The Impact of the Financial Performance on Firm Value: Evidence from Developing Countries

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ABSTRACT

The main objective of this paper is to investigate the impact of financial performance on the value of Jordanian industrial firms, which are registered in Amman Financial Market (AFM). The sample of the study consists of (40) firms available on the AFM's website. They represent 71.4% of the Jordanian industrial firms, during the period (2006-2015). Regression is used to test the study's hypotheses. Tobin's Q and operational efficiency indicators are used to measure financial performance (Gross profit and the operating expenses). The study reveals that there is a statistically significant impact of financial performance on the firms' values.

The study recommends that the firms' management, stakeholders and investors should concern with using appropriate indicators to analyze financial performance that are developed by the researchers such as the operating efficiency indicators, in addition to TQ index. This is because measuring performance is important for forecasting firm's value, and helps stakeholders in making appropriate decisions.

Keywords: Financial Performance, Firm value, Tobin's Q index, Gross profit, and the Operating costs.

1. INTRODUCTION

Decision makers concern with identifying firm's financial performance (FP), and its impact on share prices and on firm value. Shareholders do not seek for immediate gains only; they search for preserving their investments' value. They can use different financial indicators to measure the firms' FP, which are developed by researchers. Researches divide these indicators into indicators based on accounting data of the firm, such as return on investment (ROI), return on assets (ROA), earnings per share (EPS), dividends per share, and indicators based on market data, such as the value of market share (SMV), the economic value-added (EVA), market value-added (MVA), the value of Tobin's Q (TQ), and the operational efficiency's

indicators. Directors should measure FP continuously, because it helps them to develop plans, objectives, measuring the firm's value, increase the owners' wealth, and identify the firm's activities.

As accounting data based indicators are affected by using different accounting policies, they are no longer enough to give a fair and a complete picture of the firm's FP, on the other hand, indicators based on market data are affected by the supply and demand forces, rumors, the factors of speculation, changes in policies, changes in legislation, and competition. As a result, it is critical for investors and stakeholders to use these indicators in identifying the target firm's FP and its actual value. Researches in this field use two operating indicators to measure financial FP that have been emerged to replace TQ index. They are the operational efficiency indicators (OEI); scale efficiency index and the cost discipline index.

This study aims to identify the best indicators that enable decision makers to identify the impact of firms' FP on their value.

The Study's Importance

The importance of the study lies in that it deals with industrial firms registered in AFM, where complete data sets are available. The sample period is from 2006 to 2015. In contrast to previous studies that focus on traditional performance measures, this paper takes into account the OEI indexes and TQ index for computing firm's FP. Using these indicators expands the debate and research in the area of performance measurement, and testing its effect on firm's value. The paper represents the only study in developing country (Jordan) that takes in account these indicators.

The Objectives of the Study

This study aims to test the effect of FP on FV; and test which is better to measure the FP, the TQ, Gross Profit/Total Assets (GP/AT) or Operating costs/Total Assets OE/TA.

Hypotheses

After reviewing previous studies, the following hypotheses have been developed to test them in this study:

H_{01}: There is no statistically significant effect of the FP measured by TQ on the values of Jordanian industrial firms.

H_{02}: There is no statistically significant effect of the FP measured by OEI (firm's scale) on the values of the Jordanian industrial firms.

H_{03}: There is no statistically significant effect of the FP measured by OEI (cost's control) on the values of the Jordanian industrial firms.

H_{04}: There are no differences between TQ indicator and the OEI in measuring the FP.

2. LITERATURE REVIEW

One of the important goals of the Firm's management is to maximize financial and operational performance, because it will affect the firm's share price, the firm's market value, the owners' wealth and the numbers

of investors. So that managers should measure firms' continuously, and try to improve it by updating plans, improving the operation techniques, measuring the output, identifying the impact of using resources on FP, minimizing the firm's risks, and be prepared to meet the conditions of uncertainty (Naser and Mokhtar 2004). Firm's FP is used as a dependent variable in many studies (Cho & Pucik, 2005, and Sila & Ebrahimpuor 2005, Richard et. al., 2009). It represents the ability, effectiveness and efficiency of the firm in using its resources to generate output.

