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Credit Risk Management in Indonesian Islamic Banking

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Abstract

This research aims to analyze credit risk management in the Indonesia Islamic banking industry. Primarily, the credit risk management is related to policies and procedures, credit risk management activities and credit risk controling or mitigating. Research constructed by weighting a number of indicators that reflect credit risk management activities in Islamic banking. The final results of the research are index of credit risk management of the Indonesia Islamic banking industry and indices of credit risk management in the Islamic banking industry. The Index is counted by the method of scoring with the maximum score of 100 and the industrial index is obtained by combining of each Islamic bank through the calculation of weighted average of individual share of financing. Based on the analysis of primary and secondary data, the index of credit risk management of the Islamic banking industry and index aspects of credit risk management, the index of the Indonesia Islamic banking industry come up to a good criterion. Improving the Quality of credit risk management, can be proceded by bank management by improving risk management aspects which have not been adequately assessed. Moreover, improving the quality of credit risk management by the authority of Islamic banking can be pursued by formulating the banking regulations.

Keywords: *Credit risk, Risk mitigation, Risk controlling, Islamic banking, Indonesia*

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Background

The global Islamic finance has shown progressive development in the last two decades. Particularly, it grows between 15% - 20% and is operated in more than 75 countries with at least 300 Islamic financial institutions institutions (Shtayyeh and Piot, 2008). Indonesia as a country with the most populated Moslem people has a potential to be one of the leading countries in this field. In fact, the last 5 years showed a tremendous growth of the Islamic banking industry which is 40% per year eventhough it still has 4.55% market share. Further, it has a unique characteristic of intensive financing to the Small and Micro Entrepresis (SMEs) with a high Financing to Deposit Ratio (FDR).

However, such financing is not properly supported by supply of human resources, intensive monitoring and advanced information technology. As such, the Indonesian Islamic banking industry somehow faces high credit risk. Especially, Sharia prohibits changing the ongoing price in trade based transactions, charging any pinalty in default case(s) and, claiming non Islamic return as the bank's profit. These prohibitions create difficulty for Islamic banks to apply conventional based credit risk mitigation techniques and invite moral hazard in the debtors to misconduct or miuse the financing.

The other potensial factor of credit risk is in the application of *mudarabah* and *musharakah* contracts with profit and loss *sharing* (PLS) concept in bank's financing. Particularly, such contracts may trigger debtors to take exessive risks in doing business becuase the loss becomes responsibility of the Islamic banks. Meanwhile, on the liability side, Islamic banks may not transfer the business loss(es) to depositors as the true owner of the funds. This could create non prudential financing and increase credit default(s).

The paper attempts to measure and value the credit risk management application in Islamic banks. In particular, it would value some credit risk management indicators in order to have a credit risk management index as an indicator to check the credibility and soundess of the Islamic banking industry in managing depositors' funds and mitigating credit risk.

Literature Reviews

Credit risk management consists of procedures and policies of credit risk mitigation, identification of risk, measurement of risk and, monitoring and controlling risks (Bank Indonesia, 2011a; Rivai and Arvyan, 2010). It indeed determines the quality of credit management because bad credit risk management may downgrade bank financing and *vice versa* (Abadi *et al.*, 2011). Khan and Ahmed (2008) and Islamic Financial Services Board (2009) explains that credit risk management in Islamic banks requires the involvement of four things namely: (i) the roles of the board of directors, (ii) the roles of senior management, (iii) the availability of infrastructures such as administration system, information and monitoring system and, (iv) the availability of an independent credit reporting.

Meanwhile, Greuning and Iqbal (2008) address three policies in the management of credit in Islamic banks. First of all are policies to limit and decrease credit risk inclusing policies to concentrate bank financing, reducing credit exposure in core debtors and relocating financing to certain economic sectors, spreading the bank financing. Secondly is policy with regard to asset classification which includes regular evaluation on the quality of financing portfolio and limitation of the time of *review*. Thirdly is policy to have some reserves for business loss prevention. Moreover, they stress on the importance of evaluation on existing policis and practices of credit risk management in Islamic banking.

From conventional literatures, Dam (2010), Richard *et al* (2009), Anthony (1997) and Bank for International Settlements (2000), the Basel Committe on Banking Supervision (BCBS) in the documents of the Principles for the management of credit risk (2000) suggests five principles in valuing credit risk management in banks. First, creating conducive environment for credit risk management including the roles of the Board of Director (BoD) and Senior Management in managing credit risk. Second, credit extenstions are conducted based on prudential credit expansion. Third, the administration process, measurement and credit supervisory should be robust. Forth is a proper credit management. Firfth is the roles of supervisor in determining supervisory independence in valuing strategies and credit extension policies, limit of the credit, and effectiveness of the risk management.

