

Earnings Management through the Timing of Long-Lived Asset Sales

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ABSTRACT

Management can determine the time of real transactions in a way that its effects on earnings lead to decrease in reported earnings fluctuations and also accessibility to expected earnings. Asset sale is one of the real transactions in an enterprise. Accordingly, this research tries to answer the question whether managers manage earnings through timing of long-lived asset sales. The hypotheses of the study were tested through the data gathered from listed manufacturing companies in Tehran stock exchange. To examine the hypotheses, t-student test was used. Moreover, by using covariance analysis test, firstly, the relation between control variables and each of independent variables was examined. Then, the effect of control variables on independent variables was neutralized. The results of the research showed that the management had not managed earnings through timing of long-lived asset sales.

KEYWORDS: earnings management, timing transactions, income from fixed asset sales, income from non-current investment sales.

INTRODUCTION

1. Research Problem

In historical cost system, historical prices are used as a common method to value assets in order to measure the factors of financial statements. Despite the fact that Historical prices are reliable, they suffer timing errors, since income from holding assets of the previous period are recognized in the current period. By current period, we mean the asset sales period in which income is realized.

So, assets are hold based on historical cost, but they are sold in the current or market price and the income or loss from selling them is recognized during the sales period. So, income and loss from asset sales is a tool to be used by the managers to affect the reported earnings through timing of asset sales. In other words, earnings fluctuations in a company can affect the manager's decisions about timing of asset sales.

It is likely that when real earnings of a company is less than the earnings expected by the managers, they would try to increase the reported earnings to the expected level through selling more and more assets, or conversely when real earnings of a company is higher than the earnings expected by the managers, they would try to decrease the reported earnings to the expected level through selling loss-making assets.

Theoretically, P/E ratio tells us that how much are the investors going to pay per Rial of earnings or in other words, how much is the value of each Rial of company earnings? Thereby, it is called stock multiple. So, here it is possible that management manipulates the real earnings of the company in order to decrease fluctuations of P/E ratio or match it up with the expected P/E ratio. Timing of asset sales is a tool to manipulate the reported earnings.

2. Research Background

Hermann, Inoue and Thomas (2003) examined whether Japanese managers make use of recognition from selling fixed assets and street securities to manage earnings. The results of the study showed that there is a negative relation between income from asset sales and the current year performance; while the relation between income from asset sales and the expected future performance is positive. Furthermore, when the current year performance is negative (or positive) and the expected future performance is positive (negative), making use of asset sales for earnings management becomes too visible. [5]

Poitras et al. (2001) studied whether Singaporean companies schedule selling their assets in order to manipulate the reported earnings? If so, to what extent companies attempt to manage earnings through the timing of asset sales? They found that the managers of the Singaporean companies - whose reported earnings changes and consequently the changes of earnings per share during the current period compared to that of the previous period is positive, that is, the earnings is

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increased - have no incentive to manipulate earnings and as a result, timing tool of asset sales is not used to enforce earnings management. But the managers of the Singaporean companies -whose changes of earnings per share are negative- usually attempt to manage earnings through timing tool of asset sales. [6]

Bartov (1993) in his paper 'the timing of asset sales and Earnings Manipulation' put forward the issue whether management can intervene or manipulate earnings through timing of income recognition from disposal of long-lived assets or investments? [7]

Since managers can often choose the period during which the asset will be sold and since the principle of acquisition cost underlying the accounting valuation of assets implies that changes in the market value of the asset between acquisition and sale reported in the period of sale. So, it provides opportunities for the managers to manipulate earnings through the timing of asset sales at relatively low costs. About earnings management Bartov believes that such a management is manipulated in two ways. Firstly, manipulation is performed based on accrual, by the use of accounting methods and value estimation. Secondly, real manipulation, by the use of commercial transactions to match the reported earnings up with expected earnings. [7]

Wang et.al (2009) investigated the relationship between earnings management and the sale of long-lived assets and investments for firms listed in Taiwan. The findings indicate that manipulation of earnings to avoid reporting losses is more common in Taiwan listed firms than in the USA sample examined by Burgstahler and Dichev (1997). The findings also indicate Taiwan listed firms employ asset sales to avoid reporting losses. Additionally, the results suggest that Taiwan-listed firms may primarily use the sale of investments to manage earnings.[9]

