

Accumulated Performance and its Effect on Islamic Bank's Leverage: Case in Jordan

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Abstract

Islamic Banks in Jordan considered being the most required modern achievement in the Jordanian economy field because of their contribution in solving some Islamic countries' banking dealing problems they sever. Also this kind of business tries to survive and compete with others in order to achieve competitive advantage in the Jordanian market.

From these points of views the important of this study arise and try to highlight the effect of some factors express the performance such as Earnings to Total Asset (RETA) and Return on Equity (ROE) on the leverage of listed Jordanian Islamic Banks.

The results of the statistics techniques that one employed in this investigation shows that the accumulated performance index that one measured by Retained Earnings to Total Assets (RETA), and performance index that one measured by Return on Equity (ROE) have a significant effect on Islamic Bank's leverage in Jordan that one quantifying by Debt Ratio, those conclusions are agreed whether the affect taken individually or in combination. The analysis covered the period from 2010 to 2015, and used some statistical techniques to examine its hypotheses.

Keywords: Retained Earnings to Total Asset (RETA), Return on Equity (ROE), Debt Ratio, Amman Stock Exchange (ASE).

JEL Classification: A20

1. Introduction

Islamic Banks contribute efficiently in achieving developing, investing and social goals in Jordanian economy. Where they seek to attract Islamic capital and reemploy the Islamic balances among Islamic region, also, they try to enhance the economic performance for various institutions that they supervised; moreover they aim to achieve social justice through enhancing income distribution and giving loans. (<http://stocksexperts.net>)

Islamic Banks occupy a critical and significance position in the financial and economic domain. Moreover, perfect financial performance pays back the shareholders for their investment, that one leads to more investment and reveals economic growth. Likewise, bad banking performance can cause banking defeat and crisis that one have negative effects on the economic growth. (Samhan & AL-Khatib, 2015)

The most favorable firms' capital structure consists of debt and equity that one increase the worth of the firm and decrease the overall cost of capital. Banks are different than other institutions that one capital structures are has an impact and by some circumstances singular to the banking sector, For Islamic banks, capital structure is distinct from others, Islamic banks exercise in accordance with the principles of Shari'ah, that one preventing Islamic banks to pay or earn interests on their financial instruments. According to that Islamic banks should

participate their gains and losses with investors, this suggest that the lower leverage may prompt bank to earn a higher gain. This can has an impact on Islamic banks capital structure. (Milhem, 2017)

Issuing ordinary shares to finance assets or by retention a percentage of gains enable donate in decreasing loans, that one will invert the financing costs and so profitability. (Abdul Rahman, 2017)

Many surveys and investigations have presented a strong association between solvency ratios and profitability ratios. (Tze and Heng, 2011; Gitman, 2006).

Because of that this survey will attempt to find and approve this relation through searching the effect of profitability on solvency for Islamic banks in Jordan for the period from 2010 until 2015.

2. Previous Studies

(Milhem, 2017) concluded that there is a significant effect of capital structure expressed by total debt to total equity, total debt to total assets, and total equity to total assets on financial performance quantifying by return on asset, return on equity and earnings per share of the Jordanian Islamic banks in Jordan, whereas there is no statistically significant has an impact on of capital structure on performance of Jordanian commercial banks.

(Rehman,et al., 2017) study applied an unbalanced panel data covering the time from between 2006 and 2012, and the outcomes exposed that the bank size, tangibility, and growth are positively related to banks' capital structure, whereas profitability, liquidity, and capital adequacy ratio are negatively related to the capital structural decisions of banks. Moreover, real interest rate and inflation are negatively related to the capital structure of Islamic banking sector, while industrial production index has a positive effect over the capital structure decisions of the Islamic banking industry of Pakistan.

(Trad, et al., 2017) showed that bank size and capital are increasing profitability quantifying by return on asset and return on equity, and risk divided into credit risk measured by IMLGL and EQL, and insolvency risk measured by Z-SCORE. Also the results revealed that there are no material differences among Islamic banks and commercial banks with regards to their profitability and risk features. The study applied on 78 Islamic banks among 12 countries for the period from 2004 to 2013

A wide proof on distinctions in leverage and profitability among Islamic and commercial banks was investigated in a comparison study on 545 observations with 250 Islamic banks and the rest of commercial banks around 180 countries by (Toumi et al., 2016), the study covered the time from 2004 to 2008, and some statistical techniques was applied.

