

## **An Empirical Study on Effect of Profitability Ratios & Market Value Ratios on Market Capitalization of Commercial Banks in Jordan**

**Dr. Mohammad Abdelkarim Yousef Almumani**

Associate Professor  
Financial Management  
Administrative Sciences Department  
Community College  
King Saud University  
Kingdom of Saudi Arabia

### **Abstract**

*This study investigates the effect of profitability ratios and market value ratios on the market capitalization for Jordanian listed commercial banks. Data for Jordanian commercial banks for the years from 2010 up to 2016 were used. Market capitalization was measured by the number of its subscribed shares multiplied by its market Closing Price per share as the dependent variable. The independent variables of the study were Return on Equity and Return on Assets as measures profitability, and Earning Per Share, Price Earnings Ratio, and Dividend Payout Ratio as measures of market value. The results of the study revealed that return on equity and dividend payout ratio are the most influencing factors in determining market capitalization of the selected commercial banks during the study period.*

**Keywords:** Profitability ratios, Market value ratios, Market capitalization Return on Equity, Return on Assets, Earning Per Share, Price Earnings Ratio, Dividend Payout Ratio

### **1. Introduction**

Capital Formation is an integral part of economic growth and development and it plays an important role in the economic theory of production and distribution. It is assumed that capital accumulation can facilitate the faster rate of economic growth. The growth of the stock market is measured by its market capitalization. The size of the market capitalization and its growth rate pose a major influence on the growth and development of the economy (Ologunde et al.2006).

In today's unbalanced economic environment and high precariousness of stock price indices, the financial performance of the companies has become a foreseeable mediator for creating organization values and thereby increasing shareholder's wealth.

The present study is undertaken to examine the effect of selected financial variables on market capitalization. Here, market capitalization is taken as a dependent variable and the profitability ratios and market value ratios variables as independent variables

#### **1.1 Market capitalization**

The market capitalization of a company refers to the number of its shares outstanding multiplied by its market price per share. The common yardstick to quantify the value of the company is market capitalization or more generally, the wealth created by a firm. It represents the collective value of a company or stock. The success or failure of crucial decisions like mergers, acquisitions, and takeovers has a great impact on the value of a company. Now a day's market capitalization has become a universally accepted indicator of business valuation. It represents the aggregate value of company or stock(Jaya & Sunder 2012). The Market capitalization considered as an important market indicator to the value of shares and the value of companies in general and there are studies which carry out on this term such as (Toramane, 2009; and Dias 2013). the studies indicated that the significant role of profitability indicators in explaining the market variables and the changing of the market price and other market ratios, for instance;( Peles, and Schneller, 1982; Olajire, 2001; and Abdolmohammadi, 2005).

## 1.2 Profitability Ratios

Profitability is an aptitude for a given investment to earn a return from its use. Profit cannot be ignored since it is both a measure of the success of the business and means its survival and growth. profitability ratios give a worthy indicator that might help users to make their decisions and managerial tasks. Accordingly, many studies conducted in order to examine the profitability ratios effect on many variables as it's a critical indicator for the firm's survival, growth, market capitalization and various other variables. See (Narayan, et al, 2011; Burge, 2014; Graham, and King, 2013; and Diéguéz, et al, 2014). The profitability variables chosen for the present study are: Return on Assets ratios and Return on Equity ratios

## 1.3 Market Value Ratios

Market value ratios examine the economic status of a company in the wider marketplace. Market value ratios are pertinent to the publicly traded firm.

## 1.4 Objectives of the Study

The major objectives of this study are:

1. To study the effect of Profitability Ratios mainly; Return on Equity (ROE), and Return on Asset (ROA) on market capitalization in the Jordanian commercial banks.
2. To study the effect of Market Value Ratios mainly; Earning Per Share (EPS), Price Earnings Ratio(PER), Dividend Payout Ratio(DPR) on market capitalization in the Jordanian commercial banks.
3. To find out how much the market capitalization is explained by the profitability ratios & market value ratios.
4. To find out which financial performance effect significantly on market capitalization.

