Impact of Capital Structure on Bank Financial Performance of Al Ahli Bank in Saudi Arabia

Dr. Mahmoud Izzat Allahham[1]

[1] Burayda private colleges - K.S.A

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Abstract

This paper seeks to examine the relationship between capital structure and bank financial performance. This research had verified the existence of several negative relationships between capital structure (accumulated capital and annual investments) and strategic financial performance, while finding mixed results for the relationship between capital structure (accumulated capital and annual investments) and profitability.

Index terms— capital structure, bank performance, ROA, ROE, EPS.

1 Introduction

he bank performance which constitutes the core of the financial sector, plays a critical role in transmitting monetary policy impulses to the entire economic system. Capital structure plays a significant role in the success of an enterprise. A good capital structure enables a banking company enterprise to go ahead successfully on its path and attain gradual growth.

2 II.

3 Literature Review

Wael Mostafa. (2011) studied the theory of bank financial performance with the practice of bank ratings. The paper studied the effect of bank capital structure and financial indicators in Middle Eastern commercial banks associated with high and low rate issued by Capital Intelligence (CI). The authors also investigated how bank capital structure and financial indicators can be differentiated between banks with high and low rate, using the multinomial logit technique. A sample of 65 rated Commercial banks from eleven countries was used. The article focused on commercial banks in order to avoid comparison problems between various types of banks. The data was taken from the Bank scope database and covers the period of ??994-2007. The results reveal that the financial indicators of the highly-rated banks are associated with decreases in the ratio of impaired loans to gross loans, the ratio of loan loss reserve to gross loans, the ratio of non-interest expenses to total assets, the ratio of net loans to deposits and short-term funding and the ratio of net loans to total assets. In contrast, these financial indicators were allied to increase in the ratio of nonoperating income to net income, the gap ratio, the interbank ratio and thee quity ratio.

Mubeen Mujahid (2012) examined the impact of capital structure on bank performance. The study spread empirical work on capital structure determinanted of banks within country and foreign country. Multiple reversion models were useful to evaluation the relationship between capital structure and banking performance. Performance was measured by return on assets, return on equity and earnings per share. Determinants of capital structure contains long term debt to capital ratio, short term debt to capital ratio and total debt to capital ratio. Results of the study validated a positive relationship between factors of capital structure and performance of banking industry.

4 III.

5 Research Objectives

The main objective of this study is to examine the relationship between capital structure and bank performance by estimating the contribution of capital structure investment to banks performance measured by financial ratios, in the same year of investment, the second year (one-year lag effect), or the third year of the investment (two-year lag effect).

6 IV.

7 Conversion Effectiveness Results

Conversion effectiveness (CE) emerged, as a bank wide construct comprised of the views of two key managers in the bank.

To produce a common scale, the Z-scores of the seven components were determined. The average of these Z-scores (multiplied by ten) was defined as conversion effectiveness. This technique preserved the bank wide nature of CE by retaining, with an equal weighting, the view of both respondents. The mean and the standard deviation of the seven component variables are presented in Table . The implicit assumption was that the two respondents (the financial manager, and information technology department manager) represented the bank as a whole. The accuracy of this assumption was difficult to check, as it was beyond this study objective, to question each employee in the bank about his opinion in the information technology used.

V.

8 Regression Models

In order to provide a mathematical formulation to the model described in Figure (1), and to provide a test for the proposed hypotheses, four regression models have been developed.

The First regression model (model 1): test the relationship between capital structure and banks' financial performance, in which capital structure measures had been related to seven financial performance measures (P) for the same year, while controlling for Economic conditions (E), Financial leverage (L), organization size (S), and Management quality (M).M S L E IT P 5 4 3 2 1 0 ? ? ? ? ? ? + + + + + + =

The Second regression model (model 2): test if there is a one-year lag effect on the relationship between capital structure and banks' financial performance, in which financial performance measures were related to previous year capital structure measures, while controlling for Economic conditions (E), Financial leverage (L), organization size (S), and Management quality (M).M S L E IT P t t 5 4 3 2 1 1 0 ? ? ? ? ? ? + + + + + + = ?

The Third regression model (model 3): test if there is a two-year lag effect on the relationship between capital structure and banks' financial performance, in which performance financial measures were related to two years earlier capital structure measures, while controlling for Economic conditions (E), Financial leverage (L), organization size (S), and Management quality (M).M S L E IT P t t 5 4 3 2 2 1 0 ? ? ? ? ? ? + + + + + + = ?

The Fourth regression model (model 4): test the moderating effect of organization management quality and commitment to capital structure (conversion effectiveness) on the relationship between capital structure and banks financial performance, in which the previous three models had been replicated with the inclusion of the developed factor conversion effectiveness (CE). ? ? ? ? ? ? ? + + + + + + = ? a)

9 Statistical Technique and Packages

A stepwise multiple regression analysis is used to estimate the coefficients and the direction of the relationships between the dependent and the independent variables in each of the four models specified in the previous section.

