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Information System Model of Health Level Assessment of Sharia Rural Bank in Indonesia

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Abstract - Indonesia having the world's largest Muslim population and experiencing sustained economic growth at a pace of about 5 percents. The growth of Sharia Banking in recent years in Indonesia showed a good improvement. Based on data obtained from Bank Indonesia in Sharia Banking Outlook 2012, the volume of sharia banking business in last one year, especially Sharia (Islamic) Bank and Sharia Business Unit (UUS), is growing rapidly. These good improvement should also be accompanied by bank responsibilities that serve as an intermediary institution by applying Good Corporate Governance (GCG) and prudential principles. Banking in sharia financing is useful to minimize the risks that may arise from moral hazards and transactions that nature of money laundering. The Sharia Rural Bank (BPRS) also has an obligation to make financial statements submitted to Bank Indonesia periodically. Based on these financial statements can be measured the health level assesment. This study aims to develop a model of health level assesment information system from BPRS derived from the financial statements of bank publications from the Central Bank.

Keywords - Sharia Rural Bank, Health Level Assessment, Information System, Financial Statements.

I. Introduction

The sharia-based banking system, along with sharia-based financial products, is to promote a "righteous financial system" that might provide mutual benefits to the real economy and all parties. Sharia-based banking is based on partnership and mutual benefits and thus provides an alternative banking system that benefits both the public and the bank. Sharia-based banking in Indonesia is implemented under the dual banking system in compliance with the Indonesian Banking Architecture (API).

In sharia banking, there are sharia bank, sharia rural bank (BPRS) and sharia business unit (UUS) and all has an obligation to submit financial report periodically to Central Bank (BI). Inside the BI web site the information relating to the report can be found at https://www.bi.go.id/id/publikasi/laporan-keuangan/bank/bpr-syariah/Default.aspx.[1]

In the financial report on the page there are several reports including balance sheet, profit and loss, earning assets and other information. From the earning assets reports there are several data that can be used to generate the health level assesment of BPRS. Those data are Capital, Assets, Management, Earnings and Liquidity (CAMEL). [2]

II. Material And Methods

A. Health Level Assesment

Health level assesment of commercial banks based on sharia principles is done by taking into account CAMELS factors through quantitative and / or qualitative approaches to various aspects that affect the condition or performance of banks by assessing the financial factors and management factors. The assessment of management factors is separated from the assessment of financial factors, to provide a more complete picture of the financial condition and bank management. Management factor is considered as a leading indicator in the assessment so it can not be used as part of the valuation of financial factors.

The assessment of financial factors is carried out quantitatively by weighting the factor ratings, for now weighting for capital factors (25%), asset quality (50%), profitability (10%), liquidity (10%) and sensitivity to market risk (5% Assessment of capital factors, asset quality, profitability, liquidity and sensitivity to market risk is carried out using quantitative assessments through financial and qualitative ratios by considering judgment.

B. Capital Adequacy

A qualitative evaluation of critical variables that directly bear on the institution's overall financial condition. Capital adequacy is assumed to be crucial reflector of the financial soundness of a bank. In order to survive, it is indispensable to protect the stakeholder confidence and preventing its bankruptcy. Capital is assumed to be a cushion that offers protection to stakeholder and it enhances the stability and efficiency of bank. Capital adequacy represents the overall financial position of a bank.[5]

C. Assets Quality

The quality of assets is significant aspect to assess the degree of financial strength of a bank. The principal purpose to measure the assets quality is to determine the composition of non-performing assets (NPAs) as a percentage of the total assets. The quality of credit portfolio expresses the profitability of banks. [5]

The major concern of all commercial banks is to keep the amount of non-performing loans to low level. This is so because high non-performing loan affects the profitability of the bank. [6]

D. Management Efficiency

Management efficiency is another indispensable constituent of the CAMELS model that guarantees the growth and endurance of a bank. Management efficiency signifies adherence with prescribed norms, capability to counter to changing environment, leadershi and administrative capability of the bank. [5]

E. Earning Quality

High earnings quality should reflect the firm's current operating performance and a good indicator of future operating performance. [7]. The quality of earnings is an extremely significant parameter which expresses the quality of profitability and capability of a bank to sustain quality and earning consistently. It primarily reflects the profitability of bank and enlightens consistency of future earnings. [5]

