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Managing Earnings Through the Sale of Assets

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NORTHERN ILLINOIS UNIVERSITY

Managing Earnings through the Sale of Assets

A Thesis Submitted to the

University Honors Program

In Partial Fulfillment of the

Requirements of the Baccalaureate Degree

With Upper Division Honors

Department Of

Accountancy

By

Spencer Johnson

DeKalb, Illinois

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University Honors Program

Capstone Approval Page

Capstone Title (print or type)

Managing Earnings through the Sale of Assets

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HONORS THESIS ABSTRACT

This paper attempts to identify the extent to which firms in the services industries manage earnings by selling fixed assets and long-held investments. My design utilizes two regression equations: the first is to estimate normal levels of gains on asset sales and the second is to determine whether abnormally high gains on asset sales are associated with firms that have an incentive to manage earnings. Such firms are identified by just beating one of two benchmarks: zero earnings or last year's earnings. My results imply that there is no significant correlation between firms with an incentive to manage earnings and abnormally high gains on asset sales, which is consistent with prior literature.

Managing Earnings through the Sale of Assets

Introduction

Many topics in financial accounting are black and white: there is little room for interpretation. Accounting standards in the United States are established by the Financial Accounting Standards Board (FASB), and these standards are often described as “rules-based,” supporting the notion that the FASB tries to leave very little grey area in their standards so that companies are as uniform in their reporting as possible. Comparability in accounting helps financial statement users (such as investors and creditors) identify similarities and differences between companies, and helps ensure efficient allocation of capital in financial markets.

Despite these rules-based accounting standards, there is still a role for judgment and estimation in accounting. The manipulation of financial accounting reports is often referred to as earnings management, and it is one of a few areas in financial accounting which fascinate me. The line between managing earnings and intentionally misstating financial statements is blurry, and the ethical and legal aspects of earnings management are just as unclear. I enjoy exploring and investigating ambiguous subjects, so a research project examining earnings management suits me well.

My research goal is to discover how prevalent earnings management is in business. It would be difficult to generalize about all companies using every earnings management technique, so in my study, I will narrow my focus to detecting only one technique of earnings management in one group of industries. Research on earnings

management is very important. Accounting standard-setters and legislators need to know the extent to which managers manage earnings so that they can decide whether to enact laws or regulations against such behavior. It is my hope that my paper will reinforce the importance of this issue and will add new insights to the extant literature on this topic.

Literature Review

Earnings management is a very controversial issue in financial reporting in which managers intentionally manipulate earnings numbers either to help smooth income (reduce volatility in reported earnings) or to maximize reported earnings. Managers have an incentive to report the best earnings numbers possible to increase bonuses and raise the company's stock price, which, in turn, increases the value of the managers' stock options. One of the reasons that earnings management is such a contentious issue is that it is difficult to detect.

Managers can manage earnings using a variety of methods, usually categorized as either manipulation of accruals or real earnings management. Manipulation of accruals occurs when managers alter their estimates of accrual accounts, which can affect net income.¹ Managers engage in real earnings management when they make operating decisions, such as selling assets or producing more inventory, to improve the company's earnings. Since real earnings management involves operating decisions, as opposed to changes in estimates, it is generally much more difficult to detect, as there is a possibility the operating decisions were made for legitimate business purposes.

Earnings management has been a popular subject of research for the past few decades. Schipper (1989) reviews much of the literature up to the point of her publication

¹Some financial transactions are recorded at estimated amounts, and those are called accruals. Some accrual accounts (such as allowance for doubtful accounts) also affect expense accounts, which changes net income. Many of these accruals require judgments, which allow for managers to manipulate earnings by either overestimating or underestimating them.

and provides some of her own insights on the subject, focusing mainly on the manipulation of accruals. She finds that, up to that point, most research consisted of creating models that predicted normal levels of accruals, then identifying companies whose accruals appeared to be abnormal. Baber et al. (1991) focus more on real earnings management through discretionary spending on research and development (R&D). R&D expenditures have been a particularly common area of study in earnings management, probably because they must be separately disclosed, rather than grouped into selling, general and administrative (SG&A) expense. Roychowdhury (2006) discovers that firms with earnings just above zero use many other real methods to manage earnings, including price discounts and sales promotions (to drive sales) and overproduction (to lower cost of goods sold).