In order to analyze, value and get the credit risk management index of the Indonesian banking industry, and based on Bank Indonesia regulation on quality of assets (Bank Indonesia, 2011b) and banking supervision based on risk (Bank Indonesia, 2009), this research uses scoring method to compute the index and classifies the credit risk management activities in three aspects namely: (i) policies and procedures of credit risk management, (ii) management of credit risk and, (iii) credit risk mitigation. Scoring is applied to these three aspects of credit risk management with the maximum total index of 100. In particular, the total index of credit risk management (Cr) is the accumulation of the: index of policies and procedures of credit risk management (X), index of management of credit risk (Y) and, index of credit risk mitigation (Z). Mathematically, credit risk management (Cr) is simply written as:

$$Cr = \sum_{t=1}^{n} X + \sum_{t=1}^{n} Y + \sum_{t=1}^{n} Z \tag{1}$$

$$Cr = \sum_{t=1}^{n} X + \sum_{t=1}^{n} Y + \sum_{t=1}^{n} Z \tag{2}$$

$$\sum_{t=1}^{n} Y = \sum_{t=1}^{n} D + \sum_{t=1}^{n} E + \sum_{t=1}^{n} F + \sum_{t=1}^{n} G \tag{3}$$

$$\sum_{t=1}^{n} Z = \sum_{t=1}^{n} H + \sum_{t=1}^{n} I \tag{4}$$

A stands for credit risk policies and strategies of the Board of Directors. *B* is the activity of the senior managers in implementing credit risk policies and strategies of the Board of Directors. *C* is the communication of the policies and risk management strategies to all parties in the Islamic bank. *D* is the activity of the Islamic banks to apply the standard operating procedures and central bank regulation on credit risk management. *E* is the compliance of the Islamic financing with the prudential financing activities.

F is the administration process, financing measurement and supervisory and, credit risk identification from the bank's product and activities (internal sources of credit risk). *G* is the method and information system used by Islamic bank to value, measure and monitor the credit risk. *H* is the bank effort to comply the financing activites with the standard operating procedures and the banking produntial regulations (corrective actions). *I* is bank activity to periodically evaluate the policies and strategies in managing credit risk. Finally, *n* is the number of respondents. After valuing every aspect of the credit risk management, four criteria are determined to decide the quality of credit risk management which are: (1) Excellent, (2) Good, (3) Satisfactory and (4) Poor. Table 1 depicts the values of the index of the credit risk management.

Table 1. Values of the Index of the Credit Risk Management

Aspect	Total Values	Criterias of the Index Values			
		Excellent	Good	Satisfactory	Poor
Policies and Procedures (X)	40	40 ≥ X > 32	32 ≥ X >24	24 ≥ X > 16	X ≤ 16
Management of Credit Risk (Y)	30	30 ≥ Y > 24	24 ≥ Y > 18	18 ≥ Y > 12	Y ≤ 12
Mitigation of Credit Risk (Z)	30	30 ≥ Z > 24	24 ≥ Z > 18	18 ≥ Z > 12	Z ≤ 12
Total Management of Credit Risk (Cr)	100	100 ≥ Cr > 80	80 ≥ Cr > 60	60 ≥ Cr > 40	Cr ≤ 40

Technically, in counting the index of credit risk management (*Cr*) or in every aspect of credit risk management above (*X*, *Y* and *Z*), the lowest index value is limited to 40% followed by the interval of 20%. The lowest index value of 40% is decided as the minimum effort of Islamic bank to conduct a robust credit risk management. Further, it considers that the policies and procedures of credit risk management (*X*) is the most important aspect than the other two aspects in the management of credit risk. As such, it is given 40 points while the aspect of the management of credit risk (*Y*) is given 30 points and the same as credit risk mitigation (Z). The detail of the points is described in Table 1 above.

Data and Assumptions

The object of the research is the Islamic commercial banks (BUS) in Indonesia as they both capture more than 80% of the total Islamic banking industry and have independent credit risk management policies. The Islamic banking units (UUS), which are units in the conventional banks, do not belong to the object of the paper because their risk management depends on the holding companies (conventional banks).

Primary data is collected with questionnaires to the respondents from Islamic banks. Particularly, the paper targets researchers in every Islamic bank and searches for related information from related institutions such as Bank Indonesia. Researchers in Islamic banks are those from managers/decision makers in Islamic banks, bank supervisors from Bank Indonesia, or persons in charge of credit risk management in Islamic banks. Meanwhile, the secondary data was taken from Bank Indonesia data based from December 2000 – April 2012. Particularly, it takes monthly data of Islamic bank financing and *non performing financing* (NPF).

