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Impact of profitability, bank and macroeconomic factors on the market capitalization of the Middle Eastern banks

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Abstract: *Panel data has been collected for 44 Middle Eastern banks that are operated during 2005 to 2014 in different Middle Eastern countries. Secondary data has been collected primarily through the DataStream database. The study is conducted to investigate the impact of profitability, bank and macroeconomic factors on the market capitalization of the Middle Eastern banks. Results of Hausman test have explained that fixed effect model is appropriate for the analysis. The result of multiple regression have shown that market capitalization has positive relationship with ROI while negative relationship with credit risk, inflation, and year dummy for the Middle Eastern banks. Furthermore, no relationship has been observed between market capitalization and the ROA, ROE, growth and exchange rate for the Middle Eastern banks.*
Keywords: *Credit risk, Market capitalization, ROI, ROE and ROA*

I. INTRODUCTION

Market capitalization is used to calculate the value of the company that is traded on any stock exchange. It can be calculated by multiplying the number of outstanding shares with the market price of the share of the company (Gitman, 2004). With the assistance of this measure the market value of the entire company can be calculated. This measure is vital for the stakeholders because it reflect the value of the company which is placed by the market on the firm. Normally the share price or market capitalization of that company is enhancing which is performing well in the current time and also there is positive expectation about the future earnings of the company and vice versa. In this way it can be stated that market capitalization is the reflection of the current and expected performance of any company in the stock market (Kaundal and Sharma, 2010).

Market capitalization is also a vital performance tool for the banking companies. The current profit and the future earnings of the banks also have an important impact on the market capitalization of the banks (Gitman, 2004). Accounting profit is defined as the excess of revenues over the expenses of the firm in an accounting year (Amandeep, 1991). Profitability is affected through various factors of the company that are linked with the revenue and expenses of the banks. Chaudhuri (2002) has stated that various factors have significant effect on profitability but some of them are exogenous while endogenous.

There are different profitability measures, bank and macroeconomic factors which have an impact on the market capitalization of any company e.g. dividend yield, dividend pay-out ratio, firm size, earnings per share, quality of management and diversification (Ologunde, Elumilade and Saolu, 2006). It is recommended to investors that they use various fundamental analysis tools to explore the fundamental value of the stock to improve their investment decision. Lot of research has been conducted on this topic in the developed countries but no research has been conducted in this area in the emerging economics. This study is conducted to explore the effect of profitability, bank and macroeconomic factors on the market capitalization of the banks that are operating in different Middle Eastern countries such as Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE. The introduction of the paper should explain the nature of the problem, previous work, purpose, and the contribution of the paper. The contents of each section may be provided to understand easily about the paper.

II. LITERATURE REVIEW

2.1 Efficient market hypothesis

Fama (1970) has conducted his work on the efficient market hypothesis, which is consider as the most influential work in the area of market capitalization. Fame (1970) has stated that no one can beat the market because the stocks are traded at the fair price in the market. He further stated that the reflection of any information can be seen on the share price of the company after the information reached in the market. According to Fame if the information is positive then the share price will increases in the market otherwise reduction in the share price can be observed in the market.

Fama (1970) has also explained the three categories of market efficiency. Weak efficiency is stating that the investors are not able to predict the future stock prices by observing the historical stock prices of a company. Weak form is denying the correction between the historical and future stock prices and explaining that chart or technical analysis is not helpful to beat the market (Kithinji, 2010). Semi-strong form efficiency states

that no investor can beat the market with the help of all the public information available in the market about a stock because the impact of public information is reflected in the stock market. This form is denying the importance of studying the public information for generating the higher return and question the investment research sector and fundamental analysis (Watson and Head, 2010). Strong form efficiency states that no investors can generate above average return through any information (historic, public or private) because the stock price is reflecting the impact of all types of information on stock prices. This form is most convincing efficiency form theoretically but it agonizes from a major practical drawback of financial communal such as insider dealers. But there are various anomalies that are acting against the concept of efficient market hypothesis and highlighting the deviation from the normal pattern that cannot be ignored or gone unnoticed because they are too far from the normal regulated market system (Bosire, 2006).

