

Leverage, Performance, Size and Reserve Management: Empirical Evidences in Malaysian Islamic Banks

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Abstract

This study examines the relationship between leverage ratio, bank's performance, size and profit equalisation reserve. Using GMM estimators, both difference and system, we find significant relationship between current leverage ratio and previous leverage ratio and profit equalization reserve. Overall, our results are consistent with the several past literatures with addition of determining impact of profit equalization reserve on leverage ratios of Islamic banks in Malaysia.

Keywords: Leverage ratio; Bank's performance; Bank's size; Profit equalisation reserve.



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1. Introduction

The relationship between leverage and firm performance and behaviours are abundantly discussed in the past literature (Bhagat *et al.*, 2015); (DeAngelo and Stulz, 2015); (Firth *et al.*, 2008); (Foong and Idris, 2012); (Lang *et al.*, 1995); (Myers, 1977); (Umar and Sun, 2016); (Zeitun *et al.*, 2015). In fact, the literature on leverage been extended to exploring the relationship between leverage and investment structures as well as risk-taking behaviours. The findings were mixed. For example, while leverage ratio was found to be irrelevant to the investment structures, other studies found evidences on the impact of leverage ratio on investment structures (Firth *et al.*, 2008). Besides that, other studies also have investigated the relationship between leverage and risk-taking behaviours of financial and non-financial institutions (DeAngelo and Stulz, 2015). However, there are some gaps in the past literature on studies on leverage and Islamic banks, particularly on the effect of Islamic banks' performance and size on their leverage ratios. This study is significant to the existing literature to highlight the financial ability of the Islamic banks, i.e. to lend more money and simultaneously to generate more income.

The nature of Islamic banks is unique as compared to their counterparts. It is because the Islamic banks adhere to the Shariah principles. According to the Shariah principles, the banks must not rely on fixed rate of income which normally generated through interest (riba). Hence, investment based products, namely on the basis of mudharabah and musyarakah (partnership) have become the alternatives for the Islamic banks. This situation creates additional risks for the banks, i.e. rate of return risk (RORR). Among the effect of RORR is the liability of the banks to displace the returns on the investment accounts when the accounts have performed poor as compared to the returns offered by equivalent accounts in the conventional banks. This is known as the displaced commercial risk (DCR) (Archer *et al.*, 2010). Prior to the enforcement of Islamic Financial Institution Act 2013, the Islamic banks used a reserve to overcome the DCR, i.e. the Profit Equalization Reserve (PER). This reserve is a risk mitigation tool to reduce the effect of the DCR in Islamic banks (IFSB, 2010); (Taktak, 2011). The part of this reserve is its discretionary use that may affect the leverage ratios of the Islamic banks. Not only scarce studies on leverage that included such discretionary reserve can be found in the literature, the impact of the reserve on the banks' leverage is also not known.

Thus, the objective of this study is explore the leverage ratios of the Malaysian Islamic banks particularly on the determinants of the leverage ratios. Since this study is considered preliminary on Malaysian banks' ratios, it merely focuses on the association between leverage ratio and bank's performance and size. Furthermore, since this study embarks on Islamic banks, the inclusion of profit equalization reserve is therefore crucial as this was a unique practice of the banks in Malaysia that was created to maintain stable returns to investment account holders and bank shareholders. Although it was built to cushion for rate of return risk (RORR) as well as displaced commercial risk (DCR), its practical insights are scarcely discussed especially in connection with leverage ratio and performance of the banks. In a way, results obtained from this study may also entails issues in term of effective reserve management of the banks.

2. Statement of Problem

Leverage of a bank denotes the debt or other financial instruments or borrowed capital used by the bank to generate more income for the investors as well as the shareholders. The issue of leverage is of importance for the banks since it signals their financial needs particularly in their ability to lend or finance, generating returns to the depositors and shareholders as well as their potential to perform. However, there are two significant ways of perceiving the relationship between leverage and bank's performance. Positive association can be anticipated between bank' leverage and performance due to the pressure the banks hold to avoid severe loss, thus pushing them

to maximise their potentials (Jensen, 1986); (Myers and Majluf, 1984), while negative association on other hand can be perceived to emerge from the demotivating behaviours of banks due to the theory of agency (Jensen M. C. and Meckling, 1976); (Lang *et al.*, 1995); (Myers, 1977). Still, some limitations of the former studies were due to the family ownership that minimize theory of agency's conflict (Anderson *et al.*, 2003) and as Myers and Majluf (1984) put it, 'firm with ample financial slack' that were less concern with their debt level (Myers and Majluf, 1984); (Zeitun *et al.*, 2015). According to Firth *et al.* (2008) and Myers (1977), performance of banks with low growth opportunities may be negatively associated with high leverage since they perceived leverage as demotivating factor for them to undertake low gained investments. The finding was in contrast with the results of Bhagat *et al.* (2015) which posited that banks pursue excessive risk taking through high leverage.