Bartov (1993) finds that managers tend to time sales of fixed assets and investments to help either smooth earnings or meet debt covenants. Hermann et al. (2002) research management behavior in Japan and also find that managers sell fixed assets and securities in order to manage earnings. The benchmark for Hermann et al. (2002) was an internal forecast developed by management.

Graham et al. (2005) survey 401 financial executives about financial reporting and how it affects their decisions. Evidence from the survey indicates that 78% of financial executives would sacrifice economic value in order to meet earnings benchmarks or smooth earnings. Graham et al. (2005) find that, generally, executives are chiefly concerned with the company's reputation and stock price (as well as their own careers), so they are willing to sacrifice economic value and/or negatively affect cash flow. Another notable discovery from their research is that the surveyed executives prefer

to use real earnings management techniques over accounting-based techniques (i.e., manipulation of accruals).

Bennet and Bradbury (2010) find evidence of earnings management through greater sales and reduced inventory, which are real activities, but did not detect any manipulation of accruals. Gunny (2010) also finds evidence of real earnings management. According to her research, there is a positive correlation between meeting or just beating earnings benchmarks (i.e., zero earnings or last year's earnings) and the use of real earnings management. What's more, Gunny (2010) discovers that companies that use real earnings management to meet benchmarks have better subsequent performance than companies that do not use earnings management and just miss out on earnings benchmarks. This confirms that there are real benefits to using real earnings management. She concludes that one reason for the better performance is due to signaling, or the notion that companies manage their earnings to try to show the true underlying value of the firm. This suggests that earnings management can be a positive tool used to report even more accurate information about companies. That, however, is not supported by the observations of Graham et al. (2005), who report that managers willingly sacrifice the economic value of their firms to manage earnings.

Eldenburg et al. (2011) find evidence of real earnings management in non-profit hospitals. These hospitals have the incentive to positively manage earnings to report positive income but also to manage earnings negatively to avoid excessive earnings and thereby giving the impression that they are not using all of their resources effectively. Eldenburg et al. (2011) determine that to meet/beat the benchmark of zero earnings, managers cut expenditures from non-operating and non-revenue-generating activities. To

cut back earnings, however, managers tend to dispose of fixed assets, generating losses and decreasing net income.

Cohen et al. (2008) determine that before the Sarbanes-Oxley Act (SOX) went into effect in 2002, companies were much more prone to engage in earnings management through manipulation of accruals. After SOX went into effect, however, companies quickly switched to real earnings management techniques, which are more difficult to detect than manipulating accruals, to disguise their actions to avoid reprimand. CEOs and CFOs switched to the less risky real earnings management because, once SOX was enacted, the individuals in both of these positions became personally responsible for certifying the accuracy and completeness of the company's financial statements. Hunton et al.'s (2006) findings mirror those of Cohen et al. (2008). Hunton et al. (2006) find that managers are less likely to manage earnings in areas with greater transparency, so they alter their techniques to exploit areas that are less visible to both the public and regulators. Hirst and Hopkins (1998) conduct a similar study, focusing more on analysts' behavior rather than management's. This type of research is important because it helps us understand how earnings management affects analysts' opinions and how they value companies' stock.

Hirst and Hopkins (1998) try to determine, based on two different methods of disclosure, how analysts respond to the sale of available-for-sale securities for the purpose of managing earnings upwards. They ask four groups of buy-side equity analysts to value a company's stock price after they present a different set of financial statements to each group. The first group is given financial statements that contain no earnings management with comprehensive income (CI) reported in the income statement while the

second group has financial statements that do include earnings management with CI disclosed the same way. The last two groups have financial statements with CI included in the statement of stockholders' equity, however one set contains earnings management while the other does not.