## 2. *Review of Literature*

This section is where you will be providing all the relevant readings from previous works. Provide brief summaries or descriptions of the works of other authors. Make sure that your research materials are from credible sources such as academic books and peer-reviewed journals. Also, make sure that your reading materials are directly relevant to the topic of your research paper. The literature review typically includes the names of the authors, the titles of their works and the year of the publication of these works. The relationship between market capitalization and financial performance has been studied in recent years in many studies world over, with many methods and with different results. The results of the empirical studies are mixed.

The study of Qurashi & Zahoor( 2016) was conducted to examine the impact of profitability, bank and macroeconomic factors on the market capitalization of the Middle Eastern banks. For the purpose of the study, panel data for 44 middle eastern banks that are operated during 2005 to 2014 in different middle eastern countries were selected. The main findings were that:

- Market capitalization has a positive relationship with ROI.
- Market capitalization has a negative relationship with credit risk, inflation, and year dummy for the middle eastern banks.
- Market capitalization has no relationship with the ROA, ROE, growth and exchange rate for the middle eastern banks.

The Study Munther Al-Nimer& Nimer Alslilhat ( 2015) Conducted to investigate the effect of profitability ratios on market capitalization in Jordanian insurance companies listed on Amman stock exchange. 25 Jordanian insurance companies listed on Amman stock exchange (ASE) has been selected & a time series data collected over the period 2010 – 2013. The main findings were that:

- There is an effect of Return on Investment upon market capitalization for the companies operating in the insurance sector listed in the ASE.
- There is no effect of Return on Equity upon the market capitalization for the companies operating in the insurance sector listed in ASE.
- There is an effect of Return on Asset upon the market capitalization of the companies operating in the insurance sector listed in ASE.
- There is an effect of profitability measured by (ROA, ROI, ROE) combined in the market capitalization for the companies operating in the insurance listed in (ASE).

The study of Prasad & Shrimai ( 2015) focused on the effect of profitability and market value ratios on market capitalization of infrastructural companies in India.

A sample of 23 listed infrastructural companies of CNX infrastructure Index has been taken for the study. The collected data have been analyzed with the help of financial ratios & in the light of relevant statistical tools like mean, standard deviation, the coefficient of variation, correlation, multiple correlations, multiple regressions and Z-Score for normalization of financial values. The main findings of the study were that:

- There is a positive relationship between market capitalization and profitability ratios of the selected companies during the study period (2010 – 2014).
- There is a significant relationship between Return on Capital employed (ROCE), Return on Equity and Earnings Per Share (EPS) with Market capitalization.

The study of Jaya& Sunder (2012) focused on the relationship of market capitalization & macroeconomic factors (with special reference to Indian information technology industry). The study adopted a time series approach in the analysis and the quarterly data have been used for the period 2003 to 2011. multiple regression analysis was employed in the analysis of data. The main findings of the study were that 91% of the variation in the market capitalization for the study period has been explained by the variables Equity and Liquidity.

The study of Shobhana & Karpagavalli (2011) Conducted to determinants of the market price of 'A' Group and 'B' Group shares of the banking companies listed at Bombay stock exchange. Correlation and multiple regression analysis were employed in the analysis of data and the study covers a period of ten financial years. The main findings of the study were that market capitalization and dividend yield have a sign on the equity prices of 'A' group shares and in the case of group 'B' shares book value per share emerged significantly.

The study of Kennrth (2009) used multiple regression analysis to determine which of several important factors yield the best model for market capitalization by using multiple regression analyses. The study focused on some of the most successful companies in the U.S. by using multiple regression analyses. The main findings of the study were that brand value had the high correlation with the market capitalization and the brand value of small companies and had a strong relationship with market capitalization than bigger companies. The study of Prasetyantoko & Rachmadi (2008) focused on the determinants of corporate performance of listed companies in Indonesia. 238 listed companies in Jakarta Stock Exchange were chosen as a sample. The study used ordinary least square (OLS) for panel data as a method for estimation procedures. The main findings of the study were that:

- The size was positively related to the firm's profitability but it was not related to market capitalization.
- The ownership factor weighted heavily firm performance by providing that firm with predominant foreign staked much higher performance in both measurements namely return on assets (ROA) and market capitalization growth than domestically owned firms.

### **3. Methodology**

This study will attempt to answer the following question: Do profitability ratios & market value ratios affect the market capitalization in the Jordanian commercial banks? And hence, the research methods used in this study are descriptive and verification methods. The classical assumption of normality test, multicollinearity test, autocorrelation test, and homogeneous test. the data were analyzed using regression analysis to see the strong effect of independent variable on the dependent variable. Analysis of variance (ANOVA) was used in testing the hypotheses and to measure the differences and similarities between the sample banks according to their different characteristics.