2.2 Profitability measures

Various researchers have adopted different profitability measures in conducting their research study. The main profitability ratios that are used by the researchers are return on assets (ROA), return on equity (ROE) and return on capital employed (ROCE) and also known as return on investment (ROI). Manufacturing companies are highly concerned in improving their ROA (Rothschild, 2006). Financial analysts and investors are raking the performance of top management on the basis of ROA because the top management has control on the utilization of assets. Ward and Price (2006) have stated that ROE is one of the crucial profitability measures as it is setting the final form of Du Pont analysis and greater ROE is highly appreciated by the investors. ROI is highly appreciated by the potential investors because it provides information about the operating performance of the company (Ross, 2002). De Wet (2007) has stated that ROA, ROE and ROI are the accounting measures so all of them are exposed to the manipulation of accounting numbers.

2.3 Empirical evidence of profitability and market capitalization

Nainder and Reetur (2007) have conducted a study on the profitability of Indian banks. The results have shown that without generating profit the banks cannot survive in the long term but the study has also shown that Indian banks are increasing their profit with the passage of time. Study has been conducted on the Nigerian Confectionary firms to explore the impact of market capitalization on the profitability for twenty years (Oluwatoyin and Gbadebo, 2009). The result of the study has highlighted the positive relationship between the market capitalization and the profitability of the Nigerian Confectionary firms.

Another study has been conducted on different Jordanian Insurance companies from 2002 to 2007 to explore the relationship between market capitalization and profitability (Kabajeh, Mukhled and Dahmash, 2012). Different measures of profit has been used e.g. ROA, ROI and ROE. The results have shown that individually these three measures of profitability have significant positive impact on the market capitalization but collectively these measures have higher explanatory power on the share price.

Dastgerdi (2012) has carried out another study for exploring the impact of different profit ratios on the market and book value of firm's equity. The result has highlighted that different profitability ratios have significant positive impact on the market value of the equity but these profitability ratios have no impact on the book value of equity. Based on these results it can be stated that the profitability of the firm has a significant impact on the market capitalization of the firm and the corporate managers are putting their best efforts for increasing the output of the firm for achieving the shareholder's wealth maximization objective.

III. RESEARCH METHODOLOGY

3.1 Data collection and sample size

For the study, secondary data is collected. The secondary data is available on the website of the selected companies and it is also available on the DataStream database. Reliability of the data is checked by collecting the data from the DataStream database and then compared it with the financial data provided in the annual report of the selected companies.

The data is collected from the banks that are operating in six Middle Eastern countries. Only those banks are included in the sample that is operating from 2005 to 2014. In this way the study is covering 440 firm years.

3.2 Research instrument

The study will utilize different statistical tools such as descriptive statistics, correlation and multiple regression. Following multiple regression equation will be used to explore the impact of profitability and different variables on the market capitalization of the firm.

$$\text{Market capitalization}_{it} = ß_o + ß_1 (\text{Return on equity}_{it}) + ß_2 (\text{Return on assets}_{it}) + ß_3 (\text{Return on investment}_{it}) + ß_4 (\text{Inflation}_t) + ß_5 (\text{Growth}_{it}) + ß_6 (\text{Credit risk}_{it}) + ß_7 (\text{Exchange rate}_{it}) + ß_8 (\text{Year}_{it}) + Ɛ$$

3.3 Measurement of variables

3.3.1 Market capitalization

Market capitalization is the dependent variable. Venkatraman and Prescott (1990) and Mwalukumbi (2011) have stated that market capitalization is representing the market value of the firm. Different studies have been conducted to explore the impact of profitability on the market capitalization of the firm and found the significant positive impact (Pitre, 2003; Kimani, 2009; Abdolmohammadi, 2005). It is calculated through the market value of the outstanding shares and the data is collected through the DataStream database.

