The Use Of "CAMELS" In Detecting Financial Distress Of Islamic Banks In Malaysia

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ABSTRACT

The current study uses CAMEL (Capital Adequacy, Asset Quality, Management Quality, Earnings Efficiency, and Liquidity) ratings system, with the addition of Shari'ah Compliance Ratio (CAMELS) in order to detect the financial distress of Islamic banks in Malaysia. Using neural network, the study analyses data collected from the 17 Islamic banks' annual reports for the period 2006 to 2010. It was found that all Islamic banks have higher ETA ratios which portray a good performance of capital adequacy and are less likely to face financial distress. As for asset quality, all Islamic banks did not have the possibility to face financial distress as they are able to handle their non-performing loans throughout the years. Meanwhile for management quality, all Islamic banks show lower ratios in paying salaries to their employee. Earning efficiency for all Islamic banks show better performance and will be less likely to face financial distress in terms of return on assets but not for return of equity. Liquidity indicates that the Islamic banks have a large number of loans but they have sufficient liquid assets in order to cover their liabilities and commitments. Lastly for Shariah Compliance, Islamic banks have complied with all rules and regulations that have been regulated by Bank Negara Malaysia's Shari'ah Advisory Council.

Keywords: Financial Distress; Financial Detection; Islamic Financial Institutions

INTRODUCTION

With the rapid and dynamic changes in the globalization of the economy, the worlds tend to see the growth of Islamic banks especially in the Middle East region. Sufian and Noor (2009) stated that initially, Islamic banks were developed to cater the needs of Muslims but nowadays the number of Islamic financial institutions have raised to over 300 in more than 75 countries including western countries (Europe and USA) where the biggest hubs are located in Bahrain and Malaysia. In Malaysia, where the majority of the citizens are dominated by Muslims, the presence of Islamic financial institutions is acknowledged as they are currently realized on the concept of living based on Shari'ah principles. Both conventional and Islamic banks have the same concept and function in terms of the intermediation approach and facing the possibility of risks such as credit risk and liquidity risk. The main difference between conventional and Islamic banks is that conventional banks perform their business based on conventional interest-based principles. On the other hand, Islamic banks offer and perform their business operations through interest-free financing while when there is any amount of profits; it is based on profit-sharing agreements with the depositors as well as borrowers. Although previous literatures (Samad & Hassan, 1999; Siddiqui, 2008) evidenced that Malaysia's Islamic banks are more liquid and less risky, it doesn't prove or guarantee that these Islamic banks will not face any possibility of financial distress.

During the turmoil, the banking industry was exposed to the possibilities of distress and was in a higher stake of closure and bankruptcy and thus revealed the vulnerabilities of the true condition of the financial system in the Asian region. A study by Kassim and Majid (2010) provided that although the Islamic banking system can waive financial shocks based on its interest free nature, the results in their study proved that both Islamic and conventional banking system were equally exposed to the risk of distress and failures.

Thus, the Islamic banks still need to monitor their performance by developing a prediction model for financial distress. Previous studies and literatures by Kolari, Glennon, Shin, and Caputo (2002), Demyanyk and Hasan (2010), Sufian (2009) and Distinguin, Rous, and Tarazi (2006) have proven that failure prediction models and early warning systems are important tools to prevent failure as much as possible and become as an initiative for remedial action for distressed banks.

Kunt and Huizinga (2000), Chazi and Syed (2010) and Assaf, Barros and Matousek (2011) found that financial ratios (profitability and liquidity) are the most common used ratios in evaluating the efficiency of performance in banks. According to Gonzalez (2009), the determinants of the efficiency of banks are important because the market structure of banks is not only competitive for the banking system but also companies' access to fund their investment and the result conveyed that efficient banks have more access into the capital market and thus have a large market concentration by the potential investors. In addition, another method known as CAMEL ratings system (Capital Adequacy, Asset Quality, Management Quality, Earnings and Liquidity) also has been used widely to predict failures and closures of banking institutions (Sahut & Mili, 2011; Arena, 2008; Bongini, Claessens, & Ferri, 2001).

