日本管理会計学会誌 管理会計学 2009 年 第 17 巻 第 1 号

Japanese Firms' Real Activities Earnings Management to Avoid Losses

Chine-min Kevin Pan

Abstract

This paper investigates if Japanese firms that report small positive profits participate in earnings management through real activities manipulation to avoid reporting losses. The evidence indicates that these firms upwardly manage earnings by cutting discretionary expenses and overproducing. Meanwhile, the findings also suggest that they simultaneously record income-decreasing accruals, suggesting that firms reporting small positive profits have a stronger incentive to avoid reporting losses.

Keywords: Accruals, Cash Flow from Operations (CFO), Discretionary Expenses, Production Costs, Earnings Management

日本企業の実質活動による報告利益管理

潘 健民

<論文要旨>

本研究では、日本企業の実質活動による報告利益管理の検証を行った。2000 年以降、会 計ビッグ・バンの影響により、日本企業は変更された会計基準への対応を強いられた。本 研究は、先行研究と同様に、営業キャッシュ・フロー、発生項目、裁量的支出及び生産コ ストに焦点を当てて分析を行った。分析の結果、対象企業は裁量的支出の削減を行うのと 同時に、大量生産によりコストを低減させることにより、利益数値を作り上げることが確 認できた。同時に、対象企業は、発生項目により利益数値を引き下げることも確認でき、 対象企業が報告利益管理を行う動機がさらに強まったと考えられる。本研究における分析 結果を総合すると、対象企業は実質活動による報告利益管理を行っていた可能性があるの ではないかと考えられる。

<キーワード> 発生項目、営業キャッシュ・フロー、裁量的支出、生産コスト、報告利益管理

2008 年 3 月 11 日 受付 2008 年 7 月 30 日 受理 早稲田大学大学院商学研究科博士後期課程 Submitted 11 March 2008 Accepted 30 July 2008 Doctoral Student, Graduate School of Commerce, Waseda University

3

1. Introduction

This paper investigates Japanese firms' earnings management through real activities manipulation (i.e., operational activities that affect cash flows). In particular, this paper investigates if Japanese firms that report small positive profits engage in real activities management to avoid reporting losses.

Starting in the late 1990s, the Japanese business environment entered an era of accounting change. During this time, new standards were adopted in the Japanese Generally Accepted Accounting Principles (GAAP) as part of the reform known as the Japanese Accounting "Big Bang." With so many changes in accounting rules within such a limited time span, it would be a valuable exercise to examine how these new accounting standards have influenced accounting practice in Japanese firms.

In this paper, I examine if Japanese firms manage earnings to avoid reporting losses through real activities earnings management. The existing literature on earnings management shows that managers have a strong incentive¹ to avoid negative earnings surprises or/and exceed specific earnings thresholds.²

Several past studies provide substantial evidence that Japanese managers engage in earnings management. For example, Shuto (2000) and Suda and Shuto (2001) provide evidence on accruals management and Suda and Shuto (2005) present evidence of earnings management combined with earnings distribution and accruals management. Similarly, Herrmann, Inoue, and Thomas (2003) link the earnings management activities of Japanese firms with the sales of fixed assets and marketable securities, while Shuto (2007) establishes a connection with executive compensation schemes. In other extensions, Yamashita and Otogawa (2008) investigate if Japanese firms managed earnings in response to the tax reductions of the late 1990s and Onuma (2004) analyzed the use of valuation allowances for deferred taxes for earnings management in Japanese commercial banks. However, the evidence on earnings management in Japan largely ends in the 1999 fiscal year³ with only a few studies, such as Onuma (2004) and Pan (2006), continuing beyond the 2000 fiscal year.

This paper contributes to the literature by linking the earnings management of Japanese firms to real activities manipulation. Until now, research on earnings management activities has focused on accruals management with only a few studies extending their scope to specific earnings management vehicles. This paper is also one of the few studies that examine earnings management activities of Japanese firms after the 2000 fiscal year.

2. Earnings and Real Activities Management

2.1 Managing to Exceed Earnings Thresholds

One of the mainstream research methods used to detect earnings management is to depict the frequency distribution of earnings by firm-year to indicate if firm executives manage earnings to avoid reporting losses. More specifically, when plotting the frequency of earnings into earnings intervals, researchers often find a discontinuity in the zero earnings interval. This discontinuity then provides evidence of the firms' attempts to manage earnings to exceed the zero earnings threshold to avoid reporting losses.