Assessment on Credit Risk Management

Principally, index of credit risk management is constructed based on weighted average of the individual Islamic bank index of credit risk management. Whilst, the weight of an Islamic bank is from its share of financing in the Islamic banking industry. Similarly, index of every aspect of credit risk management of the Islamic banking industry is gained from a weighted average of every aspect of credit risk management of an individual Islamic bank. A composition or share of financing of an Islamic bank can be seen in the Table 2 below.

Table 2: Share of Financing of an Islamic Bank per Total Financing

No	Banks	Financing	
		Nominal (Million Rp)	Share of Financing
1	Bank Syariah Mandiri	37,146,234	42.69%
2	Bank Muamalat Indonesia	23,657,134	27.19%
3	Bank BRI Syariah	9,237,874	10.62%
4	Bank BNI Syariah	5,576,990	6.41%
5	Bank Syariah Mega Indonesia	4,390,667	5.05%
6	Bank Syariah Bukopin	2,088,447	2.40%
7	Bank Jabar dan Banten Syariah	1,860,554	2.14%
8	Maybank Syariah	1,234,361	1.42%
9	Bank BCA syariah	673,238	0.77%
10	Bank Panin Syariah	786,357	0.90%
11	Bank Victoria Syariah	62,691	0.42%
	Total	**87,014,547**	**100%**

Source: Bank Indonesia (up to April 2012)

Valuing aspects of credit risk management

Aspect of Policies and Procedures

The output of the survey with regard to aspect of policies and procedures comes up with the index values of 30.56. Based on table 1, such index values constitute to a good criteria meaning that in general the quality of Islamic banking policies and procedures to manage credit risk is relatively good. Particularly, the survey finds that:

(i) Application of policies and procedures of credit risk management as well as transfer of responsibility to the lower level have captured all aspects of credit risk mitigation. Moreover, such policies, procedures and limit of responsiblity have even been stated in the standard operating procedures (SOP) of each Islamic bank and have been well-understood by all related parties in the bank.

(ii) The transfer of responsibility to manage credit risk, limit of it, internal rating and the quality of assets in the SOP is fully implemented and reviewed periodically. In addition, review of the SOP has been done properly capturing materials, frequency and report to the board of commissioners and board of directors. In addition, Islamic banks have conducted stress testing test based on their complexity and capacity.

(iii) Communication of policies and strategies of credit risk to all employee have been done completely through various medias. As such, human resources are valued good enough based on quantity and quality to manage credit risk.

The results of measuring aspect of policy and credit risk management procedures are delivered in Tabel 2 below.

Table 2: Measuring Policy and Credit Risk Management

BANKS	Policy and Credit Risk Management Procedures			
		Policies & Strategies	Implementation of Policy and Strategies	Communication of Policies and Strategies
	X	A	B	C
AA	28,4	14,2	12,5	1,7
BB	22,5	10,7	10,7	1,0
CC	30,6	15,7	12,5	2,3
DD	30,4	15,7	11,7	3,0
EE	21,0	12,7	6,1	2,2
FF	24,5	13,5	8,4	2,5
GG.	26,6	14,5	9,8	2,3
HH	25,9	13,3	10,0	2,5
JJ	32,7	17,0	13,7	2,0
KK	29,6	16,3	11,9	1,4
LL	23,0	11,2	9,1	2,6
Industry Index	30,56			

Table 2 identifies 3 (three) Islamic banks (BUS) with a 'satisfactory' criteria of the index of policy and credit risk management. Particularly, their index values are 21, 22.5, and 23. One BUS has an 'excellent' criteria with the index value of 32.7 and 7 (seven) BUS have only a 'good' criteria. Some BUS have low index because:

(i) They do not have a comprehensive credit risk management policy, limited communication process and non routine evaluation of the SOP.
(ii) They have not applied internal rating to depositors and stress testing to check the adequcy of capital and liquidity. Moreover, there is no comprehensive and clear authority to extend financing in their middle management and it does not include types of industry, economic sectors, geography, and maturity profile.
(iii) Communication of policies and credit risk management are under responsibility of a certain team or individual dealing directly with controlling of credit risk. In fact, those should be delivered to all employees and to internalize such policies and management in the organization. Meanwhile, evaluation of both policies and credit risk management procedures is conducted when (a) the banks need to do it, (b) problems are found in extending financing or, (c) banking regulations are changed. Moreover, there is no routine evaluation and Islamic banks are only reactive (not proactive) to any change in credit risk.

