The Impact of Accounting Indicators and Growth on the Market Value

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Abstract   This study aims to investigate the impact of accounting indicators which are the return on assets, return on equity and earnings per share in addition to growth which is measured by sustainable growth rate on the market value which is measured by market share price, stock return and by market value to book value. By the application on the Jordanian Banks from 2002 to 2011, by using the simple regression test, and by using the least squares method, it was clear that all current accounting indicators and the current growth have a positive impact on the market share price and the market value to book value, and there is no effect of the current accounting indicators and the current growth on the stock market return. It also clear that there is a positive impact of future accounting indicators and the future growth on the market value depending on all of market value measurements, and that the best explanatory accounting indicators for the changes in the market value of the Jordanian banks is earnings per share.

Key words   Accounting indicators, market value, growth rate, return on assets, return on equity, earning per share

1. Introduction

Since (Ball and Brown, 1968) studied the relationship between accounting profits and market value of the shares that are measured by returns of share, and they came to the conclusion that there is a low explanatory relationship between profits and market value, there is an increased interest on the research on the relationship between accounting profits and market value by using different scales to measure profits and market value and they focused on those relationship as a scope of study, and they were followed by many researchers who studied this relationship from different angles, and it was necessary to work on the re-studying by researchers using a new model in the hope of finding new results are adding to the results of previous studies. The accounting profits have an informational content which reflects those important financial decisions that are taken by the decision-makers in the business and this information could be reflected in the financial market if investors in the financial market employed this information and reversed them on the market value of shares.

The analysis of profits is an important thing for shareholders. Profits mean the income that come to them through dividends (Gibson, 1992), and therefore, according to previous studies, it should be reflected on the market value of the shares in the financial market that are traded between investors who are working to identify market value and what will the future be depending on contents of the information that can benefit their investments.

When the company grows as a result of a financial decision such as detention of profits, then that growth will be reflected on the current value of the shares on the grounds that it is the result of a reflection of what will happen in the future. The present value of the shares is the sum of the future cash flows, and this will be reflected on the accounting profits when they occur and they won't reflect the historical accounting profits. Timing the recognition process of the economic event does not usually match the timing of the occurrence of the economic event.

When Gordon presented the valuation model of financial stocks, he depended on the dividends as a delimiter key to the value of the shares that come through the profits that have been achieved during the financial year. The model was based on what affects the market value of the shares is the profits that will be distributed at the end of the financial year and that the decision of distributing is based on what has been achieved of the profits also at the end of the financial year, and as shown in the following model:

$$\text{The intrinsic value per share} = \frac{\text{Cash dividend} + 1}{\text{Required rate of return on investment - the growth rate of dividends}} \qquad (1)$$

We find from this model that the value of firm is determined by profits and growth, and that the profits and growth are determined by financial market policies and market strategies (Palepu *et.al*, 2000).

The idea of the study is based on the results of previous studies and the collection of more than one measurement of accounting profits, and more than one measurement of the value of the market and considering the relationship between these indicators together. The idea of the study stems also from the study conducted by (Debi'e and Abu Nassar, 2001) who worked together to examine whether the accounting profits precede market value in reflecting the financial decisions and they reached a conclusion by which there is no relationship between the market value which is measured by returns of shares and accounting profits achieved at the end of the financial year, but the relationship is stronger after three years, which means that the market value precedes the accounting profits in reflecting the appropriate information to determine the value of the firm by three financial years.

The idea is based on the necessity of measuring the relationship between the accounting profits and market value of the shares asynchronously, but if we measured the relationship simultaneously, then the relationship will be weak.

In addition, we are working on this study to measure the impact of growth achieved as a result of the firm operations on the market value and the relationship of that growth accounting profits.

2. Objectives of the study

This study aims to:

1. Measure the impact of current and future accounting indicators on the market value of shares of Jordanian banks.

2. Measure the impact of current and future growth on the market value of the shares of Jordanian banks.

3. Decide which of the accounting performance measurements is the most influential on the market performance of banks and thus become a useful indicators to the investors in the financial market to direct their investments towards the banks.

3. The importance of the study

The importance of this study stems from the importance of the relationship of each of the variables of the study in each other as stated in the previous studies.

