

## **FINANCIAL PERFORMANCE OF ISLAMIC AND CONVENTIONAL BANKS: EMPIRICAL EVIDENCE FROM MALAYSIA**

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### **Abstract**

*The purpose of this study is to compare the financial performance of six Islamic and six conventional banks from Malaysia over the sample period of 2005-2016. Data were collected from BankScope database and banks' annual financial reports. To measure the financial performance of the banks, eight financial ratios were analyzed namely; bank size, leverage, return on average assets (ROAA), return on average equity (ROAE), lending intensity, total customer deposits, skills utilization, and banks' liquidity. In addition, an independent t-test was used to determine significant differences in the financial performance of both types of banks in pre- and after financial crisis of 2008. The results indicate that there are statistically significant differences in the financial performance of the two types of banks over the examined time windows. Based on financial ratio analysis, the study indicates that conventional banks are larger, more risky and profitable than Islamic banks. Yet, Islamic banks are found to be more liquid and better able to utilize skills than conventional banks.*

*Keywords: Islamic Banking, Malaysia, Financial Ratios, Financial Crisis*

## INTRODUCTION

The importance of Malaysia as a banking center has grown over the last decades. After adopting the Shari'ah-compliant financial system, Malaysia developed as a global leader in Islamic banking and finance with Kuala Lumpur as a center. During the past 23 years due to the allowance of the commercial banks to offer Islamic products, Malaysia generated high value to the local economy and abroad. At the end of 2015 more than 20% of the total banking assets account for Islamic banking services (Oxford Business Group, 2018).

All Islamic banks follow the same principles: the Shari'ah principles. The basis of all banking transactions is the Holy Qur'an. The main restrictions are Ribah (prohibition to take interest), Gharar (prohibition of speculations), and Maysir/Qimar (gambling). Also all actions that are related to unethical business are forbidden, for example business that is related to weapon deals, alcohol, prostitution and pork meat. In consequence all financial transactions have to be in compliance with the Holy Qur'an. The principles of profit and loss sharing and the partnership between the customer and the bank are fundamental for Islamic banking. This also includes social responsibilities (Ernst et al, 2013). Islamic banking provides a wide range of financial products and arrangements that fit all needs of the customers in accordance to the Qur'an. This covers all investments, savings, current accounts, equity, and insurances. The most important products are: Musharaka<sup>1</sup>, Mudaraba<sup>2</sup>, Murabaha<sup>3</sup>, and other Islamic-conform financial instruments: Qard Hasan (benevolent loan), Diminishing Musharaka (loan for a house), Wadiah (deposits), Ijara (leasing), Istisna'a (contract for a made-to-order-product), Salam (contract for agricultural support), Takaful (insurance), and Sukuk (bonds) (Ernst et al, 2013).

The main objectives of conventional banks are profit maximisation and the growth of shareholders' value. In contrast Islamic banks have to consider the growth and development of the whole economy including the complete class of population, especially the poor people due to the conjunction to the the Holy Qur'an. The characteristic principles of Islamic banks are the principle of profit and loss sharing, special loans for impecunious people, investment in socially oriented projects, and the avoiding of speculation related to financial activities and transactions (Brown et al, 2007).

The significant difference between these two types of banks might be the reason that the study of Ika and Abdullah (2011) arrives at the conclusion that Islamic banks have better

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<sup>1</sup> *Musharaka: joint venture between the bank and the business partner to finance a particular business activity*

<sup>2</sup> *Mudaraba: contract between a lender and entrepreneur, where the customer's project is financed on basis of profit and loss sharing*

<sup>3</sup> *Murabahah: cost-plus financing contract between customer and bank on agreed upon certain profit margin*

liquidity ratios than the conventional ones. In addition, the study proves that Islamic banks had an adequate level of liquidity compared to the conventional banks during the financial crisis.

In some main aspects, this study is different from prior works in the comparison of Islamic and conventional banks and contributes to the existing literature. First, the time period of 12 years (2005-2016) is longer and more significant than in the research of existing papers. In addition a lot of prior papers have aged data, what makes this study more relevant. Moreover the financial crisis as a big influencer on banks performance is taken into consideration to examine the impact on the performance of Islamic and conventional banks in Malaysia before and after the crisis. Above all, the sample size of six Islamic and six conventional banks, 12 in total, is more significant than papers that only compare one Islamic bank with a number of conventional banks. Based on eight financial ratios the financial performance of a bank can be measured in different sections. Such factors are size of the bank, behaviour of customers, staff expenses of the bank, and profitability measures such as ROAA, ROAE, leverage, and liquidity. Furthermore skills utilization is not used as a key figure as well as lending intensity is barely to be found in existing studies. The empirical results and findings of this study are useful for Islamic and conventional banks, investors, policy makers, academic labour market and the government of Malaysia and other countries.

## LITERATURE REVIEW

Performance assessment is a major tool to evaluate the success of any business including Islamic financial industry. Generally, financial ratios are the banks' indicators of financial performance; the financial ratio analysis provides a method for assessing the historical and current financial strengths and weaknesses of banks using information found in their financial statements as well as important clues for predicting their future.

According to the related reviews, various researches were implemented to measure the performance for both types of banks, Islamic and conventional banks. The study of Ryu, Piao and Nam (2012) found out that Islamic banks in Malaysia have lower risk and higher profit as well as a more stable and sound banking system than conventional banks. Rashwan (2010) compared the financial performance of Islamic and conventional banks in the pre- and post-crisis phase and discovered a significant difference between Islamic and conventional banks in 2007 and 2009, whereas no significant differences in 2008. Hasan and Dridi (2010) looked at the performance of Islamic and conventional banks during last financial crisis and found out that Islamic banks have a stronger resilience compared to conventional banks. In addition, the study approved better financial performance of Islamic banks in 2007 and traditional banks in 2009 despite the fact that crisis hit both banking systems alike. Moreover, the study of Samad and

Hassan (2003) evaluated financial performance of one Islamic bank in Malaysia compared to the selected group of conventional banks using financial ratio analysis and found out that this Islamic bank is more solvent and less risky than the selected group of conventional banks. In addition, Rosly and AbuBakr (2003) proved that Islamic banks have a higher return on assets which does not imply higher efficiency. Rosnia et al. (2011) analyzed the financial performance of Malaysian Islamic and conventional banks representing the two types of banks for the time period 2004-2008. In another study Samad and Hassan (2000) examined the intertemporal and interbank performance of Malaysian Islamic banks during 1994-1997 using the financial ratios.

Kyeong et al. (2012) issued a comparative study between Islamic and conventional banking system and their implications. The financial characteristics of the banking systems are widely used to measure the performance of the banks. In various studies the financial ratios were reapplied. Samad (2004) evaluated the comparative performance of Bahrain banks using the profitability, credit and liquidity risk. Nine financial ratios were basis for measuring these performances. Olson and Zoubi (2008) applied accounting ratios to distinguish between Islamic and conventional banks in the GCC region. Further existing studies on bank performance analyzed various issues such as firm-specific attributes, economic environment and corporate governance structure of banks. According to the numerous studies such as of Kyereboah-Coleman and Biekpe (2006-2007), Adams and Maheran (2005), Belkhir (2009), Andres and Vallelado (2008) and Tanna et al. (2011) bank size was detected to have a positive relationship with performance, when using various measurements for performance such as ROA or ROE. Moreover the study of Camilleri (2005), Yung (2009), Flamini et al. (2009) and Srairi (2009) demonstrated that larger banks have an improved performance.