Technically, there are two types of leverage ratios employed in past literatures as highlighted by Chen (2013), the market leverage ratio and the book leverage ratio. The former refers to the leverage ratio of the institution as perceived by the investors. This is calculated using the outstanding shares and the earnings of the institution. The latter, the book leverage ratio is the value of the bank as recorded in the institution's financial statement. This is normally calculated using the total liabilities and the total assets, or total equity or shareholders' equity (Bhagat *et al.*, 2015); (Foong and Idris, 2012); (Umar and Sun, 2016). However, there is another calculations used to measure and categorize levered institutions, by looking at the total debt and total loan to total asset (Zeitun *et al.*, 2015). Despite some disputes surrounding the determinants of leverage as indicated in Lemmon *et al.* (2008) and (Menichini, 2015), i.e. the time invariance of firm specifics, the same variables have been used still.

Most of studies on bank leverage were structured to explore association with the bank's performance. Foong and Idris (2012) investigated this in general insurance firms with moderating test using product diversity, leverage during pre and post financial crisis to signal banks' performance during the period (Chen, 2013); (Kalemli-Ozcan *et al.*, 2012b); (Zeitun *et al.*, 2015), stock liquidity (Umar and Sun, 2016), profitability (Laryea *et al.*, 2016) and risk taking behaviour (Bhagat *et al.*, 2015). Mixed findings could be observed from the studies. While Chen (2013) found that market leverage is a significant determinant of bank performance, (Lang *et al.*, 1995) found that there is a negative relationship between leverage and firms' growth. In addition, it was also found that there is a difference between small banks and large banks in the linkage of their leverage and stock liquidity (Umar and Sun, 2016). While small banks evidenced negative determining impact of stock liquidity on leverage, larger banks indicate positive determining impact from both sides. The size of banks also matter (Bhagat *et al.*, 2015); (Gropp and Heider, 2009).

Although performance and size of banks were evidently linked to leverage, other discretionary financial instruments were less studied with leverage ratios. Non-performing loan (NPL) and loan loss provision (LLP) are among speculative instruments used in detecting income smoothing in financial institution (Misman and Ahmad, 2011). Later, profit equalisation reserve (PER) emerged as another significant instrument in income smoothing and capital management (Md *et al.*, 2012); (Taktak *et al.*, 2010; Taktak, 2011). IFSB (2010) described PER as provisioned amounts of the gross income from the profit sharing investment to be utilized for smoothing returns paid to the investment account holders and the shareholders, and consists of a profit sharing investment account (PSIA) portion and a shareholder's portion. However, from the financial statements of the banks, it was found that the provision (deduction) is made from the commingled deposits. Only after the deduction has been made, then the amount of income can be made available to the depositors as well as the shareholders (Md *et al.*, 2012). As a result, it maybe correlated with the reported return on asset for that financial year, as well as the leverage ratio.

The function of the reserve is to offer the Islamic banks a cushion to mitigate their exposure to displaced commercial risk (DCR) and rate of return (Zainol and Kassim, 2010) and related problems of asset-liability mismatch. While the purpose of this reserve is to enhance the profit payout to IAHs in periods when the assets in an Islamic bank's asset pool has underperformed, where the returns to IAH may be lower for that Islamic bank than for its Islamic and conventional peers, it is also the case that the PER can be used for smoothing or enhancing dividend payouts to shareholders. This depends on the discretionary power of the management. It also worth noted here that while shareholders benefit from the PER, it is less clear that IAHs do so, as they have no choice as to the amounts of their profits that are withheld, and may not even be aware that the performance of their investments is riskier than it appears from the (smoothed) profit payouts. In addition, there is also an inter-generational problem in that appropriations to the PER which have reduced the profit payout to IAH in one year and it may be used to enhance the payout to a different set of IAH in a later year as prescribed in Bank Negara Malaysia 2011 It is thus interesting to explore on the determining effect this reserve has on the liability and equity sides of the banks, simultaneously indicating the effectiveness of the banks' reserve management.

