

The Liquidity and Intellectual Capital Impact on the Stability of Islamic Microfinance Institutions: Evidence from Peak Season Period

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ABSTRACT

The term of Peak Season in financial institutions may still be peculiar in the eyes of the world, but in Indonesia, this phenomenon is a real thing. It has succeeded in making some financial institutions susceptible and even bankrupt. Peak season is not unconventional from the high season, but it is far more compact. Peak session, as it means in this study, is the period in which people simultaneously withdraw their savings for seasonal needs such as Eid session, school season, New Year session, and another equal occasion. This study aims to (1) analyze the effect of liquidity risk and intellectual capital on the stability of Baitul Maal wa Tamwil Islamic Microfinance Institutions (BMT IMFI) in the peak season periods, and (2) analyze the co-movement relation between liquidity and credit risk in BMT IMFI in West Bandung Regency during 2013 -2017. By using monthly data and fixed effect estimation techniques in the Generalized Moments Method (GMM) model, this study found that liquidity risk negatively affects the stability level of IMFI. Meanwhile, the intellectual capital of BMT IMFI has a positive effect on its stability level. Based on the analysis, this study also found some interesting results for BMT IMFI liquidity management policies in the Peak Season period. Furthermore, the testing on the relation between IMFI BMT's liquidity risk and credit risk shows an insignificant result to find out the existence of a co-movement between these two risks.

KEYWORDS

Liquidity risk
Peak season
Intellectual capital

INTRODUCTION

The business management of the Islamic Microfinance Institution (IMFI) *Baitul Maal wa Tamwil* (BMT), a Non-Bank Financial Institution (NBFI), requires direct and intense guidance on its administration practice, transactions, and investments (Friantina, 2019). Discerning from the fundraising or liabilities of the third-party and assets gotten from the low-income communities, the BMT IMFI is risky. In this case, the financial supply probability from the third party, which comes from savings and credits, may also be at a higher risk toward the fluctuating income (Setiawan, 2019). The risk will come from two sides; the side of assets and the side of liabilities and the capital of IMFI BMT. Thus, IMFI BMT has an important role in keeping its stability so that there will be no liquidity mismatch and negative balance condition due to fundraising and

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financing the "high-risk borrowers" by the financial institutions because of their inability to provide warranty to cover the risks.

The operational failure can also emerge because of the management's incompetence in managing and investing the funds. The management in business and Islamic finance focuses more on operational and liquidity risk management. These two risk managements are very crucial for IMFI BMT because this institution does not have any protectors such as Bank Indonesia and Deposit Insurance Institution (LPS) to other banks. Therefore, human resource skills in managing IMFI BMT are badly needed and at stake for the sustainability of this institution.

The liquidity of IMFI can be well maintained if IMFI is able to convey its two main tasks, which are maintaining the liquidity and converting the risks (Berger & Bouwman, 2009). These two roles are often seen as the transformation function of qualitative assets (Bhattacharya & Thakor, 1993). The IMFI first function can generate liquidity on both on balance sheet and off balance sheet, while the second role, converting the risks, is conducted along with the function of liquidity generating, such as finding third party funds by issuing time deposit products and low risk savings to handle the risky funding. Even if the affiliation is not impeccable, the quantity of liquidity formed will positively correlate to the risks transformed level. Thus, the level of liquidity risk will also impact on the stability level of IMFI (Wahyudi et al., 2013).

In order to survive the liquidity risk, the IMFI should change the business strategy from labor-based business to knowledge-based business, known as intellectual capital. The main objective of a knowledge-based business is to create a value-added for the IMFI. In realizing this purpose, the right volume of physical capital and intellectual potential is needed, which is represented by all human resources with all potentials and abilities they inherited. They are to be efficiently utilized and developed by the company.