Unlike previous literature by Kuppusamy, Saleh, and Samudhram (2010) and Samad and Hassan (1999) that have used the Shari'ah Conformity and Profitability (SCnP) model and SPSS software respectively, the current study adopts the neural network analysis (NNA) in assessing the likelihood of financial distress in Islamic banks. This is because the neural network is a technique whereby it has useful practicality and used widely in the area of financial services especially to detect solvency problems in banks or firms. However, little attention has been paid to apply neural network for predicting banks' efficiency.

Hence, this study aims to assess the likelihood of financial distress in Malaysian Islamic banks by using the neural network analysis on the financial ratios (CAMEL ratings) as well as the Shari'ah compliance ratio (CAMELS ratings).

LITERATURE REVIEW

According to Sufian (2007), Malaysia is the only country in the world that has a unique setting in terms of banking system as the country practiced dual banking system or Islamic windows. Bahari (2009), Laldin (2008) and Mokhtar, Abdullah and Alhabshi (2008) further clarified that Islamic windows were first initiated by Bank Negara Malaysia in March 1993 whereby the Central Bank introduced the interest-free banking scheme. The first Islamic bank in Malaysia was established in July 1983 and in 2004, Bank Negara Malaysia encouraged all Islamic windows to set up Islamic subsidiaries in which all the banks will be licensed as full-fledged as to strengthen the economic growth of local Islamic banks (Mokhtar, Abdullah, & Alhabshi, 2008). From this point of view, the concept of Islamic banking system has started to emerge in positive ways and people begin to trust that the existence of Islamic banks can give new perspectives to the management of assets and investments according to Islamic rules and Shari'ah principles.

Goldstein (1998) and Corsetti, Pesenti, and Roubini (1999) proclaimed that the pre-crisis was due to weak regulations and lack of supervision by respective authorities, ratios were in low capital adequacy, deposit insurance schemes were lacking in terms of incentive-compatible, there were insufficient expertise and authorities in regulatory institutions, outright corrupt lending practices and inefficient credit allocation to the non-market criteria. All of these criteria were the beginning of the creation of growing numbers of non-performing loans which had led to the 1997 financial crisis.

On contrary, Islamic banks are less risky and more stable compared to conventional banks because the former prohibits the involvement of interest rate pertaining to monetary transactions. Previous case study by Ali (2007), during the 2001-2002, one Islamic bank named Ihlas Finans House had collapsed due to the financial crisis in the banking sector in Turkey. Based on the study, Ali (2007) found that the collapse of Ihlas Finans House were due to several causes and reasons such as the license of the bank had been cancelled by the regulatory authorities because the bank was unable to keep its promises and obligations towards their respective customers. Furthermore, the bank experienced a form of weak internal management, imprudent financing or fraud behaviour within the group and last but not least management had poor strategy in handling the crisis.

There are many ways and models being developed in order to detect financial distress in conventional banks (Sahut & Mili, 2011; Distinguin, Rous, & Tarazi, 2006; Flamini, McDonald, & Shumacher, 2009; Barros, Ferreira, & Williams, 2007). The reasons of why there is so much research regarding conventional banks is due to the fact that conventional banks are the main financial institutions established in the whole world including Malaysia. Unfortunately, there are not many studies on the detection being done specifically for Islamic banks. The detection models for conventional banks could also be applied in Islamic banks with but with some modification through adding the Shari'ah compliance. The modification is needed as the main difference between conventional banks and Islamic banks is the Shari'ah compliance while the others are similar.

RESEARCH DESIGN

This study used secondary data and the information is obtained from the population of 17 Islamic banks that have been established in Malaysia This data is in the form of financial figures and the sources of information are from statements of financial position and statements of income from 2006 – 2010 (4 years) and the time frame is chosen because this is when (2007) the United States subprime crisis occurred. This time-line of study is essential because it will help to determine the condition of the Islamic banking performance during the financial crisis and whether these banks are having problems in their financial matters. Furthermore, the current study also expands the years to 2011 and 2012 as to identify future prediction of Islamic banks in Malaysia by using CAMELS rating systems.

