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RISK SHARING BETWEEN UNRESTRICTED-INVESTMENT-ACCOUNT-HOLDERS AND SHAREHOLDERS OF ISLAMIC BANKS: IMPLICATIONS ON STABILITY AND RESILIENCE

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ABSTRACT

The allocation of profit and loss to the unrestricted investment account holders (URIAHs) is a fundamental principle of Islamic banking where both the URIAHs and the Shareholders participate in funds mobilization through a risk-sharing arrangement. The study investigates the risk adjusted return received by both the unrestricted investment account holders and shareholders as well as the level of risk sharing between them for Islamic banks in Nigeria, Sudan, Bahrain and Qatar using financial ratio analysis, difference in mean t-test and Var-at-Risk (VaR) methodologies. The paper concludes that, contrary to the findings of many previous studies, the unrestricted investment account holders receive lower risk adjusted returns than the Shareholders do and at a higher risk in some of these countries and also the Central Banks impose a risk sharing value (the alpha factor) which is always different from the actual computed value of the risk sharing parameter for the banks and these are the likely potential sources of instability in the Islamic banks of these countries.

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I. INTRODUCTION

One of the unique features of Islamic banks is the mobilization of funds from unrestricted investment account holders (URIAHs) based on the profit and loss sharing (PLS) principles. The PLS is a contractual arrangement between two or more transacting parties, which allows them to pool their resources to invest in a project to share in profit and loss. The PLS based on Mudharabah contract in the form of Profit-Sharing Investment Account (PSIA) is the dominant source of deposit mobilization by Islamic banks. With over 60% of Islamic banks' funding coming from profit sharing investment accounts (PSIAs), the way these investment accounts are managed has a major impact on their soundness and capital requirements (Sundararajan, 2007).

In theory, under the Mudharabah contract, which underpins the Profit-Sharing Investment Accounts (PSIAs) held by the Unrestricted Investment Account Holders (URIAHs), all losses on investments financed by the funds of the URIAHs are borne by investors, while the profits on such investments are shared between the URIAHs and Islamic banks as managers of the investments (Mudarib) in the proportions of the profit-sharing ratio (PSR) specified in the contract. In practice, however, the managements of Islamic banks may smoothen the returns paid to URIAHs, thus protecting the returns from URIAHs' funds against variations in the Islamic banks' income from assets financed by those funds, thereby enabling the banks to pay market-related returns to the URIAHs (Sundararajan, 2007). This exposes the Islamic banks to a special type of risks known as the displaced commercial risk (DCR).

The DCR is managed by Islamic banks using profit equalization reserve (PER) and investment risk reserve (IRR) to guarantee both the URIAHs' funds and a particular rate of return to the URIAHs. If these reserves are adequate such that there is no need for the transfer of income from shareholders to Investment Account Holders, then there is no exposure to the DCR. However, if these reserves are insufficient then the DCR exists and there is the transfer of a proportion of shareholders' returns to the depositors (Farooq and Vivek, 2012).

The need to measure the DCR cannot be over-emphasized especially to regulators as it forms the basis of measuring the risk sharing between the URIAHs and the Shareholders of an Islamic bank which is an important parameter in determining the bank's capital adequacy ratio bank using the IFSB's recommended supervisory discretional capital adequacy ratio formula. Additionally, the DCR is a pillar II risk, and its accurate measurement will add to the robustness of the economic capital of Islamic banks.

One of the key issues in Islamic banking is how to measure and manage the DCR and the returns to the shareholders on their equity as well as the returns to the unrestricted investment account holders (URIAHs) on their PSIAs as mismanaging the DCR and the returns on PSIAs will result in massive withdrawals by the unrestricted investment holders thereby exposing the Islamic banks to withdrawal risks which will eventually lead to instability issues in the Islamic banks. Previous studies have attempted to estimate the DCR and risk sharing level in Islamic banks. However, there is no known study that estimates returns to URIAHs, returns to the Shareholders, the DCR and risk sharing level and analyzes

the stability of the Islamic banks in the context of these four parameters; and these are what this study is set to address.

The improper measurement and management of the DCR as well as returns in Islamic banks should be of concern to regulatory authorities as this will affect the accuracy of the level of risk sharing (the alpha) which is an important parameter in the determination of the risk profiles of Islamic banks as well as their capital requirements. Despite the importance of the risk sharing level in Islamic banks, various jurisdictions impose common values for risk sharing for the industry; for instance, Central Bank of Bahrain imposes 0.3 to alpha, Central Bank of Sudan imposes 0.55 to alpha and the Central Bank of Qatar imposes 1.00 to alpha (Baldwin et al., 2019). The Central Bank of Nigeria also imposes 0.5 to the alpha factor. The possible consequences of imposing common values to the alpha for the industry by these central banks are:

A. Some of the Islamic banks' URIAHs' risk profiles and capital requirements are grossly understated, and this has some serious implications on the banking system stability
B. Some of the Islamic banks' URIAHs' risk profiles and capital requirements are grossly overstated and so the banks are holding excess cash which they do not need to hold, and this affects their competitiveness in the marketplace (Alhammadi et al., 2018).