3.3.2 ROE

ROE is measured through operating profit divided by equity. ROE is providing information about the operational and investment decision of the companies (Wangechi, 2010). Ward and Price (2006) have stated that ROE is vital measures because it is providing the reflection of firm's performance. Positive relationship is expected and the following hypothesis is generated

H 1 Positive relationship exists between ROE and market capitalization of the firm.

3.3.3 ROA

It is measured as dividing the operating profit on the closing value of total assets of the company (Bosire, 2006; Ghosh, 2003). It is reflecting how effectively top management utilized the assets of the company (Bosire, 2006; Ghosh, 2003; Ross, 2002). Positive relationship is expected and the following hypothesis is generated

H 2 Positive relationship exists between market capitalization and ROA of the firm.

3.3.4 ROI

ROI is calculated as deducting the cost of investment from the profitability of the company. This measure is reflecting how effectively the funds are utilized by the top management of the company (Barrios and Blanco, 2003; Goddard, Molyneux and Wilson, 2004; Rochet, 1992). Positive relationship is also expected and the following hypothesis is generated

H 3 Positive relationship exists between ROI and market capitalization of the firm.

3.3.5 Credit risk

It is calculated as loans divided by total assets as calculated by different researchers in their studies (Angbazo, 1997; Ahokpossi, 2013). Different researchers have found the negative relationship between the credit risk and market capitalization (Angbazo, 1997; Ahokpossi, 2013). Following hypothesis is generated

H 4 Negative relationship exists between credit risk and market capitalization of the firm.

3.3.6 Inflation

It will be measured by taking the yearly inflation rate for the country. Dias (2013) have carried out their study on the Chinese banking sector and found the positive impact of inflation on the market capitalization. Positive relationship is expected and the following hypothesis is generated

H 5 Positive relationship exists between the inflation and market capitalization of the firm.

3.3.7 Growth

It is calculated as the growth in GDP for the countries that are included in the study. Researchers have found the insignificant relationship between growth and the market capitalization of the firm (Demirguc-Kunt and Huizingha, 1999). But positive relationship is expected and the following hypothesis is generated

H 6 Positive relationship exists between the growth and market capitalization of the firm.

3.3.8 Exchange rate

It is calculated as the exchange rate of dollar with the local currencies of the countries that are covered in the study. Various researchers have found the insignificant results between the two variables (Demirguc-Kunt and Huizingha, 1999). But positive relationship is expected and the following hypothesis is generated

H 7 Positive relationship exists between the exchange rate and market capitalization of the firm.

3.3.9 Year

Year dummy is used for each year by allotting 1 to 2005 and 10 to 2014. This variable is included because it is linked with the business cycle, which has an impact on the firm's performance and market capitalization. Demirguc-Kunt and Huizingha (1999) have included this variable and found the positive impact of year dummy on the market capitalization. Positive relationship is expected and the following hypothesis is generated

H 8 Positive relationship exists between the year and market capitalization of the firm.

IV. ANALYSIS AND DISCUSSION

4.1 Descriptive statistics

Descriptive statistics is providing the brief summary of the entire data. Table 1 is providing the results of descriptive statistics

Table 1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Marketcapi~n	440	1.68e+07	2.70e+07	8228	2.44e+08
ROA	440	.0190671	.113317	-1.176397	.4028479
ROI	400	2872968	3812516	-1871	2.20e+07
ROE	440	.0658924	1.753118	-34.66639	1.206365
CR	440	.7649513	.5233048	.0039433	4.135168
IN	440	.041824	.0376862	-.04948	.152
GDP	440	.0571427	.0492688	-.0708	.26173
ExchangeRa~r	440	2.393804	1.637795	.268	3.75055