According to data compiled from West Java Sharia Cooperative Centre, during 2000-2015 there was a phenomenon that several Islamic microfinance institutions in West Java experienced financial distress which was caused by many factors, including: (1) the manager's skills in managing the finance, (2) the financial management system (liquidity administration and profitability), and (3) the members' behavior. In Indonesia, especially in West Java, the level of liquidity risk is strongly affected by the patterns in certain periods that have been a culture for years, the consumption habit is the Peak Season behavior. The word "Peak Season" might still be unfamiliar to the eye of the world, but it occurs in Indonesia and has succeeded in causing the financial institutions unstable. In traveling, Peak Season is seen as the busiest and most crowded time in the holiday period. Peak Season is not distinctive from the high season, but it is much more crowded. Peak Season, in this research, defined as the period in which people withdraw their savings at IMFI or banks for seasonal consumptive needs, such as in *Eid Al-Fitr* or school seasons. This period is speculated of bringing financial distress to IMFI.

Based on preliminary research, as IMFI's assets rose, it was also followed by the increment in business debt. It shows that one of the methods of a financial institution to cover the lack of cash flows during the peak season period is to increase business debt. By increasing business debt, costs will automatically arise, which will ultimately affect the profits earned, whereas the profit measure is a simple indicator of a management's performance in generating profits to satisfy the profit-sharing of creditors, investor dividends, and government taxes. Profit information can also show the company's ability to generate profits in the future that reflects the company's performance. On the other hand, the liquidity risk of IMFI also affects the community's trust toward it. Therefore, the role of human resources in liquidity management and profitability is essential.

In management issues, the main asset is human capital, which is believed to be the solution to the above problems. Based on the background and phenomena above, this study aims to find out the role of liquidity management and intellectual capital of BMT Islamic Micro Finance Institutions in controlling the stability of IMFI BMT.

LITERATURE REVIEW

The essential function of IMFI is a fund channel from debtors (the ones that have excess funds) to creditors (the ones who need funds). Especially, excess funds are gathered by IMFI from depositors, after this referred to as fund from third party (TPF), in the form of deposit contract-based savings, both *wadiah yad amanah* or pure deposit and *wadiah yad dhamanah* or deposit in the form of debt, and in the form of time deposits such as deposits with a *syirkah mudharabah* contract-based. Then, these funds will be delivered back to the community in the form of a financing agreement. In overall, the financial contract used by IMFI can be classified into two groups, which are a debt-based contract and a *syirkah*-based contract. The debt contract divided into two groups (1) pure debt (*qardhul hasan*) and (2) debt from selling and busing activities as well as *muajjal*). There are some commonly used *syirkah* contracts such as *mudharabah*, *musyarakah*, *musaqat*, and *muzara'ah*. The last two *syirkah* contracts are only used for plantation and agriculture sectors.

Comparable to financial industry services from other financial institutions, the product of Islamic financial will also be influenced by credit and liquidity risk. Liquidity risk happens due to difficulties in selling assets quickly without losses. According to Ismal (2011), liquidity risk comes from the disharmony of all business partners or unfavorable business conditions. As for the sharia concept, the authors will also add the forms of sale and purchase contracts, and sharia restrictions in debt sales into the liquidity risk variable in the case of IMFI.

The Effect of Liquidity Risk on IMFI Stability Levels

Related to the effect of liquidity risk to IMFI stability level, some findings of Berger & Bouwman (2009) state that the liquidity risk will impact the stability of IMFI that can be assessed by using Z-score, non-performing loans, and others. Based on the assumptions and results obtained from past studies, this paper has a different point by merging the past assumptions to the Peak Season. Thus, the hypothesis related to the association between risk liquidity and the stability level of IMFI is:

H₁: Liquidity risk negatively affects the stability level of IMFI in the peak season period

The Effect of Intellectual Capital on IMFI Stability Levels

Related to the effect of intellectual capital to the stability level of IMFI, the previous researches conducted by Chen et al. (2005) and Ulum (2009) show that intellectual capital has a positive influence on company profitability. Based on this explanation, the hypothesis on the effect of intellectual capital toward the stability level of IMFI in the study is:

H₂: Intellectual capital has a positive effect on the stability level of IMFI in the peak season period