In addition, Yung (2009) found out that diversified investment opportunities as well as better technology and management are the reason for better performance. Nevertheless some studies such as of Bashir (2000), Tanna et al. (2005), Pasiouras and Kosmidou (2007) and Sufian and Habibullah (2009) proved the opposite due to the existence of diseconomies of scale which leads to a negative relationship between size and profitability. The study of Abreu and Mendes (2003), Guru et al. (2002), Naceur (2003), Tanna et al. (2002), Athanasoglou et al. (2005), Heffernan and Fu (2008), Flamini et al. (2009), Sufian and Habibullah (2009) as well as Wasiuzzaman and Tarmizi (2010) evaluated whether the economic conditions influence the bank performance or not and found a positive relationship between inflation rate and profitability of banks for the different countries and regions. Liquidity was also found to affect profitability of banks. According to Alkassim (2005) Islamic and conventional banks have a tendency to similar liquidity ratios. Based on the study of Toumi et al. (2008) Islamic banks have a low leverage ratio compared to the conventional banks and were therefore less risky and safer during the

financial crisis. In addition, the study of Olson and Zoubi (2008) analyzed 28 conventional and 16 Islamic banks for the time period of 2000-2005 by using t-test and identified that ROAA and ROAE is significantly higher for the Islamic banks than for conventional banks.

The financial ratios are used to analyze the difference between the banking systems and the performance efficiency of these systems. Most of the studies on the Malaysian banking system generally used the financial ratios generally without focusing on which ratio is more significant and helpful to analyze the difference between these two types of financial institutions. This study tries to figure out the most relevant financial ratios in analyzing the difference between the banking systems of Islamic and conventional banks in Malaysia. In this study eight ratios are identified to be the relevant ratios for investigation of the performance and the differences between the two banking systems in Malaysia, especially before and after the financial crisis. These ratios are bank size, leverage, return on average assets (ROAA), return on average equity (ROAE), lending intensity, total customer deposits, skills utilization, and liquidity.

## RESEARCH METHODOLOGY

This study applies the financial statements of Islamic and conventional banks in Malaysia, as the sources of sample data, for the sample period from 2005 to 2016. There is a total of six Islamic banks and six conventional banks selected among the local-owned banks in Malaysia. The sample includes six Islamic banks which are CIMB Islamic Bank Berhad, RHB Islamic Bank Berhad, Hong Leong Islamic Bank Berhad, Bank Muamalat Malaysia Berhad, Affin Islamic Bank Berhad, and EONCAP Islamic Bank Berhad and six conventional banks which are Public Bank Berhad, RHB Bank Berhad, Hong Leong Bank Berhad, AmBank (M) Berhad, OCBC Bank (M) Berhad, and Maybank International (L) Ltd. Finding a matched counterpart conventional bank for each Islamic bank that fully covers all the characteristics is crucial and important issue to be taken into consideration. Therefore, the researcher constructs an approximate matched sample of conventional banks based on one or more than one factor of the following: 1) the geographic location, 2) relative age, 3) range of financial operations, and 4) banks relative size (logarithm of total assets). Data for this research were extracted from financial annual reports of banks as well as BankScope database.

The purpose of this study is to compare the financial performance of Islamic and conventional banks in Malaysia by means of different key figures and ratios. The analyzed financial ratios are bank size, total customer deposits as well as leverage, ROAA, ROAE, lending intensity, skills utilization, and liquidity. All data were converted into US Dollar and were



D U R *  P O S T	2008	3,74	3,44	3,41	3,63	3,18	3,32	3,45	3,55	Table 1...
	2009	3,91	3,52	3,42	3,72	3,35	3,32	3,54		
	2010	4,07	3,63	3,49	3,78	3,51	3,41	3,65		
	2011	4,12	3,84	3,59	3,84	3,52	2,96	3,64	3,76	
	2012	4,20	3,70	3,87	3,87	3,57	3,15	3,73		
	2013	4,15	3,79	3,96	3,96	3,55	3,41	3,80		
	2014	4,11	3,85	3,96	3,96	3,53	3,43	3,81		
	2015	4,11	3,84	3,96	3,96	3,52	3,42	3,80		
	2016	4,10	3,84	3,95	3,95	3,52	3,42	3,80		

*\*During the crisis*

Table 2: Bank Size of Conventional Banks, 2005-2016

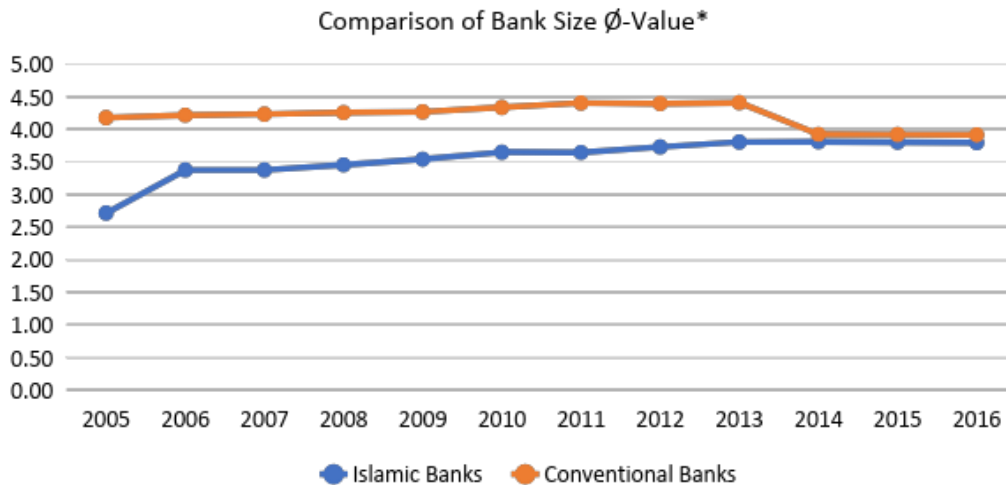
Year	Public Bank Berhad	RHB Bank Berhad	Hong Leong Bank Berhad	AmBank (M) Berhad	OCBC Bank (Malaysia) Berhad	Maybank International (L) Ltd	Average Value	Average Value for period
\$								
P R E	2005	4,76	4,41	4,24	4,13	4,12	3,41	4,21
	2006	4,83	4,47	4,26	4,19	4,18	3,37	
	2007	4,90	4,46	4,35	4,05	4,19	3,44	
D U R	2008	4,93	4,45	4,38	4,16	4,20	3,42	4,29
	2009	4,95	4,50	4,36	4,16	4,29	3,35	
	2010	5,01	4,59	4,42	4,17	4,37	3,46	
P O S T	2011	4,88	4,64	4,67	4,41	4,29	3,53	4,16
	2012	4,93	4,73	4,67	4,42	4,36	3,26	
	2013	4,94	4,70	4,68	4,40	4,37	3,36	
	2014	4,95	1,70	4,68	4,39	4,34	3,48	
	2015	4,95	1,70	4,68	4,38	4,34	3,47	
	2016	4,94	1,70	4,67	4,38	4,33	3,47	