The importance of the study also stems from the fact that it is the first study (according to researchers) which is based on the study of the impact of accounting indicators and growth on the market value and the application on the banking sector of Jordan and using different accounting measurements of profitability. This study is also based on the findings of the (Debi'e and Abu Nassar, 2001) that current profits affect the current market value and the financial decision that would be taken now will be reflected immediately in the market value and it will be reflected after at least three years in the profits generated the firm.

4. The Problem of the study

The Problem of the study can be formulated as the following questions:

1. Is there a relationship between the performance of Jordanian banks and the growth?

2. Does the current and future accounting indicators affect the market value of shares of Jordanian banks?

3. Does the current and future growth of the Jordanian banks affect the market value?
4. Which of the accounting indicators reflects the market performance of Jordanian banks?

5. Literature Review

Many researchers over the past years were interested in the relationship between profitability accounting indicators and market value. A lot of researchers linked between them and they measured those relationships in different environments and they reached to different results by which all of them strengthen the theoretical foundation for that relationship.

Lambert & Larcker (1987), the researchers tried to study the relationship between accounting performance and size and the returns on equity and the incentive schemes used by managers and stock market return through the sample consisted of 370 U.S companies from several sectors. The results showed the presence of a strong and positive relationship between directors' reward and the accounting returns, and the existence of a positive and medium relationship between rewards and stock market return.

This indicates the managers bonuses are based on accounting performance.

Hanlon (1991), the aim of this study was to define the relationship over time between the accounting rate of return and the annual rate of return of the market shares, and that the application was on a sample of 222 British companies. The result showed that there is a strong correlation and has a statistical significance between the accounting rate of return and stock market return.

Al-Khalayleh (1999), this study aimed to test the relationship between profits measured earning per share and stock return measured by the change in the share price in the long term . The researcher assumed that the relationship is a positive relationship and that the relationship is stronger whenever the period is longer. The study sample included 41 industrial and service companies listed on the Amman Stock Exchange and the years of 1985-1994. The results indicate the existence of a relationship which weak and not statistically significant between earnings and stock returns, but that relationship becomes better and would have a better explanatory power with longer period of time.

Al-Khalayleh (2001), this study aimed to test the impact of accounting performance indicators measured by the return on equity, return on assets, profit margin and asset turnover on stock return.

The study sample included 40 industrial and service companies listed on the Amman Stock Exchange for the period from 1984 to 1996. The results of correlation analysis and regression analysis that there is a positive relationship and statistically significant between the stock return and all of the return on equity and return on assets.

Debi'e and Abu Nassar (2001), this study aimed to test whether stock prices precede the accounting profits in reverse of the appropriate information to determine the value of the firm.

The researchers used a sample of 47 industrial and service companies, from the year 1991 to 1998. The results showed that the stock price precede accounting profits in reverse for information extends to the three previous years, and that the presenting of returns to previous financial periods when measuring the relationship between stock returns and profits improves strength of that relationship.

Ben Naceur & Goaied (2002), the researchers tried to reach the most important determinants of the market value of shares and the application of a sample of 28 companies listed in the Tunis Stock Exchange between the years of 1990-1996 . The researchers have come to a relationship which is positive and that has statistically significant between the stock dividend and market value to book value, and the existence of a relationship which is positive and statistically significant between profitability as measured by return on assets and market value.

Ramezani et al., (2002), the goal of researchers through this study was to analyze the relationship of growth and profitability and value. The researchers of this study applied it on a sample of U.S. companies and from 1990 to 2000. The results concluded that the existence of an inverse relationship between growth and profitability and growth in sales and revenues destroyed the value of the firm. Researchers have justified this result because of the increased book value for the market value of the shares.

Olson & Pagano (2005), the aim of this study was to investigate and analyze the impact of growth on the performance of U.S. banks and on abnormal return through the application on the banks that merged with each other between 1987 and 2000. The study concluded that the banks that merged during that period

depended on growth as the main determinant of their performance which is measured by the change of difference between stock return and market return.