The method or technique used to detect financial distress in Islamic banks is MATLAB 7.5; a programming system for neural network (NN). According to Demyanyk and Hasan (2010), the neural network is categorized into one of the intelligent techniques which have the similarities with the functions of the human brains. Neural network has the elements of mathematical and algorithmic and this method mimics the biological neural networks of the human nervous system. This method has been widely used in the area of financial services in the area of prediction of failures in banks.

The first part of CAMEL ratings system is capital adequacy. For large corporations such as banks and firms, capital or equity play an important role in order to maintain the stability or the solvency of these organizations. In order to evaluate capital adequacy, the current study used the ratio of equity capital divided by Total Assets (ETA) which is able to divide banks ranging from critically undercapitalized to well-capitalized although this ratio does not have fine gradations. For asset quality, this study used the ratio of non-performing loans divided by total loans (NPLTL). The main reason is because non-performing loans are closely related to the exposure of credit risk and though this is a useful numerator, it is also able to portray on how well banks are coping with their financial challenges and the prediction of distress (Sahut & Mili, 2011).

Management quality is the third element in CAMEL ratings. Previous literatures by Gasbarro, Sadguna, and Zumwalt (2002) and Dincer, Gencer, Orhan, and Sahinbas (2011) stated that measurement for management quality is treated as a qualitative aspect and considered as the hardest one to measure as compared to other components in CAMEL ratings. This is due to the fact that in annual reports for banks there is no direct numbers and figures in order to assess the efficiency and productivity of banks' management. It was difficult to measure management quality with accounting data and they assumed that the result for the ratios portray the different strategies used by the decision makers.

Profitability ratios can be further categorized into return on assets (ROA) and return on equity (ROE) as the former is measured by net profit after tax divided by total assets while the latter is measured by net profit after tax divided by shareholder's equity. As provided by Sarker (2006), for earnings measurement the best and widely used indicators are return on assets (ROA) and return on equity (ROE). Siddiqui (2008) also clarified that the indicators for profitability is commonly judged by ROA and ROE. Following these two studies and other studies that have used ROA and ROE as profitability measures, this study also used ROA and ROE for the detecting financial distress in Malaysia's Islamic banks.

Based on a study by Kosmidou (2008), bank managers should and must take full consideration about liquidity management especially related to the process of deposits and loans. For this reason, as the measurement of

liquidity, the current study used the ratio of net loans divided by deposits & short term funding (NLDS). Pasiouras and Kosmidou (2007) also added that this ratio is able to show the relationship between the illiquid assets (i.e. net loans) and stable funding sources (i.e. deposits & other short term funding). Both studies provided that higher ratios represent lower performance management's liquidity. In order to strengthen up the results for liquidity, the current study also used the ratio of liquid assets divided by deposits & short term funding (LADS).

There are only a few studies conducted to measure Islamic banks performance based on Shari'ah compliance (Samad & Hassan, 1999; Kupusamy, Saleh, & Samudhram, 2010; Srairi, 2010). Most of the previous studies and literatures conducted the researches based on the conventional method whereby they used traditional financial ratios such as profitability and liquidity and CAMEL ratings in predicting financial distress of Islamic banks (Siddiqui, 2008; Chazi & Syed, 2010; Sufian & Noor, 2009). Kuppusamy, Saleh, and Samudhram (2010) stated that it is not easy to determine the suitable indicators of Shari'ah compliance ratio as most of these indicators are not available in the annual reports. Sarker (2006) emphasized Islamic banks should have Shari'ah compliance ratio listed in the annual reports as this will portray the efficiency of management conducting their Shari'ah rules and regulations within the organizations.