Figure 1 shows that conventional banks typically have a bigger size compared to Islamic banks and were keeping it from 2005 till 2013. After 2013 it dropped down to almost the same size of Islamic banks. The trend of Islamic banks is oppositional. There is a growing trend in the complete period of observation from 2005 till 2016. It shows that more customers were interested in the financial services of Islamic banks. It might be the bigger offer of ethical correct services and the orientation towards the sharia law. Today more people start to identify with their religion and Islamic banks are experiencing a good performance and higher demands than conventional banks. In total it looks as if there was no strong impact of the financial crisis on both kinds of banks, only a slight one on conventional banks. The average value of Islamic bank



size in the pre-crisis was 3,33, from 2008-2010 it reached a value of 3,55, and has an average value of 3,76 in the post-crisis period. The average value of conventional bank size in the pre-crisis was 4,21, from 2008-2010 it reached a value of 4,29, and has a lower average value of 4,16 in the post-crisis period. All values are very close to each other.

Figure 1: Comparison of Bank Size in \$, 2005-2016



\* The symbol Ø stands for average

### Leverage Ratio

The leverage ratio is used to value the debt level of a bank and is calculated by equity to total assets. In case the leverage ratio is very high, the bank is faced with higher risk. If the leverage ratio is low the bank has less debt but might have a lower performance in profitability (Baka et al, 2012).

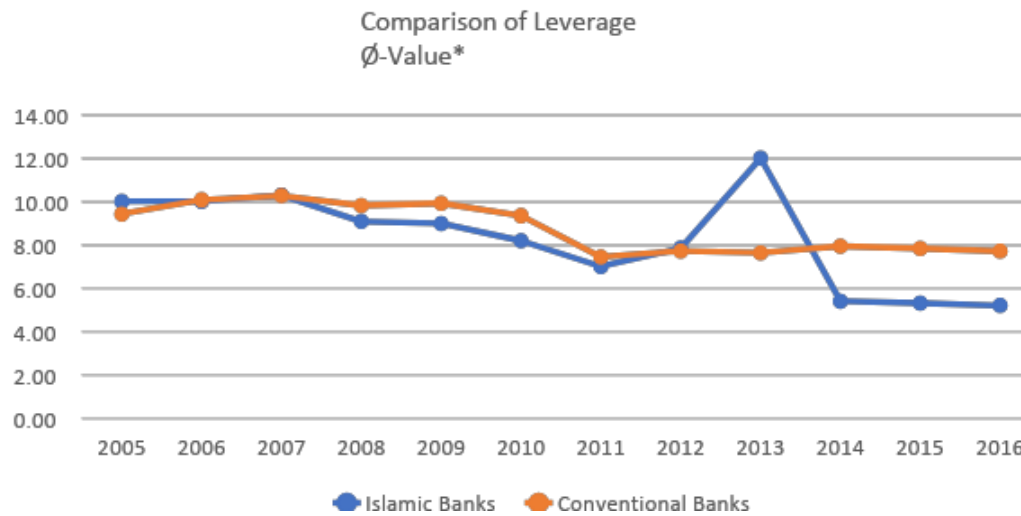
Table 3: Leverage of Islamic Banks, 2005-2016

Year	CIMB Islamic Bank Berhad	RHB Islamic Bank Berhad	Hong Leong Islamic Bank Berhad	Bank Muamalat Malaysia Berhad	Affin Islamic Bank Berhad	EONCAP Islamic Bank Berhad	Average Value	Average Value for period	
%									
P	2005	18,42	8,45	11,26	5,82	8,46	7,68	10,02	10,11
R	2006	13,81	8,86	9,26	5,84	13,52	8,80	10,01	
E	2007	8,07	9,49	10,40	5,77	20,10	7,95	10,30	
D	2008	4,09	9,21	8,37	4,99	21,20	6,66	9,09	8,76
U	2009	3,24	8,13	8,23	8,01	19,00	7,34	8,99	
R	2010	3,72	7,51	8,22	7,43	14,60	7,70	8,20	





Figure 2: Comparison of Leverage in %, 2005-2016



### Return on Average Asset

Return on Average Asset (ROAA) is a significant ratio to analyze financial bank performance and managerial efficiency and will be measured in this research by taking net income and dividing it by average total assets. According to the study of Alrawashedh, Sabri and Ismail (2014) the higher return on average asset leads to better financial performance and profitability of a bank.

Table 5: Return on Average Asset of Islamic Banks, 2005-2016

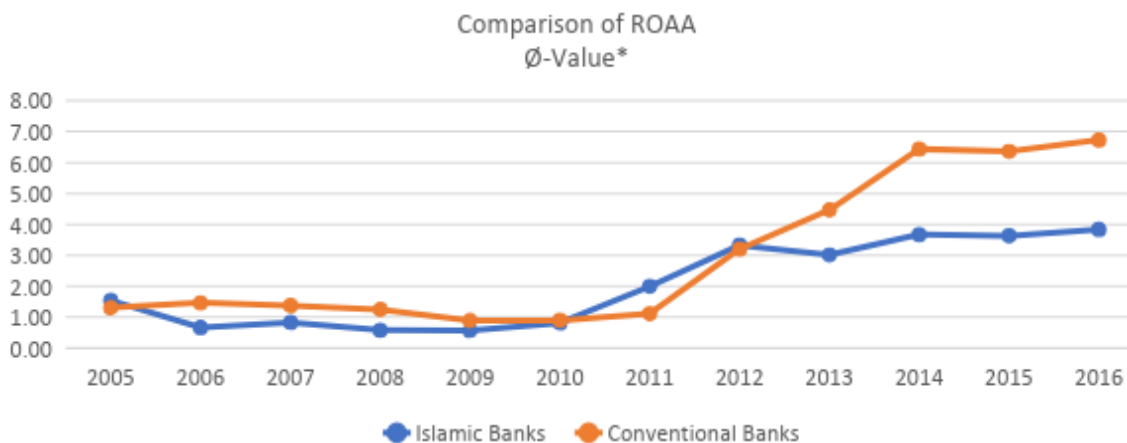
Year	CIMB Islamic Bank Berhad	RHB Islamic Bank Berhad	Hong Leong Islamic Bank Berhad	Bank Muamalat Malaysia Berhad	Affin Islamic Bank Berhad	EONCAP Islamic Bank Berhad	Average Value	Average Value for period	
	%								
P	2005	-3,08	0,68	10,34	0,40	0,49	0,44	1,55	1,02
R	2006	0,25	1,21	0,74	0,69	0,88	0,25	0,67	
E	2007	1,01	1,55	0,97	0,39	0,50	0,58	0,83	
D	2008	0,54	0,99	0,92	0,22	0,56	0,26	0,58	0,66
U	2009	0,55	0,63	0,88	0,49	0,38	0,55	0,58	
R	2010	0,95	0,56	0,88	0,77	0,56	1,20	0,82	
P	2011	0,82	8,35	0,59	0,94	0,48	0,83	2,00	3,25
O	2012	0,81	8,43	8,21	1,12	0,65	0,75	3,33	
S	2013	0,68	7,11	8,25	1,01	0,47	0,58	3,02	
T	2014	0,71	8,94	6,89	0,83	0,50	4,18	3,67	
	2015	0,70	8,83	6,81	0,82	0,49	4,13	3,63	
	2016	0,75	9,35	7,21	0,87	0,51	4,37	3,84	