This paper attempts to accurately estimate the risk sharing level between the URIAHs and Shareholders in Islamic banks as well as the risk adjusted returns to both parties and discusses the resilience and stability of the Islamic banks in the context of this risk/return analysis. The remaining section of the paper is structured as follows: section two is the literature review, section three discusses the methodology, section four analyzes the data and interpret the results while section five concludes the paper.

II. LITERATURE REVIEW

Theoretically, the Profit-Sharing Investment Accounts (PSIAs) based on Mudharabah contract requires the sharing of profits based on a pre-agreed proportion between the URIAHs and the Shareholders. The losses on the investment, if any, are borne by the URIAHs, while the *Mudharib* bears the loss of his efforts unless otherwise proven to be a case of negligence (Shariah Standard 13, AAOIFI, 2008). However, in practice, this is not the case as the sharing of 'actual profits' is not strictly implemented as often there is smoothing of returns to the URIAHs due to market considerations or regulatory requirements which give rise to a unique risk called the displaced commercial risk (DCR) (Archer & Karim, 2006).

The DCR can also be one of the principal causes for withdrawal risk. The logic that prevails is that it is in the interest of the equity holders to pay competitive returns even if it is at their expense, as this will prevent the depositors from withdrawing their accounts and migrating to other banks and thus reducing withdrawal risk due to low returns (Khan & Ahmed, 2001). The DCR has important implications on the capital adequacy of Islamic banks because any risk borne by

the shareholders on the PSIAs should be reflected in the capital adequacy ratio. (Khan & Latheef, 2016).

The DCR is mitigated by maintaining prudential reserves such as the Profit Equalization Reserves (PER) and the Investment Risk Reserves (IRR) which are used to smooth the returns to the URIAHs. However, when the reserves are insufficient, the banks may reduce their share of profits or transfer from the equity of the shareholders or a combination of both resulting in displacement of risk to the equity holders (IFSB, 2011). The various smoothing techniques practiced by the banks pose a challenge to regulators in assessing the actual risk borne by the shareholders since these call for additional capital charge (Sundararajan, 2007).

In the literature there are two dominant approaches in evaluating the DCR and the level of risk sharing between the URIAHs and the Shareholders in a banking institution: the 4-steps methodology developed by the IFSB in 2011 (IFSB GN4, 2011) and the VaR model employed by K. Toumi, et al. (2010, 2019).

The 4-steps methodology developed by the IFSB in 2011 to measure the level of risk sharing between the URIAHs and the Shareholders are:

Step 1: Estimating "w"
Step 2: Estimating return to Shareholders under three (3) different scenarios.
Step 3: Computing unexpected losses (UL) to shareholders under the three (3) scenarios.
Step 4: Estimation of the DCR and level of risk absorption, Alpha

The parameter "w" according to the IFSB is the weight attached to the market benchmark in the decision of payouts to the URIAHs and is estimated by using the Ordinary Least Square (OLS) regression method.

On the other hand, the Value-at-Risk (VaR) approach to measuring the DCR developed by Toumi, et al. (2010, 2019) is based on quantitative finance techniques instead of the simple standard deviation used by the IFSB 4-Steps methodology. This methodology also consists of four steps to estimate the level of risk sharing between the URIAHs and the Shareholders: (1) calculation of the actual returns on PSIA deposits, (2), identifying the scenarios of DCR exposure to assess the Profits and Losses for shareholders related to the DCR, (3) actual DCR and maximum DCR estimation, and (4) computing the alpha factor (α, level of risk sharing).

Both approaches present some weaknesses. The estimation of the DCR and the alpha factor as recommended by the IFSB presents some weaknesses as it uses a simple formula of risk measure based on the standard deviation of shareholders' returns which gives a measure of the volatility of returns about their mean. Consequently, employing such a classical and simple volatility formula has two shortcomings: on one hand, the average return may not represent the true mean of the return's distribution and on the other hand, the problem relates to the arbitrary choice of the length of the historical returns sample (Saita, 2007). Secondly, the IFSB approach ignores the extreme scenario where the URIAHs incur losses and their investment returns are negative.