(Ansari & Rehman, 2011) revealed that there is a variations in the operational activities and financial performance expressed by return on asset between five Islamic banks and five commercial banks for the period from 2005 to 2009 in Pakistan, moreover the results indicated that Islamic banks is more excellence than commercial banks.

3. Creating Hypotheses

Essential Hypothesis

H₀₁: There is no significant effect of Retained Earnings to Total Asset (RETA) and Return on Equity (ROE) on listed Jordanian Islamic Bank's Leverage.

Subsidiary Hypotheses

H₁₁: There is no significant effect of Retained Earnings to Total Asset (RETA) on listed Jordanian Islamic Bank's Debt Ratio.

H₂₁: There is no significant effect of Return on Equity (ROE) on listed Jordanian Islamic Bank's Debt Ratio.

4. Research Methodology

This paper searches for effect of accumulated performance expressive by Retained Earnings to Total Asset (RETA) discretely on Islamic Bank's Leverage expressive by Debt Ratio, and the effect Return on Equity (ROE) discretely on Islamic Bank's Leverage expressive by Debt Ratio, and lastly the effect of accumulated performance expressive by Retained Earnings to Total Asset (RETA) and Return on Equity (ROE) cooperatively on Islamic Bank's Leverage expressive by Debt Ratio.

All Islamic Banks listed at Amman Stock Exchange (ASE) represent the population and sample for this paper, and the study cover the period from 2010 to 2015, Moreover, the study will used (Eviews) software.

4.1. The Research Sample

The sample composed from all Islamic Banks listed at (ASE) covering the time from 2010 to 2015.

4.2. Study Variables

4.2.1. Dependent Variable_ Debt Ratio

Debt Ratio: it's one of the leverage measurements, that one reflect the amount of total assets financed with debt expressing by percentage. Higher debt ratio denotes higher financial risk, thence weakened solvency. To express this ratio total debt is set in relation to the total assets. (Financial Reporting and Analysis, 2012)

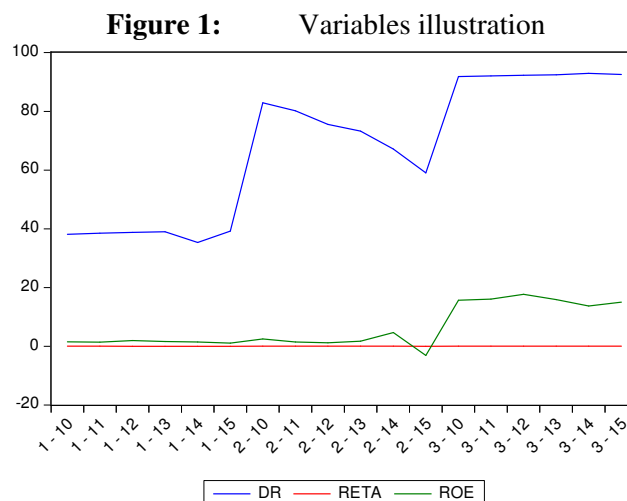
4.2.2. Independent Variables – Retained Earnings to Total Asset (RETA), Return on Equity (ROE)

Retained Earnings to Total Asset (RETA): it's a cumulative profitability measurement way, also it's one of the leverage measurements. (<https://www.stockopedia.com>). Whenever the ratio is higher, meaning the low other types of debt and equity financing. (<http://smallbusiness.chron.com>). It can be expressed by dividing the retained earnings in the numerator on the total assets in the denominator

Return on Equity (ROE): It's one of the performance measurements, reflects the returns on equity that one provided by shareholders. The greater ratio indicates more profitable performance. It can be expressed by dividing the net profit in the numerator on the average shareholders' equity in the denominator. (Gibson, 2013)