Reciprocal Relation between Liquidity Risk and Credit Risk in Affecting IMFI Stability Levels

The other circumstance that influences the establishment level of IMFI and has a relation with risk liquidity is the level of risk credit. The classical theory of microeconomics affirms that there is a close relation between risk liquidity and risk credit. Previous framework notes that the structure of assets and debt will be related to each other, especially in the case of poor credits and costumers' withdrawal of funds. It does not only happen to IMFI balance sheets but also to business funding and financing, especially toward off-balance sheets. Accordingly, the association between risk liquidity and risk credit will also impact on the stability level of IMFI. Some researchers, such as Goldstein & Pauzner (2005), confirm that both risks affect the stability level of IMFI. Refer to the assumptions and past study findings, this paper has a different point of view by merging the previous assumptions to the peak-season. Therefore, the hypotheses related to the association between liquidity and credit risk toward the stability level of IMFI are:

H₃: Credit risk has a positive effect on liquidity risk of IMFI

H₄: Liquidity risk has a positive effect on the credit risk of IMFI

RESEARCH METHOD

The population in this study are those IMFI BMT registered at the West Java Sharia Cooperative Centre (*Puskopsyah*) and still be operating in 2013-2017. There are 27 Institutions in total. Therefore, the total population in this study are 27 IMFI BMT. This study uses the purposive sampling technique. The criteria for the samples taken for this study are as follows: (1) IMFI BMTs which are registered at West Java *Puskopsyah* during 2013 to 2017, (2) IMFI BMTs that submit their complete data according to information needed for this research, which is a monthly report from 2013 to 2017. Because of the limited data available in West Java *Puskopsyah* and the big size of the West Java region, the samples that meet the above criteria are only 4 BMT IMFIs with 156 data observations taken from 2013-2017 monthly report data. The monthly report data consist of a balance sheet, income statement, and financial ratio report. All financial report data are obtained from West Java Syariah Cooperative Centre (*Puskopsyah*). The description of the variables used in this study is explained in Table 1. The method used in this study is panel data (fixed effect) to test the influence of liquidity risk on the stability of IMFI. Further, this research also uses the Generalized Moments Method (GMM) to examine the reciprocal relation between risk liquidity and risk credit in affecting the IMFI stability level.

The dependent variable used is the IMFI financial risk, in which the Z-score is used as the main element in assessing the risk. Z-score indicates how much deviation standard of the return on assets of an IMFI must fall to make the IMFI being insolvent (Kunt & Huizinga, 2010). A higher value of the Z-score suggests that the IMFI is less risky and tends to be stable. On the other hand, a lower value of the Z-score shows that IMFI faces a higher risk and tends to be unstable.

The liquidity risk (LR) variable is measured by subtracting all assets that can be quickly changed into cash to cover withdrawals taken from short-term liabilities. This research does not use derivatives and securities as they are not found in the IMFI balance sheet and are not the

main business of the IMFI. Other reciprocal and independent variables are credit risk, which is measured from the ratio of non-performing financing (NPF) to assess the value of risk credit.