Ebrahimi Kordlar and Zakeri (2009) studied examining of the earnings management through timing of asset sales. The results show that when the current year performance is negative (or positive) and the expected future performance is positive (negative), asset sales for earnings management are used.[10]

Safaei Kooyshahi (2009) studied and tested the relation between income smoothing and income from capital asset sales (tangible fixed assets) in the listed companies in Tehran Stock Exchange. The results of their research show that there is no meaningful relation between income smoothing and income from capital asset sales. In other words, managers do not make use of this tool to smooth income.[2]

In his research, Koochaki (1994) tried to introduce the timing of asset sales and consequently, income from it as a device for income smoothing and test it experimentally, to answer the question whether managers use it as an income smoothing device? Results show that income from asset sales does not smooth temporary changes of earnings. In other words, the results of the study show that income from asset sales in the companies with annual earnings decreases (except for the effects of asset sales) is not mainly more than that in companies with annual earnings increases.[3]

3. Research Hypothesis

1. There is a significant relation between earnings before tax deduction and income from fixed asset sales.
2. There is a significant relation between earnings before tax deduction and income from non-current investment sales.
3. There is a significant relation between gross earnings and income from fixed asset sales.
4. There is a significant relation between gross profit and income from non-current investments.
5. There is a significant relation between price/earnings per share (P/E) ratio and income from long-lives asset sales.
6. There is a significant relation between price/earnings per share (P/E) ratio and income from non-current investment sales.

4. Methodology

This research is of causal-comparative nature. It tries to examine the causal-potential relation between independent and dependent variables through t-student test so that it can be determined whether or not there is any difference between the independent variables of the companies with income from long-lived asset sales and the companies which lack this variable. If the answer is affirmative, we can conclude that there is a causal-potential relation between dependent and independent variables. Moreover, covariance analysis test is used to calculate the effect of control variables on the neutral independent variables and net independent variables.

5. Research Variables

5.1. Independent Variables

Independent variables in this research include: earnings before tax deduction (after deducting income from fixed asset sales and non-current investments), gross profit and P/E ratio.

5.2. Dependent variables

Dependent variables in this research include: income from fixed asset sales and income from non-current investment sales.

5.3. Control Variables

In this research, in order to homogenize the companies whose information is analyzed, all selected companies are manufacturing companies. Also the size and the age variables of the company are used as control variables to homogenize the companies, as far as possible.

5.3.1. Measuring Control Variables

Size of the company: Most researchers in the field of earnings management believe that the size of a firm is determined through measuring total assets, total annual sales, face value of stock or the market value of the firm stock.[6] In this research, natural logarithm of total assets in balance sheet date is used to measure the size of the company.

Age of the company: Roozenboom (2003) in his paper "*earnings Management and Initial Public Offerings*" has used natural logarithm of "the age of the company+1" to evaluate the age of the company as a control variable. [7] Thereby, in this research, following Roozenboom model, natural logarithm of "the age of the company + 1" is used to measure the age of the company.

6. Sample selection and data

In this research, to access statistical population, initially, the information of income from fixed asset sales and the non-current investments is considered in all companies listed in Tehran Stock Exchange compared to others lack these items -except the investment companies and financial intermediary companies, because of fundamental differences in the type of their activity. Then, the information of income from fixed asset sales and non-current investments of these companies listed in Tehran Stock Exchange prior to 2004 and were active in Tehran Stock Exchange during 2004-2008 were gathered for 5 years and classified into three categories:

1. In case of income, number 1 was assigned as the symbol of that company and fiscal year;
2. In case of loss, number -1 was assigned as the symbol of that company and fiscal year; and
3. If neither income nor loss was present, number 0 was assigned as the symbol of that company and fiscal year.

Among the mentioned companies, the manufacturing companies were selected and among the manufacturing companies, the companies whose information of income from fixed asset sales and non-current investment (separately) was available for 5 fiscal years were selected as statistical population.

In the studied statistical environment per fiscal year, 60 companies were selected as follows:

30 companies, among those with symbol 1 and 30 more companies of those with symbol 0 and -1 were selected through simple random method. It must be noted that, because of inaccessibility to 30 companies with non-current investment at each category per fiscal year, company-year information was gathered and analyzed, according to the previously mentioned conditions. hence, for the whole five fiscal year, 30 companies among the ones with symbol 1 and 30 more companies among the ones with symbol 0,-1 were selected through simple random method.