Pandey (2005), this study aimed to investigate the effect of profitability and growth on the value of shareholder wealth as measured by market value of the shares divided by the book value of the shares , in Malaysian companies from the year 1994 to 2002. The researcher applied the model that consists of several variables in addition to growth and profitability. The researcher found that the profitability has a positive impact on the value of shareholder wealth, and the researcher found that growth affects negatively the value of shareholder wealth. The researcher justified the result that relationship of growth and value is the relationship that depends first and foremost on the value of the return on equity (ROE) compared with the cost (K), if the ROE is less than K, the growth of which depends on their account to re-invest profits adversely affect the value.

6. Research Methodology

6.1 Sample and data

The population of the study includes all Jordanian banks. The sample data are all banks sector, without exception, and they were subject to the availability of data throughout the study period. The sample data are ten years of panel data ranging from 2002 to 2011.

6.2 Hypotheses

The hypotheses of the study are to test the relationship between the variables of the study in order to get to the results that may be consistent with the fact of the theoretical grounds of the subject, or may differ with it.

H01: There is no relationship between accounting indicators and the growth rate of the Jordanian banks.

H02: there is no statistically significant effect for the current accounting indicators on the market value of the Jordanian banks.

H03: there is no statistically significant effect for the future accounting indicators on market value of Jordanian banks.

H04: there is no statistically significant effect for the rate of current growth on the market value of the Jordanian banks.

H05: there is no statistically significant effect for the rate of future growth on the market value of the Jordanian banks.

6.3 Variables of the study

This study is using the following variables in order to serve the purposes of the study:

6.3.1 The independent variables

This study is using a number of Independent variables:

1. Accounting indicators that measure the profitability in order to serve the objectives of the study as stated in the previous studies.

A. Return on Assets = Net Income/Total Assets
B. Return on Equity = Net Income/Equity
C. Earning per share = Net Income attributable to ordinary shareholders/Number of ordinary shares
2. Growth, growth was measured in this study (Palepu *et al.*, 2000):

Growth = sustainable growth rate = ROE × percentage of detention (2)

6.3.2 Dependent variables

This study is using a number of scales to measure the market value of the shares as stated also in previous studies.

A. Market share price = market price per share at the end of the year.

B. Stock return = $\dfrac{\text{Market share price on the day (t) - Market share price on the day (t-1)}}{\text{Market share price on the day (t-1)}}$ (3)

C. Market value to book value = $\dfrac{\text{Market value per share}}{\text{Book value per share}}$ (4)

6.4 Statistical methods and models used for the study

The study is using two main tests in order to test the relations according to the study hypotheses which are:

1. Pearson correlation test.

2. Testing simple linear regression using the method of ordinary least squares (OLS) and through the use of panel data in order to test hypotheses of the study according to the following models:

MV = a + b ROA (t) + ei
MV = a + b ROA (t +1) + ei

Where:
MV: market value, market value is taken by several scales to measure them, namely:
SP: market share price at the end of the year.
SR: stock return
M/B: market value to book value.
And where:
ROA (t): current return on assets, or return on assets at time (t).
ROA (t +1): future return on assets, or return on assets at time (t+1)

MV = a + b ROE (t) + ei
MV = a + b ROE (t+1) + ei

Where:
ROE (t): current return on equity, or return on equity at time (t).
ROE (t+1): future return on equity, or return on equity at time (t+1).

MV = a + b EPS (t) + ei
MV = a + b EPS (t +1) + ei

Where:
EPS (t): current earnings per share, or earning per share at time (t).
EPS (t +1): future earnings per share, or earning per share at time (t+1).

MV = a + b GR (t) + ei
MV = a + b GR (t+1) + ei

Where:
GR (t): rate of current growth, or growth rate at time (t).
GR (t+1): rate of future growth, or rate of future growth at time (t+1).

7. Results

7.1 Results of correlation analysis

7.1.1 The relationship between current accounting indicators and rate of current growth and market value

The results contained in Table (1) indicates the existence of a positive relationship and statistically significant among accounting indicators and growth rate, and therefore we reject the first hypothesis

argument that there is no relationship between indicators of accounting and rate of growth, and this confirms that the financial decision taken to hold the profits and then growth in future earnings may be affected significantly depending on accounting profitability. The results also indicate a relationship between all the accounting indicators under study and market share price and market value to book value. Results did not refer to the existence of a relationship between accounting indicators and stock returns, and this confirms that the measurement of the relationship between accounting indicators and stock returns for the same period of the market did not come with positive results, and this is what (Debi'e and Abu Nassar, 2001) said. We also noted from the table that earning per share is the most closely related accounting indicators to market value of Jordanian banks.