Table 1. Operationalization of research variables

No	Variable type	Description
Dependent		
1	IMFI Risk	The ratio of Return on Assets (ROA) plus the equity to asset ratio (CAR) divided by the standard deviation of ROA (SDROA)
Independent		
2	Liquidity Risk (LR) It-1	[(Immediate liability + <i>Wadiah</i> savings + Other liabilities + Financing received] - [Cash] + Placement with other banks) / Total assets
	Credit Risk (CR)it-1	NPF Ratio
Intervening		
3	Intellectual Capital (IC)	<p><i>Intellectual Capital</i> (IC). IC is divided into three main elements, namely:</p> <p>a. Value Added Capital Employed (iN-VACA) This ratio shows the contribution made by each unit of CE to the company's value added. Note:</p> <p style="margin-left: 40px;">iB-VACA : Value Added Capital Employed</p> <p style="margin-left: 40px;">iB-VA : Value added</p> <p style="margin-left: 40px;">iB-CE : Capital Employed : (total equity)</p> <p style="margin-left: 40px;">VA = OUT - IN</p> <p style="margin-left: 40px;">Out = Total income</p> <p style="margin-left: 40px;">IN = Expenses excluding the employee's expense</p> <p style="margin-left: 40px;">CE = Equity, net profit</p> <p style="margin-left: 40px;">VACA = VA/CE</p> <p>b. iB-Value Added Human Capital (iB-VAHU)</p> <p>This ratio shows the contribution made by each rupiah invested in HC to the value added of the organization.</p> <p>Note :</p> <p style="margin-left: 40px;">iB-VAHU : Value added Human Capital</p> <p style="margin-left: 40px;">iB-VA : Value added</p> <p style="margin-left: 40px;">HC : Employee expense</p> <p style="margin-left: 40px;">VAHU = VA / HC</p> <p style="margin-left: 40px;">HC = Employee expense</p> <p>c. Structural Capital Value Added (iB-STVA)</p> <p>This ratio measures the number of SCs needed to produce one rupiah from iB-VA and is an indication of SC's success is in value creation.</p> <p>Note :</p> <p style="margin-left: 40px;">iB-STVA : Structural Capital Value Added</p> <p style="margin-left: 40px;">iB-SC : Structural capital : iB-VA - HC</p> <p style="margin-left: 40px;">iB-VA : Value Added</p> <p style="margin-left: 40px;">STVA = SC / VA</p> <p style="margin-left: 40px;">SC = VA - HC</p> <p>d. Value Added Intellectual Coefficient (iB-VAIC™)</p> <p>This value indicates the organization intellectual ability which can also be considered as BPI (Business Performance Indicator).</p> <p style="margin-left: 40px;">$iB-VAIC^{TM} = iB-VACA + iB-VAHU + iB-STV$</p>

Table 1. Operationalization of research variables (continued)

No	Variable type	Description
Control		
4	Roa	Profit (loss) ratio to total assets
5	Roe	Profit (loss) ratio to total equity
6	Loan to Asset	Total credit ratio to total assets
7	Peak Season	The peak period of deposit withdrawing which means withdrawing above the average amount in one year as indicated by number 1 if there is a peak season and 0 if it does not occur
8	<i>Ijarah</i>	<i>Ijarah</i> ratio to total credit
9	<i>Murabaha</i>	<i>Murabahah</i> ratio to total credit
10	<i>Qardun Hasan</i> (QH)	<i>Qordhun Hasan</i> ratio to total credit
11	<i>Mudharabah</i>	<i>Mudharabah</i> ratio of total deposits
12	<i>Wadiah</i>	<i>Wadiah</i> ratio of total deposits

RESULTS

The results of IMFI from 2012 to 2017 data, the descriptive statistics on the Z-score show an average value of 6.08 with a maximum score of 16.26 and a minimum score of 3.10. For the risk liquidity, the average value is 1.47, with a maximum value of 2.34 and the minimum value of 0.22. The risk liquidity value is so meaningful because, on the current assets, this value only depends on cash and placement on IMFI or other banks. Moreover, for the credit risk value, the average value of this risk is 3.69%, with a maximum value of 5.32%, indicating that this value is reasonable.

Table 2. Descriptive statistics

	Mean	Max	Min	SDev
Z-Score	6.08212	16.26502	3.10780	2.46218
LR	1.47635	2.34520	0.22029	0.49941
CR	0.03694	0.05326	0.03015	0.00492
ROA	0.00925	0.05739	(0.02844)	0.01497
ROE	0.01310	0.54763	(0.82985)	0.15516
Loan To Asset	0.41825	0.67738	0.23591	0.08546
Peak Season	0.30000	1.00000	-	0.46212

Table 3. Description of intellectual capital value

	2013	2014	2015	2016	2017
VACA	0.094	0.076	0.08	0.078	0.076
VAHU	1.216	1.198	1.216	1.226	1.188
STVA	0.166	0.154	0.16	0.17	0.172
VAIC	1.478	1.428	1.454	1.472	1.436

In 2013 to 2017 the highest value of VAIC obtained was in 2013 with 1.478 and the lowest value of VAIC was obtained in 2014 with 1.428. The average value of VAIC obtained was 1.45. Based on the VAIC value category from 2013 – 2016, West Bandung IMFI BMT was in the category of *Bad Performance*.