The firm's FP is a set of partial organizational effectiveness, which covers the financial and operational outputs of the firm (Santos & Birto, 2012, Carton & Hofer; 2006 and Kapopoulos & Lazaretou, 2007). In a survey of 238 researches that dealt with the firms' FP in the Journal of Strategic Management during the period (1980-2004). Combs et. al., (2005) found that researchers in these studies used 56 indicators to measure performance, and the most one which is used frequently profitability, it should be compared with the peer firms, the competitors' firms in the same industry, and compared with the firm's goals (Carneiro et. al., 2007). The firm's high FP shows its success over a period of time. Strategic Management concentrates on measuring FP because it helps in examining the strategic plan content, its components, the extent of achieving strategic objectives, improving the work's motivation, improving communication, and avoiding problems (Waggoner et. al., 1999).

A lot of financial performance indicators are used in the accounting literature, they are classified into indicators based on accounting data, and indicators based on market data (Basu , 2015).The most important indicators that rely on accounting data to measure the FP are: the return on assets, the return on equity. According to Nassim and Penman (2001) study there is a relationship between the changes in the assets turnover and the changes in the current and future gains. Analyzing the factors that affect the FP is increased (Athanasoglou et. al., 2008). Many researchers used the return on assets in addition to other indicators to measure FP (Alkatib, 2012, Inoti et. al., 2014).

Measuring performance by using indicators based on accounting data is preferred to study the relationship between corporate governance and FP, but if the objective is to identify the impact of corporate governance in the FP and effectiveness of the firm, it is preferred to use indicators to measure FP that are associated with the technical competence (Sheu and Yang, 2005, Bozec et. al., 2010, and Garcia 2010). The faults of the indicators based on accounting data are: depend on historical data, measure FP in the short term, do not take in account the expected cash flows in the future, the potential risks, and they are more sensitive to the change of using different accounting methods in assessing tangible and intangible assets and potential manipulation in data (Barth et. al., 2005).

Tobin' Q (TQ) and the market value-added are the most important indicators that rely on market data in measuring FP. These indicators reflect expectations of firm's future FP (Wahla et. al., 2012, Shan & McIver, 2011, and Ganguli & Agrawal 2009). Al-Matari et. al., (2014) surveyed the studies and they found that some researchers used financial indicators based on accounting data and others used indicators based on market data during the period (2012-2000) to test of the impact of the corporate governance on FP, and they also, found that the indicators based accounting data and those based on markets data must be used together to give a clear picture for the firm's FP in the short and long term. TQ index is considered more reliable than the price to profit share ratio in predicting the profit per share. Nabavand & Rezaei (2015) measured the FP of 74 Iranian firms, and found that there was a statistically significant relationship between TQ, the earnings per share, the market value per share divided by book value (MV/BV), the return

on equity, and they also, found that there was no statistically significant relationship between TQ, the price to profit per share and the return on assets.

TQ index is calculated by dividing the firm's market value of plus the market value of its debts by the replacement value of its assets. Kim et. al., (2010) in their study measured the values of the industrial firms which are registered in the financial market of Korea during the period (1980-2005) based on the TQ index. They found that the using of market values of debts and the replacement values of the assets to compute the firms' values is more reliable. Computing the market value of the firm requires calculating the present value of future cash flows generated from using its assets, and finding the replacement values of these assets. But because of there is a multiple steps to compute the present value of future cash flows, and the lack of the assets' markets in many countries for finding the replacement value of these assets, researchers developed simple models to calculate the value of TQ index. Chung and Pruitt (1994) developed a simple model to calculate the value of TQ depending on the accounting data after a series of comparisons with the model of Lindenberg and Ross, which is appeared in their study in 1981. The simple model measures 96.6% of the change in the value of TQ, the simplified model appeared as follows:

$$\text{Approximate } q = (\text{MVE} + \text{PS} + \text{DEBT})/\text{TA}$$

whereas

- MVE represent the result of multiplying the share price by the number of issued shares.

- PS represents the monetary value of firm's preferred shares.

- DEBT represent a short-term debts less current assets and plus the carrying value of long-term debt.

- TA represents the book value of total assets.

Researches believed that this model will be important for managers, investors and academicians in the absence of data about the replacement values of the assets and market values of debt, because of its easy application, and it provides accurate data about TQ indicator or the firm's FP. The simplified model has been used in many studies (see Black et. al., 2003, Drobetz et. al., 2004). It also used in many studies to examine the relationship between FP and other variables, such the diversification (see, Berger & Ofek 1995, and Lang & Stulz, 1994), and in the examining the impact of the ownership structure on the firm's value (Cho, 1998), and also used as a controlling variable in other studies.