FINDINGS

This study uses CAMEL ratings system with the addition of Shari'ah compliance for the calculation of ratios. As for methodology, this study uses MATLAB 7.5 a programming system for neural network (NN) and has been used by previous studies in predicting financial distressed (Malhotra & Malhotra, 2002; Sun & Li, 2008; Shin, Lee, & Kim, 2005). The ratios that have been calculated have to be normalized in the scale of between 1 and 2 and it is called as Normalization Process. This procedure is done because every ratio has different evaluation functions which may provide different classification of scales (Ko & Lin, 2006; Yang, Platt, & Platt, 1999). In neural network, the numbers for normalization can be in any figures such as 0 and 1, -1 and +1 depends on the researches' desire.

Descriptive Analysis

All 17 Islamic banks portray good performance throughout the five years despite having ups and downs of economic downturn as well as managing internal problems. Results indicate that most Islamic banks show better performance (2) rather than low performance (1) in which portrays 17 Islamic banks in Malaysia have a firm and substantial performance in terms of capital adequacy. The result is aligned with previous study by Sahut and Mili (2011), Gunay and Ozkan (2007), Koetter, Bos, Heid, Kolari, Kool, and Porath (2007) whereby Islamic banks that have higher ETA ratios portray a good performance of capital adequacy and are less likely to face financial distress. From the ROE's results, it can be said that shareholder's funds are important in order to make sure that these Islamic banks are able to continue their operations and are able to manage the organizations well. Apart from investment funds, Islamic banks need to initiate themselves in generating their source of income. This might be done through promoting their financial products and services so that people will recognize and are interested to invest. This is because people still did not understand the terms being used in Islamic financial products and some of the terms are quite confusing to be accepted and understood.

Liquidity is important for organizations as it involves the firms' ability to pay their liabilities in a short span of time. The current study uses the ratio of net loans / deposits & short term funding (NLDS) and liquid assets / deposits & short term funding (LADS). All Islamic banks show a high percentage of NLDS and the results indicate that all Islamic banks have a larger number of loans and this is not a good situation for all the banks. From the results, they stated that in terms of NLDS, all Islamic banks may have the potential to face financial distress but in terms of LADS, all Islamic banks will be less likely to face financial distress.

All Islamic banks have their own Shari'ah Committee and they comply with the requirements enlisted by the Bank Negara Malaysia. The difference is there are some items that they didn't have or they didn't disclose in the annual reports. Sarker (1999) highlighted that Islamic banks that didn't have proper or lack of supervision in terms of Shari'ah requirements will most likely face financial distress as Shari'ah is a special or unique terms that conventional banks didn't have and customers entrusted that Islamic banks will preserve their investments based on Islamic ways. Furthermore, it is time for Islamic banks to initiate the Shari'ah Compliance ratio so that the users of annual reports are able to use the information for various purposes such as for research.

Prediction for capital adequacy, for 2011 and 2012, shows that all Islamic banks have good potential in terms of capital adequacy. All Islamic banks need to escalate their capital adequacy performance as currently Malaysia has been one of the largest hubs for Islamic banking and financial services (Sufian & Noor, 2009). Furthermore, this will be good for Malaysia's image as an Islamic country whereby instead of only Muslim other races also have entrusted the capability and efficiency of Islamic financial products and services either for personal or business purposes. It is also indicates that none of the Islamic banks show negative signs and therefore for the year 2011 and 2012 all Islamic banks are predicted will not having the possibility of financial distress.

In terms of asset quality, all Islamic banks are able to maintain and lower their figures on non-performing loans. It can be said that foreign Islamic banks didn't have to worry so much about their situations or conditions as they have full-concerned support from their origin shareholders and they might able to help their subsidiaries whenever needed. Even though they get support from their origin country, they must learn to be independent on their own as nowadays the world's economy is in fluctuate situation.

Prediction of ratios in terms of management quality shows that all banks still maintain their figures in terms of employees' salaries. In other words, these Islamic banks did not spend too much money in salaries as they are counted heavily into organization's profit. Although it is known that banks provide several months of bonuses to their employees, it is not a guarantee that in the future these valuable people will get the same amount of bonuses as the real condition of the economy currently can't be predicted and it is hope that financial crisis will not occur again in the near future. This also will encourage staffs and employees to hop from one job to another and this will give bad figures or percentages to Islamic banks' staffs' turnover.