Table 6: Return on Average Asset of Conventional Banks, 2005-2016

Year	Public Bank Berhad	RHB Bank Berhad	Hong Leong Bank Berhad	AmBank (M) Berhad	OCBC Bank (Malaysia) Berhad	Maybank International (L) Ltd	Average Value	Average Value for period	
								%	
P	2005	1,56	0,81	1,11	1,61	2,02	0,74	1,31	1,39
R	2006	1,50	1,03	1,02	1,47	1,82	1,97	1,47	
E	2007	1,46	1,22	1,01	0,78	1,94	1,87	1,38	
D	2008	1,17	1,21	1,02	1,24	1,19	1,67	1,25	1,02
U	2009	0,26	1,29	1,17	1,12	1,31	0,21	0,90	
R	2010	1,23	1,19	1,23	1,07	1,44	-0,76	0,90	
P	2011	1,44	1,18	0,96	1,30	1,17	0,62	1,11	4,72
O	2012	1,40	1,10	1,04	1,48	1,13	13,08	3,20	
S	2013	1,32	0,96	7,34	1,62	1,14	14,43	4,47	
T	2014	1,27	6,22	6,15	8,85	5,62	10,51	6,44	
	2015	1,25	6,15	6,07	8,75	5,55	10,39	6,36	
	2016	1,33	6,51	6,43	9,26	5,87	11,00	6,73	

Both kinds of banks had a stable ROAA from 2005 till 2010, while both values are quite low. Directly after the financial crisis in the year 2010 the value of Islamic banks started to climb up and reach another stable period in 2012. The rise of conventional banks was bigger and since 2012 conventional banks have had a much better profitability than the Islamic banks. Evidently higher earnings were generated from invested capital. The average value of the ROAA of Islamic banks in the pre-crisis was very low with a value of 1,02, from 2008-2010 it dropped to a value of 0,66 due to the financial crisis, and had the best average value of 3,25 in the post-crisis period. The average value of ROAA of conventional banks in the pre-crisis was similar to the Islamic banks with 1,39. From 2008-2010 it dropped down to a value of 1,02, and had a very high average value of 4,72 in the post-crisis period.

Figure 3: Comparison of ROAA in %, 2005-2016



### Return on Average Equity

Return on Average Equity (ROAE) is an adjusted version of the Return on Equity (ROE). According to the study of Popovici (2011) ROAE is a common measure to analyze the bank's profitability and efficiency. It provides a better overview in situations where the value of shareholder's equity has changed significantly during the financial year.

Table 7: Return on Average Equity of Islamic Banks, 2005-2016

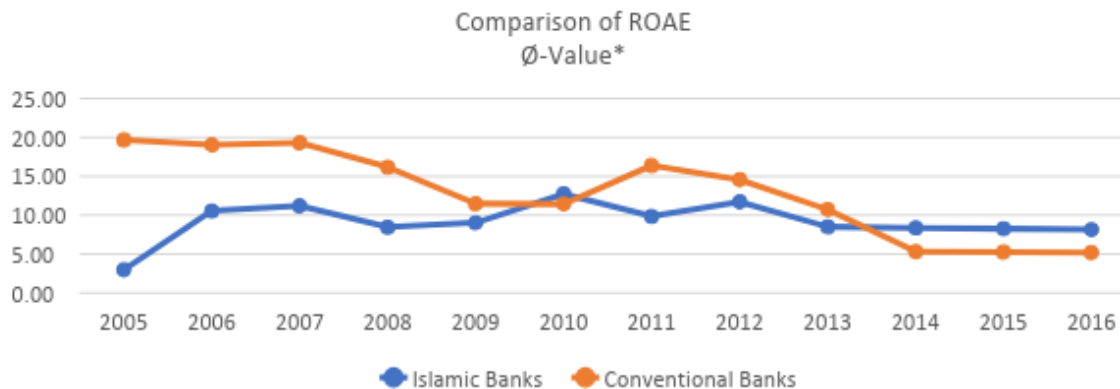
	Year	CIMB Islamic Bank Berhad	RHB Islamic Bank Berhad	Hong Leong Islamic Bank Berhad	Bank Muamalat Malaysia Berhad	Affin Islamic Bank Berhad	EONCAP Islamic Bank Berhad	Average Value	Average Value for period
		%							
P R E D U R P O S T	2005	-19,04	9,13	6,76	7,21	9,82	4,05	2,99	8,26
	2006	1,90	15,63	8,76	13,14	20,79	3,12	10,56	
	2007	10,96	18,35	10,74	7,33	12,37	7,56	11,22	
	2008	10,58	11,10	10,39	4,30	10,71	3,76	8,47	10,08
	2009	15,57	7,43	10,77	6,03	6,40	8,03	9,04	
	2010	27,31	7,18	10,80	10,00	11,12	10,01	12,74	
	2011	19,88	8,19	7,77	5,86	10,38	7,11	9,87	9,15
	2012	17,88	4,64	13,91	13,08	12,63	8,14	11,71	
	2013	13,61	10,42	4,61	12,13	8,30	2,06	8,52	
	2014	12,04	8,11	10,13	10,28	8,42	1,27	8,38	
	2015	11,90	8,01	10,01	10,16	8,23	1,26	8,26	
	2016	11,74	7,90	9,88	10,03	8,12	1,24	8,15	

Table 8: Return on Average Equity of Conventional Banks, 2005-2016

	Year	Public Bank Berhad	RHB Bank Berhad	Hong Leong Bank Berhad	AmBank (M) Berhad	OCBC Bank (Malaysia) Berhad	Maybank International (L) Ltd	Average Value	Average Value for period
		%							
P R E D U R P O S T	2005	18,18	30,43	13,43	11,90	32,45	11,72	19,68	19,34
	2006	18,17	12,66	13,78	11,64	29,83	28,18	19,04	
	2007	18,79	13,37	14,78	15,44	30,14	23,32	19,31	
	2008	15,38	15,13	15,50	14,40	17,58	19,12	16,18	13,04
	2009	3,33	13,20	16,98	13,91	19,12	2,42	11,49	
	2010	14,58	14,15	16,52	13,11	21,63	-11,37	11,44	
	2011	21,98	15,76	15,77	17,65	15,60	11,62	16,40	9,59
	2012	20,99	15,14	16,64	19,15	15,32	0,15	14,57	
	2013	19,21	12,94	14,68	1,03	16,18	0,41	10,74	
	2014	16,50	0,58	11,97	1,12	1,35	0,50	5,34	
	2015	16,30	0,57	11,83	1,11	1,34	0,50	5,27	
	2016	16,08	0,56	11,67	1,09	1,32	0,49	5,20	

The trend of ROAE of conventional banks showed a decrease over the period of 2005 till 2016 with a peak in 2011, after the financial crisis. It seems that the crisis had an effect on the key figure, while Islamic banks showed a better performance in their ROAE. Nevertheless Islamic banks were stamped by an instable performance over the period observed. Oppositionally to the key figure ROAA in this chart shows that since 2014 the values of Islamic banks were better compared to those of the conventional banks. While the average value of the ROAE of Islamic banks almost stayed the same in all three periods the average values of ROAE of conventional banks decreased in the time of observation. The average at the beginning was very high with a value of 19,34 and ended with a value of 9,59 in the post-crisis period.