Hirst and Hopkins (1998) find that CI disclosure in the income statement leads to similar stock price valuations, regardless of whether there was earnings management. However, in the statement of stockholders' equity disclosure, analysts give a higher stock price to the financial statements that included earnings management. Hirst and Hopkins (1998) conclude that this occurs because analysts are more likely to consider the earnings management if it is transparently reported on a statement of performance (i.e., the income statement), and will factor it out of their valuation. However, they are less likely to detect the earnings management if CI is presented on the statement of stockholders' equity. Since GAAP currently allows reporting entities to include CI on the statement of stockholders' equity (and most elect to), there is an increased chance of earnings management through the sale of available-for-sale securities.²

Hypothesis Development

I derive my hypothesis from Gunny's (2010) study on how real earnings management is associated with future performance. Unlike Gunny, though, I do not hypothesize on how earnings management and future performance are related. Instead, I focus on uncovering evidence of earnings management through the use of real activities, specifically the sale of assets. I narrow the focus of my hypothesis even more by only considering firms in the services industries. I then target firms with an incentive to manage earnings, just as Gunny (2010) did, by distinguishing firms that just meet two

²Due to an Accounting Standard Update in 2011, the method of reporting comprehensive income in the statement of stockholders' equity will no longer be allowed. This could have implications for earnings management, making it more difficult.

particular benchmarks. These two benchmarks are zero earnings and last year's earnings, the same two used in Gunny's (2010) study. I use these two benchmarks because I want to maintain comparability to Gunny's (2010) study and also because they are easy to determine. Although Gunny (2010) did not find any evidence of real earnings management through asset sales, I believe that I will find such evidence with my more exclusive sample, which leads to the following hypothesis:

Hypothesis: Firms that just meet either zero earnings or last year's earnings display signs of earnings management through abnormal gains and losses on the sale of assets.

Research Design

The sample was derived from Wharton Research Data Services (WRDS), through its COMPUSTAT North America database, and consists of all firms in the services industries (SIC codes 7000-8999). I included annual data for firms spanning from 1988 through 2006 (19 years). I limited my sample to pre-2007 data so that none of the effects of the late-2000s recession would be included in my dataset. Also, consistent with Gunny (2010), I began with year 1988 because that was the first year that COMPUSTAT had data on income from asset sales. The sample contains 25,547 observations and 3,706 firms.

The design I use is taken directly from Gunny (2010). I use her design because it is well-structured, yet it did not uncover any evidence of earnings management through asset sales. This may be due to the fact that her sample included all industries (except the financial and utilities industries), so I targeted firms in the services industries since asset sales behavior is probably more consistent in similar industries and will therefore lead to

a more reliable regression analysis. I chose to target services industries because, after analyzing the asset sales behavior of many different industries, I found that firms in the services industries tend to sell more assets than any other industry – besides the financial industry – and I believe that the more asset sales data there is, the stronger the results of the analysis will be. I chose not to target the financial industry because, as Gunny (2010) explains, that industry is heavily regulated and would need a much different research design tailored to it.

This design calls for two separate regression analyses: the first regression will determine the expected level of gains on asset sales and the second will determine if there is an association between firms having an incentive to manage earnings and abnormally high gains on asset sales measured as the residuals from the first regression (Gunny 2010).

$$\frac{GainA_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 MV_t + \beta_2 Q_t + \beta_3 \frac{INT_t}{A_{t-1}} + \beta_4 \frac{ASales_t}{A_{t-1}} + \beta_5 \frac{ISales_t}{A_{t-1}} + \varepsilon_t^{Asset}$$

GainA = income from asset sales

A = total assets

MV = the natural logarithm of market value

Q = Tobin's Q, calculated as (market value + preferred stock + long- and short-term debt) / lagged total assets

INT = internal funds, calculated as (income before extraordinary items + depreciation and amortization + research and development expense)

ASales = long-lived asset sales

ISales = long-lived investment sales

All of the variables in Gunny's (2010) design are considered to be significant in determining a firm's level of gains on asset sales. Market value is included in the formula to control for size effects. Internal funds is another control variable which represent reduced funds available for investment. Tobin's Q indicates the marginal benefit to the marginal cost of adding a new unit of investment, which has a large bearing on whether a firm will sell long-lived assets (Gunny 2010).