Table 1. Correlation matrix

Variable	ROE (t)	EPS (t)	GR (t)	SP	SR	M / B
ROA (t)	*.552	*.600	*.467	*.359	.095	*.407
ROE (t)	1	*.626	*.936	*.498	.104	*.489
EPS (t)		1	*.551	*.698	.139	*.636
GR (t)			1	*.407	.134	*.477

* Denotes 1% level of significance

7.1.2 The relationship between future accounting indicators and rate of future growth and market value

The results in Table (2) indicates the existence of a relationship which is positive and statistically significant among all future accounting indicators and rate of future growth, and the market value of all standards and in particular the market return, and this confirms with (Al-Khalayleh, 1999, 2001) study and (Debi'e and Abu Nassar, 2001) study that the relationship between accounting indicators and stock return become more powerful in the longer term. We also note from the table that earning per share is the most accounting indicators linked to the market value of Jordanian banks even when different methods of measuring the market value were used.

Table 2. Correlation matrix

Variable	ROE (t+1)	EPS (t+1)	GR (t+1)	SP	SR	M / B
ROA (t+1)	*.548	*.599	*.466	*.278	*.269	*.301
ROE (t+1)	1	*.622	*.937	*.341	*.285	*.444
EPS (t+1)		1	*.551	*.470	*.282	*.448
GR (t+1)			1	*.255	*.312	*.428

* Denotes 1% level of significance

7.2 The results of the regression analysis

7.2.1 Linear regression test of the market value on the current accounting indicators and rate of current growth

The results of analysis of simple linear regression in Table (3) indicates the existence of a positive impact of the return on assets of all of the market share price and the market value to book value, and with the low explanatory reasons of return on assets for the changes in each of the two variables ex-where the R-square (0.129) to variable market share price and (0.166) to the variable market value to book value, upon this result, we can reject the hypothesis that there is no statistically significant effect for the current accounting indicators on the market value of the banks in Jordan.

It is clear from the table that there is a positive impact of return on equity on each of the market share price and the market value to book value, and the presence of a positive impact of the earning per share on the market share price and the market value to book value, and based on that result, we reject the hypothesis that there is no statistically significant effect for the current accounting indicators on the market value of the banks in Jordan.

We noted also an improved explanatory power for each of the return on equity and earnings per share to changes in the market share price and the market value to book value, where the explanatory power of the earning per share to changes in the market share price (0.488) and changes in the market value to book value (0.404), the highest explanatory power between the independent variables to changes in the dependent variables, and this leads us to say that the earning per share is the best accounting indicator for the explanation of the changes in the market value of the Jordanian banks.

It was clear from the table that there is no impact of all accounting indicators on stock return, and based on that result, we accept the hypothesis that there is no statistically significant effect for the current accounting indicators on the market value of the banks in Jordan, and this result was consistent with the result of the study (Debi'e and Abu Nassar, 2001).

In examining the impact of the growth rate on the market value, it was also clear that there is a positive effect of rate of current growth on both the market share price and the market value to book value, and based on that result, we reject the hypothesis there is no statistically significant effect for the rate of current growth on the market value of the Jordanian banks. It is also clear that there isn't an effect on stock return, on the basis of this result we accept the there is no statistically significant effect for the rate of current growth on the market value of the Jordanian banks.

Table 3. Regression results

Variable	Factors	SP	SR	M / B
ROA (t)	Constant value	2.320 (.000)	0.147 (.099)	1.349 (.000)
	The coefficient independent Variable	62.712 (.000)	0.050 (.262)	25.455 (.000)
	R-square Value	0.129	0.009	0.166
ROE (t)	Constant value	1.609 (.000)	0.116 (.259)	1.144 (.000)
	The coefficient independent Variable	15.054 (.000)	0.944 (.220)	5.287 (.000)
	R-square Value	0.248	0.011	0.239
EPS (t)	Constant value	1.496 (.000)	0114 (.208)	1.141 (.000)
	The coefficient independent Variable	7.868 (.000)	0472 (.102)	2.569 (.000)
	R-square Value	0.488	0.019	0.404
GR (t)	Constant value	2.198 (.000)	0.120 (.178)	1.288 (.000)
	The coefficient independent Variable	12.959 (.000)	1.272 (.116)	5.421 (.000)
	R-square Value	0.166	0.018	0.227