All Islamic banks show low ratios in terms of return on assets. In other words, the management of all Islamic banks are not sufficient enough to use their assets in order to generate earnings. According to Chazi and Syed (2010) and Bongini, Claessens, and Ferri (2001), organizations, either firms, companies or approved financial institutions, must portray a high ratio for ROA as this is an important indicator to measure earnings efficiency and sufficiency. Although this is only a prediction, all Islamic banks must take full attention and consideration as this is a bad indication to the organizations as a whole. Besides that, Islamic banks should take more possible actions and efforts in promoting their financial products and services as these are their assets that can generate earnings. It is time for Islamic banks to increase people awareness on the advantages of Islamic financial products as this will benefit time and they are able to strengthen their positions in the financial industry.

Return on equity analyzed the volatility of the rate of return for the shareholders (Chazi & Syed, 2010). In other words, it measures on how well the company generates its own profit with the money that shareholders invested. As compared to ROA, all Islamic banks show better results for both years. Luckily, with the support and concern of its foreign shareholders, AF is able to cope with its financial difficulties and is still available in Malaysia's financial industry. The ratios also indicate that every Islamic bank must have used their shareholders' funds in order for them to generate more profits. All banks must show continuous effort in making profits through their financial products and services. Hence, this will attract more potential investors and will also gain existing shareholder's confidence towards the company's performance.

In terms of liquidity, all Islamic banks have high ratios for net loans / deposits & short term funding. This can be considered as a bad situation to the banks as net loans are a type of illiquid assets and if banks have too many loans it will affect the management's liquidity as they are unable to pay their obligations accordingly. This is supported with previous studies by Kosmidou (2008) and Pasiouras and Kosmidou (2007). Although Islamic banks want to attract customers by providing easy-loan, this could be a disadvantage to these banks as these loans can be turned into non-performing loans and will affect the asset quality of the banks. Islamic banks should promote customers to save and invest their money in savings or current accounts as this will help banks to strengthen their economic positions in the country as well as in Muslim region.

In terms of liquid assets / deposits & short term funding, all 17 Islamic banks have positive ratios ranging from 10% to 85%. This is aligned with previous researches by Kosmidou, Pasiouras, Doumpos, and Zopoundis (2006), Hassan and Bashir (2003) and Altunbas and Marques (2008) in which they stated that the higher the ratios of LADS, the more liquid the bank is. This is a good indication whereby 15 Islamic banks are able to cope with

financial distress if anything happens. Based on this predictive numbers, all Islamic banks should be able to be aware of their future situation and able to take possible steps and actions to improve their liquidity's management.

As for Shari'ah Compliance ratio, it shows that all Islamic banks still comply with the Shari'ah requirements and regulations. This is because Shari'ah principles act as fundamentals to the Islamic banks as to show that all Islamic financial products and services are in accordance with the Holy Quran and as-Sunnah. As being highlighted earlier, the Shari'ah compliance ratio is developed based on a score sheet and this ratio is not available in the annual reports. All Islamic banks are not able to have 100% fully complied of Shar'ah compliance as this is based on past information. This is because some of the requirements such as directors' training and Corporate Social Responsibility activities, they did not report in the annual reports. This is due to the fact that they have showed in their Group reports. It should be reported differently and solely in Islamic banks annual reports as it is easy for future reference especially in terms of researches.

DISCUSSION AND CONCLUSION

The current study uses CAMEL ratings system with the addition of Shari'ah Compliance ratio (CAMELS) in order to detect the financial distress of Islamic banks in Malaysia. The current study also uses neural network method in order to analyze the results and the results indicate that all Islamic banks show favourable results except for in the section of earnings and liquidity. All Islamic banks show better performance through the years from 2006 until 2010 and the result shows that all Islamic banks have higher ETA ratios, portray a good performance of capital adequacy and are less likely to face financial distress.