The capital adequacy ratio for Islamic banks is highly sensitive to changes in the value of the DCR and the alpha factor and therefore an inaccurate assessment of these two measures might lead to either the Islamic banks being significantly

undercapitalized thereby threatening financial stability or carrying excess amounts of capital which could impair the ability of the Islamic banks to compete (Daher et al., 2015). The time horizon for computing risk using the VaR approach as presented by the available data present some weakness for the VaR approach.

There are some empirical evidences on the DCR and level of risk sharing in Islamic banks. In one of such studies, Arshad et al (2015) examine whether the DCR is a threat to Islamic banks' stability in Malaysia by setting up a model to estimate bank stability and employing the VaR approach to determine the DRC in 17 full-fledged Islamic banks over the period 1994 to 2012, using a balanced panel data of 323 observations. The study finds that the DCR reached its peak in 2008 where all the banks experienced the DCR of between 8% to 10% of their shareholders' fund and the effect of the DCR on banking stability was minimal. However, DCR was one of the factors that affected bank profitability in the Malaysian Islamic banks. The study concludes that Islamic banks operating in a dual banking system are affected by the displaced commercial risk and hence, it should be one of the banks' risk management concerns. While Arshad et al (2015) studies the DCR from the perspective of the Shareholders' funds, Toumi (2010) examine the DCR from the perspective of the URIAHs' funds in Bahrain Islamic bank and proposes a Value at Risk (VaR) model to measure this risk for the year 2008. The measurement of the actual risk sharing depends on returns smoothing policies of the bank. The findings reveal that the capital required by Bahrain Islamic Bank to cover the displaced commercial risk was BHD 83,973, representing 13.45% of the total of unrestricted investment accounts, at 99% confidence and a 1-year holding period. It further reveals that capital requirements for the displaced commercial risk under the VaR approach is different from that of the IFSB (2005).

Adding to the literature on the DCR and the level of risk sharing, Toumi et al (2019) measure the displaced commercial risk (DCR) and the alpha coefficient faced by three (3) Islamic banks in Bahrain based on the Value at Risk approach (VaR) over the period 2005 -2015. The study first identifies different scenarios of exposure of Islamic banks to the DCR which depend on the actual return on the unrestricted investment accounts (URIA), the benchmark returns as well as the level of the existing profit equalization reserve (PER) and investment risk reserve (IRR). The study finds that the levels of risk sharing in the three banks at 99% confidence level are: 76%, 7% and 99%.

It appears there is no consensus among researchers on the level of risk sharing level even the same jurisdictions. As noted, Toumi et al. (2019) find that the level of risk sharing in Bahrain's Islamic banks ranges from 7% to 99%. Meanwhile, Farooq and Vivek (2012) explore the level of risk sharing between URIAHs and Shareholders in three (3) Islamic banks in Bahrain by determining the displaced commercial risk (DCR) and the alpha factor using the IFSB methodology over a period of four (4) years (2007 – 2010) and find that the level of risk sharing (the alpha) is in the range of 50-60% which is significantly higher than the 30% required by the Central Bank of Bahrain. This implies that the level of risk absorbed by the URIAHs is in the range of 40-50%. They conclude that the level of risk sharing is consistent with the rate of return to both the URIAHs and the Shareholders.

In a radically different approach of measuring the level of risk sharing in Islamic banks, Baldwin et al (2019) develop a new theoretical model for bank-

specific alpha. They then estimate the alpha for 43 Islamic banks in 11 countries over the period 2009 - 2016. The approach models a decision logic for outcomes in which bank equity is used to subsidize the returns paid to profit sharing investment account holders. It also relies on allocations between financial instruments within the pool of commingled assets which generates contractual returns to the URIAHs. The study finds that for 4 of the 11 countries in the sample (Bahrain, Oman, Qatar, Sudan), the IFSB's alpha is contained within the range of structural alpha values calculated for Islamic banks in those countries., while in the other 4 of the countries (Jordan, Palestine, Syria and Yemen), it is outside the range of structural alphas, being below the lowest bank-specific alpha. Specifically, the study estimates the minimum and maximum values of alpha to be 0.054 and 0.325 respectively for Bahrain, 0.068 and 0.370 for Qatar, and 0.262 and 0.454 for Sudan. These findings are consistent with what Khan & Latheef (2016) document when they empirically address the robustness of the Alpha factor by applying the IFSB methodology and the IFSB Supervisory Discretion Formula that is currently in place on selected Islamic banks in Qatar and Bahrain over the period 2008 – 2014. The study finds that in Qatar the DCR is high as they are required by law to conduct the smoothing of returns to URIAHs solely through contributions from the Shareholders' equity and are prohibited from making any appropriations from the income of the URIAHs or maintain any prudential reserves such as the PER or the IRR; and the value of alpha ranges between 0.22 -0.33 as opposed to 1 which is imposed by the Qatar Central Bank, while in Bahrain, the DCR appears to be low and the alpha value of Islamic banks in Bahrain ranges between 0.33-0.35 which is more or less nearer to the alpha value of 0.30 that is imposed by the Central Bank of Bahrain.