7. Testing Hypothesis

In these tests, null hypothesis indicates that there is not a significant difference between the means of independent variables of two groups of the companies. While, alternative hypothesis indicates that there is a significant difference between the means of independent variables of two groups of the companies. If the significance level of the test is more than 5% null hypothesis is accepted and the other one is rejected. However, in the statistical table of analyzing hypothesis, in some cases, the significance level of the test is too big but so close to 0.05. So, it is better to say that, in such cases, null hypothesis is rejected and the other hypothesis is accepted. Since sample companies of fixed assets are different each year, year variable is considered in the hypothesis of fixed assets. Finally, year-group interactive effect has been studied.

H1. There is a significant relation between earnings before tax deduction and income from fixed asset sales.

Table 1: Analysis results of the relation between earnings before tax and income from fixed sales

Effect	F	P
Year	2.40	0.0502
Group	0.66	0.42
Year*Group	10.17	0.00

Interpretation of results based on table 1 is as follows:

Statistic F (2.40) and the significance level (0.0502) indicate that there is a significant difference between earnings before tax deduction of companies at least in one year, excluding the groups.

Also statistic F (0.66) and significance level (0.42>0.05) indicate that there is not a significant difference between earnings before tax deduction of two groups of companies at least in one year, excluding the years.

Also statistic F (10.17) and significance level (0.00<0.05) indicate that there is a significant difference between earnings before tax deduction of two groups of companies at least in one year. In order to determine the year or years, Tukey test is used. After the test, we found that there is a significant difference between the earnings before tax deduction of two groups of the companies only in 2008.

Conclusion: Since the significance level (0.42) is more than 0.05, null hypothesis is accepted at 95% assurance level and the other hypothesis is rejected. It means that there is not a significant difference between earnings before tax deduction in companies with symbol 1 and those with symbol 0 and -1 at this level of assurance.

H2. There is a significant relation between earnings before tax and income from non-current investment sales.

Table 2: Analysis results of the relation between earnings before tax and income from non-current investment sales.

Effect	F	P
Group	1.59	0.21

Interpretation of results based on table 2 is as follows:

Since significance level (0.21) is more than 0.05, null hypothesis is accepted at 95% assurance level and the alternative hypothesis is rejected. It means that there is not a significant difference between earnings before tax deduction in companies with symbol 1 and those with symbol 0 and -1 at this level of assurance.

H3: There is a significant relation between gross profit and income from fixed asset sales.

Table 3: Analysis results of the relation between gross profit and income from fixed asset sales.

Effect	F	P
Year	0.10	0.98
Group	0.22	0.64
Year*Group	2.35	0.055

Interpretation of results based on table 3 is as follows:

Statistic F and significance level (0.98>0.05) indicate that there is not a significant difference between gross profit of companies in different years, excluding the groups.

Statistic F and significance level (0.64>0.05) indicate that there is not a significant relation between gross profit of two groups of companies, excluding the years.

Statistic F and significance level (0.05) indicate that there is a significance relation between two groups of companies at least in one fiscal year.

Conclusion: Since significance level (0.64) is more than 0.05, null hypothesis is accepted at 95% assurance level and the other hypothesis is rejected. It means that There is not a significant relation between gross profit of the companies with symbol 1 and those with symbol 0 and -1 at this level of assurance.

H4. There is a significant relation between gross profit and income from non-current investments.

Table 4: Analysis results of the relation between gross profit and income from non-current investment sales.

Effect	F	P
Group	2.34	0.13

Interpretation of results based on table 4 is as follows:

Since the significance level (0.13) is more than 0.05, null hypothesis is accepted at 95% assurance level and the other hypothesis is rejected. It means that There is not a significant difference between gross profit of the companies with symbol 1 and those with symbol 0 and -1 at this level of assurance.

H5. There is a significant relation between price/earnings per share (P/E) ratio and income from long-lives asset sales.

Table 5: Analysis results of the relation between P/E ratio and income from asset sales.

Effect	F	P
Year	2.16	0.07
Group	0.09	0.76
Year*Group	0.44	0.78

Interpretation of results based on table 5 is as follows:

Statistic F and significance level (0.07>0.05) indicate that there is not a significant difference between P/E ratios of different years, excluding the groups.