F. Liquidity

The adverse effect of increased liquidity for financial institutions stated that although mode liquid assets enhances the ability to raise cash on short-notice, but also reduce management's ability to commit credibly to an investment strategy that protects investors [8]. Liquidity is another noteworthy aspect which expresses the financial performance of banks. Liquidity means the ability of bank to honour its obligations toward depositors. Bank can preserve adequate liquidity position either by increasing current liabilities or by converting its assets into cash quickly. It also denites the fund available with bank to meets its credit demand and cash flow requirements. [5]

G. Sensitivity to Market

Sensitivity is expressed as the risk which occurs due to alteration in market conditions, such changes adversely impact earnings and/or capital. Market risk includes exposures associated with changes in interest rates, foreign exchange rates, commodity prices, equity prices, etc. While all of these items are important, the primary risk in most banks is interest rate risk [9]. The sensitivity of the market risk is assesed by banks through changes in interest rate, foreign exchange rates and equity prices. The changes in these variables affects earning ability of the bank. So, sensitivity to market risk expresses how adversely the bank is affected due to such changes. Market risk is the effect of trading activities, non-trading activities and foreign exchange operation.

H. Rural Bank

An BPR or Rural Bank (RB) is a Bank conducting business in a conventional or sharia-based manner, in which its activities do not provide services in the payment services. [10]

BPR activities are much narrower than those of commercial banks because BPRs are prohibited from receiving demand deposits, forex activities, and insurance.

Business activities that may be performed by BPR are as follows:

- Collect funds from the public in the form of deposits in the form of time deposits, savings, and or other similar forms.
- Giving credit.
- Provide financing and placement of funds based on Sharia Principles, in accordance with provisions stipulated by Bank Indonesia.
- Placing funds in the form of Bank Indonesia Certificates (SBI), time deposits, certificates of deposit, and / or savings in other banks.

There are two kinds of Rural Banks, namely Conventional Rural Bank and Sharia Rural Bank. Each

Bank is required to make a financial statement. Financial Statements that should be be submitted by Conventional Rural Banks consist of:

- Balance Sheet Report
- Income statement
- Statement of Commitments and Contingencies
- Other Information Report as for BPR Syariah have different report with Conventional BPR.

There are several reports in a form of table are shown in Central Bank web site, namely :

- Balance
- Profit and loss
- Commitment and Contigency
- Earning Assets Quality and Other Information
- Source and Use of ZIS (Zakat, Infaq and Sodaqoh)
- Source and Use of Qardhul Hasan
- Distribution of Profit Sharing
- Changes in Related Investment Funds

I. Information System

Information system is an organized combination of people, hardware, software, communication network and data resources that collect, transform and distribute information within an organization [4].

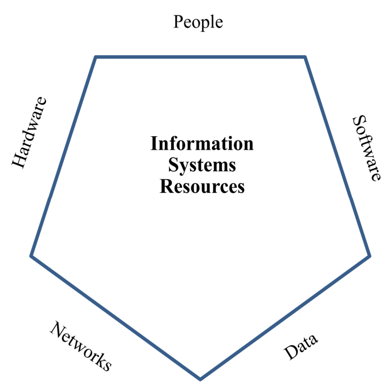

Figure 1. Information System Component

An information system depends on the resources of people (end user and IS specialists), hardware (machines and media), software (programs and procedures), data (data and knowledge bases), and networks (communication media and network support) to perform input, processing, output, storage, and control activities that convert data resources into information products.

III. RESEARCH METHODOLOGY

Based on the Sharia Rural Bank financial statement with the assessment of financial factors and assessment of management factors then the information system model of health level of rural sharia bank created (ISM).

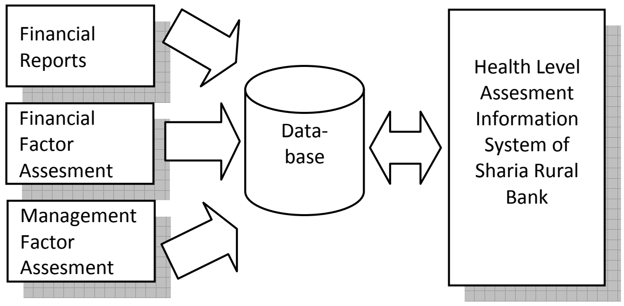

Figure 2. Framework ISM

Health level assesment of Sharia Rural Bank based on Surat Edaran Bank of Indonesia No.9/24/DPBS year 2007 [3] as follow:

Capital Adequacy, the adequacy of fulfillment of the minimum capital requirements (KPMM).

Rank	Description	Criteria
1	Very Healthy	KPMM ≥ 12%
2	Healthy	9% ≤ KPMM < 12%
3	Quite Healthy	8% ≤ KPMM < 9%
4	Less Healthy	6% < KPMM < 8%
5	Unhealthy	KPMM ≤ 6%

Assets Quality, the quality of productive assets (KAP).