Figure 4: Comparison of ROAE in %, 2005-2016



**Lending Intensity**

The loans-to-assets ratio measures the total loans outstanding as a percentage of total assets and is used as lending intensity in this research. The height of this ratio indicates that a bank is loaned up and its liquidity is low. The higher the ratio, the more risky a bank may be to higher defaults. The study of Abu-Alkheil, Burghof and Khan (2012) found out that bank loans are the major source of revenue and impact efficiency positively. In addition, the study discovered that banks with higher loans intensity could have either higher or lower efficiency.

Table 9: Lending Intensity of Islamic Banks, 2005-20016

Year	CIMB Islamic Bank Berhad	RHB Islamic Bank Berhad	Hong Leong Islamic Bank Berhad	Bank Muamalat Malaysia Berhad	Affin Islamic Bank Berhad	EONCAP Islamic Bank Berhad	Average Value	Average Value for period
%								
P	2005	95,47	95,47	61,50	48,46	21,58	69,84	65,39
R	2006	93,57	93,57	72,58	33,33	41,24	87,39	70,28
E	2007	48,49	48,49	69,12	31,55	88,32	71,11	59,51

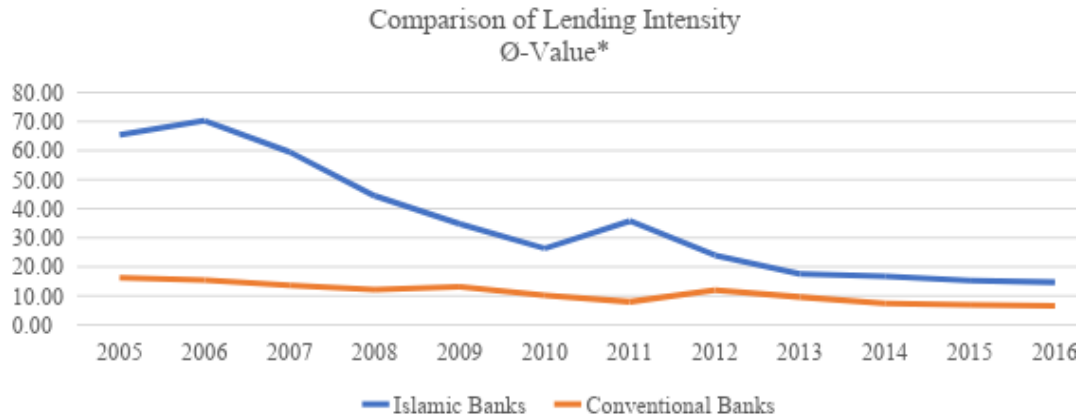
D U R  P O S T	2008	21,93	21,93	47,51	28,38	88,99	57,66	44,40	35,18	Table 9...
	2009	14,71	14,71	45,25	22,96	53,93	57,28	34,81		
	2010	9,88	9,88	37,75	19,07	36,58	44,74	26,32		
	2011	8,25	8,25	27,75	15,51	34,83	120,06	35,77	20,65	
	2012	6,57	6,57	14,10	14,10	29,18	73,57	24,02		
	2013	7,16	7,16	10,94	10,93	29,29	39,42	17,48		
	2014	7,32	7,32	10,31	10,31	29,61	35,15	16,67		
	2015	6,74	6,74	9,50	9,49	26,98	32,37	15,30		
2016	6,46	6,46	9,10	9,10	25,87	31,03	14,67			

Table 10: Lending Intensity of Conventional Banks, 2005-2016

	Year	Public Bank Berhad	RHB Bank Berhad	Hong Leong Bank Berhad	AmBank (M) Berhad	OCBC Bank (Malaysia) Berhad	Maybank International (L) Ltd	Average Value	Average Value for period
%									
P R E	2005	2,61	5,87	8,68	11,05	11,34	57,90	16,24	15,08
	2006	2,08	4,72	7,71	8,94	9,24	59,71	15,40	
	2007	1,68	4,61	6,02	11,94	8,70	48,70	13,61	
D U R	2008	1,43	4,31	4,98	8,27	7,67	45,84	12,08	11,80
	2009	1,33	3,79	5,21	8,21	6,12	53,88	13,09	
	2010	1,12	2,98	4,44	7,81	4,98	40,03	10,23	
P O S T	2011	1,42	2,48	2,32	4,24	5,50	31,67	7,94	8,38
	2012	1,22	1,98	2,22	4,01	4,63	57,76	11,97	
	2013	1,16	2,03	2,09	4,05	4,32	43,98	9,61	
	2014	1,06	1,92	1,97	3,85	3,98	31,52	7,38	
	2015	0,97	1,77	1,81	3,55	3,90	29,03	6,84	
	2016	0,93	1,69	1,74	3,40	3,59	27,82	6,53	

Figure 5 shows a very high lending intensity of Islamic banks before the crisis which means that a lot of loans were outstanding and therefore the liquidity was quite low. It sunk continuously until 2010 with the exception of a slight recovery in 2011. The value remained almost at the same level after 2013. The risk of high default had significantly decreased and then remained almost at the same level as the ratio of conventional banks. Lending intensity of conventional banks did not change significantly and obviously was just slightly affected by the crisis. Both types of banks decreased in their average values but the Islamic banks faced a bigger decline. The lending intensity of Islamic banks was 65,06 for the beginning three years of the observation. The average value was 35,18 during and 20,65 in the post-crisis period. That shows that Islamic banks were able to reduce their risk significantly.

Figure 5: Comparison of Lending Intensity in %, 2005-2016



### Total Customer Deposits

In this study the market share is measured by total customer deposits. Market share increases can allow a bank to achieve greater scale with its operations and improve profitability. According to Akhtar, Akhtar and Shahbaz (2015) total customer deposits are influenced by variables such as interest rate of conventional banks or profit of Islamic banks. Furthermore the study pointed out that any boost in interest rate raises the deposits of conventional and decline the deposits of Islamic banks. In addition the study confirmed that religion is an important factor in attracting the depositors towards Islamic banking.