#### **3.1.The sample of the study**

Population in this study are all commercial banks listed in Amman Stock Exchange in the period of 2010-2017 which total 13 commercial banks. Islamic banks are excluded from research object

#### **3.2.Data**

This study is a survey of secondary data. This study utilized a content analysis by taking time series data collected over a period of seven years (2010-2016) from the bank's financial report that's reported on Amman Stock Exchange.

#### **3.3. Hypotheses**

For the purpose of this study and based on the theories and concepts which are previously discussed, we can build the following hypotheses:

H1: There is an effect from Return on Equity and Return on Assets on Market Capitalization in most active and consistent stocks in 7 years on Amman Stock Exchange.

H2: There is an effect of Earning Per Share (EPS), Price Earnings Ratio(PER), Dividend Payout Ratio(DPR) on market capitalization in most active and consistent stocks in 7 years on Amman Stock Exchange.

H3: there is a combined effect of profitability ratios and market values ratios on market capitalization in most active and consistent stocks in 7 years on Amman Stock Exchange.

### **3.4. Research Variables**

After going through the literature the following variables were chosen. Details are given in table.1.

**Table 1. Explanation of dependent and independent variables along with their proxies**

Abbreviation	Variables	Type	Unit	Equation
MC	Market capitalization	Dependent	Jordanian Dinar	number of its subscribed shares multiplied by its market Closing Price per share
ROA	Return on Assets	Independent	%	Annual Earnings Divided by Total Assets
ROE	Return on Equity	Independent	%	Annual Earnings Divided by Total Shareholders Equity
EPS	Earnings Per Share	Independent	%	Net Income Pertains to Shareholders Divided by No. of Subscribed Shares
DPR	Dividend Payout Ratio	Independent	Times	Proposed Cash Dividends Divided by No. of Subscribed Shares
PER	Price Earnings Ratio	Independent	%	Market Capitalization Divided by Net Income Pertains to Shareholders

### **3.5. Research Models**

Multiple regression models is used to examine the effects of profitability and market values ratios on market capitalization as follow:

Market capitalization as a function of profitability ratios and market value ratios

Model 3:  $MC = \beta_0 + \beta_1 ROE + \beta_2 ROA + \beta_3 EPS + \beta_4 PER + \beta_5 DPR + \epsilon$

MC represents the market capitalization

ROE represents the return on equity

ROA represents the return on assets

EPS represents earnings per share

PER represents price earnings ratio

DPR represents dividend payout ratio

$\beta_0$  = constant term

$\beta_1$  to  $\beta_5$  = regression coefficient for respective variables

$\epsilon$  = Error terms

## **4. Results**

### **4.1 Descriptive Statistics**

Table 2 shows the descriptive analysis of the dependent variable profitability and the independent variables. It includes the mean, minimum, maximum, and the standard deviation of the selected banks.

**Table2. Descriptive analysis of all the dependent variable and the independent variables**

	N	Minimum	Maximum	Mean	Std. Deviation
MC	91	43692296	5329320000	676160097.05	1174736917.933
ROA	91	-.001659	.025055	.01263393	.004962302
ROE	91	-.014479	.168744	.09058139	.036125556
EPS	91	-.016066	.648363	.21606705	.143842234
PER	91	-.684692	1.943153	.14722273	.225386983
DPR	91	.000000	.350000	.11576134	.092007351
Valid N (listwise)	91				

Return on assets (ROA) gives an idea as to how efficient a company's management is at using its assets to generate earnings. The higher the ROA number, the better, because the company is earning more money on less investment. ROA of the commercial banks operating in Jordan has obtained mean 1.26% over the study period. This ratio was minimum (-0.17%) and maximum (2.5%) during the study period in term of standard deviation, this ratio registered (0.5%)

Return on equity (ROE) measures a firm's profitability by revealing how much profit a firm generates with the money shareholders have invested. The higher the return on equity, the more efficient the company's operations are making use of those funds. ROE of the commercial banks operating in Jordan has obtained mean 9.1% over the study period. This ratio was minimum (-1.5%) and maximum (16.9%) during the study period in term of standard deviation, this ratio registered (3.6%)