Rank	Description	Criteria
1	Very Healthy	KAP > 0,99
2	Healthy	0,96 < KAP ≤ 0,99
3	Quite Healthy	0,93 < KAP ≤ 0,96
4	Less Healthy	0,90 < KAP ≤ 0,93
5	Unhealthy	KAP ≤ 0,90

Management Efficiency, the amount of non-performing financing (NPF)

Rank	Description	Criteria
1	Very Healthy	NPF < 2%

2	Healthy	2% ≤ NPF < 5%
3	Quite Healthy	5% ≤ NPF < 8%
4	Less Healthy	8% ≤ NPF < 12%
5	Unhealthy	NPF ≥ 12%

Earning quality, the earning assesment is measured with the return on asset (ROA).

Rank	Description	Criteria
1	Very Healthy	ROA > 1,5%
2	Healthy	1.25% < ROA ≤ 1,5%
3	Quite Healthy	0,5% < ROA ≤ 1,25%
4	Less Healthy	0% < ROA ≤ 0,5%
5	Unhealthy	ROA ≤ 0%

Liquidity, the liquidity risk is measured with the finance to deposit ration (FDR).

Rank	Description	Criteria
1	Very Healthy	FDR < 98%
2	Healthy	98% ≤ FDR < 100%
3	Quite Healthy	100% ≤ FDR < 102%
4	Less Healthy	102% ≤ FDR < 104%
5	Unhealthy	FDR ≥ 104%

Sensitivity to market is the ability of bank to cover the risk from the exchange rates.

Rank	Description	Criteria
1	Very Healthy	MR ≥ 12%
2	Healthy	10% ≤ MR < 12%
3	Quite Healthy	8% ≤ MR < 10%
4	Less Healthy	6% ≤ MR < 8%
5	Unhealthy	MR < 6%

IV. Result And Discussion

The framework of this research is to develop Health Level Assessment Information System of Sharia Rural Bank in Indonesia. The data used for this research collected from Central Bank web site and then save into the ISM database tables.

Some structure of the main table to keep the information can be shown in figure 3.

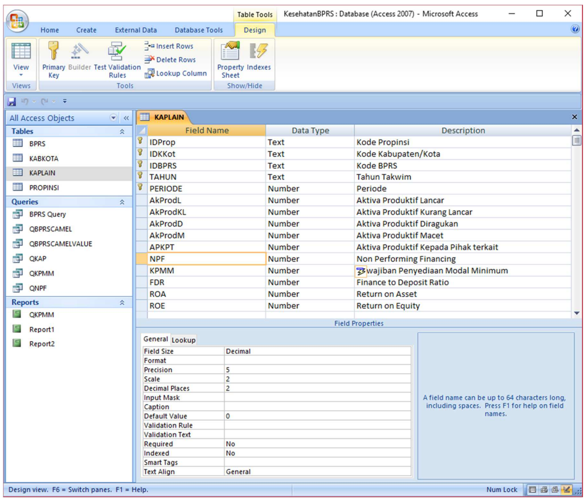

Figure 3. Table structure

There are four tables namely : BPRS, KABKOTA, PROPINSI and KAPLAIN to keep the data about Sharia Rural Bank, City and Province and the financial statement.

Based on those data mention above then the related report with the health level assessment can be created.

Figure 4. Capital Adequacy

Figure 4 shows the report about the adequacy of fulfillment of the minimum capital requirements (KPMM) for several years.

PENILAIAN PERINGKAT KAP
KUALITAS AKTIVA PRODUKTIF

Propinsi

JAWA BARAT

Kabupaten/Kota

Kabupaten Bogor

Nama Bank Pembiayaan Rakyat Syariah

PT BPRS Amanah Ummah

TAHUN	Rasio KAP	Peringkat	Keterangan
2011	0,5 %	5	Tidak Sehat
2012	0,77 %	5	Tidak Sehat
2013	0,38 %	5	Tidak Sehat
2014	0,56 %	5	Tidak Sehat
2015	1,03 %	1	Sangat Sehat
2016	1,08 %	1	Sangat Sehat
2017	2,14 %	1	Sangat Sehat

Figure 5. Assets Quality

Figure 5 shows the report about the quality of productive assets (KAP) for several years.