Heidarpoor and Malekpoor (2012) examined the relationship between TQ Index as a dependant indicator and other independent indicators such as: liquidity, the change in the share price, the return on equity, the leverage, the return on assets, and the size of the firm, on 100 Iranian firms that are registered in Tehran market during the period (2005- 2015). They found that there is a relationship between TQ and others independent variables except the firm's size. TQ index is used also, in measuring and evaluating the firm's efficiency in the field of investment (Wolf and Sauaia, 2003). Fu et. al., (2016) examined the relationship between Tobin index as a measure of investment and the future FP in 56,719 US firms during the period (1988- 2004). They found that TQ index rises with high operating performance in the long run.

OFI can be used to measure the firm's FP. Operational efficiency can be defined as the impact of changes in the cash cycle, the operating expenses, the size of the firm, and the operating risks in the future

FP. It's a result of the influence of many factors such as: management's skills, innovation, costs' control, and market share (Abuzayed and Molyneux, 2009).

Baik et. al., (2012) examined the relationship between operating efficiency, the firm's FP, and the role of operating efficiency in improving the prediction of profitability. They found that there is a relationship between the change in operating efficiency and the change of the future profitability, and there is a positive relationship between the operating efficiency and the current and the future revenue. Gill et. al., (2014) also, examined the relationship between the change in operating efficiency and change in the future FP of a sample consists of 244 industrial firms, registered in the financial market of Pompey in India during the period (2008 -2012). They found that the changes in operating efficiency play an important role in the future FP. Falope and Ajilore (2009) found that there is a statistically significant relationship between operating profitability and the cash cycle, but it is negative in a sample of 50 firms registered in the financial market of Nigerian, during the period (1976-2007). Ahmad and Noor (2010) found that there is a positive relationship between operating efficiency and profitability depending on the data of 78 Bank in 25 countries during the period (1992-2009). Dietrich (2010) found that there is an effect of the operating efficiency on profitability in the short term, depending on a sample of British industrial firms during the period (1993-2007). Rahman and Farah (2012) also found that the operating efficiency improved profitability in non-banking firms in Bengalis.

According to the study of Dybvig and Warachka (2014) the TQ index does not help in measuring the firm's performance accurately, especially in the case of underinvestment. They suggested using two indicators of OEI; scale efficiency (measured by dividing income margin by total assets), and cost discipline (measured by dividing operating costs by total assets). They found that the result of examining the relationship between FP and firm's governance was different from using TQ to measure FP, and the operating under non suitable scale efficiency and non controlling costs results in deviation from the objective of maximizing the firm's value, and any rise in the TQ value does not mean rise in firm's value. This means that the studies relied on using TQ indicator to measure performance did not take into account the decisions of the size, but it assumed that the change in this index is derived entirely from cost control.

Management should take in account the operating efficiency to achieve suitable performance (Sufian, 2007), which represents the firms' ability to rid of the unfavorable variables, and using the available resources in order to provide customers with high quality products (Kalluru & Bhat 2009, Dillon, 2012). The attention about the operating efficiency concept is increased after the increasing of competition, the rapid of production technology, and the rapid changes in the work's environment (Bhagavath, 2006, Goel, 2012).

Ndolo (2015) examined the relationship between operating efficiency and FP depending on 67 Kenyan's firms that were registered in Nairobi Stock Exchange during the period (2009-2013). He found that there was a statistically significant effect of operating efficiency on the return on assets. Qiang et. al., (2014) tested the affect of internal control on operational efficiency for a sample of 3907 firms during the period (2004-2011). He found that there is a low operating efficiency among companies experiencing weakness internal control relatively compared with firms that did not exercised such control. Omondi and Muturi (2013) identified the factors that have an effect on FP in a sample of 29 Kenyan firms, registered in the Nairobi financial market during the period (2006-2012). They found that the leverage, operating efficiency, liquidity, size and age of the firms play an important roles in improving FP.

There is no agreement between researchers about the suitable indictor to measure the FP. Some of them used one indicator, because they ignored the multiple dimensions of FP (Glick et. al., 2005), others used more than one indicator (Crook et. al., 2008). In all cases researchers must take into account that FP affected by firm's governance, which helps in avoiding the potential financial challenges, and facilitate the growth of FP (Ehikioya, 2009).

The firm's value can be measured by dividing market value on book value of the firm's equity (Tobin, 1969), or by computing the present value of cash flows. The first measure is the better, because it shows the firm's management efficiency in using resources effectively (Gamayuni, 2015), especially when financial statements are still provide users with financial information that helps in making their decisions. Firm's value is also influence by financial, earning structure, and the return on equity. According to the study of Gill, et. al., (2013), which examined the impact of earnings' management on the firm's FP, and on the firm's value, in 250 industrial firms registered in Pompey financial market in India during the period (2009-2012), they found that the hard application of gains' management has a significant impact on the return on assets, and the share price. (Sudiyatno et. al. (2013) found that the return on assets has a positive statistically significant impact on the firm's value. The corporate governance impacts on the FP and the firm's value (Gompers et. al., 2003; Bebchuk et. al., 2008; Core et. al., 2006).