Earnings per share (EPS) serves as an indicator of a company's profitability. It is an important variable in determining a share's price. The EPS is an important fundamental used in valuing a company because it breaks down a firm's profits on a per share basis. EPS of the commercial banks operating in Jordan has obtained mean 21.6% over the study period. This ratio was minimum (-1.6%) and maximum (64.8%) during the study period in term of standard deviation, this ratio registered (14.4%)

The price-earnings ratio (P/E ratio) is the ratio for valuing a company that measures its current share price relative to its per-share earnings. In general, a high P/E suggests that investors are expecting higher earnings growth in the future compared to companies with a lower P/E. A low P/E can indicate either that a company may currently be undervalued or that the company is doing exceptionally well relative to its past trends. PER of the commercial banks operating in Jordan has obtained mean 14.7% over the study period. This ratio was minimum (-68.5%) and maximum (194.3%) during the study period in term of standard deviation, this ratio registered (22.5%)

The dividend payout ratio is the percentage of earnings paid to shareholders in dividends. The payout ratio is useful for assessing a dividend's sustainability. A steadily rising ratio could indicate a healthy, maturing business. DPR of the commercial banks operating in Jordan has obtained mean 21.6% over the study period. This ratio was minimum (0%) and maximum (35%) during the study period in term of standard deviation, this ratio registered (9.2%)

#### 4.2 Variables Correlation Test:

**Table 3. Pearson's Correlation Matrix of Jordanian commercial banks**

		MC	ROA	ROE	EPS	DPR	PER
MC	Pearson Correlation	1	.190	.294**	.579**	.673**	.114
	Sig. (2-tailed)		.071	.005	.000	.000	.280
ROA	Pearson Correlation		1	.838**	-.075	-.013	.089
	Sig. (2-tailed)			.000	.481	.901	.402
ROE	Pearson Correlation			1	.016	.034	.085
	Sig. (2-tailed)				.883	.749	.422
EPS	Pearson Correlation				1	.783**	- .128
	Sig. (2-tailed)					.000	.226
DPR	Pearson Correlation					1	- .035
	Sig. (2-tailed)						.745
PER	Pearson Correlation						1
	Sig. (2-tailed)						

\*\*. Correlation is significant at the 0.01 level (2-tailed).

The Pearson's co-efficient is used to examine the relationship between the study variables at 1% and 5% level of significance. It is clear from table 3 that EPS (.579) and DPR (.673) are strongly positive and statistically significant (.000) correlated with MC which means that these variables move together with market capitalization. However, ROA (.190) and PER (.114) are weakly positively correlated with MC and statistically insignificant.

ROE is found to be weakly positive (.294) and statistically significant (.005) correlated with MC. The aim of this test is to examine the lack of high correlation between the variables of the study. To avoid multicollinearity problem, variables with a value of more than 80% will be omitted and hence, highly correlated ROA (.838) variable is omitted. and the variables ROE, EPS, PER and DPR are selected to the final regression model.

#### 4.3 Regression Test

The regression coefficients of the model were estimated by using regression analysis. The main findings From the regression analysis as depicted in Table.6 indicates that ( $R=0.743$ ), which indicates that the correlation among independent and dependent variables is positive.

**Table 6. ANOVA, Model Summary & Coefficient for Each Variable with the dependant Variable**

Model 3: $MC = \beta_0 + \beta_1 ROE + \beta_2 ROA + \beta_3 EPS + \beta_4 PER + \beta_5 DPR + \epsilon$						
Variables	B	Beta	T	Sig	Tolerance	VIF
(Constant)	-1.292E9		-4.858	.000		
ROE	8.512E9	.262	3.609	.001	.991	1.009
EPS	1.425E9	.175	1.483	.142	.376	2.657
PER	6.925E8	.133	1.808	.074	.965	1.036
DPR	6.797E9	.532	4.556	.000	.382	2.618
R	.743a					
R Square	.552					
Adjusted R Square	.531					
F	26.444					
Sig.Prob (F-statistic)	.000a					
Durbin-Watson	2.289					