Table 11: Total Customer Deposits of Islamic Banks, 2005-2016

Year	CIMB Islamic Bank Berhad	RHB Islamic Bank Berhad	Hong Leong Islamic Bank Berhad	Bank Muamalat Malaysia Berhad	Affin Islamic Bank Berhad	EONCAP Islamic Bank Berhad	Average Value	Average Value for period
\$								
P	2005	2,12	3,22	3,21	3,45	2,29	3,07	2,89
R	2006	2,88	3,32	3,23	3,58	2,86	3,09	3,16
E	2007	3,36	3,32	3,21	3,57	3,14	3,06	3,28
D	2008	3,61	3,34	3,29	3,57	3,13	3,15	3,35
U	2009	3,72	3,38	3,36	3,67	3,18	3,16	3,41
R	2010	3,87	3,51	3,38	3,73	3,18	3,29	3,49
P	2011	3,95	3,72	3,47	3,76	3,37	0,18	3,07
O	2012	4,04	3,22	3,69	3,75	3,46	0,18	3,06
S	2013	4,04	3,41	3,74	3,75	3,43	0,18	3,09
T	2014	4,03	3,48	3,74	3,69	3,42	0,21	3,09
	2015	4,05	3,50	3,76	3,71	3,44	0,16	3,11
	2016	4,07	3,52	3,78	3,73	3,46	0,13	3,12

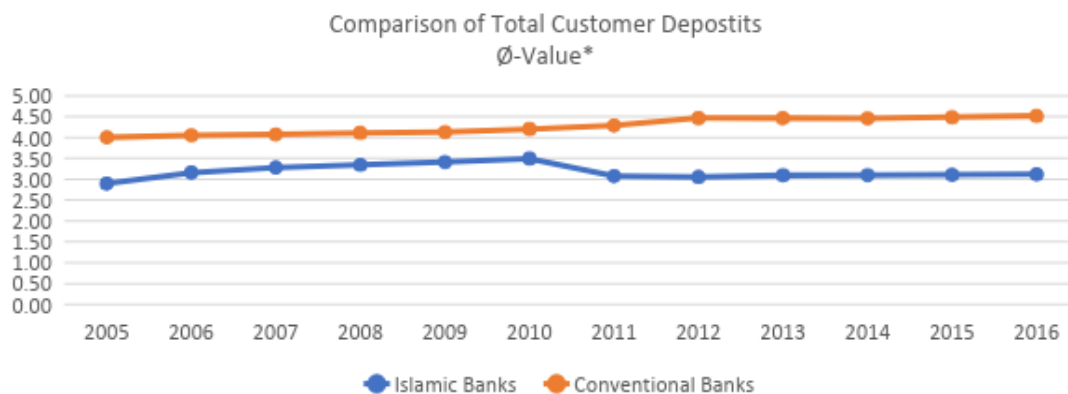


Table 12: Total Customer Deposits of Conventional Banks, 2005-2016

Year	Public Bank Berhad	RHB Bank Berhad	Hong Leong Bank Berhad	AmBank (M) Berhad	OCBC Bank (Malaysia) Berhad	Maybank International (L) Ltd	Average Value	Average Value for period
\$								
P	2005	4,59	4,17	4,08	4,06	3,93	3,18	4,00
R	2006	4,61	4,24	4,12	4,11	4,00	3,23	4,05
E	2007	4,71	4,35	4,25	3,81	4,05	3,27	4,07
D	2008	4,77	4,32	4,29	3,95	4,05	3,28	4,11
U	2009	4,79	4,39	4,29	3,93	4,10	3,27	4,13
R	2010	4,86	4,48	4,33	3,96	4,16	3,42	4,20
P	2011	4,79	4,54	4,57	4,27	4,17	3,37	4,28
O	2012	4,85	4,61	4,57	4,28	4,24	4,26	4,47
S	2013	4,85	4,59	4,53	4,27	4,25	4,27	4,46
T	2014	4,85	4,51	4,49	4,35	4,18	4,36	4,46
	2015	4,88	4,53	4,51	4,42	4,18	4,38	4,48
	2016	4,90	4,55	4,53	4,57	4,14	4,40	4,52

Islamic banks had a slight increase of total customer deposits until 2010. After a small decrease the figure shows no changes until 2016. In general the total customer deposits of conventional banks were higher than the customer deposits of the Islamic banks. This might be an indicator for a greater market share of conventional banks, but also for the difference of the banking systems, due to different type and character of deposits. Especially the difference of returns for customers of Islamic banks has to be taken into consideration. The purpose of customers to deposit their money in an Islamic bank is not solely for profit but also for ethical and social responsible reasons. The average values of both kinds of banks barely fluctuate.

Figure 6: Comparison of Total Customer Deposits in \$, 2005-2016



### Skills Utilization

Skills utilization will be measured by personal expenses of the bank divided by total assets. According to the analysis of this study skills utilization is an indicator how successful banks manage to transform the expenses for their staff's salary and training into profit: the lower the ratio the sound the performance. Banks pay for training and education of their employees in order to increase customers' satisfaction and thereby maximise the profit.

Table 13: Skills Utilization of Islamic Banks, 2005-2016

Year	CIMB Islamic Bank Berhad	RHB Islamic Bank Berhad	Hong Leong Islamic Bank Berhad	Bank Muamalat Malaysia Berhad	Affin Islamic Bank Berhad	EONCAP Islamic Bank Berhad	Average Value	Average Value for period	
%									
P R E D U R P O S T	2005	11,88	0,81	0,92	0,60	0,27	0,73	2,54	1,36
	2006	1,16	0,69	0,90	0,41	0,51	1,09	0,80	
	2007	0,60	0,65	0,86	0,39	1,10	0,88	0,75	
	2008	0,27	0,54	0,59	0,35	1,11	0,72	0,60	0,48
	2009	0,18	0,45	0,56	0,29	0,67	0,71	0,48	
	2010	0,12	0,34	0,47	0,24	0,46	0,56	0,36	
	2011	0,10	0,20	0,35	0,19	1,48	1,49	0,63	0,44
	2012	0,08	0,26	0,18	0,18	1,44	0,92	0,51	
	2013	0,09	0,20	0,14	0,14	1,41	0,49	0,41	
	2014	0,09	0,17	0,13	0,13	1,39	0,44	0,39	
2015	0,09	0,16	0,12	0,12	1,29	0,41	0,36		
2016	0,08	0,14	0,11	0,11	1,19	0,38	0,34		

Table 14: Skills Utilization of Conventional Banks, 2005-2016

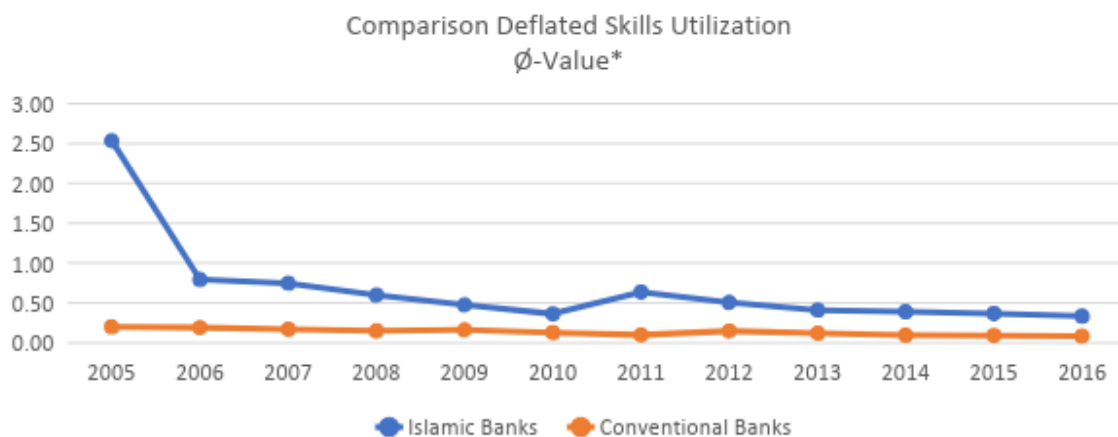
Year	Public Bank Berhad	RHB Bank Berhad	Hong Leong Bank Berhad	AmBank (M) Berhad	OCBC Bank (Malaysia) Berhad	Maybank International (L) Ltd	Average Value	Average Value for period
%								
P R E	2005	0,03	0,07	0,11	0,14	0,14	0,72	0,19
	2006	0,03	0,06	0,10	0,11	0,11	0,74	
	2007	0,02	0,06	0,07	0,15	0,11	0,61	
D U R	2008	0,02	0,05	0,06	0,10	0,10	0,57	0,15
	2009	0,02	0,05	0,06	0,10	0,08	0,67	
	2010	0,01	0,04	0,06	0,10	0,06	0,50	
P O S T	2011	0,02	0,03	0,03	0,05	0,07	0,39	0,11
	2012	0,02	0,02	0,03	0,05	0,06	0,72	
	2013	0,01	0,03	0,03	0,05	0,05	0,55	
	2014	0,01	0,02	0,02	0,05	0,08	0,39	