III. METHODOLOGY

3.1. Sample and Data Sources

The paper considers four countries (Nigeria, Sudan, Bahrain, and Qatar) and eleven (11) Islamic banks from these countries (2 in Nigeria, 3 in the Sudan, 3 in Bahrain and 3 in Qatar) are identified to have robust and complete required information and are therefore selected for the analysis. Yearly data on the relevant variables are from the Annual Reports and Pillar 3 disclosures of the banks over the period 2007 – 2018 or where available.

These countries are selected because most of the Islamic banks in these countries have on average higher profit distribution management to mitigate the DCR in the Islamic banking industry compared to Islamic banks in other countries (Farook et al., 2012). Secondly, the Central Banks in these countries have issued the guidelines regarding the DCR and required Islamic banks to disclose minimum financial information related to the DCR. Thirdly, Islamic banks are also required to retain the prudential reserves PER and IRR as recommended by AAOIFI and IFSB. Fourthly, the Central Banks require banks to establish an internal process to monitor the overall capital adequacy considering all relevant risk factors as required by Pillar 2 of the Basel accord (Toumi et al., 2019).

The benchmark rate in Nigeria is the yearly interest rate on conventional deposits with similar maturity to the URIAHs' funds and is extracted from the Central of Bank of Nigeria's website while in Qatar and Sudan, the benchmark rate

of each of the three banks is the average annual rate of return on the URIAs of the remaining 2 banks, being direct competitors(Toumi et al., 2019) and in Bahrain the average annual rate on URIAs for other three (3) different banks (Bahrain Islamic bank, Khaleeji bank and Ithmaar banks), being direct competitors, is used as the benchmark rate.

3.2. Estimating Returns to URIAHs and the Shareholders

As suggested by Rosly (2016) and Alhammadi (2016), the rate of return to URIAHs is computed as the profits distributed to URIAHs divided by URIAHs funds while the rate of return to the Shareholders as the net profits attributable to bank's shareholders divided by stockholders' equity attributable to the bank's common shareholders, where all figures are as at 31st December of a particular year.

To compare the returns of the URIAHs and the Shareholders, the following hypothesis was postulated and tested:

Hypothesis

H1: The rate of return to URIAHs is not significantly different from the rate of return to the Shareholders

Before testing this hypothesis, the normality test on the returns distributions is carried out using the Q-Q Plot (quantile-quantile plot) and the Shapiro-Wilk (SW) test as it is now preferable that normality be assessed both visually (histogram, stem-and-leaf plot, boxplot, P-P Plot (probability-probability plot), and Q-Q Plot (quantile-quantile plot)) as well as through normality tests, of which the Shapiro-Wilk (SW) test is highly recommended (Ghasemi & Zahedias, 2012). If there are many data points (100 or more), the histogram is highly recommended. However, if the data points are few it is recommended to construct a normal probability plot (P-P Plot) or a quantile-quantile plot (Q-Q Plot) and check if the points fall roughly in a straight line where normal distribution will then be assumed (McNess, 2009). The Q-Q plot tends to be preferred in research situations (Grace-Martin, 2016). The SPSS Software is used for the preliminary normality tests on the data as well as conducting the parametric and non-parametric tests for the difference of two means. The parametric test employed is the usual t-statistics while the non-parametric test is the Mann Whitney statistics.

3.3. Estimating Risk Sharing between URIAHs and Shareholders

Estimating the level of risk sharing between the Shareholders and URIAHs in an Islamic bank is done in two steps as suggested by Toumi et al (2019). The first step is to compute the profit or losses to the shareholders relative to the benchmark expectations by the URIAHs based on different scenarios and the second step is to estimate the actual DCR and the maximum DCR faced by the Shareholders. The approach of Toumi et al (2019) is selected because it addresses the short comings associated with the IFSB 4-steps methodology.

3.3.1. Step 1: Computation of Losses/Profits due to the Shareholders

3.3.1.1. Different Scenarios for DCR Computation

According to Toumi et al. (2019) there are three possible scenarios as presented below for computing the DCR in an Islamic bank using the return to URIAHs, R_I, market benchmark, B_R, profit equalization reserve as a proportion of URIAHs' Funds, PER_{acc}, investment risk reserve as a proportion of URIAHs' Funds, IRR_{acc}. and Y is the loss to the Shareholders where there is DCR.