PENILAIAN PERINGKAT NPF
NON PERFORMING FINANCING

Propinsi

JAWA BARAT

Kabupaten/Kota

Kabupaten Bogor

Nama Bank Pembiayaan Rakyat Syariah

PT BPRS Amanah Ummah

TAHUN	Rasio NPF	Peringkat	Keterangan
2011	0,65 %	1	Sangat Sehat
2012	1,09 %	1	Sangat Sehat
2013	0,7 %	1	Sangat Sehat
2014	0,87 %	1	Sangat Sehat
2015	1,49 %	1	Sangat Sehat
2016	1,72 %	1	Sangat Sehat
2017	3,31 %	2	Sehat

Figure 6. Management Efficiency

Figure 6 shows the amount of non-performing financing (NPF) for several years.

PENILAIAN PERINGKAT ROA
RETURN ON ASSET

Propinsi

JAWA BARAT

Kabupaten/Kota

Kabupaten Bogor

Nama Bank Pembiayaan Rakyat Syariah

PT BPRS Amanah Ummah

TAHUN	Rasio ROA	Peringkat	Keterangan
2011	3,79 %	1	Sangat Sehat
2012	2,69 %	1	Sangat Sehat
2013	3,53 %	1	Sangat Sehat
2014	4,01 %	1	Sangat Sehat
2015	4,21 %	1	Sangat Sehat
2016	3,58 %	1	Sangat Sehat
2017	3,4 %	1	Sangat Sehat

Figure 7. Earning Quality

Figure 7 shows the earning assesment is measured with the return on asset (ROA) for several years.

PENILAIAN PERINGKAT FDR
FINANCE TO DEPOSIT RATIO

Propinsi

JAWA BARAT

Kabupaten/Kota

Kabupaten Bogor

Nama Bank Pembiayaan Rakyat Syariah

PT BPRS Amanah Ummah

TAHUN	Rasio NPF	Peringkat	Keterangan
2011	76,55 %	1	Sangat Sehat
2012	72,63 %	1	Sangat Sehat
2013	76,93 %	1	Sangat Sehat
2014	78,82 %	1	Sangat Sehat
2015	87,21 %	1	Sangat Sehat
2016	78,35 %	1	Sangat Sehat
2017	77 %	1	Sangat Sehat

Figure 8. Liquidity

Figure 8 shows the liquidity risk is measured with the finance to deposit ration (FDR) for several years.

PENILAIAN FAKTOR FINANSIAL TINGKAT KESEHATAN
BANK PEMBIAYAAN RAKYAT SYARIAH

Propinsi

JAWA BARAT

Kabupaten/Kota

Kabupaten Bogor

Nama Bank Pembiayaan Rakyat Syariah

PT BPRS Amanah Ummah

TAHUN	KPMM	Per.	Keterangan	KAP	Per.	Keterangan	NPF	Per.	Keterangan	ROA	Per.	Keterangan	FDR	Per.	Keterangan
2011	14,23	1	Sangat Sehat	0,5	5	Tidak Sehat	0,65	1	Sangat Sehat	3,79	1	Sangat Sehat	76,55	1	Sangat Sehat
2012	14,17	1	Sangat Sehat	0,77	5	Tidak Sehat	1,09	1	Sangat Sehat	2,69	1	Sangat Sehat	72,63	1	Sangat Sehat
2013	12,69	1	Sangat Sehat	0,38	5	Tidak Sehat	0,7	1	Sangat Sehat	3,53	1	Sangat Sehat	76,93	1	Sangat Sehat
2014	15,33	1	Sangat Sehat	0,56	5	Tidak Sehat	0,87	1	Sangat Sehat	4,01	1	Sangat Sehat	78,82	1	Sangat Sehat
2015	14,17	1	Sangat Sehat	1,03	1	Sangat Sehat	1,49	1	Sangat Sehat	4,21	1	Sangat Sehat	87,21	1	Sangat Sehat
2016	15,89	1	Sangat Sehat	1,08	1	Sangat Sehat	1,72	1	Sangat Sehat	3,58	1	Sangat Sehat	78,35	1	Sangat Sehat
2017	16,01	1	Sangat Sehat	2,14	1	Sangat Sehat	3,31	2	Sehat	3,4	1	Sangat Sehat	77	1	Sangat Sehat

Figure 9. CAMEL

Figure 9 shows all of the CAMEL aspect of 1 sharia rural bank for several years.

Other reports can be generated based on those data like trend of each category for several years using such diagrams like bar or line.

V. Conclusion

The conclusion can be made from the results of the research conducted as follows : Health level assessment of Sharia Rural Bank can be presented for each bank for several years for each category easily. If it is needed the information can be presented for each bank for all of category for several years.

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