Some studies have been conducted to explore the PER management. This was done through few mechanisms, i.e. income smoothing, capital management, profit distribution management and even the provisioning of the reserve. A study has been conducted to examine the provisioning behaviour of profit equalization reserve. It focused on the underlying determinants of PER in Malaysian Islamic banks. This study used a sample of two full-fledged Islamic banks and thirteen Islamic banking windows and covers the period of 2002 to 2004. It was found that the banking regulators in Malaysia view PER as a reserve that is built up in good times to improvise the bad times. Taktak (2011) who studied the nature of smoothing returns in contrast, found that most of Islamic banks particularly in Bahrain relied on natural smoothing, or smoothing based on Islamic accounting standard compared to intentional smoothing or smoothing based on discretionary power. Sundararajan (2007) who studied the risks of Islamic banks also slightly examined the provisioning of PER by 14 Islamic banks in 8 countries, but reported that only 30% of them disclosed the information on PER thus rendering the findings on PER to be weak. Another related study would be Taktak *et al.* (2010), when the researchers studied the use of loan loss provision (LLP), they found that the smoothing practice

of Islamic banks have no linkage to LLP, thus they opined that the practice could have been linked to PER and IRR. This opinion thus suggested that PER and IRR were used not to smooth profit payouts to IAHs.

(Hamdi and Zarai, 2013) have injected a new perspective of the study of PER through profit distribution management (PDM). In (Farook *et al.*, 2012), it was discovered that Islamic banks do manage their profit towards the interest rates and away from the fundamental profit when they maintain a discretionary reserve, particularly PER and IRR. The study was conducted on 50 Islamic banks, over the period of 1993 to 2005. In (Hamdi and Zarai, 2013), following partial methods used by (Farook *et al.*, 2012), he concluded that most Islamic banks manage their profit away from the fundamental returns to interest rates, by using three different measures, i.e. using descriptive statistics, mean and standard deviation, of the asset spread, deposit spread and equity spread. Their results thus provide some indications on the reserve effective management.

Thus, this paper is divided into 6 sections. Following the introduction and statement of problem, Section 3 presents the research questions and hypotheses and Section 4 states the purpose of the study. Section 5 develops the research framework and the subsequent section provides the descriptive statistics as well as regression results. Section 7 concludes the findings with some suggestion for further related studies.

3. Research Questions and Hypotheses

Based on the earlier discussion, the following research questions have been developed.

1. What are the leverage ratios of Islamic banks in Malaysia?
2. What are the determinants of the leverage ratios of Islamic banks in Malaysia?

To answer the second research questions, the following hypotheses have been structured;

H_1 : There is a significant relationship between leverage ratio and bank's performance.

H_2 : There is a significant relationship between leverage ratio and bank's size.

H_3 : There is a significant relationship between leverage and bank's profit equalisation reserve.

4. Purpose of the Study

Leverage ratio of a bank is the total debt that a bank holds to its total capital. Technically, the leverage ratio implies that for an increase in the ratio means the banks can lend more money to the customers. Theoretically, the potential to lend or finance may render the banks optimal potentials to raise more income. Consequently, banks that report higher earnings should be able to evidence higher leverage as well as larger banks. These assumptions have been revealed true in the previous literatures (Bhagat *et al.*, 2015); (Chen, 2013); (Gropp and Heider, 2009); (Laryea *et al.*, 2016); (Umar and Sun, 2016). Besides exploring the leverage ratios descriptively, we also try to prove the same theoretical position in Malaysian Islamic banks. Size of the bank also proved to be significantly associated with leverage. While small banks are less likely to indulge in risk taking behaviours, the larger banks are more levered. This was exhibited in Umar and Sun (2016) on the determining impact of stock liability on leverage by both small and large banks. The size of banks also matter as studied in Bhagat *et al.* (2015) and Gropp and Heider (2009).