Aspect of credit risk management

Output of the survey gives an index value of the credit risk management in Islamic banks of 22.94 and based on the credit risk management measuring system, it complies with a good criteria. It means that the credit risk management in the Indonesian Islamic banking industry is relatively good with some minor corrections, particularly:

(i) Indentification, measurement and monitoring of credit risk in the Indonesian Islamic banking industry are well-managed both the materials and the frequency.
(ii) A consistent/continuous internal rating and stress testing test are practiced refering to the complexity and capacity of each Islamic bank. Further, the structure of organization in the Indonesian Islamic banking industry supports the financing activities.

(iii) Financing activities have been organized properly based on a robust financing procedures which starts from analysis of financing proposal, credit mitigation adequacy, approval process, financing administration and disbursement of financing.
(iv) Valuation of the financing quality is continuously organized by considering collectibility, payment capacity, liquidity, cash flow estimation and macroeconomic condition.
(v) Information system can provide data for analysis, management, controlling and credit risk management policy formulation. A continuous review of the information system including the materials, frequency and reporting to both board of commisioners and directors.

The outputs of the credit risk management is depicted in Tabel 3 below:

Table 3: Measuring Management of Credit Risk

BANKS	Management of Credit Risk (Y)				
		Implementation SOP and Regulation	Extending Financing with Standard Procedures	Administration, Measurement and Supervision of financing	Method and Information System
	Y	D	E	F	G
AA	22,4	5,9	5,1	6,3	5,2
BB	22,9	5,9	5,0	6,7	5,3
CC	20,5	5,4	4,5	6,2	4,4
DD	23,1	7,1	4,8	6,5	4,8
EE	14,3	4,5	2,6	5,8	1,5
FF	16,3	2,8	4,6	6,0	2,9
GG	21,8	6,1	5,1	6,8	3,7
HH	22,9	6,6	4,7	6,5	5,2
JJ	25,4	6,4	5,4	7,4	6,3
KK	23,2	6,0	6,0	6,7	4,6
LL	17,9	4,8	4,5	6,0	2,7
Industry Index	22,94				

Tabel 3 identifies 3 (three) Islamic banks (BUS), which have credit risk management index of Satisfactory, with the values of 14.3, 16.3 and 17.9. In addition, 1 (one) BUS stands on an excellent index criteria with a value of 25.4 and the other 7 (seven) BUS fall in a good criteria because:

(i) Identification and credit risk assessment are not appropriate, not regularly assessed and based on demand. These have caused inaccurate credit risk measurement.
(ii) They have not distinguised administration function and banking operations in the organization structure. In particular, administration function of financing activities is still managed by the operational unit as such it may not independently function as a back office control unit in financing disbursement.
(iii) Review of the information system is not regularly arranged and depends on banking regulatory change or request by the banking regulator. Lastly, the quality of the asset is still manually assessed with the possibility of human error and credit engineering.

Aspect of credit risk controlling

The index of the industry credit risk controlling is valued 23.92 or falls in a good criterion. It shows a modest control of credit risk in the Indonesian Islamic banking industry with some constraints to be sorted out. Such value comes from certain findings, which are:

(i) Anticipative and corrective actions in the case of low asset quality performance are conducted by Islamic banks perfectly. Specifically, they anticipate credit losses by intensifying financing collectibility, monitoring business conditions, managing cash flow, and collateral.
(ii) A more prudent and tighter asset classification stipulated by Islamic banks than the central bank to maintain the robust financing besides sanctions on the violation of credit risk management procedures.
(iii) The same as before, Islamic banks have evaluated the policies and procedures of the credit risk management properly including reporting to the board of directors and commisionners.

The outputs of the credit risk controlling can be seen in table 4 in the following:

Table 4: Measuring Controlling of Credit Risk

BANKS	Controlling Credit Risk		
		Corrective Action	Policy Evaluation and Strategies
	Z	H	I
AA	21,3	14,8	6,6
BB	20,8	13,6	7,2
CC	22,7	14,5	8,2
DD	22,9	14,9	8,0
EE	16,9	12,4	4,5
FF	23,0	15,4	7,6
GG	21,3	14,5	6,9
HH	23,9	15,6	8,3
JJ	25,9	17,5	8,4
KK	25,4	15,0	10,4
LL	21,6	14,8	6,8
Industry Index	23,92		

Unlike the previous result, table 4 finds 2 (two) BUS, which have credit risk controlling index of excellent (above the industry) with the values of 25.9 and 25.4. Meanwhile, 1 (one) BUS is classified as satisfactory with the value of credit risk controlling index of 16.9. The other 7 (seven) BUS olny have a good credit risk controlling index because:

(i) Reserve policy for every financing is relied on collectibilities per se and does not consider business condition, cash flow of enterpreneurs and macroeconomic condition.
(ii) Evaluation of the policy and credit risk management procedures is not a routine agenda, rather it depends on the demand for evaluation or if it is needed by the boards.