For this design to function properly, income from asset sales, long-lived asset sales and long-lived investment sales must be monotonic, meaning they must all enter the equation with the same sign (positive or negative). Since it is possible for firms to have negative income from asset sales but impossible to have negative sales on assets, I converted all asset and investment sales to negative for observations where the income from asset sales was negative. Accordingly, the coefficients on the asset and investment sales variables are expected to be positive. High residuals from this equation are a signal of abnormal gains or losses through asset sales, which may be the result of earnings management (Gunny 2010).

For this analysis to be successful, it is necessary to separate firms that have an incentive to manage earnings with those who do not. To accomplish this, I employ the same technique Gunny (2010) uses to distinguish the firms. I use two different benchmarks to indicate an incentive to manage earnings: (1) net income just above \$0 and (2) net income just above last year's earnings. To determine which firms just beat \$0 earnings, I divide net income by total assets from the beginning of the year, and any firm with a result between zero and 0.01 is classified as *BENCH* (a firm which has an incentive to manage earnings). For the second benchmark, I subtract last year's net

income from this year's, and then divide the result by total assets at the beginning of the year. As with the previous benchmark, any firm with a result between zero and 0.01 is labeled *BENCH*.

<Insert Table 1 here>

Descriptive statistics

Table 1 shows the estimated levels of gain on asset sales. The entire sample was run through the regression equation from the previous section in SPSS v19. Unlike Gunny (2010), I have not winsorized the results at all so that all observations were included in the analysis. Except for the natural logarithm of market value (*MV*), each of the coefficients is statistically significant at the 0.05 level. In Gunny's (2010) study, *MV* was also not statistically significant. This independent variable was included to control for size effects, so it appears that this control may not be necessary. The coefficients in Table 1 for *ASales* and *ISales* are both significantly greater than the corresponding coefficients in Gunny's (2010) study, which could be due to the fact that there are greater sales of assets and investments in the services industries than there are on average. Also, both coefficients in this study are significant, whereas only *ASales* in Gunny's (2010) research was significant. The statistical significance of both coefficients could be explained by the fact that firms in the services industries have more similar asset sales behavior than do firms across all industries. Another factor that supports similar industry behavior is the adjusted R^2 in this study of 0.81, which is significantly higher than Gunny's (2010) adjusted R^2 of 0.28.

<Insert Table 2 here>

Table 2 presents statistics related to the residuals from the first regression. I chose not to winsorize these results either, so that all observations would be included in the analysis. The standard deviation for the residuals in my model is much higher than it is in Gunny's (2010) study, which suggests that there is much more variety in the residuals of this study than in hers.

<Insert Table 3 here>

Table 3 shows Pearson correlations between the residuals and other characteristics from the firms. The only significant correlation for *Abnormal GainAsset* is with *MTB*, which is positive and significant at the 0.01 level. In Gunny's (2010) study, no variables had any statistically significant correlation with the residuals.