The particular finding of an earnings distribution discontinuity was first documented by Hayn (1995) and Burgstahler and Dichev (1997). This method has also been applied by Degeorge, Patel and Zeckhauser (1999), Dechow, Richardson and Tuna (2003), Beaver, McNichols and Nelson (2007), Xue (2004), and Durtschi and Easton (2005). In addition, several studies on earnings management activities in Japanese firms employ similar methods, including Shuto and Suda (2001), Suda and Shuto (2005), and Pan (2006).

2.2 Accruals Management and Real Activities Management

Other than the shape of the frequency distribution of earnings, the existing literature also presents models and methods to capture earnings management activities by firms. A Jones-type accruals model (Jones, 1991) or the modified Jones accruals model (Dechow, Sloan and Sweeney, 1995) has dominated the detection of earnings management activities during the last decade. In addition to their role as a detector of earnings management, increases/decreases in accruals are also presented as evidence of earnings management.⁴

More recently, real activities earnings management has received increasing attention from younger researchers. In Ball and Shivakumar (2006), it is argued that a less noisy earnings variable is obtained by adding working capital accruals to the cash flows from operations (CFO). In short, accruals models are used to detect earnings management activities with *no direct cash flow consequences* (Roychowdhury, 2006).

Conversely, real activities earnings management focuses on detecting earnings management activities with *direct cash flow consequences*. The literature on real activities earnings management details the following transactions. First, cutting research and development (R&D) expenses, or selling, general and administrative (SG&A) expenditures to increase income. Second, overproducing to reduce the cost of goods sold to increase income. Third, cutting prices/offering price discounts to boost sales in the current period. Finally, selling fixed assets with unrealized holding gains or losses.⁵

In a seminal study, Roychowdhury (2006) proposes and finds evidence that firms manage earnings through real activities manipulation. Following the procedures developed in Roychowdhury (2006), Gunny (2005) analyzes the consequences of real activities earnings management and finds that managing earnings through real activities significantly hinder the future performance of firms. Zang (2007) also studies the trade-off between accruals management and real activities management and finds that managers opportunistically switch from accruals to real activities and vice versa. In a recent paper, Cohen, Dey and Lys (2008) investigate and find that accrual-based earnings management declines significantly after the passage Sarbanes-Oxley Act (SOX) in 2002, while real activities earnings management increases significantly after the passage of SOX.

3. Real Activities Hypotheses

3.1 Real Activities Earnings Management

A number of studies have discussed the possibility that managerial intervention in the reporting process can occur via not only accounting estimates and methods, but also operational decisions.⁶ Shortly after Healy and Wahlen (1999), Dechow and Skinner (2000) propose that the acceleration of sales, alterations in shipment schedules and the delay of R&D and maintenance expenditures are some of the earnings management methods available to managers. Roychowdhury (2006) investigates several other real

activities management methods, including price discounts and the reduction of discretionary expenses, as possibly optimal actions given the economic circumstances of the firm.

In Roychowdhury (2006), two features characterize real activities manipulation: (a) departures from normal operational practices—these departures are, by themselves, potentially detrimental to firm value,⁷ and (b) a desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations.⁸ Real activities management affects cash flows and, in some cases, accruals. Zang (2006) also argues that real activities and accruals management are substitutes. Hence, the present analysis also investigates accruals management.

This paper focuses on the following real activities earnings management manipulation methods documented in the literature and their effects on excess CFO:

- 1. offering price discounts to increase sales,
- 2. reducing discretionary expenses, and
- 3. overproducing to decrease the costs of goods sold.

3.2 Offering Price Discounts to Increase Sales

Sales manipulation is generally defined as a managerial attempt to temporarily increase sales before the fiscal year-end. It is argued that by offering price discounts, managers can rush in more sales volume before the year-end. However, managers likely undertake such actions even in the normal course of business. Whether these activities are more extensive than normal among firms trying to meet earnings targets is then an empirical question. Also, it is expected that the additional sales volumes created by price discounts will reverse in the next fiscal year once the firm stops offering such discounts.

3.3 Reducing Discretionary Expenses

One effective way to increase earnings is reducing discretionary expenses. Following Roychowdhury (2006), this paper investigates if Japanese firms make use of discretionary expenses to manage earnings by examining advertising, research and development (R&D) and selling, general and administrative (SG&A) expenses.