2015	0,01	0,02	0,02	0,05	0,08	0,37	0,09
2016	0,01	0,02	0,02	0,04	0,07	0,34	0,08

Table 14...

Figure 7 shows that the value for skills utilization of Islamic banks was decreasing in 2005 enormously and had a slight increase after the crisis. Due to increase their market shares, Islamic banks had to hire more employees and train them at the beginning of the period observed. After being well-established they deducted their costs for hiring and training of their staff in 2006. Conventional banks had no changes in their skills utilization value at all and kept it constantly on a very low level. Concerning this value the crisis did not have any impact at all. Both types of banks decreased in their average values but the Islamic banks faced a bigger decline. The skills utilization of Islamic banks was 1,36 for the beginning three years of the observation. The average value was 0,48 during and 0,44 in the post-crisis period.

Figure 7: Comparison of Skills Utilization in %, 2005-2016



### Liquidity

In this study the liquidity is measured by loans divided by customer deposits. Liquidity is the ability of a bank to pay its debts using its liquid assets. A bank's liquidity is determined by its ability to meet all its anticipated expenses, such as funding loans or making payments on debt, using only liquid assets. Ideally a bank should maintain a level of liquidity that also allows to meet any unexpected expenses without having to liquidate other assets. The bigger the cushion of liquid assets relative to anticipated liabilities, the greater the bank's liquidity (Hazzi, Al Kilani, 2013).

Table 15: Liquidity of Islamic Banks, 2005-2016

Year	CIMB Islamic Bank Berhad	RHB Islamic Bank Berhad	Hong Leong Islamic Bank Berhad	Bank Muamalat Malaysia Berhad	Affin Islamic Bank Berhad	EONCAP Islamic Bank Berhad	Average Value	Average Value for period	
%									
P	2005	1,66	72,92	82,26	50,53	30,48	103,48	56,89	71,51
R	2006	79,37	70,40	77,82	48,49	81,12	118,30	79,25	
E	2007	31,15	73,88	77,21	51,99	101,79	134,37	78,40	
D	2008	46,02	77,17	71,39	52,88	141,92	105,00	82,40	84,38
U	2009	95,30	76,16	49,96	47,95	128,44	100,54	83,06	
R	2010	100,35	90,85	54,68	46,24	143,58	90,35	87,68	
P	2011	94,77	74,12	57,55	50,42	59,78	96,91	72,26	76,99
O	2012	90,51	138,08	49,87	49,94	55,87	112,83	82,85	
S	2013	86,12	96,06	52,92	53,00	62,76	113,39	77,37	
T	2014	80,33	77,67	62,47	62,50	68,41	112,57	77,33	
	2015	79,84	77,19	62,09	62,11	67,27	110,92	76,57	
	2016	79,32	76,68	61,68	61,71	66,86	106,96	75,53	

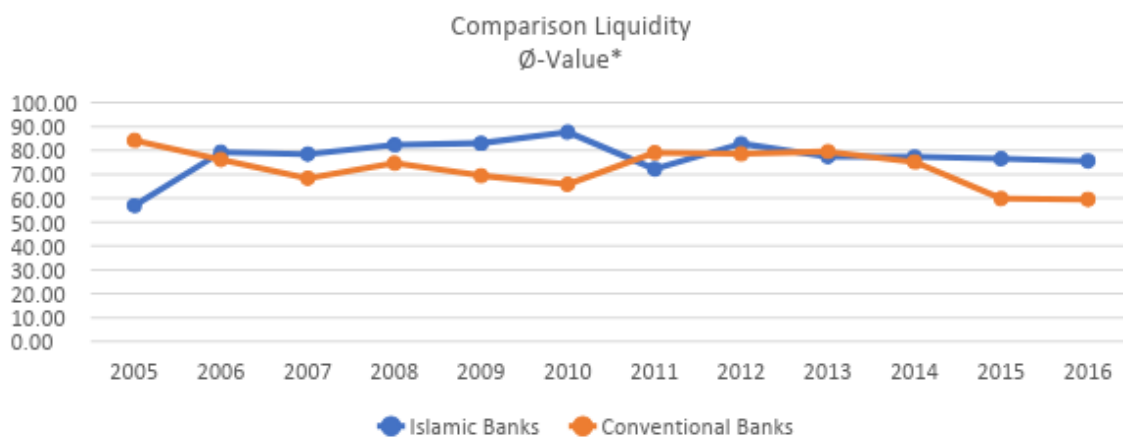
Table 16: Liquidity of Conventional Banks, 2005-2016

Year	Public Bank Berhad	RHB Bank Berhad	Hong Leong Bank Berhad	AmBank (M) Berhad	OCBC Bank (Malaysia) Berhad	Maybank International (L) Ltd	Average Value	Average Value for period	
%									
P	2005	109,57	117,79	75,59	31,32	89,10	82,18	84,26	76,23
R	2006	111,34	109,23	73,40	20,09	86,43	56,25	76,12	
E	2007	97,20	82,94	61,91	19,96	79,09	68,75	68,31	
D	2008	93,58	90,24	57,91	22,33	119,27	64,83	74,69	70,00
U	2009	92,51	86,78	53,68	24,48	110,28	49,10	69,47	
R	2010	90,02	90,92	55,37	23,32	100,23	35,13	65,83	
P	2011	85,93	83,30	70,90	94,99	85,43	53,97	79,09	71,94
O	2012	83,78	79,72	70,17	94,15	82,91	60,81	78,59	
S	2013	82,32	82,66	76,26	90,77	83,71	61,49	79,53	
T	2014	80,19	79,22	78,98	89,81	68,69	54,10	75,16	
	2015	79,70	78,74	78,49	0,00	68,27	53,77	59,83	
	2016	79,17	78,22	77,98	0,00	67,82	53,41	59,43	

Islamic banks showed a solid increase in liquidity from 2005 until the end of the crisis. There was a decrease in liquidity in 2010. After a slight recovery in 2011 liquidity held approximately

the same level until 2016. In contrast, conventional banks showed the oppositional trend until 2014, when liquidity decreased. Alkassim (2005) proved in his study that Islamic and conventional banks have a tendency to similar liquidity ratios. But these figures show that the crisis affected the two types of banks in the opposite way. The average value of liquidity of Islamic banks was 71,51 from 2005-2007, while the average value of conventional banks was 76,23. The post-crisis period had an average value of 76,99 for Islamic and 71,94 for conventional banks. The comparison of liquidity shows an antithetic trend over the time of observation.

