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The Impact of Applying Financial Performance Indicators on Earnings Management in Manufacturing Companies

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Abstract
The study aimed at finding out the impact of applying financial performance indicators on earnings management in manufacturing companies listed at Amman Stock Exchange. Five independent and dependent variables were stated: independent variables represented the earning per share (EPS), returns on equity (ROE), and the current Ratio (CR), whereas dependent variables standed for operating cash flows (OCF), and net profits (NP). The study adopted a descriptive and analytical approach by analyzing financial statements and reports of a sample of Jordanian manufacturing companies using statistical tools to test the research hypotheses. Data of this research were gathered from a sample of 52 manufacturing companies based on a series period from 2007 – 2011, and processed using the statistical package of social sciences (SPSS).
The main results of the study are:
1- There is no impact of financial performance indicators (EPS and CR) on the process of earnings management in the sample studied, despite of the ability of manufacturing companies to distort financial data as directed by, and for the interest of, middle and top managements to accommodate certain conditions related to internal and external factors, such as written changing financial instructions and levels of competition facing these companies.
2- There is an impact of financial performance indicators (ROE) on the process of earnings management in manufacturing companies listed at Amman stock exchange. This is because of many accounting items that may by distorted by accountants to exploit the flexibility of international financial reporting standards (IFRS).
The study recommended the following:
1- there is a need to more studies on this topic using mathematical models, such as the modified Jones model of 1991 to measure the process of earnings management in manufacturing and nonmanufacturing companies.
2- it is benificial for the government to adopt a continuous revision of tax legislations and laws in order to prevent practices of earnings management.
3- the use of qualitative performance indicators, such as the level penetration of company's products and disconnection of board of directors' rewards with realized net profits.
Keywords: Financial Performance indicators, Earning Management, Jordanian Listed Manufacturing Companies.

1. Introduction

The current century has witnessed many attempts taking place after the international financial crises in 2008 onwards to prevent distortions and manipulations in financial statements and reports of companies, where many studies have agreed on the existence of advantages of financial and management systems in businesses for stakeholders, including owners (Gill and Obradovich, 2012, p.8). Earnings management can be defined by researchers as “an attempt to manipulate profits to achieve certain aims as targeted by management or expectations set by analysts or numbers in line with smoothing the actual income ending up with fixed gains" (Mulford and Comisky, 2002. P.2). Other researchers went further in terms of fraudulent practiced by one or more individuals among management, those charged with governance, employees, or third parties, involving the use of deception to obtain an unjust or illegal advantages (Whittington, & Delany, 2013:P 77). On the other hand, auditors need to distinguish between different types of manipulation, creative accounting, income smoothing, and earnings management, compared with a sense fo fraud as perceived by auditors, who must understand that earnings management resulted in legal actions that is different from fraud as what sounds a violation to laws in accordance with the scope of their work (Vona, 2011: P. 14; and Mulford and Comisky, 2002. P.5).

These terrmonolgies usually used in businesses whether in accounting, finance, management and economics with a wide range of human behavior in general and perceptions and attitudes in particular to denote functional and dysfunctional behaviour facing businesses (Al-Halabi, 2013, p. 4). To be more specific, management at the middle and the top levels do use earnings management at various types with the intentionally or unintentionally, leading to distortion in financial reports and affecting in many times negatively on economic decisions (Dutta, S. and Gigler, F. (2002, p. 15).

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Recently, many researchers called for more studies to discover factors and procedures affect and be affected by the practice of earnings management from auditors', analysts' and management's perspectives in manufacturing companies with the aim of studying real earnings management , adopting new approaches to solve consequences of these effects, and develop new control and audit procedures to achieve predetermined objectives (Chi, Listic and Pevzner, 2011, p 319 ; Judeh, et.al., 2011, p 20; Taylor and Ux 2010, p. 131; Greiner Kohlbeck and Smith, 2013, p. 12). A further line of study has differenciated between accounting earnings management and real earnings management and pointed to the existence of earnings management techniques and methods to some extent were less acceptable while other methods and techniques were difficult to detect by auditors, to which management discussion and analysis of real earnings management were actually inadequate (Commerford, et.al, 2014 pp: 37-44). Other studies focused on control tools to support management and accounting control systems through: (i) imposing procedures to describe jobs and formal procedures with management and accounting systems; (ii) improving current performance measures; (iii) providing continuous disclosures for owners; and (iv) providing a list of data that includes questions and required documents to review and audit accounting and control procedures for owners of companies (Rapp, 2010; and Dorgham, Al-Halabi , and Shanikat, 2014, p. 4).
The research focused on exploring the impact of financial performance indicators on earnings management in manufacturing companies listed at Amman stock exchange, as shown in figure (1).