Together, advertising and R&D typically comprise a large share of discretionary expenses and managers can temporarily increase earnings through their reduction. For example, Mande, File, and Kwak (2000) provide evidence that Japanese firms in the 1990s smoothed income through the adjustment of R&D expenses.

Other than advertising and R&D expenses, SG&A usually includes, amongst other things, employee training, maintenance and traveling expenses. These items are generally in the form of cash. Reducing discretionary expenditures has positive effects on excess operational cash flows in the current period, but only at the expense of lower cash inflows in the future. At the same time, when reducing discretionary expenditures such advertising and R&D, the long-term competitiveness and profitability of the firm is adversely affected.

Roychowdhury (2006) expresses discretionary expenses as advertising expense + R&D expense + SG&A expense. SG&A expense in Roychowdhury (2006) is taken from COMPUSTAT data item #189. The data definition in COMPUSTAT #189 indicates that the calculation of SG&A already includes advertising and R&D. In other

words, it is very possible that Roychowdhury (2006) double counts advertising and R&D expenses in discretionary expenses. To avoid this, this paper employs SG&A expense as the discretionary expense.

3.4 Overproducing to Decrease the Cost of Goods Sold

Recall the principle of profit-maximization from any introductory economics text: firms maximize profits at the point where marginal costs equal marginal revenues. Roychowdhury (2006) argues that "...manufacturing firms can overproduce (produce more goods than necessary to meet expected demand) to manage earnings upwards (p. 340."

As the production volume of goods increases, variable costs also increase. However, when production volumes increase, fixed costs do not change and the per-unit fixed overhead costs decline. As long as the increase in marginal costs per unit does not exceed the decrease in fixed costs per unit, total cost per unit declines. With lower total costs per unit, the reported Costs of Goods Sold (COGS) are lower, and firms are able to report better operating margins.

This paper defines production costs as the sum of Costs of Goods Sold and the Change in Inventory during a period. With this definition, if the firm decides to manage earnings through overproduction, the firm will need to bear the production and holding costs of the overproduced goods that the firm is unable to sell before the end of the fiscal year.

Nonmanufacturing firms also have production costs within the scope of this definition. It is possible, for example, that nonmanufacturing firms receive price discounts from bulk purchases. If the firm receives price discounts, it reports lower COGS and higher operating margins. At the same time, the firm also incurs the inventory holding costs of the overpurchased goods that the firm is unable to sell before the fiscal year-end. Therefore, for a given sales level, cash flows from operations are expected to be lower than normal.

3.5 Formal Hypotheses

Similar to Roychowdhury (2006), the discussion in this section suggests that the relation between real activities and sales is as follows: offering price discounts and overproducing leads to higher production costs relative to sales volume, while reducing discretionary expenditures leads to lower discretionary expenses relative to sales. Conversely, the relation between real activities and sales is as follows: price discounts, channel stuffing, and overproducing may simultaneously decrease CFO, while reducing discretionary expenditures may increase CFO.

Following Roychowdhury (2006), the formal hypotheses are as follows:

Formal Hypothesis for Overproduction: After controlling for the level of sales, target firms should have unusually high production costs.

Formal Hypothesis for Discretionary Expenses: After controlling for the level of sales, target firms should have either or both unusually low cash flow from operations (CFO) and low discretionary expenses.

4. Data and Variable Definitions

4.1 Data and Sample

Financial and stock price data are obtained from the Nikkei Economic Electronic Databank System–FinancialQUEST (hereafter, NEEDS-FQ) on-line database service. All firms in the sample are listed in the first and second section of the Tokyo Securities Exchange. All firms included in the sample are also March fiscal year-end firms. The data period covers the period from fiscal year 2000 to fiscal year 2004. To ensure data consistency, firms that change their fiscal year-end during the sample period are removed. In addition, all firms in the sample are required to have consecutive firm-year data throughout the entire sample period. To calculate market capitalization, firm-years are excluded if the stock price data is missing.

The Nikkei industry classification codes are used to identify if a firm is a manufacturing or nonmanufacturing firm. In addition, the two-digit Nikkei medium industry classification codes are used to identify a firm's industry affiliation. Furthermore, firms in regulated industries (e.g., utilities), banks, and other financial institutions are excluded from the sample.

The regressions in the paper are estimated for every industry for every year. Any industry with less than 15 observations in a year is excluded from the sample. As a result, the full sample consists of 8,205 observations from 24 industries and 1,641 individual firms over the period 2000 to 2004.