4.2 Correlation

Correlation is providing the information that how different variables are moving together. This tool is also providing information about initial relationship among different variables. Table 2 is providing the results of correlation

Table 2 Correlation of Variables

	Market~n	ROA	ROI	ROE	CR	IN	GDP
Marketcapi~n	1.0000						
ROA	0.0224 0.6397	1.0000					
ROI	0.7368 0.0000	0.0006 0.9897	1.0000				
ROE	0.0315 0.5100	0.3988 0.0000	0.0270 0.5903	1.0000			
CR	-0.0034 0.9431	0.0470 0.3258	0.0092 0.8549	0.0047 0.9224	1.0000		
IN	-0.0077 0.8722	0.0171 0.7199	0.0048 0.9238	-0.0621 0.1932	0.1199 0.0118	1.0000	
GDP	0.0988 0.0382	0.0596 0.2125	0.0595 0.2347	0.0419 0.3811	0.2394 0.0000	0.2720 0.0000	1.0000
ExchangeRa~r	0.4711 0.0000	-0.0303 0.5267	0.5162 0.0000	0.0338 0.4794	0.2274 0.0000	0.1520 0.0014	0.1952 0.0000

The above table is highlighting that there is no multicollaniarity issue among different variables.

4.3 Hausman test

Hausman test is used to find what model should be applied such as fixed or random effect model. The results of Hausman test is provided below

Table 3 Hausman test

	Coefficients (b) FE	(B) RE	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
ROA	-7811393	-8148184	336791	.
ROI	2.222269	3.09519	-.8729216	.2581137
ROE	42029.6	-141805.5	183835.1	71953.11
CR	-1.58e+07	-7654431	-8103735	4195023
IN	-8.98e+07	-8.11e+07	-8634984	.
GDP	-3.81e+07	-2.46e+07	-1.35e+07	2592045
ExchangeRa~r	-4.68e+08	5181949	-4.73e+08	2.45e+08
Yearsdummy	-1281478	-1417514	136036.2	.
D2006	-6918486	-7844796	926309.9	.
D2007	-830935.6	-1156687	325751.5	.
D2008	-1.04e+07	-1.09e+07	434299.6	403238.1
D2009	-1.68e+07	-1.65e+07	-323847.1	.
D2010	-1.18e+07	-1.15e+07	-293398.3	.
D2011	-1.01e+07	-9424287	-721361.8	113587.3
D2012	-9588527	-9039896	-548631.1	.
D2013	-3964841	-3394984	-569856.3	.

Significant p value has been generated so fixed effect model will be used instead of random effect model.

4.4 Multiple regression analysis

Table 4 is providing the results of multiple regression that is used for the current study to explore the impact of various independent variables on the dependent variable.

Table 4 Regression analysis results

Marketcapitalization	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ROA	-7811393	5978290	-1.31	0.192	-1.96e+07	3947211
ROI	2.222269	.4921505	4.52	0.000	1.254266	3.190272
ROE	42029.6	381985.9	0.11	0.912	-709292.5	793351.7
CR	-1.58e+07	5486190	-2.87	0.004	-2.65e+07	-4967466
IN	-8.98e+07	2.39e+07	-3.76	0.000	-1.37e+08	-4.28e+07
GDP	-3.81e+07	1.99e+07	-1.91	0.056	-7.73e+07	1035212
ExchangeRatetoDollar	-4.68e+08	2.45e+08	-1.91	0.057	-9.49e+08	1.36e+07
Yearsdummy	-1281478	309497.8	-4.14	0.000	-1890225	-672732
D2006	-6918486	2586612	-2.67	0.008	-1.20e+07	-1830920
D2007	-830935.6	2572248	-0.32	0.747	-5890249	4228378
D2008	-1.04e+07	2886853	-3.61	0.000	-1.61e+07	-4740542
D2009	-1.68e+07	2666265	-6.30	0.000	-2.21e+07	-1.16e+07
D2010	-1.18e+07	2311032	-5.11	0.000	-1.64e+07	-7268309
D2011	-1.01e+07	2373173	-4.28	0.000	-1.48e+07	-5477892
D2012	-9588527	2401545	-3.99	0.000	-1.43e+07	-4864965
D2013	-3964841	2476157	-1.60	0.110	-8835154	905473.2
D2014	0	(omitted)				
_cons	3.79e+09	9.05e+08	4.19	0.000	2.01e+09	5.57e+09