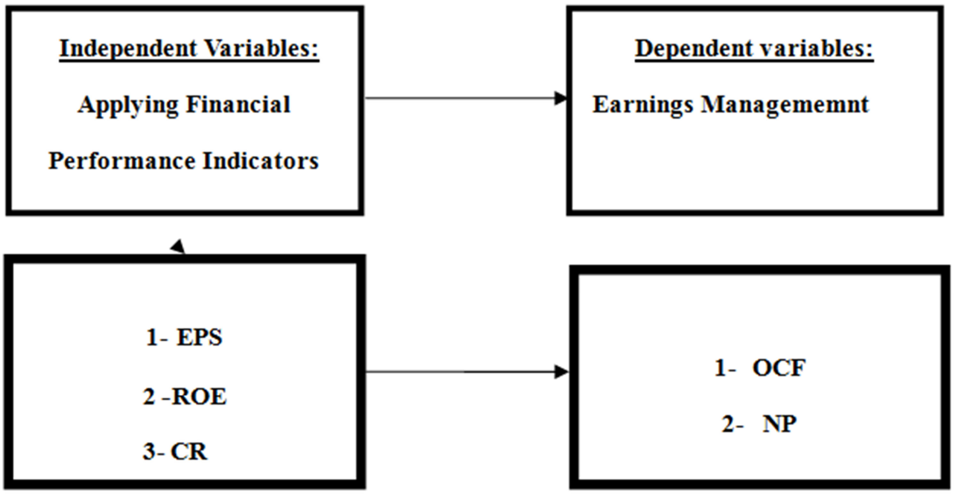

Figure (1)
Research framework

2. Objectives of the research

The following are objectives of this research:
1- identifying the impact of applying financial performance indicators on earnings management in Jordanian manufacturing companies.
2- studying the process and real practices of earnings management in manufacturing companies using a time series approach during the period ranging from 2007 to 2011.
3- identifying differences between operating cash flows and net profits within the research sample, with the aim of finding out real earnings management practices.
4- indetifying the relationship between selected financial indicators using three financial ratios, to detect earnings management by measuring changes in operating cash flows and net profits during the period of the study.

3. Research Latitude

This study identified earning management practices that affect the content of financial reporting and decreasing reliability of accounting information in Jordanian manufacturing companies. Independent variables were selected using Pearson test to end up with three variables: EPS, ROE, and CR, whereas selection of dependent variables were done based on differences between the accrual accounting basis and the cash basis to discover real earnings management practices in Jordanian manufacturing companies. There is little evidence on the impact of financial performance indictors on earnings management in manufacturing companies listed at Amman stock exchange, in attempting to create ideas that contribute in tackling real earning management for sound economic and investment decisions.

4. Literature Review

Prior studies pointed to many definitions of creative accounting, income and earning management practiced by different parties in firms (Mulford and Comisky, 2002, p 2). Earnings management is defined as a process to manipulate data and numbers legally exploiting flexibility of the international accounting standards (IAS) to show the content of financial statements in unreal image and in contrary with the real condition of the company's performance with the aim of achieving own management interests (Amat and Goethorpe, 2005, p 57). The process of earnings management is more discovered when forecasting earnings of companies leading to practices of earnings management to become an usual process (Dutta and Gigler, 202, p.8). Another study pointed to the used of earnings management extensively when companies facing solvency and failure thus manipulating their earnings in a cosmetic way in order to avoid further financial crises (Rosner, 2003, p. 382). Auditors' perceptions and attitude were also studied in relationship with earnings management and included real earnings management in their audit reports to mitigate business risks (Greiner, Kohlbeck, and Smith, 2013. P. 15). Another study, on the other hand, focused on the association of enhanced audit quality and changing practices of real earnings management resulting in more quality of audits leading to greater real earnings management in companies (Chi, Listic, and Prezner, 2011, p. 327). While another study pointed to the incidence issues (in terms of creating accounting treatments to fulfill own management objectives) and ethical issues in dealing with economic conditions facing companies (Amat, O., 2004, p.1225). It seems that earnings management process is dominated by auditing researches, with little studies focusing elements of human behavior, such as perceptions and attitudes of both management and accountants who are the concerned parties that are acting and dealing, on daily basis, with the process and practices of earnings management in companies (Kaminski, Sterling, and Liming, 2004, p. 19). Further, the role of governance is also studied in reducing negative effects of earnings management practices on financial statements in firms (Tanjitprom, 2013, p.23).