The salient feature of Islamic banks is that it adheres to Islamic principles. To avoid relying on fixed rate of income which normally generated from interest, the Islamic banks depend on investment based products namely on the basis of mudharabah and musyarakah (Siddiqui, 2007). Both are profit sharing products with the former appoints the one party as capital provider and another as the 'entrepreneur', while the latter considers both parties as the capital provider and the entrepreneur. Islamic banks' engagement into these products exposed them to a mixture of risks, such as Rate of Return Risk (RORR) which inclusive in Displaced Commercial Risk (DCR). In the practice of Islamic banks throughout the world, they rely on several mechanisms to mitigate risks. But, most of Islamic banks rely on profit equalisation reserve (PER) as mitigation tool to mitigate the DCR (Archer *et al.*, 2010); (Sundararajan, 2011); (Sundararajan, 2007). This reserve has affected the amount of earnings of the Islamic banks as indicated by Md *et al.* (2012). Since this study employs the return on asset as indicator of banks' performance, it is interesting to include this reserve as an instrumental variable despite the fact that this reserve may not theoretically correlated with other error terms, like financial crisis. In addition to that, results of this study may indicate effectiveness of reserve management of the banks as signalled by its relationship with risk taking behaviours or leverage ratios of the banks.

5. Research Methods

Data was collected from the financial statements of 16 Islamic banks in Malaysia, both local and foreign from the year of 2008 to 2014. This is almost the subsequent years of Md *et al.* (2012), who conducted the study from 2003-2010 on all Malaysian Islamic banks, comprising of 15 banks at that time for profit equalisation reserve (PER). The data used in the empirical analysis were those obtained from publicly available financial statements based on each bank financial cycle, i.e. March, September and December. The initial dataset comprised of strongly balanced panel of 16 Islamic banks for the 7 years' period but due to unavailability of data on profit equalisation reserve (PER), merely 11 Islamic banks were maintained. The final dataset consists of a range of 7 variables for 11 Islamic banks in Malaysia for 7 years' period. The key dependant variable is bank's leverage ratio as calculated by total liabilities over total equity of the bank. Three independent variables consist of the return on asset (roa) of the bank, size of the bank (size) and profit equalisation reserve (per) of the bank as reported in the financial statement. Due to the intuition of endogeneity in the independent variables, profit equalisation reserve and financial year (t) has been treated as exogenous variables. We employed GMM estimators since it is more advance estimation compared to OLS, fixed (FE) and random effects (RE), as well as two least square regression models (2LSR). The estimation

works better in the form of treating endogeneity that arises from among others, reversed causality. The estimation model and details of the variables are indicated in the table below. The GMM estimator is of the following form:

$$y_{it} = \delta y_{it-1} + \beta_i x_{it} + \beta_i w_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

$$i = 1, \dots, N, t = 1, \dots, N$$

where *i* is the bank specific and *t* is the financial year. While *x* captures the independent variables, *w* captures the time dummies. The variables' details are provided as follow;

Variable	Details	+/-	Ref.
Dependant variable			
Leverage	equals to total liabilities to total equity		Foong and Idris (2012) (Umar and Sun, 2016)
Independent variable			
Roa	equals to earnings before taxation and zakat to total asset	+	(Bhagat <i>et al.</i> , 2015) (Zeitun <i>et al.</i> , 2015)
Per	equals to Profit equalisation reserve to total asset	+	Original
Size	Equals to logarithm of asset	+	(Bhagat <i>et al.</i> , 2015) (Gropp and Heider, 2009)
ε_{it}	Idiosyncratic error		

6. Findings

Table-1. Summary of variables

Var	Obs	Mean	Std. Dev.	Min	Max
Leverage	77	11.88413	4.332019	1.844881	25.50555
Roa	77	1.469722	0.900438	0.078096	4.197488
Per	77	0.102688	0.285976	0	1.74393
Size	77	23.88848	1.700043	21.80975	28.69681

Table 1 presents the summary of all variables employed for this study. The leverage ratio reports the minimum ratio of 2% and the highest is 25%. The mean and standard deviation values are 11% and 4% respectively. The results are different from Foong and Idris (2012) where the leverage ratios was studied across general insurance firms in Malaysia, but quite consistent with Umar and Sun (2016) that reported leverage ratios of banks in BRIC countries. The results show that the banks' debt or total liabilities are 11% of the total equity of the banks. The range of 4% to 25% leverage ratios among the Islamic banks show that some banks are more levered that the others. The mean value of return on asset (roa) is 1.4% and standard deviation is 0.9%. These values are although not consistent with Zeitun *et al.* (2015) who reported return on asset of firms in GCC countries at 0.006%, but, we find them to be consistent with Misman and Ahmad (2011). Misman and Ahmad (2011) employed Malaysian banks' data and reported the mean value of net income and earnings before taxation at 0.1% and 0.9% respectively. Profit equalisation reserve reports 0.1% mean value and standard deviation of 0.2%. It shows that only a small provision allocated for the reserve and the values are different from Md *et al.* (2012) due to the different reserve calculation and financial year selected. Size of the bank on the other reports the mean value of 23 and standard deviation of 1.7.