Stepwise regression is a technique for choosing the variables to include in a multiple regression model.

Stepwise regression starts with no model terms. At each step it adds the most statistically significant term (the one with the highest F statistic or lowest p-value) until there are none left.

An important assumption behind the method is that some input variables in a multiple regression do not have an important explanatory effect on the response. If this assumption is true, then it is a convenient simplification to keep only the statistically significant terms in the model.

10 b) Estimation of Model One

Model one tests the relationship between capital structure and banks' financial performance in the same year, in which capital structure measures were related to seven financial performance measures (P) for the same year, while controlling for Economic conditions (E), Organization size (S), Financial leverage (L), and Management quality (M).M L S E IT P 5 4 3 2 1 0 ? ? ? ? ? ? + + + + + = c) Accumulated capital structure

The relationship between capital structure accumulated capital and bank performance in the same year was estimated. Stepwise multiple regression analysis was used to test the relationship between each of the seven dependent variables and banks' accumulated capital structure in the same year.

The first three dependent variables measure banks' profitability, Return on total assets (ROA), return on share holders equity (ROE), profit margin (PM). According to the results there is no relationship between banks' accumulated capital structure and profitability in the same year.

The following four variables measure the strategic performance of the banks, market share (MSH), growth in revenue (GINR), revenue to total assets ratio (RTA), and market to book value ratio (M/BV). These ratios provide a measurement of the ability of banks to generate future returns. The results indicate significant negative relationships between these variables and accumulated capital structure. Accumulated capital structure negatively affects banks' market share, rate of growth in its revenues, revenues to total assets, and market to book value ratio. The relationship between annual capital structure investments and bank financial performance in the same year was tested using stepwise multiple regression analysis. Each of the seven dependent variables was related to banks' annual capital structure investment for the same year. Table **??**3) presents the statistical outcome of the analysis. The results presented in the previous table indicated that there was a significant positive relationship between annual capital structure investments and one profitability ratio, profit margin (PM); the estimated relationship is strong and significant at ? ? 5% level of significance. However, the results for the strategic measures (market share, revenue to total assets ratio, and market to book value ratio) show significant negative relationships with annual capital structure investments.

11 e) Estimation of Model Two

The question of whether the impact of capital structure is delayed to the second year of investment or to the third year is tested in this section and the following one.

Model two is developed to see if there was a one-year lag effect on the relationship between capital structure and banks' financial performance, in which seven financial performance measures were related to previous year capital structure measures, while controlling for Economic conditions (E), Organization size (S), Financial leverage (L), and Management quality (M).t t t t t t M L S E IT P 5 4 3 2 1 1 0 ? ? ? ? ? ? + + + + + = ? f) Accumulated capital structure One-Year Lag Effect

The relationship between accumulated capital structure and bank financial performance (after one year) was examined using a stepwise multiple regression analysis; Table (4) presents the statistical outcome of the analysis.

The results presented in the Table (4) indicate that there is a significant one-year lag effect (i.e. the impact of accumulated capital structure is delayed one year following the investment year) on the relationship between accumulated capital structure and one of the profitability measures, return on assets (ROA). That accumulated IT capital tends to have a negative effect on next year return to total assets ratio, at ? ? 5% level of significance. Also accumulated capital structure negatively and significantly affects banks' strategic measures revenues to total assets and market to book value ratios. The inclusion of the "conversion effectiveness" (CE) variable has disclosed a previously hidden relationship between capital structure accumulated and banks' profitability measured by return to total assets ratio, as shown in Table (5).

Accumulated capital structure negatively affects banks' return on total assets at the (? ? 5%) level. Also "conversion effectiveness" (CE) affects the relationship between annual capital structure investments and banks' profitability measured by the profit margin ratio. The inclusion of the conversion effectiveness factor had reduced both the power and significance of the relationship, as presented in Table (5).

12 Conclusions

The following provide the conclusion arrived at in this study:

? The results of this study indicate that Alahli bank' accumulated capital structure, on average, had no relationship with banks' profitability.

? Accumulated capital structure had negatively affected banks' strategic performance measures, on average, increasing capital structure to revenues ratio, results in a decrease in banks' market share, productivity, growth, and investors' valuation of banks' stocks, in the same year of investment, while only decreasing banks' productivity and investors' valuation of banks' stocks, in the second and third years to investment.

? Alahli bank' annual capital structure investments, on average, had no relationship with banks' profitability.

? Annual capital structure investments had negatively affected the strategic performance measures for three consecutive years, on average, increasing capital structure investments, results in a decrease in banks' market share, effectiveness, and investors' valuation of banks' stocks, but it had no effect on banks' growth.

? The inclusion of the "conversion effectiveness" variable into the regression model has isolated the impact of the banks' management quality and commitment to capital structure from the relationship between capital structure investments and banks' financial performance.

VII.