DISCUSSION

The Effect of Liquidity and Credit Risk on IMFI Stability Levels in the Peak Season Period

This research employs panel data with a fixed-effect model for 1 to 7 to judge the impact of risk liquidity on IMFI stability. The model utilizes the Z-score variable per month to detect the changes in every period. For the independent variables, this research employs existing variations: using liquidity risk or credit risk, as well as the interaction between these risks. Besides, this research also uses several control variables, covering the ratio loan to asset, peak-season, intellectual capital variables (VACA, VAHU, STVA), and savings and financing products. The data processing uses one single risk (liquidity or credit risk) in model 1 and model 2, while equation 3 to 7 are models that function to see the effect of an amalgamation of variable independent and variable control on the stability of IMFI.

Table 4. Effects of liquidity and credit risk on IMFI stability levels

Variable	1	2	3	4	5	6	7
LR	-1.999			15.675	-2.462	2.522	1.472
CR		41.654		460.983			
LR*CR				-426.011			
VACA			-19.158	-19.127			- 15.882
VAHU			0.951	0.930			0.817
STVA			0.024	-0.009			0.0137
LR*VAIC					0.102		
PEAKSESON	-0.827	-0.497	-0.044	-0.018	-0.878		
VAIC					-0.047		
IJARA						3.699	10.572
MURABAHAH						8.398	17.197
DEP (MUD)						7.347	4.899
QH							10.216
Obs	156	156	156	156	156	156	156
R-Square	0.062	0.004	0.209	0.292	0.073	0.142	0.267
	LR	-	VACA	LR	LR	LR	LR
			VAHU	CR		DEP	VACA
Prob < 0.05				LRCR			VAHU
				VACA			DEP
				VAHU			

Table 4 shows that the liquidity risk has a positive value in model 4, while other models show negative values. Overall, the models show that liquidity risk influences significantly on the stability of IMFI BMT. According to Wahyudi et. al. (2013), the more the liquidity risk (LR), the less the z-score value, the more unstable the IMFI is. On the contrary, the lower the value of liquidity risk, the higher the z-score value given, the more stable the financial institutions are. Thus, there is an incongruous relation between liquidity risk and IMFI stability.

This counteractive relation between risk liquidity and IMFI stability needs to occupy more serious consideration from the stakeholders as the average value of IMFI risk liquidity is 147.63%, with the highest value of 234.52% (Table 2). This result reinforces Wahyudi et al.

(2015) sequence in which the average value of liquidity risk is 50.52%, with the highest value is 182%. This conclusion is in line with previous results because this study includes the peak-season period as a control variable. It strengthens that liquidity risk must become the focus of the attention of those in charge, especially for Islamic microfinance institutions. It happens because Islamic microfinance institutions engage in low-income communities, which tend to be more vulnerable in peak-season periods so that cash and placements in other banks cannot cover their current liabilities. The impact of liquidity risk, which is significantly negative on IMFI stability, is seen consistently in all models. It suggests that the reliability of the results obtained from the effect of liquidity risk toward IMFI stability can be justified.

The Effect of Intellectual Capital on IMFI Stability Levels in the Peak Season Period

As seen in Table 4, the effect of intellectual capital on the stability level of IMFI of the overall VACA and VAHU value models significantly alters the stability of IMFI. VACA negatively impacts the stability of IMFI on the overall model, while VAHU has a positive effect. In line with the researches of Faza & Hidayah (2014), Sopian (2017), and Kartika & Hatane (2013) which show that VACA affect profitability, the result of this study also supports the research by Ulum (2009) which explains that intellectual capital does not only influence the performance of the firm in the current year, but it can also predict future financial performance. It shows that IMFI BMTs in West Java have relied on available funds, which are equity and net income, to be able to increase the added value of the company, which in turn can improve the performance of IMFI.