4.2 Choice of Scaling Factor

The choice of scaling factor is intended to incorporate the uniqueness of the accounting environment in Japan. In this paper, all variables are deflated by market capitalization unless specified otherwise.

The choice between total assets or market capitalization as the scaling factor is a controversial issue in the accounting literature. In the case of Japanese firms, the market value of equity is a better deflator than the book value of total assets. This is because due to a deep-rooted historical cost accounting convention in Japan, the book value of land held by long-established firms may be undervalued.⁹ These unrealized holding gains hidden within land prices are very common among long-established Japanese firms. By using market capitalization, the expectations of market participants to some extent justify the unrealized holding gains hidden in the firm's total assets.

4.3 Expectation Models for Excess Values

Following the procedures found in the literature to detect real activities management (Roychowdhury, 2006; Gunny, 2006; Zang, 2006), I first estimate the 'normal level value of the variable' and then define the deviation between this and the realized value of variable as the 'excess value of the variable'.

To provide specific detail on the empirical procedure, we give a detailed description of how we derive the excess cash flow from operations (CFO). I first use the model presented in Dechow, Kothari and Watts (1998) to estimate the normal CFO for each firm-year. Then using the sales in this firm-year and the estimated mean relation between CFO and sales for the corresponding industry-year, I define the normal CFO. Finally, I define the deviations between the estimated normal CFO and the realized CFO as 'excess CFO.'

Four models are selected from Dechow, Kothari and Watts (1998) to define the

日本企業の実質活動による報告利益管理

excess cash flows from operations, excess production costs, excess discretionary expenses, and excess accruals. All four of these models are represented as a linear function of sales or the change in sales.

The first model defines the excess value of cash flow from operations. As discussed, the cross-sectional linear models are regressed on every industry every year.

The model is expressed as follows:¹⁰

$$CFO_t = \alpha_0 + \alpha_1 * S_t + \alpha_2 * \Delta S_t + \varepsilon_t \tag{1}$$

where

 CFO_t = cash flows from operations in period t, S_t = sales generated in period t, and ΔS_t = changes in sales in period t.

The regression model assumes a linear relation between the cash flow from operations and sales and change in sales in the current period. The excess CFO or excess cash flows from operations are defined as the deviations between the realized CFO and the estimated CFO.

The treatment in regression (1) is also applied to regressions (2) and (3) to define excess production costs and excess discretionary expenses. Again, the cross-sectional regressions are estimated for every industry and year:

$$PROD_{t} = \beta_{0} + \beta_{1} * S_{t} + \beta_{2} * \Delta S_{t} + \beta_{3} * \Delta S_{t-1} + \varepsilon_{t}$$

$$Disex_{t} = \gamma_{0} + \gamma_{1} * S_{t-1} + \varepsilon_{t}$$

$$(2)$$

$$(3)$$

 $PROD_t = production costs$, defined as Cost of Goods Sold + Change in Inventory, $Disex_{i}$ = discretionary expenses, defined as SG&A, S_{t-1} = sales generated in the prior period t-1, and ΔS_{t-1} = changes in sales in the prior period t-1.

The excess *PROD*, or excess *production costs*, and excess *Disex*, or excess discretionary expenses, are also defined as the deviations between the realized PROD and the estimated PROD, and realized Disex and the estimated Disex respectively. Regression (2) assumes a linear relation between production costs between sales, change in sales and change in sales in previous period. Regression (3) assumes a linear relation between discretionary expenses and sales. Production costs here are defined as the sum of the costs of goods sold and the change in inventory. Discretionary expenses here are defined as selling, general and administrative expenses (SG&A).

Finally, accruals are introduced for the purpose of the comparison between accruals management and real management. 'Normal' accruals are estimated by using the model in Jones (1991):

(3)

	CFO _t	PROD _t	Disex _t	Accruals _t
Intercept	***0.084817	***-0.24238	***0.240766	*0.013138
*	(11.18291)	(-21.4619)	(28.50354)	(1.658283)
S	***0.038102	***0.834371		· · · ·
D_t	(25.45533)	(247.7071)		
S			***0.140022	
\mathcal{D}_{I-1}			(75.96929)	
۸ <u>۶</u> .	-0.007335	-0.06204		0.020035
	(-0.36414)	(-1.47825)		(1.022601)
AS. 1		***0.098254		, , , , , , , , , , , , , , , , , , ,
		(3.054039)		
PPE.				***-0.12137
				(-41.5501)
#Obv.	8205	8205	8205	8205
Adjusted R^2	0.2965	0.9624	0.5914	0.3526

Table 1 - Excess Variable Expectation Models Panel A: Expectation Models Estimated with Cross-sectional Regressions

*, **, and *** indicate variable significant at 10%, 5%, and 1% level respectively. The sample includes 24 industries and 120 industry-years over 2000 to 2004 fiscal-years. Numbers presented in the table are mean coefficients and mean adjusted R-squared estimated by each industry and by each year. The t-statistics reported in the parenthesis are calculated from standard errors of the mean across all industry-years.