Results

I use the same equation as Gunny (2010) to determine the association between firms just meeting earnings benchmarks (zero earnings, last year's earnings) and engaging in earnings management:

$$Abnormal\ GainAsset_t = \gamma_0 + \gamma_1 BENCH_t + \gamma_2 SIZE_t + \gamma_3 MTB_t + \gamma_4 ROA_t + \varepsilon_t$$

BENCH = an indicator variable that equals one if (1) net income divided by total assets at the beginning of the year is between zero and 0.01 or (2) the change in net income divided by total assets at the beginning of the year is between zero and 0.01; otherwise, the variable equals zero

SIZE = the natural logarithm of total assets

MTB = market to book: the market value of equity divided by the book value of equity

ROA = income before extraordinary items divided by total assets at the beginning of the year

In this second regression equation, the residuals from the first regression enter this one as the dependent variable. Gunny (2010) multiplied *Abnormal GainAsset* by (-1) so that low values would represent earnings management, but I do not do this. So, in this equation, high values are consistent with earnings management, and the predicted coefficient on *BENCH* is positive. *SIZE* is a control variable for size effects while *MTB* controls for opportunities to grow. *ROA* controls for the concern that earnings management is correlated to performance (Gunny 2010).

<Insert Table 4 here>

Table 4 displays the results from the second regression analysis. Consistent with Gunny's (2010) findings, the *BENCH* coefficient is close to zero and is not statistically significant. This indicates that, for the services industries, there is no association between companies that barely beat earnings benchmarks and abnormally high gains on asset sales, which refutes my hypothesis.

<Insert Table 5 here>

Table 5 shows the percentage of *BENCH* firms by industry (SIC code). In the services industries overall, 9.31% of firms just beat earnings benchmarks. When looking at individual industries, the percentage ranges from 0.00% to 28.01%. According to the hypothesis, industries with a higher percentage of *BENCH* firms should engage in more earnings management. With that in mind, I tried to apply the same regression equations in this study to industries 75 and 70, but the samples were not large enough to draw significant results.

Summary and Conclusions

This paper contributes to the body of literature on the identification of earnings management. I focus on firms engaging in real earnings management through the sale of fixed assets and long-lived investments. I model my research design after Gunny (2010), but focus on firms in the services industries. In this design, I estimate the normal levels of gains on asset sales for the entire sample and then identify firms with an incentive to manage earnings (*BENCH* firms) and evaluate whether these firms are associated with abnormally high gains on asset sales. Gunny (2010) did not find any significant correlation between abnormally high gains on asset sales and *BENCH* firms, and I also found no such correlation in my study.

I did attempt to apply the same regression analysis to two specific industries that had a greater proportion of *BENCH* firms, but the samples were too small. One possible opportunity for further study would be to aggregate industries with a high proportion of *BENCH* firms and apply Gunny's (2010) regression on that sample. Another research opportunity would be to use a similar design to the one in this paper and apply it to quarterly financial statements rather than annual ones. This would be beneficial because firms are probably more likely to manage earnings closer to year-end (fourth quarter), so it would be easier to identify that behavior when just examining that particular quarter. One more potential area for study is comprehensive income (CI) disclosure and how it affects earnings management. This would build on Hirst and Hopkins' (1998) study and would be significant because of the change in reporting requirements, prohibiting firms from presenting CI on the statement of stockholders' equity. This would make it more

difficult for firms to engage in earnings management through the sale of available-for-sale securities.

Appendix: Personal Reflection

I was excited to begin my Capstone project at the beginning of the semester. At the end of the previous semester, Dr. Matuszewski, my faculty adviser, and I picked out a topic to research that I was very interested in: earnings management. I was fascinated by this subject because it has no clear ethical or legal boundaries and it is such a controversial issue. After we decided on the topic, my mind raced, thinking of all the different things I could do. I wanted to create a case study, and then I wanted to generate a revolutionary piece of research, and then I wanted to do something else. But whatever my idea was at the time, I thought in my head that I was going to be trailblazing, doing something new and inventive that no one had ever seen before. After the first couple of meetings with Dr. Matuszewski, I realized I would be doing no such thing.