5. Data Analysis and Results Discussion

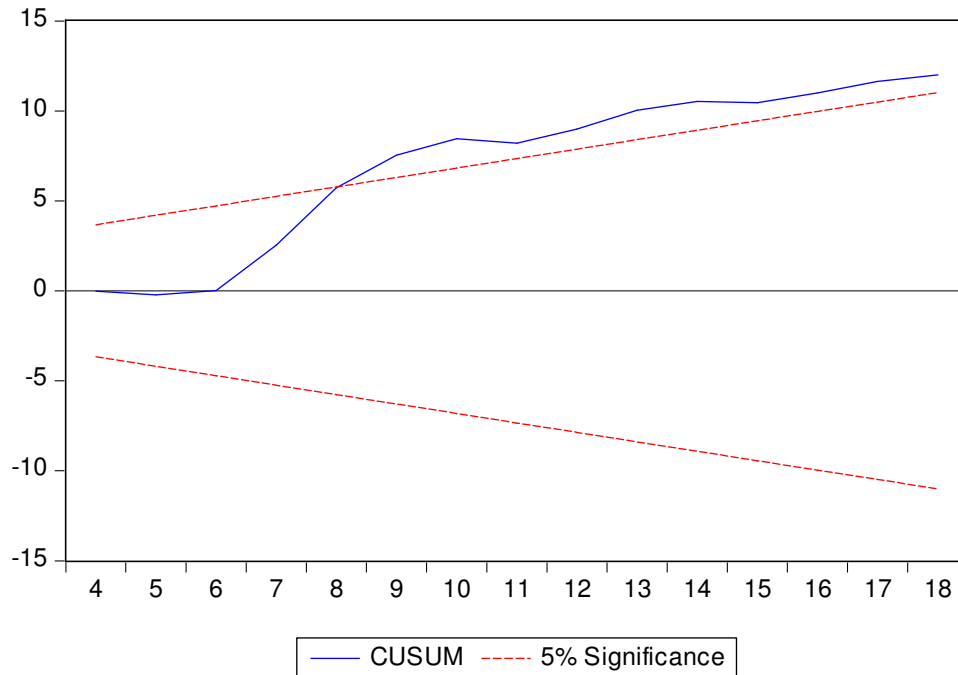
5.1 Variables Illustration



Where:
 X1: Retained Earnings to Total Asset (RETA)
 X2: Return on Equity (ROE)
 Y: Debt Ratio

5.2 Stability of Debt Ratio

Figure 2: Stability of Debt Ratio



Stability diagnostic appears that the blue line in the middle is beyond the upper red line, resulting in that Debt Ratio is not stable.

5.3 Regression

5.3.1 Residuals test

Figure 3: Actual and Predicted Residuals

<u>Actual</u>	<u>Predicted</u>	<u>Residual</u>	<u>Residual Plot</u>
38.1060	63.9547	-25.8487	* . .
38.4810	60.1845	-21.7035	* . .
38.7340	53.5200	-14.7860	* . .
38.9660	43.1263	-4.16035	. * .
35.3350	33.8218	1.51324	. * .
39.1910	29.6822	9.50879	. * .
82.8580	70.5923	12.2657	. . *
80.1680	67.5890	12.5790	. . *
75.5300	67.1835	8.34647	. * .
73.2630	66.9246	6.33837	. * .
67.1640	69.5868	-2.42281	. * .
59.0160	46.5226	12.4934	. . *
91.8100	93.7752	-1.96519	. * .
92.0610	91.4393	0.62170	. * .
92.2150	96.1802	-3.96515	. * .
92.4270	89.5404	2.88663	. * .
92.8620	87.7600	5.10195	. * .
92.5650	89.3686	3.19643	. * .

The cross in the middle states the predicted cross, the residuals can derive from the dissimilarity between the actual and predicted amounts. The positive residuals are stand on the right, and the negative on the left. By adding positive and negative together the average will be zero.

5.3.2 Hypotheses Testing

Dependent Variable: DR

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Sample: 2010 2015

Periods included: 6

Cross-sections included: 3

Total panel (balanced) observations: 18

Table 1: Panel Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	53.95739	3.783438	14.26147	0.0000
RETA	912.1720	243.0706	3.752704	0.0019
ROE	1.203082	0.534931	2.249039	0.0400
R-squared	0.776321	Mean dependent var		67.81956
Adjusted R-squared	0.746497	S.D. dependent var		23.57211
S.E. of regression	11.86834	Akaike info criterion		7.936637
Sum squared resid	2112.862	Schwarz criterion		8.085033
Log likelihood	-68.42974	Hannan-Quinn criter.		7.957099
F-Test	26.03018	Durbin-Watson stat		0.423701
Prob(F-Test)	0.000013			

Since R_squar.is 0.776321 higher than 0.60 conveying that the data of this model is fitted strongly, it signify that 0.223679 percent variation in the Debt Ratio can be described cooperatively by Retained Earnings to Total Asset (RETA) and Return on Equity (ROE), the rest percent variation in Debt Ratio can be described by residuals or other variables other than Retained Earnings to Total Asset (RETA) and Return on Equity (ROE).