The earning per share (EPS) is usually defined in accordance with earning of shares based on future cash flows and calculated by dividing net profits after tax on outstanding shares of companies, and it is a well-known variable in prior studies that may affect real earning management (Michael, Don, and Jodil, 2007, p. 8). From the analysts and accounting points of `view, the return of equity (ROE) consisted of many items, such as share capital, retained earnings, the current year result, treasury stocks and unrealized gains of investments available for sale, each of which is an area of practicing earnings management in companies, thus return on equity is calculated by dividing net profits after tax on average shareholder equity (Gibson, 2014, p 280). The current ratio (CR) is also a variable that studied by researchers to have possible effects of accounting numbers and earnings management, taking into consideration the effects of the short-term current assets and liabilities on practices of earnings management in companies (Partha, 2003, p. 16; Brigham, Ehrahard, and Michael, 2010).

The literature indicated many studies using mathematic models to identify earnings management by differentiating between discretionary accruals, aggregate accruals and mandatory accruals (Healy, 1985; Dechow, 1995; Jones 1991; McNichols, 2000; and Miller, 2007). According to these models, for example as in Healy's model of 1985, earnings management is tested by dividing aggregate accruals on average assets and comparing results during a series period of time with each other, so if the result was greater than zero, then there is evidence of earnings management (McNichols, 2000). Accordingly, these models used operating cash flows (OCF) based on the cash basis emerged from the statement of cash flows, and net profits (NP) based on the accounting accrual basis, to discover earnings management in companies (Rosner, 2003, p. 377; and Arens, Elder, and Beasley, 2014).

This research is in line with the management accounting literature by exploring the impact of financial performance indicators, represented by EPS, ROE and CR, on earnings management measured by changes in OCF and NP in manufacturing companies listed in Amman stock exchange.

5. Research Problem

The main research problem is characterized by identifying the impact of three financial ratios, namely, EPS, ROE and CR on two dependent variable, namely, OCF and NP in Jordanian manufacturing companies. Earnings management practices may be occurred in either ways: through increasing the current profits in the interest of prior or future periods; or decreasing current profits in the interest of previous or future periods. This is done in the eyes of auditors and other controlling parties since such practices are adopted because of the flexibility existence of international financial reporting standards (IFRS). However, the problem of earnings management is ended with this but many accountants, management , analysts, internal auditors and others are concerned with the unknown practices of earnings management that led to negative effects on both parties inside and outside the company. Actually, earnings management reflected many practices by management to change net profits in a way to achieve management's interest, more than a reflection of a real indicator of the economic performance. As a result, many stakeholders, and investors in particular, have been deceived by untrue and unreliable financial statements and reports, as a result of earnings management practices, and this was resulted in unsound investment and economic decisions. Accordingly, the whole economy will be negatively affected by such decisions leading to unstability in economic activities at micro and macro levels. Thus, the main problem of this research is presented to answer the following main and sub-main questions:

1- what is the impact of applying financial performance indicators (EPS, ROE and CR) on earnings management (OCF, and NP) in manufacturing companies listed at Amman stock exchange?

1-1 what is the impact of applying financial performance indicators (EPS, ROE and CR) on operating cash flows in manufacturing companies listed at Amman stock exchange ?

1-2 what is the impact of applying financial performance indicators (EPS, ROE and CR) on net profits in manufacturing companies listed at Amman stock exchange ?

6. Research Methodology

The research relied on a descriptive and analytical method, and accordingly, the research was divided into two parts: the first part was theoretical by discussing and analyzing the related literature, and the second part was analyzing financial statements and reports of the sample studied, based on: (I) the research hypotheses and (II) research method.

6.1 Research Hypotheses

The research hypotheses are as follows:

1- H01 there is no singnificant impact (α= 0.05) of applying financial performance indicators (EPS, ROE, and CR) on earnings management (OCF, and NP) in manufacturing companies listed at Amman stock exchange.

2- H01-1 there is no significant impact (α= 0.05) of applying financial performance indicators (EPS, ROE, and CR) on operating cash flows in manufacturing companies listed at Amman stock exchange.