VAHU (Value Added Human Capital), in this case, is human resources (employees) have a crucial role in a company. Employees are the main factor in determining the success of the company because employees are the sole element that conducts everything to run the company. IMFI BMT has realized this by actively providing training and development of its human resources, either be provided by related institutions or by issuing additional personal budget to provide more knowledge or literacy for employees in carrying out their duties as employees at IMFI. The result of this study states that VAHU influences the stability of IMFI. This result also supports the finding of Ulum (2009), which states that VAHU and ROA are indicators to determine VAIC and company profitability. It shows that IMFI's human resources have been able to use their knowledge and skills to improve company performance.

As for STVA (Structure Capital Value Added), the result shows that STVA only has a little significant effect on IMFI stability. This result is different from Widiatmoko's (2015) and Candrasari's (2013) results, which state that STVA affects profitability. It shows that IMFI BMT has not been able to fulfill the company's operational process and its structures that support employee efforts to maximize the intellectual performance, such as IMFI operational system and IMFI organizational culture. It also shows that IMFI has been able to utilize the structured capital well even though it is not optimal because it has not met the expected final profit yet.

Value Added Intellectual Capital (VAIC) is a combination of VACA, VAHU, and STVA components. The result shows that Value Added Capital Asset (VACA), Value Added Human Capital (VAHU), and Structure Capital Value Added (STVA) jointly have a positive effect on IMFI BMT stability. This result is in line with the research of Sopian (2017), Kalkan et al. (2014), and Ahangar (2011), which state that VACA, VAHU, and STVA jointly affect profitability.

Based on table 5, a notable impact appears in the pool and random effect for the GMM model, as seen from the influence of the risk of credit on the risk of liquidity for alpha levels of 1%, 5%, and 10%. Next, the effect of the risk of liquidity on credit can only be seen on the side

of the pooled effect of GMM, for the 3rd lag. Therefore, this result suggests that there is no general influence of the risk of credit on the risk of liquidity.

The Relation between Liquidity Risk and Credit Risk

Table 5. Relationship between liquidity risk and credit risk

Bound Variable = LR			Bound Variable = CR		
	Pool	Random		Pool	Random
C	-1.027	-1.027	C	-0.034	-0.136
CR(-1)	-0.187	-0.187	CR(-1)	0.765	0.472
CR(-2)	0.285	0.285	CR(-2)	-1.059	-0.268
CR(-3)	0.147	0.147	CR(-3)	1.097	0.686
LR(-1)	0.372	0.372	LR(-1)	-0.057	-0.118
LR(-2)	-0.035	-0.035	LR(-2)	-0.020	0.006
LR(-3)	0.219	0.219	LR(-3)	0.002	0.159
Adjusted R-Squared	0.689			0.236	0.120
J-Statistic	54.989			16.075	14.398

MANAGERIAL IMPLICATION

This study has some impacts for managing the liquidity of Islamic microfinance institutions. Refer to the finding of this study, the risk of the liquidity risk significantly influences the level of stability of an IMFI during the peak-season in all models assessed. This result implies that the results obtained can be applied as they are consistent. The results of this study also indicate that the average value of IMFI liquidity risk in the peak-season is not remarkably good. It needs to be seriously considered by the stakeholders as it will impact on the stability level of IMFI, which will subsequently impact on the financing of low-income communities. Based on this, the ability of managers in controlling IMFI liquidity is very much needed, especially in facing the peak season that will always be faced by IMFI. In this case, the manager's ability as part of IMFI's intellectual capital can be further developed through appropriate training.

LIMITATIONS AND FUTURE RESEARCH

This study only uses data from four institutions. The lack of optimal data collected is undoubtedly one of the limitations of the study. For this reason, for further research, it is better to use data with a broader sample and to get better results, the use of an unbalanced panel data approach might be plausible.

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