H₁₁: There is no significant effect of Retained Earnings to Total Asset (RETA) on listed Jordanian Islamic Bank's Debt Ratio.

Since the p_value of Retained Earnings to Total Asset (RETA) is 0.0019 that one is less than 0.05, signify that Retained Earnings to Total Asset (RETA) is an important variable to describe the dependent variable. Thus can reject the null hypothesis, and accept the alternate hypothesis that the Retained Earnings to Total Asset (RETA) is an important independent variable to affect the Debt Ratio, signifying that (RETA) is an important independent variable to have an impact on the listed Jordanian Islamic Bank's leverage.

H₂₁: There is no significant effect of Return on Equity (ROE) on listed Jordanian Islamic Bank's Debt Ratio.

Since the p_value of Return on Equity (ROE) is 0.0400 that one is less than 0.05, signify that Return on Equity (ROE) is an important variable to describe the dependent variable. Thus we can reject the null hypothesis, and accept the alternate hypothesis that Return on Equity (ROE) is a significant independent variable to affect the Debt Ratio, Signifying that (ROE) is an important independent variable to have an impact on the listed Jordanian Islamic Bank's leverage.

H₀₁: There is no significant effect of Retained Earnings to Total Asset (RETA) and Return on Equity (ROE) on listed Jordanian Islamic Bank's Leverage.

Since prob(F_Test) is 0.000013 that one is less than 0.05, signify that Retained Earnings to Total Asset (RETA), and Return on Equity (ROE) cooperatively are important variables to describe the dependent variable. Thus we can reject the null hypothesis, and accept the alternate

hypothesis that all Retained Earnings to Total Asset (RETA), and Return on Equity (ROE) cooperatively are significant independent variables to affect the Debt Ratio (ROI), intending that (RETA) and (ROE) are important independent variables to have an impact on the listed Jordanian Islamic Bank's leverage.

5.3.3 Residual values correlation

Table 2: Breusch-Godfrey Serial Correlation LM Test

F-Test	6.630503	Prob. F(2,13)	0.0104
Obs*R-squared	9.089450	Prob. Chi-Square(2)	0.0106
Dependent Variable: RESID			
Least Squares			
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Sample: 1 18			
Incorporate observations: 18			
Pre_sample missing value lagged residuals set to zero.			
Variable	Coefficient	Std. Error	Prob.
C	1.003879	2.874675	0.7325
RETA	-369.7802	234.6939	0.1391
ROE	0.296109	0.440228	0.5130
RESID(-1)	0.668357	0.254182	0.0208
RESID(-2)	0.225551	0.297669	0.4621
R-squared	0.504969	Mean dependent var	5.26E-15
Adjusted R-squared	0.352652	S.D. dependent var	11.14836
S.E. of regression	8.969740	Akaike info criterion	7.455724
Sum squared resid	1045.931	Schwarz criterion	7.703049
Log likelihood	-62.10151	Hannan-Quinn criter.	7.489826
F-Test	3.315252	Durbin-Watson stat	1.463891
Prob(F-Test)	0.044339		

As the p_value shows 0.044339 that one is less than 0.05, noted that residuals are correlated, suggests that the residuals for these modelling have auto correlation problem, that one is unfavourable.