Figure 8: Comparison of Liquidity in %, 2005-2016



### Overall summary of the results

Table 18 bellow shows the average performance for Islamic and conventional banks over the entire period of 2005-2016. The overall results reveal that conventional banks on average are larger in size, less solvent, more risky, more profitable and are less liquidity.

Table 18: Financial Ratio Analysis of Islamic and Conventional Banks: 2005-2016

Islamic Banks		Conventional Banks	
Financial Ratio	Ø-Value	Financial Ratio	Ø-Value*
Bank Size (\$)	3,56	Bank Size (\$)	4,20
Leverage (%)	8,28	Leverage (%)	8,77
ROAA (%)	2,04	ROAA (%)	2,96
ROAE (%)	9,16	ROAE (%)	12,89
Lending Intensity (%)	35,39	Lending Intensity (%)	10,91
Total Customer Deposits (\$)	3,18	Total Customer Deposits (\$)	4,27
Skills Utilization (%)	0,68	Skills Utilization (%)	0,14
Liquidity (%)	77,47	Liquidity (%)	72,53

## Hypothesis Testing

The following table shows the results of the hypothesis testing.

Table 17: Hypothesis Testing T-Test Results at 5% Significance Level

Financial Ratio	Bank type	T-Test for Equality of Means	
		t	Sig. (2-tailed)* P-Value
Bank Size	Islamic Banks	-4,85143	0,00001
	Conventional Banks	0,22036	0,82645
Leverage	Islamic Banks	1,83553	0,07215
	Conventional Banks	4,29859	0,00008
ROAA	Islamic Banks	-2,46697	0,01696
	Conventional Banks	-3,47726	0,00103
ROAE	Islamic Banks	-0,52498	0,60183
	Conventional Banks	4,36118	0,00006
Lending Intensity	Islamic Banks	6,30580	0,00006
	Conventional Banks	1,48575	0,14338
Total Customer Deposits	Islamic Banks	0,06346	0,94964
	Conventional Banks	-4,03323	0,00018
Skills Utilization	Islamic Banks	2,03802	0,04665
	Conventional Banks	1,44542	0,15434
Liquidity	Islamic Banks	-0,72797	0,46990
	Conventional Banks	0,61603	0,54056

\* 5% significance level

The independent samples t-test is an inferential statistical test that defines whether there is a statistically significant difference between the means in two sets of data. This study uses this type of t-test to compare the mean score of two groups between six Islamic and six conventional banks at 5% significance level. The independent variables are pre-crisis period 2005-2007 (variable 1) and post-crisis period 2011-2016 (variable 2). The results from the table above represent eight independent t-tests for financial ratios such as bank size, leverage, ROAA, ROAE, lending intensity, total customer deposits, skills utilization and liquidity. If the p-value is less than our chosen significance level  $\alpha = 0,05$  the null hypothesis will be rejected. Based on the results, six financial ratios are found as significant ratios that can be used to study the difference and evaluate the performance of two types of banks in Malaysia in pre- and post-crisis phases.

The independent t-test shows that significant ratios for Islamic banks are bank size with a p-value of  $0,00001 < 0,05$  lending intensity  $0,00006 < 0,05$  and skills utilization  $0,04665 < 0,05$ . This means that all three ratios have an impact on the financial performance of Islamic banks in Malaysia in pre-and post-crisis period. All of the results are consistent with the previous financial ratio analysis, that indicated significant changes before and after the financial crisis, in

e.g. in size of the Islamic banks in Malaysia due to the increased demand in Islamic financial services, lending intensity due to the high loans outstanding as well as skills utilization due to the high costs for recruitment and training of employees at the beginning of the period observed. In addition, the significant ratios for conventional banks are leverage  $0,00008 < 0,05$  return on average equity  $0,00006 < 0,05$  as well as total customer deposits with a p-value of  $0,00018 < 0,05$ . This means that all three ratios have an impact on the financial performance of conventional banks in Malaysia in pre-and post-crisis period. All of the results are consistent with the previous financial ratio analysis, that showed significant changes before and after the financial crisis, in e.g. in leverage of the conventional banks in Malaysia due to the risk, return on average equity due to the better financial performance of Islamic banks as well as total customer deposits due to the greater market share, but also difference of the banking systems because of the different type and character of deposits.

## CONCLUSION

This paper utilizes the financial ratio analysis approach to analyze the comparative performance of Islamic versus conventional banks from Malaysia. The study covers the period from 2005 to 2016. The results indicate that there are statistically significant differences between the Islamic and conventional banks in Malaysia in terms of bank size, leverage, ROAA, ROAE, lending intensity, total customer deposits, skills utilization, and liquidity. Based on financial ratio analysis, Islamic banks on average are more solvent, less risky, less profitable, and have a higher credit risk though more liquidity.

In addition, based on independent t-test method the results indicate that there are statistically significant differences between the two types of banks in terms of bank size, leverage, ROAA, ROAE, lending intensity, total customer deposits, skills utilization, and liquidity in pre- (2005-2007) and post-crisis period (2011-2016). The significant ratios for Islamic banks are bank size, lending intensity and skills utilization while significant ratios for conventional banks are leverage, return on average equity as well as total customer deposits. The major limitation of this study is that only eight financial ratios were taken into account that do not cover all the financial characteristics of Islamic and conventional banks. In addition, the time period of analysis is still relatively short and only involves 12 years. As mentioned previously, this study is not consistent with the study of Ryu, Piao and Nam (2012) which found that Islamic banks in Malaysia are more stable and sound than conventional banks. As the t-test is only giving the information whether the significant difference exists this study is not consistent with the study of Hasan and Dridi (2010) which showed that Islamic banks have a stronger resilience compared to the conventional banks during the last financial crisis. In contrast, this study is consistent with



the study of Alkassim (2005) which found out that Islamic and conventional banks have a tendency to similar liquidity ratios.

As a result the decision whether to invest in Islamic or conventional banks depends on the investors' type and behavior. Investors with a high interest in custom tailored financial products and services will tend to prefer Islamic instead of conventional banking, whose main goal is maximizing profit based on loans. With the political situation becoming more instable, religion seems to play a bigger role in society. This might be a chance to keep the focus on and improve the ethical financial services like offered by Islamic banking.

Eventually, there is a wide scope for improvement and further research in the area of comparative banks performance. For instance, instead of emphasizing on only fully fledged Islamic and conventional commercial banks, the coverage of this study can be extended to include more banks with Islamic windows and longer time series. It is also possible to compare the performance of Malaysian banks with other banks from Non-Muslim countries. Furthermore, instead of utilizing only the financial metrics as proxies of performance the researcher can utilize parametric and nonparametric approaches to measure and compare bank performance. However, the extension of the analysis is subject to the constraints of the availability and the accuracy of the required data. Yet the new exercise will yield some additional insights. This type of analysis would be completely new papers.

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