Table-2. Correlation Matrix

	leverage	roa	per	Size
Leverage	1			
Roa	-0.2648	1		
Per	-0.2335	0.3176	1	
Size	-0.372	-0.2476	-0.2837	1

Table 2 presents the correlational matrix of the variables. All tests were checked for significance collinearity by reviewing the variance inflation factor (*vif*) for each variable. The correlation coefficients among the independent variables are low (less than 0.80) suggesting the absence of multicollinearity problems and the variance inflation factor (*vif*) indicates value below 4.0, again to impede the multicollinearity problem.

We employed GMM estimators for this study. Considering the panel data consists of a small time series (*T*) compared to the large (*N*), we rely on the results of system GMM, still we report the difference GMM for the mixed results on the effect of bank's size on leverage ratio and for robustness check. The model is correct at $\text{prob} > \chi^2 = 0.000$, the wald χ^2 is insignificant for all models and at 108.33 for the gmm system model. The Arellano

and Bond's zero autocorrelation test indicated the residuals are not affected by the second order serial autocorrelation, at value >0.005.

Table-3. Regression Analysis

	gmm difference	gmm difference robust	gmm system	gmm system robust
	leverage	leverage	leverage	leverage
L.leverage	0.141 (1.19)	0.0678 (0.35)	0.702*** (7.78)	0.0652 (0.30)
Roa	-0.292 (-0.74)	-0.496 (-0.92)	-0.652 (-1.55)	-0.230 (-0.35)
Per	2.132 (1.49)	-0.632 (-0.19)	3.357* (2.25)	2.549 (0.89)
Size	2.605*** (3.88)	1.928 (1.27)	-0.200 (-0.91)	2.782 (1.57)
_cons			9.457 (1.51)	-55.26 (-1.32)
Arellano-Bond test for Ar(2) (<i>p</i> -value)	(0.598)	(0.609)	(0.407)	(0.407)
Sargan test (<i>p</i> -value)	(0.693)	(0.859)	(0.693)	(0.693)
N	55	55	66	66
t statistics in parentheses				
=* <i>p</i> <0.05	** <i>p</i> <0.01	*** <i>p</i> <0.001"		

Table 3 documents the estimated coefficient for the lagged dependant variable as significant for the gmm system model. This significant value shows that the previous year's leverage ratio has a positive impact on the current year leverage ratio of Islamic bank in Malaysia. This result is anticipated since the debt equity ratio of previous year signals the financial position of the bank thus assisting the banks' decision maker to construe the leverage ratio for the current year. This is also due to the long term liabilities held by the banks and possibly to due to the stable determinants of leverage, even across country cross sections (Kalemli-Ozcan *et al.*, 2012a).

The return on asset (roa) to proxy for bank's performance yielded negative relationship with leverage ratio. The negative relationship can be explained by the effect of agency theory. As indicated in the previous studies, banks that perform better would less likely to resume in risky taking behaviours due to the agency theory and as a result, less levered (Firth *et al.*, 2008); (Jensen M. C. and Meckling, 1976); (Lang *et al.*, 1995); (Myers, 1977). This is in contrast with our null hypothesis that highly performed banks are levered banks that engage in more risk taking behaviours (Bhagat *et al.*, 2015). This negative relationship was also found by Foong and Idris (2012), but the value found in this study is insignificant. Thus, we reject the null hypothesis.

The profit equalisation reserve is a discretionary reserve, owned partly by the depositors and shareholders. Being partly liability and equity, we posited a positive relationship between this reserve and leverage ratio. As documented in Table 3, this reserve is positively associated with leverage ratio, that is whenever the provision of PER is higher, the banks are more levered and thus, implying more risk-taking behaviours. The relationship is statistically significant at 5%. Interesting insights of this finding is on reserve management of the banks. The significant positive relationship thus suggests that the reserve has determined the risk-taking behaviour of the banks, implying the effective management of the reserve. In fact, the existence of the reserve or other discretionary reserve may present different behaviours of the banks. This is evident in the findings of Farook *et al.* (2012) where it was discovered that there was a profit distribution management by the Islamic banks (managing their profit towards the interest rates and away from the fundamental profit) when they maintain a discretionary reserve, particularly PER and IRR.