5.3.4 Residuals Variances

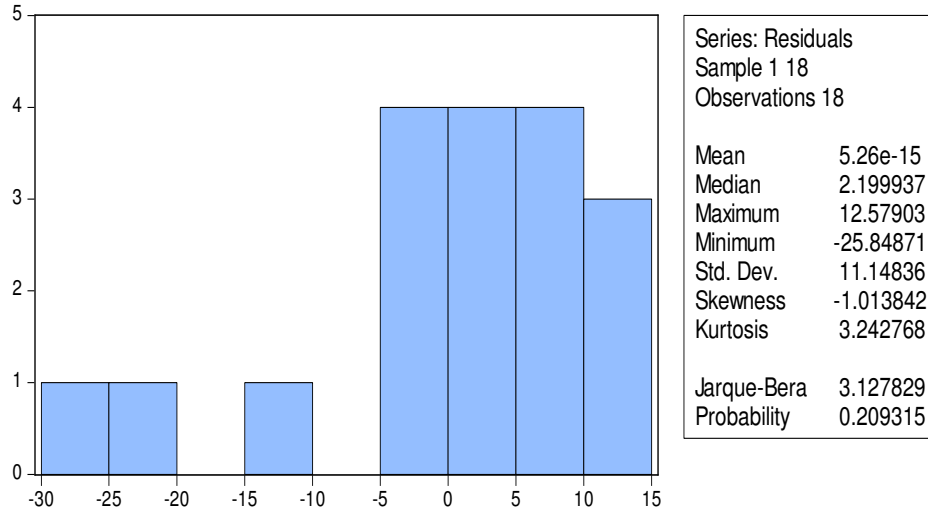
Table 3: Breusch-Pagan-Godfrey

F-Test	2.786432	Prob. F(2,15)	0.0935
Obs*R-squared	4.875916	Prob. Chi-Square(2)	0.0873
Scaled explained SS	3.797065	Prob. Chi-Square(2)	0.1498
Dependent Variable: RESID^2			
Method: Least Squares			
Date: 11/03/17 Time: 11:06			
Sample: 1 18			
Incorporate observations: 18			
Variable	Coefficient	Std. Error	Prob.
C	194.3399	52.41749	0.0021
RETA	4239.673	3367.612	0.2273
ROE	-17.31359	7.411186	0.0338
R-squared	0.270884	Mean dependent var	117.3812
Adjusted R-squared	0.173669	S.D. dependent var	180.8850
S.E. of regression	164.4294	Akaike info criterion	13.19385
Sum squared resid	405555.6	Schwarz criterion	13.34225
Log likelihood	-115.7447	Hannan-Quinn criter.	13.21431
F-Test	2.786432	Durbin-Watson stat	0.354524
Prob(F-Test)	0.093535		

As the p_value shows 0.093535 that one is higher than 0.05, signifying that the variance of the residual is homoscedastic, note that homoscedasticity is convenient.

5.3.5 Distribution of Residual

Figure 4: Residual Distribution



As the p-value shows 0.209315 that one is higher than 0.05, point to that residual follows normal distribution and that one is a good indicator for this modelling.

5.4 Vector Autoregression Estimates

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Sample (adjusted): 2012 2015

Incorporate observations: 12 after adjustments

Standard errors in () & t-statistics in []

Table 4: Vector Autoregression Estimates

	DR	RETA	ROE
DR(-1)	0.543110 (0.84003) [0.64654]	0.000853 (0.00128) [0.66572]	1.512527 (0.70617) [2.14189]
DR(-2)	0.274205 (0.72848) [0.37641]	-0.000536 (0.00111) [-0.48184]	-1.348881 (0.61239) [-2.20263]
RETA(-1)	295.0268 (370.302) [0.79672]	0.802713 (0.56507) [1.42055]	142.6649 (311.293) [0.45830]
RETA(-2)	-375.7779 (459.540) [-0.81773]	-0.020533 (0.70125) [-0.02928]	-370.7379 (386.311) [-0.95969]
ROE(-1)	-0.903454 (0.78271) [-1.15426]	-0.001736 (0.00119) [-1.45317]	0.449712 (0.65799) [0.68347]

	DR	RETA	ROE
ROE(-2)	1.545624 (0.93224) [1.65797]	0.001429 (0.00142) [1.00420]	0.088600 (0.78368) [0.11306]
C	8.112509 (7.13004) [1.13779]	-0.021316 (0.01088) [-1.95918]	-3.621170 (5.99384) [-0.60415]
R-squared	0.993831	0.974391	0.954177
Adj. R-squared	0.986427	0.943659	0.899189
Sum sq. residuals	37.86518	8.82E-05	26.75881
S.E. equation	2.751915	0.004199	2.313388
F-Test	134.2425	31.70690	17.35251
Log likelihood	-23.92201	53.89944	-21.83901
Akaike AIC	5.153669	-7.816574	4.806501
Schwarz SC	5.436531	-7.533712	5.089363
Mean dependent	66.43900	0.003500	6.055083
S.D. dependent	23.62127	0.017692	7.286088
Determinant resid covariance (dofadj.)		6.01E-05	
Determinant resid covariance		4.34E-06	
Log likelihood		22.99740	
Akaike information criterion		-0.332900	
Schwarz criterion		0.515687	