For asset quality, all Islamic banks did not have the possibility to face financial distress as throughout the years as they are trying to cope with all difficulties and manage to stand still until nowadays. Based on the results given in Management Quality, all Islamic banks show lower ratios in paying salaries to their employees as based on previous studies by Cornett et al. (2005) and Kosmidou et al. (2007). This indicates that management of the banks believe that high paid salaries didn't mean that organizations were a well organized company. It depends on the employees themselves and whether they are working based on responsibilities or only based on money.

Earning efficiency indicates that in terms of ROE all Islamic banks show better performance and will be less likely to face financial distress. This represents that the Islamic banks may have the possibility to face financial distress in terms of return on assets but not in return of equity. Meanwhile for liquidity it indicates that the Islamic banks are in a win-win situation; even though they have a large number of loans but in the same time they have sufficient liquid assets in order to cover their liabilities and commitments.

In Malaysia, Islamic banks can be considered as new but today citizens have started to embrace their existence. Based on the results given, in terms of Shari'ah Compliance, Islamic banks have complied with all rules and regulations that have been regulated by Bank Negara Malaysia's Shari'ah Advisory Council. Even though there are some information that was not disclosed in the annual reports, it doesn't mean that the banks did not follow the Shari'ah requirements as all the members of Shari'ah Committee are academicians in the area of Shari'ah, Islamic Banking and Finance and Fiqh Muamalat.

For management quality, all banks still maintain their figures in terms of employees' salaries. Although this is a good sign on profitability and less financial distress, Islamic banks should think about their employees' welfare as they are the precious one who manage and run the company. As the pay is low, it will encourage staffs and employees to hop from one job to another and this will give bad figures or percentages to Islamic banks' staffs' turnover. Meanwhile earnings efficiency indicates that all Islamic banks have low ratios in terms of return on assets. In other words, the management of all Islamic banks are not sufficient enough as to use their assets in order to generate earnings.

As for liquidity, all Islamic banks have high ratios for net loans / deposits & short term funding and this indicates that banks having too many loans will affect the management's liquidity as they are unable to pay their obligations accordingly. As for liquid assets / deposits & short term funding, 15 Islamic banks are able to cope with financial distress if anything happens as they have sufficient liquid assets in order to cover possible losses. For Shari'ah Compliance Ratio, all Islamic banks still comply with the Shari'ah requirements and regulations but they

need to improve more on their reporting information and should report differently some information such as directors' training and corporate social responsibility activities as they showed the information in the Group's annual reports.

As for conclusion, based on this current study, it is found that CAMEL ratings system can be a good measurement to predict the financial distress of Islamic banks. Moreover, the neural network methodology is able to predict future financial possibilities by using historical data. As a result, the combination of CAMEL ratings system and neural network can develop a good financial distress-detection model and thus can help Islamic banks in Malaysia to forecast their future performance and efficiency.

Several limitations were identified, first this study only depends on quantitative measures (calculation of ratios) as it is merely based on annual reports, websites and computerized database. Furthermore, sometimes these figures didn't portray the true situations and conditions of the organizations and institutions. Second, as Islamic banks are considered new in Malaysia and different from conventional banks, there is an issue of unavailability of data as to find the appropriate ratios. Third, there are only a few studies and researches that only focusing on Islamic banks and most of them are for conventional banks and doing a comparison between Islamic and conventional banks.

For future research, one should conduct interviews as to know in depth the real situation of Islamic banks as most of the previous studies indicated that Islamic financial institutions are able to waive the shock of financial crisis or distress. In addition, this study only analyzes the data in the form of descriptive statistics as this study extends the previous studies in analyzing performance of banks and didn't measure any relationship between independent and dependant variables. Future research should add some independent variables to their studies especially in the area of Islamic finance as this area has not been covered in a wide range either in Malaysia or other countries. Besides that, as Islamic banks have a close relationship with Shari'ah compliance, future studies should consider the variable of Shari'ah Supervisory Board or Committee. This is due to the fact that the Shari'ah Committee is an important body in and this committee must ensure that all Islamic banks operate under Shari'ah laws and regulations.

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