Scenario 1:

$$0 \leq R_I < B_R; and\ PER_{acc} < B_R - R_I; Y = R_I - B_R + PER_{acc}$$

In this scenario, the return to the URIAHs is positive but less than the market benchmark and the level of profit equalization reserve (PER) is not enough to smooth the return to the URIAHs to match the market benchmark, thus the DCR exists under this scenario.

Scenario 2:

$$R_I < 0 \leq B_R; IRR_{acc} \geq |R_I|; and\ PER_{acc} \leq B_R; Y = R_I + \gamma IRR_{acc} + PER_{acc} - B_R$$

where $R_I+\gamma IRR_{acc}=0$ and γ is the proportion of IRR needed to absorb the actual loss;

In this scenario, the return to the URIAHs is negative, and the investment risk reserve is enough to cover the losses incurred by the URIAHs to bring their return to zero. However, the profit equalization return is not enough to smooth the return to match the market benchmark. Thus, the DCR exists in this scenario.

Scenario 3:

$$R_I < 0 \leq B_R; IRR_{acc} \leq |R_I|; and\ PER_{acc} \leq B_R; Y = R_I + IRR_{acc} + PER_{acc} - B_R$$

In this scenario, the return to the URIAHs is negative, the investment risk reserve is not enough to cover the losses and the profit equalization reserve is also not enough to smooth the return to the URIAHs to match the market benchmark and thus the DCR exists in this scenario.

Based on the above scenarios, the template for computing the losses to the Shareholders is developed and presented below:

Table 1.
Template for Computing Profit or Loss to the Shareholders

Year	URIAH Funds	Unsmo. Profit	Smo. Profit	PER	IRR	Unsmo URIAH return (%)	Smo URIAH return (%)	PER/ URIAH Funds (%)	IRR/ URIAH Funds (%)	Benchmark (%)	Loss/ Profit from unsmo RR (%)	Loss/ Profit from smo RR (%)
					VaR (%) at 95% confidence level						xx %	yy %

Where,
Year: year or the period of the study, i.e. 2008 – 2018
URIAH Funds: The total funds belonging to the URIAHs in the banks as at 31st December of a particular
Unsmo. Profit: the unsmoothed profit for the URIAHs as at 31st December of a particular year reported in the annual reports of the banks. This is the profit before any form of movement into/out of the PER and IRR maintained by the banks. In most cases, the movement is always into the reserves, that is building the reserves by the banks, however on occasional periods there will be outward movement from the reserves when the URIAHs' assets are underperformed. Thus, the unsmoothed profit, in most cases is higher than the smoothed profits.
Smo. Profit: the smoothed profit for the URIAHs as at 31st December of a particular year as reported in the annual accounts of the banks. This is the profit obtained after movement into/out of the reserves. In most cases, the smoothed profit is less than the unsmoothed profit unless when the URIAHs assets are underperformed and there is movement out of reserves to the smooth the profits.
PER: the outstanding balance of the profit equalization reserves as at 31st December of a particular year. It is used for the purpose of smoothing profit.
IRR: the outstanding balance of the investment risk reserves as at 31st December of a particular year. This is not strictly used for smoothing purposes. It is used only to cover the losses.
Unsmo IAH Return: the unsmoothed rate of return for the URIAHs, which in most cases is higher than the smoothed rate of return, and therefore closer to the benchmark rate of return expected by the URIAHs and this represents the actual (minimum) loss, if any, to the Shareholders as the gap between this rate and the benchmark rate is smaller. This is computed as follows:

Unsmo IAH Return=Unsmo Profit/URIAHs'Funds

Smo IAH Return: the smoothed rate of return for the URIAHs, which in most cases lower than the unsmoothed rate of return, and therefore farther away from the benchmark rate of return expected by the URIAHs and this represents the

maximum possible loss, if any, to the Shareholders as the gap between this rate and the benchmark rate is larger. This is computed as follows:

Smo IAH Return=Smo Profit/URIAHs'Funds

PER / URIAHs' Funds (Perrr) = the PER expressed as a proportion of the URIAHs' Funds. This is taken into consideration in determining both the actual and maximum losses to the Shareholders.
IRR / URIAHs Funds (irrr) = the IRR expressed as a proportion of the URIAHs' Funds. This is used only when the rate of return to the URIAHs is negative (<0), i.e., there are losses.
Benchmark Rate (B_R): the benchmark rate expected by the URIAHs. It is normally the return of an alternative competitive investment having similar characteristics with PSIAs. It is used for the purpose of computing losses or profits to the Shareholders.
Loss or Profit from Unsmo RR: the loss or profit to the Shareholders arising from the payment of the unsmoothed rate of return to the URIAHs relative to the payment of the benchmark rate and is computed as follows:

Loss (Profit) from Unsmo RR (Actual Loss)= Unsmoothed rate of return+Perrr-B_R

Loss or Profit from Smo RR: the loss or profit to the Shareholders arising from the payment of the smoothed rate of return to the URIAHs relative to the payment of the benchmark rate and is computed as follows:

Loss (Profit)from Smo RR (Maximum Loss)=Smoothed rate of return+Perrr- B_R

VaR (%): This is Value at Risk of the loss from Unsmo RR and loss from Smo RR which expresses the actual losses and the maximum losses, respectively that the shareholders can bear over the study period at 95% confidence level and expressed as a percentage. This is computed as follows:

VaR (%)=*percentile* (*array of losses,*5%)

3.3.2. Step 2: Estimation of Actual DCR, Maximum DCR and Level of Risk Sharing (Alpha Factor)

The template for computing the actual DCR, maximum DCR and the level of risk sharing (alpha factor) is also developed and presented below:

Table 2.
Template for Actual DCR, Maximum DCR and Level of Risk Absorption

URIAHs' Funds	(Actual DCR)		Maximum DCR		Alpha
	DCR VaR		DCR VaR		%
	VaR (%)	VaR (amount)	VaR (%)	VaR (amount)	xx/yy*100
zzz.zz	xx%	zzz.zz * xx/100	yy%	zzz.zz*yy/100	

Where,
URIAHs' Funds: the average of URIAHs Funds over the study period expressed in unit of currency of a jurisdiction
Actual DCR: the actual DCR due to the Shareholders during the study period and is computed from the following parameters:
VaR %: the possible actual losses or profits due to the Shareholders determined in step 1 above and denoted by xx%.
VaR (amount): the actual DCR due to the Shareholders and is computed as follows:

Actual DCR =URIAHs' Funds (zzz.zz)**VaR* (*xx%*)

Maximum DCR: the worst of the maximum possible losses (DCR) due to the Shareholders during the study period and is computed from the following parameters as follows:
VaR %: This is the worst of the maximum possible actual losses due to the Shareholders determined in step 1 above and denoted by yy%.
VaR: This represents the maximum DCR (amount) due to the Shareholders and is computed as follows:

Mazimum DCR (*amount*)=*URIAHs' Funds*(zzz.zz)**VaR* (*xx*%%)

Level of risk sharing (Alpha): the level of risk sharing by the Shareholders of the bank and is computed as follows:

Alpha=Actual(*DCR*)/*Maximum*(*DCR*)

IV. RESULTS, ANALYSIS AND STABILITY

The outcome of the normality and outlier tests on the return distribution suggests absence of outliers and that the distributions of ROE and returns to URIAHs (RURIAH) in all the eleven Islamic banks may not be normally distributed. As such both the parametric and non-parametric tests are employed to compare the means of the risk adjusted return of the Shareholders (ROE) and that of the URIAHs (RURIAH). The risk sharing between the Shareholders and the URIAHs for the eleven banks is also determined and compared against the Central Banks' imposed value for risk sharing on the Islamic banks. The risk adjusted mean returns for both URIAHs and Shareholders of the banks as well as the t-statistics and the Mann Whitney statistics are determined, analysed, and the results summarized in Table 3 below:

Table 3.
Return and Risk Sharing Analysis of Islamic Banks

Country	Bank	Risk Adjusted Return		Level of Significance	Calculated Alpha (%) (Risk Sharing)-VaR Approach	Calculated Alpha (%) (Risk Sharing)-VaR with Expected Shorfall Approach	Central Bank Alpha (%)	Capital Adequacy	Implications
		ROE	RURIAH						
Nigeria	Jaiz	0.45	4.58	Not significant	100	100	50	Undercapitalized	Instability
	Sterling NIB	0.24	1.37	Not significant	99.09	98.79	50	Undercapitalized	Instability
Sudan	Omdurman	2.21	4.87	Significant	102.38**	100	55	Undercapitalized	Instability
	Tadamon	2.64	1.97	Significant	100	100	55	Undercapitalized	Instability
	BOK	3.37	3.26	Significant	84.77	85.81	55	Undercapitalized	Instability
Bahrain	Al Salam	1.42	1.03	Significant	67.62	Undefined	30	Undercapitalized	Instability
	KFH	0.81	1.72	Not significant	98.23	92.74	30	Undercapitalized	Instability
	Al Baraka	-0.27	3.79	Significant	0	0	30	Overcapitalized	Non-Competitiveness
Qatar	QIIB	12.02	2.28	Significant	97.92	112.5	100	Overcapitalized	Non-Competitiveness
	Al Rayan	21.27	1.62	Significant	21.15	21.44	100	Overcapitalized	Non-Competitiveness
	Barwa	4.07	2.68	Significant	-25.21**	60.4	100	(Overcapitalized)	Non-Competitivenesss