While Akaike information criterion is -0.332900 and Schwarz criterion is 0.515687 that one is the lower so it is favourable when applying Vector Autoregression Estimates on lag 2 comparing with other lags, thus the Granger Causality test should run on lag 2 to give the best model when running Granger Causality test

5.4.1 Granger Causality Test

By considers the following pair of regression to see the Granger Causality test:

$$\text{RETA}_t = C1 * \text{DR}_{t-i} + C2 * \text{RETA}_{t-j} + u1t$$

$$\text{DR}_t = C3 * \text{RETA}_{t-i} + C4 * \text{DR}_{t-j} + u2t$$

$$\text{ROE}_t = C5 * \text{DR}_{t-i} + C6 * \text{ROE}_{t-j} + u3t$$

$$\text{DR}_t = C7 * \text{ROE}_{t-i} + C8 * \text{DR}_{t-j} + u4t$$

$$\text{ROE}_t = C9 * \text{RETA}_{t-i} + C10 * \text{ROE}_{t-j} + u5t$$

$$\text{RETA}_t = C11 * \text{ROE}_{t-i} + C12 * \text{RETA}_{t-j} + u6t$$

Where:

ROE= Return on Equity

DR= Debt Ratio

RETA= Retained Earnings to Total Assets

Assuming that Return on Equity, Debt Ratio and Retained Earnings to Total Assets variables are stationary if not; should make them stationary before testing Granger Causality, also assuming that $u1t, u2t, u3t, u4t, u5t$ and $u6t$ are uncorrelated.

Null hypotheses:

1. RETA does not granger cause DR
2. DR does not granger cause RETA
3. ROE does not Granger Cause DR
4. DR does not Granger Cause ROE
5. ROE does not Granger Cause RETA
6. RETA does not Granger Cause ROE

In order to test the null hypothesis; F statistics is appointed.

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Sample: 2010 2015

Lags: 2

Table 5: Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
RETA does not Granger Cause DR	12	0.88465	0.4544
DR does not Granger Cause RETA	2.71639		0.1339
ROE does not Granger Cause DR	12	3.88568	0.0733
DR does not Granger Cause ROE	1.82214		0.2306
ROE does not Granger Cause RETA	12	3.40328	0.0928
RETA does not Granger Cause ROE	0.06823		0.9347

For the first null hypothesis, since $\text{prob}(F_Test)$ is 0.4544 that one is higher than 0.05, thus cannot reject null hypothesis, so RETA does not Granger Cause DR. Also For the second null hypothesis, since $\text{prob}(F_Test)$ is 0.1339 that one is higher than 0.05, thus cannot reject null hypothesis, so DR does not Granger Cause RETA, moreover, for the third null hypothesis, since $\text{prob}(F_Test)$ is 0.0733 that one is higher than 0.05, thus cannot reject null hypothesis, so ROE does not Granger Cause DR, furthermore, for the fourth null hypothesis, since $\text{prob}(F_Test)$ is 0.2306 that one is higher than 0.05, thus cannot reject null hypothesis, so DR does not Granger Cause ROE, as well for the fifth null hypothesis, since $\text{prob}(F_Test)$ is 0.0928 that one is higher than 0.05, thus cannot reject null hypothesis, so ROE does not Granger Cause RETA and finally, since $\text{prob}(F_Test)$ is 0.9347 that one is higher than 0.05, thus cannot reject null hypothesis, so RETA does not Granger Cause ROE.

6. Summary and Concluding

The significance of this study stands out from the significance of the relation between performance and solvency. This project may assist pertinent sides to analyze the actuality of Islamic banks in a preferable way by recognizing the considerable effect of performance measures on solvency, that one may support Islamic banks to take suitable administrative decisions depending on of the relation between performance and solvency.

Referring to the analysis, the results show that Retained Earnings to Total Asset (RETA) and Return on Equity as a performance measures are significant independent variables to describe the dependent variable Debt Ratio as a leverage index, whether they are taken independently or cooperatively that one agreed with many previous studies.

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