 22(1), 59-84. <https://doi.org/10.1080/15140326.2018.1526868>
- Rusydiana, A. S. (2018). Efisiensi dan Stabilitas Bank Umum Syariah di Indonesia. *Akuntabilitas*, 11(2), 203-222. <https://doi.org/10.15408/akt.v11i2.7033>
- Sakti, M. R. P., & Azhar, M. (2018). Efficiency, Stability, and Asset Quality of Islamic vis-à-vis Conventional Banks: Evidence from Indonesia. *Journal of Islamic Accounting and Business Research*, 9(3), 378-400. <https://doi.org/10.1108/JIABR-07-2015-0031>.
- Srairi, S., & Kouki, i. (2012). Efficiency and Stock Market Performance of Islamic Banks in GCC Countries. *ISRA International Journal of Islamic Finance*, 4(2), 89-116.
- Sufian, F., & Kamarudin, F. (2015). Determinants of Revenue Efficiency of Islamic Banks. *International Journal of Islamic and Middle Eastern Finance and Management*, 8(1), 36-63. <https://doi.org/10.1108/imefm-12-2012-0114>
- Suntoto, D. (2013). *Analisis Laporan Keuangan Untuk Bisnis*. CAPS: Yogyakarta.
- Tabari, N. A. Y., Ahmadi, M., & Emami, M. (2013). The Effect of Liquidity Risk on the Performance of Commercial Banks. *International Research Journal of Applied and Basic Sciences*, 4(6), 1624-1631.
- Triola, M. F. (2011). *Essentials of Statistics 5th Edition*. Pearson College Division: New York.
- Wasiuzzaman, S., & Hanimas. (2013). Profitability of Islamic Banks in Malaysia: An Empirical Analysis. *Journal of Islamic Economics, Banking Finance*, 6(4), 53-68.