3- H01-2 there is no significan impact (α= 0.05) of applying financial performance indicators (EPS, ROE, and CR) on net profits in manufacturing companies listed at Amman stock exchange.

6.2 Research Method

It represented the research population (78 manufacturing companies listed at Amman stock exchange, based on the issued fiscal year of 2012), and sources of data gathering, from which a sample of 52 listed manufacturing companies (that is, 52 financial statements that consist of: income statements, financial position statements, ownership equity statements, and cash flows statements) were processed and analysed using a five-year series analytical approach during the period from 2007 till 2011. Average figures of the financial statements of 52 manufacturing companies for each year of the period from 2007-2011 were calculated to represent independent variables. On the other hand, average figures of changes in OCF and NP for period from 2007-2011 were also calculated to respresent dependent variables. The reason for doing this is to match averages of independent variables for five years with averages of changes of dependent variables resulted in five-year changes.

The chosen sample were based on the following statistical conditions:

1- those companies that have all issued financial data required for this research and for the series period of time.

2- those companies that their shares did not stop from trading at Amman stock exchange during the period 2007-2011.

3- those companies that had not subject to mergers or acquisitions with other companies.

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6.2 Research Statistical Techniques

Based on the computerized coding system for all research independent and dependent variables, the statistical package for social sciences (SPPS) were used to run the following descriptive and inferential statistics:

1-normal distribution measures applied on independent and dependent variables, such as Means and standard deviations, in order to know the highest and lowest observations.

2- Pearson Correlation Coefficient test to find out the relationship between independent variables that could be appropriately selected for later tests.

3- Simple regression tests to find out the impact of each individual variable of the chosen independent variables on dependent variables.

4- Multiple regression tests to find out the impact of each group of independent variables on dependent variables.

7. Research Results and Discussion

7-1 Results of Applying Descriptive Statistics

Table no.1 pointed to the highest and lowest observations for each group of the research variables.

Table (1)
Descriptive Results of the Research Variables in Manufacturing Companies During the Period From 2007-2011

Independent dependent variables	Lowest observations	Highest observations	Means	SD
EPS	-.520	93.4 0	1.8824	12.944
ROE	-.49	.31	-.0012	.1412
CR	. 69	10.48	3.0556	2.393
OCF	-26.98	3276.13	62.115	454.465
NP	-26.70	988.44	17.895	137.306

The above-mentioned table showed a wide range of observations between independent variables, with a lowest range found in the ROE compared with both EPS and CR. On the other hand, there was a wide range of observations between dependent variables, with the lowest range found in the NP compared with the OCF. This result is important as a starting point towards testing the research hypotheses with the aim of discovering practices of earnings management in Jordanian manufacturing companies.

7-2 Results of Using Pearson Correlation Coefficient Test

Table (2) referred to the matrix of Pearson coefficients among independent variables. Once again, the results shown in this table, supported the aforementioned table, and indicated that the correlation coefficient (β) is less than 80% meaning that there is no conformity between these three independent variables.

Table (2)
Matrix of Pearson Coefficients in Manufacturing Companies During the Period From 2007-2011

Independent variables	EPS	ROE	CR
EPS	1	.093 .512	.440 .001
ROE	.093 .512	1	.164 .245
CR	.440 .001	.164 .245	1
No. of observations	52	52	52

7-3 Research Results of Inferential Statistics

In order to test the research hypotheses for the sample of 52 manufacturing companies, two tests were used, simple and multiple regressions to identify the impact of each independent variable on each dependent variable (simple regression); and the impact of a group of independent variables on dependent variables (multiple regressions). The results of these tests were as follows:
H01 the null hypothesis stated that there is no impact of applying financial performance indicators (EPS, ROE, and CR) on earnings management (OCF, and NP) in manufacturing companies listed in Amman stock exchange. Table no. (3) identified the insignificant impact of applying financial performance indicators on each of OCF (H01-1) and NP and (H01-2).