Panel B: Descriptive Statistics of Variables to Run the Ex-	xpectation Models
---	-------------------

	Real Numbers (in	Million Yen)	Scaled Nur	nbers
	Mean	Median	Mean	Median
CFO	13,555	2,209	0.198718	0.138653
Production Costs	176,918	34,176	4.144555	2.375578
Discretionary Expenses	43,351.85	7,688	0.7424	0.529861
Accruals	-5,360	-487	-0.16483	-0.07547
Sales	229,140	49,217	5.040252	3.097302
Change in Sales	-8,004	-13	-0.05138	0.020469
Property, Plant and Equipment	53,586	8,720	0.9653	0.563489
Market Value of Equity	122,437	14,849		

#Obvs 8,205

Definition of Variables: CFO: Cash flow from operations; Accruals: [Earnings before extraordinary items - CFO]; Production Costs (PROD): [Cost of Goods Sold + Change in Inventory]; Discretionary Expenses (Disex): [Selling, General and Administrative Expenses]; S: Sales; S_{L-1} : Sales in Prior Year; ΔS : Change in Sales; ΔS_{L-1} : Change in Sales in Prior Year; PPE: Property, Plant and Equipment; Scaling Factor: Market Capitalization.

$$Accruals_{t} = \lambda_{0} + \lambda_{1} * \Delta S_{t} + \lambda_{2} * PPE_{t} + \varepsilon_{t}$$
(4)

where

Accruals_t = accruals, defined as earnings before extraordinary items minus CFO, and PPE_t = property, plant and equipment.

	0 <pretax<0.03 (650)<="" th=""><th colspan="2">Rest of Sample (7555)</th></pretax<0.03>		Rest of Sample (7555)	
	Mean (t-stats)	Median (z-stats)	Mean	Median
Market Value of Equity	***295,268	***31,414	107,567	14,186
(million JPY) Market to Book Ratio	***4.275569 (6 82)	(7.5239) ***1.247726 (10.7938)	1.205363	0.771787
Total Asset (million JPY)	*30,189 (-1.84)	59,267 (1.2294)	260,689	52,726
Sales (million JPY)	*292,808 (1.85)	*`*47,993 (-0.2420)	223,662	49,269
Earnings before Extraordinary Items (million JPY)	7,122 (-0.65)	1,380 (-0.9506)	8,288	1,649
Earnings after Extraordinary Items (million JPY)	4,481 (-0.56)	***442 (-6.4830)	5,565	1,102
Net Extraordinary Items (million JPY)	-2,641 (-0.12)	*-418 (-1.7792)	-2,723	-319
Cash Flow from Operations (million JPY)	**19,384 (2.69)	2,551 (1.0659)	13,053	2,193
Accruals (million JPY)	***-12,263 (-4.82)	***-761 (-3.5936)	-4,766	-467
Sales / Market Capitalization	***2.851591 (-8.32)	***1.807746 (-12.0135)	5.228555	3.258519
EBEI / Market Capitalization	***0.050634 (-8.72)	***0.035068 (-20.6786)	0.114281	0.108696
Pretax Income / Market Capitalization	0.016882 (-0.30)	***0.018084 (-26.5644)	0.035351	0.080284
CFO / Market Capitalization	***0.122431 (-3.83)	***0.084057 (-10.2968)	0.205282	0.144477
Accruals / Market Capitalization	-0.0718 (-0.95)	-0.04223 (-0.5690)	-0.091	-0.03908
Production Costs / Market Capitalization	***2.286623 (-7.67)	***1.23074 (-11.5230)	4.304404	2,499414
Disex / Market Capitalization	0.485651 (-8.31)	0.344778 (-9.48)	0.76449	0.547558
Inventory Turnover Ratio	*9.085802 (1.83)	**3.747806 (-2.6126)	6.676297	4.015724
Receivable Turnover Ratio	9.293555 (-0.82)	5.058046 (-1.2230)	12.92603	5.250318

Table 2 - Descriptive Statistics of Variables

*, **, and *** indicate variable differences from the rest of the sample significant at 10%, 5%, and 1% level respectively. The t-statistics in the parentheses are produced by t-test for the differences in means; and z-statistics by non-parametric test for the differences in medians.