Moreover, the R-Square which is a measure of the overall fitness of the model indicates that the model is capable of explaining about 55.2% of the variability the market capitalization of the listed commercial banks. This means that the model explains about 55.2 % of the systematic variation in the dependent variable, which means that about 44.8% of the variations in MC of the listed commercial banks are accounted for by other factors not captured by the model. This result is complemented by the adjusted R- square of about 53.1%, which in essence is the proportion of total variance that is explained by the model. Further, The Durbin- Watson statistics value is 2.289 which means that the error term is independent and is free of autocorrelation. Similarly, findings from the Fishers ratio (i.e. the F-Statistics which is a proof of the validity of the estimated model) as reflected in Table.4, indicates that the F is about 26.444 and a p-value that is equal to 0.000 (P-value =0.000) which is less than 0.05 at 5% level of significance, this invariably suggests clearly that simultaneously the explanatory variable is significantly associated with the dependent variable. That is, it strongly determines the behavior of the market capitalization. The significance of independent variables is also been tested individually since the p-value of PER (.074) and the p-value of EPS(.142) is greater than 5% level of significance, so we conclude that there is no significant effect of PER and EPS on market capitalization. However, the p-value of ROE( .001) and the P-value of DPR(.000) is less than 5% level of significance, so we conclude that ROE and DPR are highly significant on market capitalization, so we accept the hypotheses and conclude that there is a significant effect of market value ratios on market capitalization of listed commercial banks.

#### 5. Conclusion

This study aims to investigate the effect of profitability ratios and market value ratios on the market capitalization for Jordanian listed commercial banks. Related data was gathered for the period 2010-2016 from the Amman stock exchange archives. Thus, the study draws out a relationship of market capitalization with five other variables namely ROE, ROA, EPS, PER and DPR. Multiple regression model is created to examine the effects of profitability and market values ratios on market capitalization. A linear regression equation is generated to help observe and predict future trends. Findings from the regression analysis indicates that the ROE and DPR are has been found most significant while other variables were not that much significant. Therefore we can conclude that return on equity and dividend payout ratio are the major determinants of market capitalization of the listed commercial banks in Jordan. These findings are quite instrumental and identical with the empirical findings. The results of this study can be considered reliable as it has included all the listed banks in Amman stock Exchange. Thus, these findings seems to be particularly useful for investors and share portfolio managers.

This Study recommended that investors and portfolio managers should monitor the ROE ratio and DPR before they expand their portfolios.