Statistic F and significance level (0.76>0.05) indicate that there is not a significant difference between P/E ratios of two groups of companies, excluding the year.

Statistic F and significance level (0.78>0.05) indicate that there is not a significant difference between P/E ratios of two groups of companies in different years.

Conclusion: Since significance level (0.76) is more than 0.05, null hypothesis is accepted at 95% assurance level and the other hypothesis is rejected. It means that There is not significant difference between P/E ratios of companies with symbol 1 and those with symbols 0 and -1 at this level of assurance.

H6. There is a significant relation between price/earnings per share (P/E) ratio and income from non-current investment sales.

Table 6: Analysis results of the relation between P/E ratio and income from non-current investment sales.

Effect	F	P
Group	0.82	0.37

Interpretation of results based on table 6 is as follows:

Since significance level (0.37) is more than 0.05, null hypothesis is accepted at 95% assurance level and the other hypothesis is rejected. It means that There is not significant difference between P/E ratios of companies with symbol 1 and those with symbols 0 and -1 at this level of assurance.

8. Interpretation of the Results

H1. The results of the test showed that the amount of earnings before tax had no effect on income from fixed asset sales and management did not sell fixed assets to match earnings before tax reported up with the earnings before tax expected. There was a significant difference between earnings before tax in companies with symbol 1 and the companies with symbol 0 and -1 at this level of assurance, only in 2008.

H2. The results of the research indicated that the amount of earnings before tax had no effect on income from non-current investment sales and management did not sell non-current investments to match earnings before tax reported up with the earnings before tax expected.

H3. The results of the test presented that the amount of gross profit had no effect on income from fixed asset sales and management did not sell fixed assets to match reported gross profit up with the expected gross profit.

H4. The results of the test showed that the amount of gross profit had no effect on income from non-current investments sales and management did not sell non-current investments to match reported gross profit up with the expected gross profit.

H5. The results of the test indicated that the P/E ratio had no effect on income from fixed asset sales and management did not sell fixed assets to decrease P/E ratio fluctuations and match it up with the expected P/E ratio.

H6. The results of the test presented that P/E ratio had no effect on income from non-current investment sales and management did not sell non-current investments to decrease P/E ratio fluctuations and match it up with the expected P/E ratio.

9. Concluding Remarks

Since historical cost is a common method to value assets and also due to current inflation, great difference between book value and sale value of assets and lack of reevaluation of assets for tax reasons, etc. earnings management was expected to exist through the use of above-mentioned tool. This had been verified by the overseas studies. However, It must be noted that the atmosphere governing Tehran Stock Exchange is different from that of other countries in which the research was conducted. Anyway, the discrepancy between the results of current research and those of other research as well as not performing earnings management through asset sales in this research can not be regarded as evidence not performing earnings management, since earnings can also be managed with other tools.

In the studies conducted by Safaei Kooyshahi (2009) and Koochaki (1992) in Iran, the results of the studies showed that managers did not make use of timing asset sales and recognition of income from them in order to smooth income. Thereby, the results of this research were in alignment with those conducted in Iran.

10. Research limitation

Because of inappropriate and inadequate disclosure of income from non-current investment sales by some companies listed in Tehran Stock Exchange, it was not possible to choose 30 companies under conditions pointed out in sampling section at each category per fiscal year. So, the year-company information was gathered and analyzed.

11. Implications

Due to existing different tools available for earnings management, the results of current research- that indicates managers do not use timing of long-lived asset sales for earnings management- does not prove that managers do not manage earnings, since managers can make use of other tools for this purpose. Thereby, the users of the financial statements are recommended to take heed of the possibility of earnings management by managers while using reports to make decisions based on the information in the financial statements.

12. Scope for future research

1. Since historical cost is the common method to value assets and because of current inflation as well as great difference between book value and sale value of assets and lack of reevaluation for tax reasons, etc. and also due to the results of current research, the reasons for not using the above tools in earnings management can be an appropriate subject in future studies.

2. income from fixed asset sales and non-current investment sales are considered as tools to perform earnings management in this research. As a result, studying other items of assets as earnings management tools can be appropriate subjects in future studies.

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