In fact, credit risk controlling is more dominant than credit risk management with an index of good (23.92). This is reasonable because credit risk controlling may avoid Islamic banks from both low asset quality and business losses. Moreover, credit risk controlling is much easier to do than mitigating credit risk because Islamic banks have prepared some policies and actions to controll credit risk.

Index of credit risk management of the indonesian Islamic Banking industry

The overall credit risk management of the Indonesian Islamic banking is counted 77.41 as seen table 5, and classified as a good criterion. Such an index comes out because of some facts, which are:

(i) Policies, procedures, limit of credit risk and transfer of responsibility to manage credit risk have captured all areas of credit risk management and have been stipulated in the Islamic banks standard operating procedure (SOP). Moreover, policies and strategies of credit risk management have been well-communicated with all employees via various media.

(ii) Most of the credit risk controlling in the Indonesian Islamic banks follow the process of identification, measurement, and monitoring based on the SOP. Moreover, internal rating and stress testing are consistently done with standard materials and high frequency. Further, prudential financing activities start from financing analysis, risk mitigation adequacy, financing contract agreement, financing administration and financing disburshement.

(iii) Quality of asset is valued referring to financing collectibility, payment capacity, liquidity capacity, estimated cash flow and macroeconomic condition. Moreover, information system can provide required data for financing analysis, management, controlling and timely basis credit risk management policies.

(iv) Credit risk controlling is conducted with a liquidity reserve to mitigate any loss by considering financing collectibility, business condition, cash flow, collateral and macroeconomic condition. Moreover, sanction is imposed in any violation of the implementation of credit risk management policies.

(v) Evaluation of the credit risk management policies and procedures is organized properly capturing aspects of evaluation, frequency (regularly and suddenly) and report to the board of directors and commissioners.

Table 5: Overall Credit Risk Management

BANKS	Policy and Procedures	Controlling of Credit Risk	Management of Credit Risk	Index of Credit Risk Management
	X	Y	Z	
AA	28,4	22,4	21,3	72,1
BB	22,5	22,9	20,8	66,1
CC	30,6	20,5	22,7	73,7
DD	30,4	23,1	22,9	76,4
EE	21,0	14,3	16,9	52,2
FF	24,5	16,3	23,0	63,7
GG	26,6	21,8	21,3	69,7
HH	25,9	22,9	23,9	72,6
JJ	32,7	25,4	25,9	84,0
KK.	29,6	23,2	25,4	78,3
LL	23,0	17,9	21,6	62,5
Industry Index	30,56	22,94	23,92	77,41

However, there is one Islamic bank (BUS) namely Bank EE which has a criteria of satisfactory of the credit risk management and another one has a criteria of excellent. The other 9 (nine) BUS are considered having a criteria of good. Particularly, a low index of credit risk management of Bank EE is also revealed in its three aspects of credit risk management which fall in satisfactory criteria as shown in table 5. As such, the management of Bank EE need to have corrective actions to improve its credit risk management, including banking regulator (central bank of Indonesia) to supervise and guide such improvement efforts. Failure in improving credit risk management in Bank EE may potentiall effect other Islamic banks in the industry as well.

Conclusion and Recommendations

Credit risk management policies and procedures in the Indonesian Islamic banking industry has been quite good with the index value of the credit risk management of 30.56. Nonetheless, there are still some minor limitations which could be solved by the banks and banking regulators.

Individually, there are some Islamic banks which have an index criteria of satisfactory and these banks should be awared by the banking regulator as well. Some improvements can be done such as stipulating a central bank standard credit risk management policies and procedures and treating credit risk management as a priority activity in every Islamic bank. The paper further recommends some policies which are:

(i) Islamic banks having a good criteria of credit risk management index (either overall of per aspect of credit risk management) should: (a) highly impose credit risk management policies and procedures, (b) apply an intensive credit risk controlling and (c) mitigate any credit risk.

(ii) The central bank needs to require every Islamic bank to apply internal rating and stress testing test to investigate any potential of credit risk. On the other hand, Islamic banks are demanded to improve their communication mechanism in disseminating policies and procedures of credit risk management to all employees.

(iii) Finally, the evaluation of credit risk management policies and procedures needs to be regulated formally by the central bank in order to anticipate any credit risk.

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