## **6. References**

- A.E. Oluleye, K.A. Olajire, (2001), Productivity and profitability trends in an environment of reform Integrated Manufacturing Systems, Vol. 12 Iss: 3, pp.205 – 210.  
<https://www.emeraldinsight.com/doi/full/10.1108/09576060110391165>
- Alexandra Dias, (2013), Market Capitalization and Value-at-Risk, *Journal of Banking & Finance*. (2013), Volume: 37, Issue12, Pages: 52485260.<https://www.sciencedirect.com/science/article/pii/S0378426613001982?via%3Dihub>
- Ana I. Irimia-Diéguéz, Juan Bernal González-Villegas, M. Dolores Oliver-Alfonso (2014), The Financial Performance of an Innovative Megaproject - Procedia - Social and Behavioral Sciences, Volume 119, 19 March 2014, Pages 417-426.<https://www.sciencedirect.com/science/article/pii/S1877042814021387?via%3Dihub>
- Cengiz Toraman, Aydemir, and Demirhan, O. Aydemir, E. Demirhan(2009), The Long Run Relationship Between Stock Market Capitalization Rate and Interest Rate: Co-integration Approach, *International Research Journal of Finance and Economics*, 23 (2009), pp. 208–215.  
<https://www.sciencedirect.com/science/article/pii/S1877042814044851?via%3Dihub>
- Gregory Burge, (2014), The capitalization effects of school, residential, and commercial impact fees on undeveloped land values *Regional Science and Urban Economics*, Volume 44, January 2014, Pages 1-13.  
<https://www.sciencedirect.com/science/article/pii/S0166046213000926?via%3Dihub>
- Jaya, M., & Sundar, K. (2012). A Study On The Relationship Of Market Capitalization And Macro Economic Factors (With Special Reference To Indian Information Technology Industry). *Zenith International Journal Of Business Economics & Management Research*, Vol.2 (Issue 11), 67.  
[http://www.zenithresearch.org.in/images/stories/pdf/2012/NOV/ZIJBEMR/7ZIJBEMR\\_NOV2012\\_VOL2\\_ISSUE11.pdf](http://www.zenithresearch.org.in/images/stories/pdf/2012/NOV/ZIJBEMR/7ZIJBEMR_NOV2012_VOL2_ISSUE11.pdf)
- Kenneth Ko. (2009). Multiple Regression Model for Market Capitalization. *Journal of Global Business Issues*, 21: 16-20.<https://search.proquest.com/docview/223741378?pq-origsite=gscholar>
- Mohammad J. Abdolmohammadi, (2005), Intellectual capital disclosure and market capitalization , *Journal of Intellectual Capital*, Vol. 6 Iss: 3, pp.397 – 416.<https://www.emeraldinsight.com/doi/fu/10.1108/14691930510611139>
- Munther Al-Nimer, M. & Nimer Alslihat, N. ( 2015). The Effect of Profitability Ratios on Market Capitalization in Jordanian Insurance Companies Listed in Amman Stock Exchange. *Journal of Economics and Sustainable Development*, Vol.6, No.6, 140 – 146.<http://www.macrothink.org/journal/index.php/jmr/article/view/1482>
- Ologunde, A., Elumilade, D., Saolu, T., 2006. Stock market capitalization and interest rate in Nigeria: A time series analysis, *International Research Journal of Finance and Economics*, Issue 4, pp.154-67.  
<https://www.ajol.info/index.php/epr/article/view/39274>
- Paresh Kumar Narayan, Sagarika Mishra, Seema Narayan,(2011), Do market capitalization and stocks traded converge? New global evidence, *Journal of Banking & Finance*, Volume 35, Issue 10, October 2011, Pages 2771-278.  
<https://www.sciencedirect.com/science/article/pii/S0378426611001154?via%3Dihub>
- Prasad, H., & Shrimal, K. (2015). An Empirical Study on Effect of Profitability and Market Value Ratios on Market Capitalization of Infrastructural Companies In India.GJRA-Global Journal for Research Analyses, Volume 4( Issue 5), 95-97.  
[https://www.worldwidejournals.com/global-journal-for-research-analysis-GJRA/file.php?val=May\\_2015\\_1432976237\\_34.pdf](https://www.worldwidejournals.com/global-journal-for-research-analysis-GJRA/file.php?val=May_2015_1432976237_34.pdf)
- Prasetyantoko and Rachmadi Parmomo. (2008). Determinants of Corporate Performance Of Listed Companies In Indonesia. MPRA Paper, No.6777: 25 July 2009  
<https://mpra.ub.uni-muenchen.de/6777/>
- Qurashi,M., & Zahoor,M.( 2016). Impact of profitability, bank and macroeconomic factors on the market capitalization of the Middle Eastern banks. *International Journal of Business and Management Invention*, Volume 5,( Issue 11), 56-62.  
[https://www.researchgate.net/publication/315217276\\_Impact\\_of\\_profitability\\_bank\\_and\\_macroeconomic\\_factors\\_on\\_the\\_market\\_capitalization\\_of\\_the\\_Middle\\_Eastern\\_banks](https://www.researchgate.net/publication/315217276_Impact_of_profitability_bank_and_macroeconomic_factors_on_the_market_capitalization_of_the_Middle_Eastern_banks)
- Roger C. Graham, Raymond D. King, (2013), Decision Usefulness of Whole-Asset Operating Lease Capitalizations, *Advances in Accounting*, Volume 29, Issue 1, June 2013, Pages 60-73.  
<https://www.sciencedirect.com/science/article/pii/S0882611013000096?via%3Dihub>
- Shobhana, V. K.,& Karpagavalli, R. (2011). Determinants Of Market Price Of Shares Of The Select Banking Companies Listed On Bombay Stock Exchange. *ACADEMICIA*, Volume 1 (Issue 3), 8-25.  
<http://www.indianjournals.com/ijor.aspx?target=ijor:aca&volume=1&issue=3&article=002>
- Yoram C. Peles, Meir I. Schneller, (1982) Financial Ratios and The Analysis of Marketing Policy, *European Journal of Marketing*, Vol. 16 Issue: 5, pp.12-21, <https://www.emeraldinsight.com/doi/pdfplus/10.1108/EUM0000000004849>