I was first asked to review the literature that related to my topic, a task that I found to be tedious and time-consuming. There were many times when I found my mind trailing off as I was reading the papers. Much of the subject matter was over my head and I had to concentrate in order to comprehend a lot of the writing. Once I reviewed the literature, I had to fashion my study around the research that I read about. I tweaked my design a few times and did not actually have my design set until the second half of the semester – and I ended up using the same design as one of the papers I had read. I felt disappointed that I could not even come up with a design of my own, but I had severely underestimated the complexity of some of the regression equations in the earnings management literature. It was not until I was actually inputting the information into SPSS that I fully realized what the design was supposed to measure. But before I could use SPSS, I needed to get the data into a usable format.

This part was difficult because the data I had gotten from the WRDS database did not include variables for last year's assets and last year's net income, two measures I had to have to run the regression analysis. To get these variables, I had to do some manipulating in Excel. The strange thing is, I found this part of the project the most exciting. Before I tried to create the variables, I would daydream about ways to manipulate the data and utilize formulas to make my job as easy as possible. Once I figured out how to create the variables using the least amount of effort, I felt extremely satisfied. Then my task was to run the regression and write up my results.

Unfortunately, my results did not come out as I had hypothesized. At this point, I was disappointed all over again; I stole a research design from someone else and did not get any significant results. I actually thought for a moment that this was all a waste of time. Then I remembered how Dr. Matuszewski would stress to me that the main goal of this project was to learn about the research process, and I quickly realized that this was anything but a waste of time. The process was, at times, stressful, satisfying and frustrating, but always challenging and rewarding. I know so much more about research and have much more of an appreciation for it now. I was not able to blaze any trails with my research, or even draw any significant results from it, but at least I learned from it.

TABLE 1

Estimation of the normal level of gain on asset sales

Variable	Coefficient	<i>p</i> -value
Intercept	-0.012	0.002
$\frac{1}{A_{t-1}}$	0.002	0.000
MV_t	0.000	0.700
Q_t	0.000	0.012
$\frac{INT_t}{A_{t-1}}$	0.000	0.002
$\frac{ASales_t}{A_{t-1}}$	0.422	0.000
$\frac{ISales_t}{A_{t-1}}$	0.306	0.000
Adj. R^2	0.81	
# of Observations	25,547	

TABLE 2

Descriptive statistics of residuals

	Mean	Median	Standard Deviation
Residuals	.000	.0129	.35

TABLE 3

Pearson correlation matrix

	<i>SIZE</i>	<i>MTB</i>	<i>ROA</i>	<i>Q</i>	<i>INT</i>
<i>MTB</i>	.011*				
<i>ROA</i>	.033***	.036***			
<i>Q</i>	-.035***	-.083***	-.679***		
<i>INT</i>	.033***	.036***	.997***	-.668***	
<i>Abnormal</i>	.009	.085***	-.008	.000	.000

*/**/*** represent statistical significance at the 0.10/0.05/0.01 levels

TABLE 4

Regression relating abnormal residuals to firms just meeting benchmarks

Variable	Coefficient	<i>p</i> -value
Intercept	-.006	.187
<i>SIZE_t</i>	.001	.223
<i>MTB_t</i>	.000	.000
<i>ROA_t</i>	.000	.066
<i>BENCH_t</i>	.006	.464
Adj. <i>R</i> ²	.007	
# of Observations	25,547	

TABLE 5

Percentage of firms that just beat earnings benchmarks by SIC code

SIC Code	non-BENCH	BENCH
75 (307)	71.99%	28.01%
70 (744)	79.44%	20.56%
72 (356)	80.06%	19.94%
83 (261)	84.67%	15.33%
79 (1,637)	86.87%	13.13%
78 (1,026)	89.86%	10.14%
80 (2,546)	90.06%	9.94%
87 (2,631)	90.65%	9.35%
76 (93)	91.40%	8.60%
82 (466)	92.27%	7.73%
73 (15,448)	92.45%	7.55%
81 (23)	95.65%	4.35%
86 (4)	100.00%	0.00%
89 (5)	100.00%	0.00%
Total (25,547)	90.69%	9.31%

The numbers in parentheses in the SIC Code column represent the number of firms under each SIC code

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