The Study Methodology

In the methodology section, researcher discusses the study population, the study variables, how he measured them, the statistical techniques, the hypotheses test, the results and discussion.

The Study Sample

The study population consists of the 40 firms. They represent 71.4 % of the industrial firms that are registered on AFM. The study depends on the financial reports of these firms within the period (2006-2015).

Table 1 summarizes the number of firms, the observations on the firms' financial statements and the total observations.

Table 1
**Sample Firms and the Observations on their Reports**

Sector	Firms' number	Observations' per firm	Observations' Total
Industrial firms	40	10	400

Data Collection

The study relied on secondary data taken from the firms' financial statements published on the site of AFM during the period of the study.

The Study Variables

The study examines the effect of financial performance (independent variable) on the firm's value (dependent variable) (see the shape 1).

Shape (1)
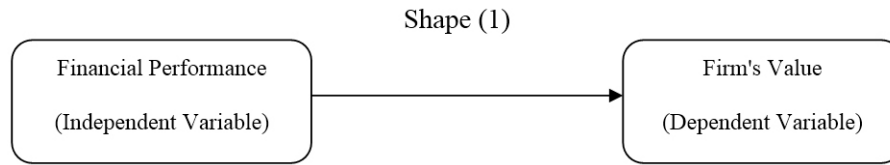
FP is measured by using TQ indicator in H_{01}, the profit margin divided by total assets in H_{02}, and the operating expenses divided by total assets in H_{03}. FV is measured by dividing the market value on the book value of the firm. (see Table 2)

Table 2

Variable	Variable Kind	The measurement of the variables
Financial Performance (FP)	Independent	By using TQ index in Hypothesis H_{01}, depending on the approximate q model of Chung and Pruitt (1994).
		By dividing gross profit by total assets in Hypothesis H_{02}, depending on the model of Dybvigy and Warachkaz (2014)
		By dividing Operating Expenses by total assets in hypothesis H_{03}, depending on the model of Dybvigy and Warachkaz (2014)
Firm's Value (FV)	Dependent	Dividing market value by book value of the firm, depending on the studies of Tobin, (1969) and Lindenberg & Ross, (1981).

Statistical Methods

In the study the means and standard deviations were used to describe the variables characteristics. Simple regression analysis was used to test the first three hypotheses, the Paired Sample T-test is used to test the fourth hypothesis, and the Skewness rate to standard error technique is used to test the normal distribution of variables.

According to the descriptive statistics which was contained in Table (3), the Standard deviations in the variables data of all companies were low, the biggest figure was associated with a standard deviation of the OE/TA and the least figure was associated with variable GP/TA.

Table 3
Descriptive statistics

Variable	Observations No.	Mean	Std. Deviation	Std. Error Mean
MV/BV	400	1.367	1.059	0.053
Tobin's Q	400	1.271	0.795	0.040
GP/TA	400	0.141	0.118	0.006
OE/TA	400	0.579	0.616	0.038

To test the normal distribution of the variables, the skewness rate to standard error technique is used. Table 4 appears that the skewness rate of all variable between (−2, 2), this means that each of these variables has a normal distribution.

Hypothesis Testing and Results' Analysis

To test the study's hypotheses, simple regression analysis was used to examine the relationships between the different variables of the study. The model that represents this relationship is:

Table 4
The normal distribution of the variables

Variables	Skewness to standard error rate
MV/BV	0.238
TQ	0.176
GP/TA	0.606
OE/TA	0.324

$$FV_{i,t} = \beta_0 + \beta_1 \times FP_{i,t} + \varepsilon$$

where, $FV_{i,t}$ represents the firm value i in the year *t*. $FP_{i,t}$ represents the financial performance for the firm *i*, in the year *t*, and measured by using TQ index.

H01: There is no statistically significant effect of the performance on the value of the Jordanian industrial firms depending on TQ index.