From Table 3 above, the findings reveal that, in the two Islamic banks in Nigeria, the URIAHs receive higher risk adjusted return than the Shareholders do though the difference between the means of the risk adjusted returns to the Shareholders and the risk adjusted returns to the Unrestricted Investment Account holders is statistically insignificant. These findings contradict the findings of Alhammadi (2016), Alhammadi et al. (2018), Samhan & AL-Khatib (2015), Rosly (2016), Azhar Rosly & Ashadi Mohd. Zaini (2008) and Diaw & Mbow (2011) where it is found that there is a significant difference in the rates of return between the shareholders and the URIAHs and that the shareholders' risk adjusted rates of return are significantly higher compared to URIAHs' risk adjusted rates of return, even though the risk is similar in many aspects and also the risk-adjusted rates of return paid to the URIAHs are inferior to those accruing to the shareholders, in the form either of ROE or of dividend yield. This contrast is not surprising as the Shareholders in both Jaiz bank and Sterling NIB Window have been receiving high negative returns during their early years of operations even though the returns to the URIAHs are positive. Also, the risk sharing indicates that the Shareholders in Jaiz Bank bear 100% of the commercial risk while in Sterling NIB the Shareholders bear 99.1% of the commercial risk. When compared to the risk sharing level of 50% imposed on the Shareholders by the Central Bank of Nigeria, it is obvious that the risk profiles of both banks are understated. Thus, the capital levels imposed by the Central Bank of Nigeria on the two institutions are much lower than the level

required by the banks and this implies that when the DCR crystalizes the capital base of the banks cannot support the banks in absorbing the shocks of the DCR as the capital of the banks will be completely eroded and this can lead to instability in the banks and perhaps the entire financial system if the banks are systematically important banks and this is in consonance with Daher et al. (2015). Furthermore, the low return received by the shareholders of the two banking institutions coupled with the fact that they bear most of the risk suggests that the profit distribution framework for the institutions appear to be unfair to the shareholders.

In Sudan, however, the Shareholders in Tadamon bank and BOK receive higher risk adjusted returns than the URIAHs do and the difference in the risk adjusted returns is statistically significant while in Omdurman bank the URIAHs receive a significant higher risk adjusted return than the Shareholders. The findings in Tadamon bank and BOK are similar to Alhammadi (2016), Samhan & AL-Khatib (2015) and Azhar Rosly & Ashadi Mohd. Zaini (2008) where they find that there is a significant difference in the risk adjusted rates of return between the shareholders and the URIAHs and that the shareholders' adjusted rates of return are significantly higher compared to URIAHs' rates of return.

Also, in Omdurman bank, Tadamon bank, and Bank of Khartoum, the Shareholders bear 102.38%, 100% and 84.77%, respectively, of the commercial risks and they commensurate with the risk adjusted returns received by the Shareholders, as such the profit distribution framework in the three institutions appear to fair to both parties. However, when compared to the 55% level of risk sharing imposed by the Central Bank of Sudan (Baldwin et al., 2019), it is evident that the capital level imposed by the Central Bank of Sudan is much lower than the actual capital required by the banks and the implication in Sudan is quite similar to that of Nigeria as explained earlier. It should however be noted that the risk sharing in Omdurman bank of 102.38% represents a multiplier allowing the bank and its regulator to express additional capital required to support the DCR in units of risk-weighted assets of URIAHs and no longer interpreted as the proportion of IAH assets requiring capital support (Baldwin et al (2019).

In Bahrain, the Shareholders in Al Salam bank receive a significantly higher risk adjusted return than the URIAHs and this is consistent with the level of risk sharing assumed by the Shareholders of the bank where they assume. 67.62% of the commercial risks. Meanwhile, in Al Baraka bank, the URIAHs receive a significantly higher risk adjusted return than the Shareholders where they receive negative risk adjusted return. This is also consistent with the level of risk sharing by the shareholders as they assumed 0% of the commercial risks. In KFH, the URIAHs receive an insignificant though higher risk adjusted return than the Shareholders while the Shareholders assume 98.23% of the commercial risks, and thus the profit distribution appears unfair to the Shareholders. However, when the level of risk sharing by the shareholders in the three banks is compared with the level risk sharing of 30% imposed by the Central Bank of Bahrain, it is obvious that the risk profiles of Al Salam bank and KFH are understated as the banks' actual risk sharing levels are 67.62% and 98.23%, respectively, as against the risk sharing value set by the Central Bank of Bahrain of 30% (Khan & Latheef, 2016). Thus, Al Salam bank and KFH are holding capital levels that are inadequate for their risk profiles and this could a potential source of non-resilience and instability in the

financial system in Bahrain. On the other hand, the risk profiles of Al Baraka Bank are overstated as the risk sharing level in the bank is 0.00% as against the Central Bank of Bahrain's issued alpha of 30%. This implies that the bank is overcapitalized, which is good from the regulatory perspective. However, it puts the bank at a competitive disadvantaged position since it is required to hold a capital level that is far above its risk requirements. The capital is being provided for a risk that is not there, where ideally the capital should have gone into risk asset creation or other form of investment thereby enabling the bank to make more profit and enhance its competitive position in the marketplace. The bank is however resilient and stable.