13 Recommendations

This research had verified the existence of several negative relationships between capital structure (accumulated capital and annual investments) and strategic financial performance, while finding mixed results for the

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Variable	Mean	Standard Deviation	Cronbach Alpha
Experience	3.9	0.836	NA
Political turbulence (IT)*	4.55	0.941	0.8209
User Satisfaction (IT)	26.28	8.184	0.8848
Top Management commitment (IT)	6.375	0.824	0.9475
Political turbulence (FM)*	4.46	0.752	0.6122
User Satisfaction (FM)	21.6	10.79	0.9314
Top Management commitment (FM)	6.5	0.635	0.6683
Conversion Effectiveness	-0.583	6.86	NA

Conversion effectiveness had a mean of approximately -.58, standard deviation of 6.86, ranging from -18.8 to 8.63. Each component was equally weighted in the construct so that an increase in capital structure experience, user satisfaction, or top management commitment resulted in an increase in the bank's conversion effectiveness. Any decrease in political turbulence also resulted in an improved conversion effectiveness.

Figure 1: Table 1 :

P = ? 0 + ? 1 IT + ? 2 E +
? Moderated capital structure-Performance relationship (one-year lag)
P t = ? 0 + ? 1 IT t 1 ? + ? 2 E + t
? Moderated capital structure -Performance relationship (two-year lag)
P t 0 1 IT t 2 2 E t

Figure 2: ?

2

Dependent variables	Predictors	R Square	F calculated	t value	Sig.	B
	MQ MQ, S	0.371	NA*	NA	NA	NA
ROA		0.311	39.76 15	NA	NA	
ROE						
PM	MQ	0.481	62.29	NA	NA	NA
MSH	S, L, E, TIT	0.918	179	-2.195	0.032	-0.02
GINR	S, MQ, TIT	0.248	6.92	-2.146	0.036	-0.112
RTA	TIT, MQ	0.5965	48.78	-8.821	0	-0.041
M/BV	S, TIT, MQ, E	0.6	22	-3.021	0.004	-0.426

*[Note: *NA is provided whenever the stepwise regression excludes the insignificant variables from the model.C d) Annual capital structure Investments]*

Figure 3: Table 2 :

3

Dependent variables	Predictors	R Square	F calculated	t value	Sig.	B
ROA	MQ	0.372	39.76	NA	NA	NA
ROE	MQ, S	0.3129	15	NA	NA	NA
PM	MQ, AIT	0.531	37.41	2.642	0.0103	0.7546
MSH	S, L, E, AIT	0.92	184.76	-2.61	0.0112	-0.1895
GINR	S, MQ	0.193	7.655	NA	NA	NA
RTA	AIT, MQ, E	0.413	15.267	-5.29	0	-0.2395
M/BV	L, MQ, E, AIT	0.582	20.54	-2.51	0.0148	-2.895

Figure 4: Table 3 :

4

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Dependent variables	Predictors	R Square	F calculated	t value	Sig.	B
ROA	MQ, TIT	0.378	0.2459	-2.02	0.0482	-0.0062
ROE	S, MQ		15.797	NA	NA	NA
PM			8.4777			
MSH	MQ	0.449	43.17	NA	NA	NA
GINR	S, L, E	0.923	204.86	NA	NA	NA
RTA	S	0.157	9.93	NA	NA	NA
M/BV	TIT, MQ, E	0.68	36.06	-8.89	0	-0.0435
	L, MQ, TIT	0.603	24.32	-2.99	0.0044	-0.4582

Figure 5: Table 4 :

5

Dependent variables	Predictors	R Square	F calculated	t value	Sig.	B
ROA	MQ, CE, TIT	0.5	22	-2.11	0.038	-0.005
ROE	MQ, S	0.313	15	NA	NA	NA
PM	MQ, CE	0.614	52.46	NA	NA	NA
MSH	S, L, E, TIT	0.918	179	-2.2	0.032	-0.02
GINR	S, MQ, TIT	0.248	6.92	-2.15	0.036	-0.112
RTA	TIT, MQ, CE	0.622	35.65	-8.87	0	-0.04
M/BV	S, TIT, CE, E	0.59	21.4	-3.54	0.001	-0.498

Figure 6: Table 5 :

5

Dependent variables	Predictors	R Square	F calculated	t value	Sig.	B
ROA	MQ, CE	0.47	29.34	NA	NA	NA
ROE	MQ, LNTA	0.313	15.03	NA	NA	NA
PM	MQ, CE, AIT	0.64	38.61	2.198	0.032	0.562
MSH	LNTA, DTOE, LNGDP, AIT	0.92	184.76	-2.61	0.011	-0.189
GINR	LNTA, MQ	0.193	7.655	NA	NA	NA
RTA	AIT, MQ, LNGDP	0.413	15.266	-5.29	0	-0.24
M/BV	DTOE, MQ, LNGDP, AIT	0.58	20.54	-2.51	0.015	-2.895

VI.

Figure 7: Table 5 :

relationship between capital structure (accumulated capital and annual investments) and profitability. [1] [2]

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