7.2.2 Linear regression test of the market value on the future accounting indicators and rate of future growth

The test of simple linear regression of the variables of the future accounting indicators and rate of future growth was conducted, it was very clear from the table (4) the presence of statistically significant effect for all accounting indicators on all measurements of market value, and based on this result, we can reject the hypothesis there is no statistically significant effect for the future accounting indicators on market value of Jordanian banks.

We note that in spite of the existence impact of the accounting indicators on the stock return, the R-square was low and this shows the low explanatory power of the future accounting indicators for changes in the stock return.

We also note that the earning per share was the best among all of the future accounting indicators for explaining the changes in the market value of the banks of Jordan, which explains (22%) of the changes in the market share price and (20 %) of the changes in the market value to book value.

In this table also note the presence of a positive impact for the rate of future growth on all measurements of market value, and therefore we can reject the hypothesis that there is no statistically significant effect for the rate of future growth on the market value of the Jordanian banks.

Table 4. Regression results

Variable	Factors	SP	SR	M / B
ROA (t+1)	Constant value	2.512 (.000)	0.02932 (.734)	1.442 (.000)
	The coefficient independent Variable	48.631 (.001)	14.093 (.001)	18.760 (.000)
	R-square Value	0.077	0.072	0.090
ROE (t+1)	Constant value	2.095 (.000)	0.0497 (.620)	1.198 (.000)
	The coefficient independent Variable	10.346 (.000)	2.587 (.001)	4.802 (.000)
	R-square Value	0.116	0.081	0.197
EPS (t+1)	Constant value	2.018 (.000)	0.0151 (.864)	1.307 (.000)
	The coefficient independent Variable	5.317 (.000)	0.953 (.001)	1.808 (.000)
	R-square Value	0.221	0.079	0.201
GR (t+1)	Constant value	2.556 (.000)	0.00371 (.966)	1.331 (.000)
	The coefficient independent Variable	8.109 (.002)	2.973 (.000)	4.864 (.000)
	R-square Value	0.065	0.097	0.183

8. Conclusions

After conducting the necessary tests to test the hypotheses of the study and after reaching the previous results we conclude the following:

1. All the current accounting indicators positively affect the market share price and the market value to book value, and this indicates that the market performance of the Jordanian banks are affected by such indicators is an expression and a reflection of the accounting performance of the banks.

2. There was no impact of all current accounting indicators on stock return and this result confirms the findings of the (Debi'e and Abu Nassar, 2001) that we cannot measure the relationship between accounting indicators and stock return simultaneously, and the stock return does not take into account what is happening now from changes in the accounting performance, but is looking forward to what will happen in the future. It is a measurement of the change in the market share price which is linked more to the future performance and that is what we have reached that there is an impact of the future accounting indicators on stock return in spite of the low explanatory power of these indicators to changes in the stock return, and this result is identical with came by (Al-Khalayleh, 1999, 2001) and (Debi'e and Abu Nassar, 2001) and (Ball and Brown, 1968) and (Hanlon, 1991).

3. The rate of current growth has a positive relationship with accounting indicators and has a positive effect on the market value and this shows that the decisions which are taken by the Jordanian banks to hold profits had an impact on accounting profits and therefore this decision affected the financial performance.

4. There is also a positive impact of the future accounting indicators and rate of future growth on the market value even when using the different ways of measuring it, and this confirms that the market value takes into consideration the future cash flows and this correspondence came with Gordon equation that the future cash flows and growth have a positive impact on the market value of the share.

5. The best explanatory accounting indicators for the changes in the market value of the Jordanian banks is earning per share, and this indicates that it is the best accounting indicators, which is taken into account when making investment decision in the financial market.

9. Recommendations

After reaching our conclusions we recommend the following:

1. The investors and financial market participants have to take into account the accounting indicators that have been considered in this study to direct them to make the investment decision, especially earning per share.

2. The need to conduct further studies to determine the nature of those relationships, using other standardized methods to make sure there is no difference in the results.

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