In Qatar, the Shareholders in all the three banks receive a significantly higher risk adjusted return than the URIAHs while they assume risk sharing level of 97.92%, 21.15%, and -25.21% in QIIB, Al-Rayan bank and Barwa bank, respectively. Thus, the profit distribution appears fair to both parties only in QIIB while the profit distribution seems unfair to URIAHs in Al-Rayan. The Central Bank of Qatar imposes a risk sharing level of 100%, thus compared to the Central Bank's threshold, QIIB and Al-Rayan are overcapitalized. This is good from the regulatory perspective as the banks are resilient and stable. However, from the business perspective this will adversely affect the efficiency and competitiveness of the banks as they are holding a capital above its requirements. Barwa Bank has a risk sharing level of -25.21%. This negative value is inconsistent with the theory as the risk sharing level is expected to be greater than zero. Conversely, in Al-Rayan bank, the source of instability could result from the situation where the URIAHs receive low return and have greater part of the commercial risk. The URIAHs assume about 78.85% of the commercial risk with a return lower than that of the Shareholders and this could trigger withdrawal risks thereby leading to instability in the bank.

For robustness, the risk sharing between the Shareholders and the URIAHs is computed using the VaR with Expected Shortfall Approach. Interestingly, in Nigeria and Sudan, the implications are the same in both the VaR and the VaR with Expected Shortfall Approaches. However, in Bahrain the risk sharing is undefined for Al Salam Bank while in Qatar the risk sharing level changes from a negative value (-25.21%) to 60.4% thereby changing the stability implication of the bank as the bank becomes overcapitalized and therefore is more stable but likely to be uncompetitive. Furthermore, in QIIB, the risk sharing value obtained using the VaR Expected Shortfall Approach is now higher than the value set by the Central bank of Qatar, and this changes the stability implication of the bank from being overcapitalized to being undercapitalized.

V. CONCLUSION AND RECOMMENDATION

The Unrestricted Investment Account Holders (URIAHs) are important customers to the Islamic banks because they represent the dominant source of fundings. Therefore, managing this class of customers in the context of risk-return framework is paramount. This class of customers could be a potential source of instability in the Islamic banks if their rights are not properly addressed by the banks.

The findings of this paper are mixed. While the Shareholders in most banks in the sample receive a significantly higher risk adjusted return than the

URIAHs, the URIAHs also receive a significantly higher risk adjusted return than the Shareholders in some of the banks. The results further reveal that in about 63% of the Islamic banks, the level of risk sharing is higher than the imposed level of risk sharing by the Central Banks, and this implies that these banks are undercapitalized and as such they are holding capital that is not commensurate with their risk profiles and this is a potential source of instability in the banks. On the other hand, in about 37% of the Islamic banks the level of risk sharing is lower than level of risk sharing imposed by the Central Banks, and this implies that these banks are overcapitalized and as such holding capital that is much higher than the amount required for their risk profiles and this affects the competitiveness of the banks.

Thus, the practice of Central Banks imposing a common value for the level of risk sharing for the Islamic banking industry is counterproductive as such the Central Banks should inculcate the culture of determining the level of risk sharing for each Islamic bank in the industry. Consequently, the IFSB recommendation of determining and issuing a common risk sharing level for the industry needs to be revisited and this paper is of the opinion that for the purpose of promoting resilience and stability in the Islamic banking system, the risk sharing level between the Shareholders and the URIAHs should be determined for each individual bank rather than industry-based risk sharing value as recommended by the IFSB; and for the Central Banks, whether income smoothing is allowed or not allowed in a particular jurisdiction, the DCR in managing URIAHs is real and as such the Central Banks should not impose the value for risk sharing between the Shareholders and the URIAHs. The Bank of Indonesia is also not an exception and should deploy methodology to accurately estimate the DCR and risk sharing level between the URIAHs and Shareholders as this will ensure the robustness of the economic capital of Islamic banks which will be commensurate with their risk profiles thereby promoting stability in the financial system. Lastly, the academia needs to undertake further research to further improve the measurement of the DCR and the risk sharing level.

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