Table (3)
Results of the Research Hypothesis H01

Tabulated F	R square	β	Calculated F	Sig.	Result of testing H01
1.65	.099	0.314	1.53	0.169	Accept H01-1
1.65	.048	0.323	1. 37	0.148	Accept H01-2

The decision rule stated that if sig. is less than 5% then accept null hypothesis and the vice versa is true; also if tabulated F is greater than calculated F then accept null hypothesis and the vice versa is true.
Results shown in Table (3) pointed differences in tabulated F and the calculated F with R square lower than 10% which means that earnings management is interpreted with this percentage only, and there is a need to look for other dependent variables that may interpret practices of earnings management in Jordanian manufacturing companies. Thus, the decision rule stated that if sig. result is less than 5% then the null hypothesis H01 is rejected and this means that there is no impact of applying financial performance indicators on earnings management practices represented by each of OCF and NP in manufacturing companies in Jordan. This result is in line with Kaminski's study who found that all financial ratios have no impact on discovering manipulation in accounts in companies (Kaminski, et. al., 2004, pp: 20-28).

A further application of simple regression tests among each individual independent and dependent variables was run, with the aim of discovering the impact of each individual independent variable alone affected in each individual dependent variable. The researchers discovered an interesting results related to the impact of ROE on the OCF and the impact of ROE on the NP, as shown in Table no. (4).

Table (4)
Results of the Impact of ROE on Each of OCF and NP In Manufacturing Companies During the Period From 2007-2011

Tabulated T	R square	β	Calculated T	Sig.	Result of testing H01
1.66	.096	.310	2.309	0.025	There is impact of ROE on OCF
1.66	. 085	319.	2.378	0.021	There is impact of ROE on NP

The decision rule stated that if sig. is less than 5% then accept null hypothesis and the vice versa is true; also if tabulated F is greater than calculated F then accept null hypothesis and the vice versa is true.
There is no impact of financial performance indicators (EPS and CR) on the process of earning management in the sample studied, despite of the ability of manufacturing companies to distort financial data as directed by middle and top managements to accommodate certain conditions related to internal and external factors, such as written changing financial instructions and levels of competition facing these companies. On the hand, there is an impact of financial performance indicators (ROE) on the process of earning management in manufacturing companies listed at Amman stock exchange. This is because of many accounting items that may by distorted by accountants to exploit the flexibility of International Financial Reporting Standards (IFRS). Accordingly, the research partially accepted the main hypothesis, H01, in that there is no impact of all three independent variables on the dependent variables, whereas rejecting the main hypothesis, H01, to which there is an impact of the ROE on each of the OCF and the NP in manufacturing companies listed at Amman stock exchange.

8. Conclusions and Recommendations

8.1 Conclusions

Based on the research results, one conclusion of this research may reflect the benefit of positive earnings management in realizing a balance between dividends policies and actual net profits with the objective of maintaining continuity and stability in manufacturing companies. Moreover, the following are a number of conclusions that reflected the impact of financial performance indicators on earnings management in manufacturing companies listed at Amman stock exchange:
1.1 focusing on governance procedures within companies to detect negative effects of earnings management in manufacturing companies, such as forwarding current expenses to next years.
1.2 enhancing auditors' , analysts', management's, and board of directors works towards more detection of items of ROE since they are represented by the statement of ownership equity of manufacturing companies, such as frequent revisions of contracts and invoices in conformity with accounting policies adopted by top management.
1.3 there is a need to develop IFRS to lowering flexibility in standards that are open to more practices of earnings management and in particular items of net profits, operating cash flows and return of equity, such as mixing between main and secondary revenues; earlier recording of revenues; selling assets that were undervaluation ; consider resulted gains as part of main revenues of companies; and capitalization of operating expenses.
1.4 one way of achieving the aforementioned conclusions is to impose accounting disclosure on items of income statements and ownership equity statements, and in particular EPS, ROE, OCF, and NP separately, and to include results of audit tests in the auditor's report. Further, adopting a policy of detecting and matching management opinions with accountants actions, such as comparing management opinions and justifications are made on depreciation and amortization policies in conformity with historical accounting numbers.

8.2 Recommendations

The following are research recommendations for Jordan manufacturing companies listed at Amman stock exchange:
1. more research is needed to study real earnings management in companies, by differentiating between negative and positive effects of earnings management in financial statements.
2. there is a need to more studies on earnings management using mathematical models, such as the modified Jones model of 1991 to measure the process of earning management in manufacturing and nonmanufacturing companies.
3. Depending on earnings per share ratio alone as a performance indicator could be misleading due to the practice of real earnings management in manufacturing companies and this is an area for future researches.
4. it is benificial for the government to adopt a continuous revision of tax legislations and laws in order to prevent practices of earning management.
5. the use of qualitative performance indicators, such as the level penetration of company's products and disconnection of board of directors' rewards with the realized net profits.

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