R square is approximately 55 percent that highlights that independent variables of the study have 55 percent effect on market capitalization. The F statistics is also significant, which shows that the model is highly significant.

ROA is negatively linked with market capitalization but insignificant results have been observed so the hypothesis is rejected. It is stated that no relationship exists between ROA and market capitalization for the Middle Eastern banks. These results are not in line with empirical results because the other studies have observed positive relationship between the two variables (Bosire, 2006; Ghosh, 2003; Ross, 2002).

Significant positive results have been observed between ROI and the market capitalization so the hypothesis is accepted and it is stated that positive relationship exists between ROI and market capitalization for the Middle Eastern banks. These results are in line with the empirical results where the researchers have found the significant positive relationship between these two variables (Barrios and Blanco, 2003; Goddard, Molyneux and Wilson, 2004; Rochet, 1992).

Insignificant positive results have been observed between ROE and the market capitalization so the hypothesis is rejected and it is stated that no relationship exists between ROE and market capitalization for the Middle Eastern banks. Current results are not in line with the empirical results because other researchers have found the positive relationship between the two variables (Ward and Price, 2006; Wangechi, 2010).

Significant negative results have been observed between credit risk and the market capitalization so the hypothesis is accepted and it is stated that negative relationship exists between the two variables for the Middle Eastern banks. Results are also consistent with the empirical results as other researchers have also found the significant negative relationship between the two variables (Angbazo, 1997; Ahokpossi, 2013).

Significant negative results have been observed between inflation and the market capitalization so the hypothesis is rejected and it is stated that negative relationship exists between the two variables for the Middle Eastern banks. Results are not in line with the empirical results because other researchers have found the positive relationship between the two variables (Dias, 2013).

Insignificant negative results have been observed between growth and market capitalization. The hypothesis is rejected and it is stated that no relationship exists between the two variables for the Middle Eastern banks. Current results are consistent with the empirical results as other researchers have found the insignificant results between the two variables (Demirguc-Kunt and Huizingha, 1999).

Exchange rate is negatively linked with market capitalization. The hypothesis is rejected as insignificant results have been observed. Furthermore, it is stated that no relationship exists between the two variables for the Middle Eastern banks. Current results are also consistent with the empirical results because insignificant results have been observed by other researchers between these two variables (Demirguc-Kunt and Huizingha, 1999).

Significant negative results have been observed between year dummy and market capitalization for eight years out of ten years. Based on the results the hypothesis is rejected between the two variables.

V. CONCLUSION

Panel data has been collected for 44 Middle Eastern banks that are operated during 2005 to 2014. Secondary data is collected through DataStream database and from the annual reports of the selected banks. The study is conducted to investigate the impact of profitability and different other bank related and macroeconomic factors on the market capitalization of the Middle Eastern banks. Different statistical tools have been utilized to analyze the data. Results of Hausman test have explained that fixed effect model is appropriate for the analysis. The F statistic has shown that the model is highly significant. R square is approximately 55 percent, which highlight that the independent variables have 55 percent explanatory capacity to predict the outcomes of dependent variable.

The results of multiple regression have shown that market capitalization has positive relationship with ROI while negative relationship with credit risk, inflation, and year dummy for the Middle Eastern banks. Furthermore, no relationship has been observed between market capitalization and the ROA, ROE, growth and exchange rate for the Middle Eastern banks.

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