Size of the bank in contrast shows a negative relationship with leverage ratio of the banks, but not statistically significant. On the other hand, the gmm difference model reports a significant positive association of both. Heid (2015) explained on this on the second procedure of gmm system where as Roodman (2009) argued, that there is fixed effect present in the level errors. As a result, we accept the gmm system result, thus reject the null hypothesis.

7. Conclusion

This is a preliminary study on the effect of bank's performance, size and profit equalisation reserve on leverage ratio of Islamic banks in Malaysia. The findings revealed that there is no relationship between leverage ratio and bank's performance as well as bank's size as proven in the past literature. However, since the study employed the GMM models, it was found that the previous year leverage ratio and profit equalisation reserve are significant determinants of the Islamic banks' leverage ratio. These results shed some lights on particularly, the leverage ratio determinants in Malaysian Islamic banks and also provide some insights on the function of profit equalisation reserve by the banks.

Acknowledgement

Financial support is acknowledged from Ministry of Education (MoE) Malaysia under the Exploratory Research Grant Scheme (ERGS) (ERGS/1/2013/SS05/UNISEL/03/01). We also acknowledge the support of our home institution, University of Selangor (UNISEL) and Business, Research Linkages and Consultancy (BRIC) particularly.

References

- Anderson, R. C., Mansi, S. A. and Reeb, D. M. (2003). Founding family ownership and the agency cost of debt. *Journal of Financial Economics*, 68(2): 263–85. Available: [http://doi.org/10.1016/S0304-405X\(03\)00067-9](http://doi.org/10.1016/S0304-405X(03)00067-9)
- Archer, S., Karim, R. A. A. and Sundararajan, V. (2010). Supervisory, regulatory, and capital adequacy implications of profit-sharing investment accounts in Islamic finance. *Journal of Islamic Accounting and Business Research*, 1(1): 10–31. Available: <http://doi.org/10.1108/17590811011033389>
- Bhagat, S., Bolton, B. and Lu, J. (2015). Size, leverage, and risk-taking of financial institutions. *Journal of Banking and Finance*, 59: 520–37. Available: <http://doi.org/10.1016/j.jbankfin.2015.06.018>
- Chen, S. (2013). How do leverage ratios affect bank share performance during financial crises, The Japanese experience of the late 1990s. *Journal of the Japanese and International Economies*, 30: 1-18. Available: <http://doi.org/10.1016/j.jjie.2013.07.003>
- DeAngelo, H. and Stulz, R. M. (2015). Liquid-claim production, risk management, and bank capital structure, Why high leverage is optimal for banks. *Journal of Financial Economics*, 116(2): 219-36. Available: <http://doi.org/10.1016/j.jfineco.2014.11.011>
- Farook, S., Hassan, M. K. and Clinch, G. (2012). Profit distribution management by Islamic banks: An empirical investigation. *The Quarterly Review of Economics and Finance*, 52(3): 333-47.
- Firth, M., Lin, C. and Wong, S. M. L. (2008). Leverage and investment under a state-owned bank lending environment, Evidence from China. *Journal of Corporate Finance*, 14(5): 642–53. Available: <http://doi.org/10.1016/j.jcorpfin.2008.08.002>
- Foong, S.-Y. and Idris, R. (2012). Leverage, Product Diversity and Performance of General Insurers in Malaysia. *The Journal of risk Finance*, 13(4): 347-61.
- Gropp, R. and Heider, F. (2009). The determinants of bank capital structure (september 30, 2009). Ecb working paper no. 1096.: Available: <https://ssrn.com/abstract=1478335.1>
- Hamdi, F. M. and Zarai, M. A. (2013). Perspectives of earnings management in Islamic banking institutions. *International Journal of Business and Management Invention*, 2(9): 26-38.
- Heid, B. (2015). Difference gmm vs system gmm (vol. 1149805). (stata internal notes).
- IFSB (2010). Ifsb gn-3 practice of smoothing profit payout to iah.:
- Jensen (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, 76(2): 323–29. Available: <http://doi.org/10.2139/ssrn.99580>
- Jensen, M. C. and Meckling, W. H. (1976). Theory of the firm, Managerial. *Journal of Financial Economics*, 3: 305-60. Available: [http://doi.org/http://dx.doi.org/10.1016/0304-405X\(76\)90026-X](http://doi.org/http://dx.doi.org/10.1016/0304-405X(76)90026-X)
- Kalemli-Ozcan, S., Sorensen, B. and Yesiltas, S. (2012a). Leverage across firms, banks, and countries. *Journal of International Economics*, 88(2): 284–98. Available: <http://doi.org/10.1016/j.jinteco.2012.03.002>
- Kalemli-Ozcan, S., Sorensen, B. and Yesiltas, S. (2012b). Leverage across form, Banks and countries. *Journal of International Economics*, 88(2): 284-98.
- Lang, L., Ofek, E. and Stulz, R. M. (1995). Leverage, investment and firm growth. *Investment and Firm Growth*, 40(1): 3-29.
- Laryea, E., Angela, M. N., Alu, A., Laryea, E., Ntow-gyamfi, M. and Alu, A. A. (2016). Nonperforming loans and bank profitability, Evidence from an emerging market. 462-81. Available: <http://doi.org/10.1108/AJEMS-07-2015-0088>
- Lemmon, M. L., Roberts, M. R. and Zender, J. F. (2008). Back to the beginning, Persistence and the cross-section of corporate capital structure. *Journal of Finance*, 63(4): 1575–608. Available: <http://doi.org/10.1111/j.1540-6261.2008.01369.x>
- Md, R. R., Shahimi, S. and Ismail, A. G., 2012. "Do Malaysian Islamic banks manage earnings through profit equalization reserve?" In *Proceeding of the 14th MFA Conference 2012*. pp. 1–20.
- Menichini, A. (2015). On the determinants of firm leverage: evidence from a structural estimation. *International Journal of Managerial Finance*, 11(2): 179–97. Available: <http://doi.org/10.1108/IJMF-04-2014-0054>
- Misman, N. F. and Ahmad, W. (2011). Loan loss provisions, Evidence from Malaysian Islamic and conventional banks. *International Review of Business Research Papers*, 7(4): 94–103.

- Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2): 147–75. Available: [http://doi.org/10.1016/0304-405X\(77\)90015-0](http://doi.org/10.1016/0304-405X(77)90015-0)
- Myers, S. C. and Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2): 187–221. Available: [http://doi.org/10.1016/0304-405X\(84\)90023-0](http://doi.org/10.1016/0304-405X(84)90023-0)
- Roodman, D. (2009). How to do xtabond2, An introduction to difference and system gmm in stata. *Stata Journal*, 9(1): 86–136. Available: <http://doi.org/The>
- Siddiqui, A. (2007). Managerial finance financial contracts, risk and performance of islamic banking. *Managerial Finance Humanomics The Journal of Risk Finance Iss The Journal of Risk Finance Managerial Finance*, 34(10): 680-94. Available: <http://doi.org/10.1108/03074350810891001>
- Sundararajan, V. (2007). Risk measurement and disclosure in islamic finance and the implications of profit sharing investment accounts. *Advances in Islamic Economics and Finance*, 1: 121–52.
- Sundararajan, V. (2011). Profit sharing investment accounts-- measurement and control of displaced commercial risk (dcr) in islamic finance. *Islamic Economic Studies*, 19(1): 41–62.
- Taktak, N. B. (2011). The nature of smoothing returns practices: the case of Islamic banks. *Journal of Islamic Accounting and Business Research*, 2(2): 142–52. Available: <http://doi.org/10.1108/17590811111170548>
- Taktak, N. B., Zouari, S. B. S. and Boudriga, A. (2010). Do islamic banks use loan loss provisions to smooth their results? *Journal of Islamic Accounting and Business Research*, 1(2): 114–27. Available: <http://doi.org/10.1108/17590811011086714>
- Umar, M. and Sun, G. (2016). Bank leverage and stock liquidity, Evidence from brics countries. *Journal of Financial Economic Policy*, 8(3): 298-315.
- Zainol, Z. and Kassim, S. H. (2010). An analysis of islamic banks' exposure to rate of return risk. *Journal of Economic Cooperation and Development*, 31(1): 59–84.
- Zeitun, Rami and Saleh, S. (2015). Dynamic performance, financial leverage and financial crisis, Evidence from gcc countries. *EuroMed Journal of Business*, 10(2): 147-62.