Table 5
The regression coefficients of the effect of FP on FV

Model	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.220202	0.073601	2.991842	0.0029
T.Q	0.902713	0.049126	18.37551	0.0000
R-squared	0.458989			
Adjusted R-squared	0.457629			
F-statistic	337.6594			
Prob(F-statistic)	0.000000			

[a]Predictor (constant), (FP) TQ
[b]Dependent Variable: (FV) MV/BN

Table 5 shows the analysis of the relationship between FP and FV. The beta coefficient is 0.903. Moreover, the adjusted R-square is 46%, this means that a 46 % of the total deviations in FV variable can be interpreted by the linear relationship in the model. As a result, there is a statistically significant effect of FP on FV at *p*-value less than 1%. Hypothesis H_{01} should be rejected.

H02: There is no statistically significant effect of the performance on the value of the Jordanian industrial firms depending on the operational efficiency index (profit) margin.

Table 6
The regression coefficients of the effect of FP on FV

Model	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.874129	0.076009	11.50033	0.0000
GT/TA	3.496613	0.413168	8.462941	0.0000
R-squared	0.152509			
Adjusted R-squared	0.150379			
F-statistic	71.62138			
Prob(F-statistic)	0.000000			

[a]Predictor (constant), (FP) GT/TA
[b]Dependent Variable: (FV) MV/BV

Table 6 shows the analysis of the relationship between FP and FV. The beta coefficient is 3.497. Moreover, the adjusted R-square is 15%, this means that a 15 % of the total deviations in FV variable can be interpreted by the linear relationship in the model. As a result, there is a statistically significant effect of FP on FV at p-value less than 1%. Hypothesis H_{02} should be rejected.

H_{03}: There is no statistically significant effect of the performance on the value of the Jordanian industrial firms depending on the operational efficiency index (costs' control).

Table 7
The regression coefficients of the effect of FP on FV

Model	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.551583	0.071522	21.69367	0.0000
OE /TA	−0.318459	0.084726	−3.758683	0.0002
R-squared	0.034280			
Adjusted R-squared	0.031853			
F-statistic	14.12770			
Prob(F-statistic)	0.000196			

[a]Predictor (constant), (FP) OE/TA
[b]Dependent Variable :(FV) MV/BV

Table 7 shows the analysis of the relationship between FP and FV. The beta coefficient is −0.318. Moreover, the adjusted R-square is 3%, this means that a 3 % of the total deviations in FV's variable can be interpreted by the linear relationship in the model. As a result, there is a statistically significant effect of FP on FV at p-value less than 1%. Hypothesis H_{03} should be rejected.

H_{04}: There is no difference between TQ indicator and the Operational Efficiency indicators in measuring the financial performance

Table 8
Paired Samples T-Test

Variables	Paired Differences		t	df	Sig. (2-tailed)
	Mean	Std. Deviation			
Pair 1 G/TA-TQ	1.129	0.74	30.138	399	0.000
Pair 2 OE/TA-TQ	0.692	0.792	17.487	399	0.000

Table 8 show that there are differences in means between G/TA and TQ at p-value less than 1%, so that H_{04} should be rejected, this means that the efficiency indicators could be used to measure the financial performance.

3. CONCLUSIONS

After reviewing the previous studies, and the results of this study we can conclude the following:

The studies of (Wirakusuma Yuniasih (2007), Makaryawati (2002), and Sudiyatno et. al. 2013) revealed that there is an effect of financial performance on the firm's value. (Kapopoulos and Lazaretou (2007) said that measuring financial performance means measuring the efficiency and effectiveness of the firm's operation.

This study shows that there is a statistically significant effect of FP measured by TQ on FV, but the linear relationship between the two variable interpreted only 34.4 % of the total deviations in FV variable. This result agrees with the studies of Nabavand & Rezaei (2015), Kim et. al., (2010), Heidarpoor and Malekpoor (2012), It shows that there is a statistically significant effect of FP measured by GT/TA on FV, but the linear relationship between the two variable interpreted only 3.5 % of the total deviations in FV variable. And there is a statistically significant effect of FP measured by OE/TA on FV. It also shows that the efficiency indicators can be used to measure the financial performance, this result agrees with the results of the Sufian, (2007) study, and disagree with the results of Dybvig and Warachka (2014) study.

The Recommendations

The study recommends that the firms' management, stakeholders and investors should concern with using appropriate indicators to analysis financial performance that are developed by the researchers such as the operating efficiency indicators, in addition to TQ index, especially since measuring performance is important for forecasting firm's value , it helps stakeholders in making appropriate decisions.

The Study's Determinants

The study relied on secondary data. It has been taken from firms' financial statements, which is founded on the site of AFM. There is a bad economic condition have been happened within the period of the study, they had left negative impacts on the industries' output. The study used three indictors to compute the financial performance; it ignored the factors that have an impact on the firm value, Such as, the ownership of the managers.

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