Definition of Variables: Accruals: [Earnings before extraordinary items - CFO], Production Costs (PROD): [Cost of Goods Sold + Change in Inventory], Discretionary Expenses (Disex): [Selling, General and Administrative Expenses], EBEI: Earnings before Extraordinary Items, MVE: The Market Value of Equity (Market Capitalization), Market-to-book (MTB): The Ratio of MVE to the Book Value of Equity, Inventory Turnover Ratio: [Cost of Goods Sold] / [(Beginning Inventory + Ending Inventory) /2], Receivable Turnover Ratio: Sales / [(Beginning Gross Receivables + Ending Receivables) / 2].

4.4 Descriptive Statistics of Excess Values

Table 1 provides the estimated results from the four models. Panel A details the regression estimates for each industry and year. Panel B provides descriptive statistics of the variables used to estimate the models.

Panel A in Table 1 shows the coefficients and *t*-statistics calculated from the mean standard errors across all industry-years from 2000 to 2004. All regressions reported in Panel A are estimated for every industry in each year. Hence, the regressions are estimated with a very strict assumption that all firms in the same industry-year have



Figure 1 - Frequency Distribution of Earnings before Extraordinary Items (Ordinary Income)

exactly the same parameters. In essence, all of the independent variables in each model (except for ΔS_t) are significantly correlated with their corresponding dependent variables.

Panel A also reports the adjusted R^2 for each regression. Since the cross-sectional regressions are estimated for every industry and year, the adjusted R^2 in Table 1 are the mean adjusted R^2 . The mean adjusted R^2 is 0.2965 for CFO, 0.9624 for production costs, 0.5914 for discretionary expenses, and 0.3526 for accruals.

5. Selection of Target Firms and Descriptive Statistics

5.1 Samples Examined

This paper examines firms where I suspect managed earnings by considering if firms manage earnings through real activities manipulation to avoid reporting losses. The existing literature on earnings management (Burgstahler and Dichev, 1997; Degeorge, Patel, and Zeckhauser, 1999; Matsumoto, 2002) shows that managers have a strong incentive to avoid negative earnings surprises or exceed specific earnings thresholds.

The thresholds that managers have a strong incentive to exceed include: (a) zero earnings (to not report a loss), (b) last period's earnings (to not report decreased earnings), and (c) analysts' forecasts (to not miss analysts' expectations).

Following prior work (Burgstahler and Dichev, 1997; Beaver, McNichols, and Nelson, 2007), firms that I suspect of managing earnings to exceed the zero earnings threshold are defined as firms that report small positive profits. Small positive profits are defined as earnings after extraordinary items deflated by market capitalization that are greater than or equal to zero, but less than 3%.

日本企業の実質活動による報告利益管理



Figure 2 - Frequency Distribution of Earnings after Extraordinary Items (Pretax Income)

The descriptive statistics of the small positive profit reporting firms and the remainder of the sample are documented in Table 2. Following the stated sample selection criterion, there are 650 firm-years in the sample defined as the small positive profit-reporting firms. The observations in the remainder of the sample comprise 7,555 firm-years. The descriptive statistics in Table 2 reveal that firms that report small positive profits have larger market values of equity, higher market-to-book ratios, more cash flows from operations, and more income-decreasing accruals than the remainder of the sample. Meanwhile, the descriptive statistics in Table 2 also reveal that firms that report small positive profits have smaller total assets relative to the remainder of sample.

5.2 Distributions of Earnings Frequency

Figure 1 and Figure 2 group firm-years into intervals based on earnings before extraordinary items deflated by market capitalization and earnings before extraordinary items deflated by market capitalization respectively. The shapes of the earnings distribution in both Figure 1 and Figure 2 are similar to that documented in the literature in that the frequencies of earnings shift upwards when going from the left of zero to the right.

5.3 Correlations between Variables

Pearson product-moment correlation and Spearman rank correlation coefficients are also calculated. However, the results are not given. Both methods generate similar results. As expected, CFO and Accruals are negatively correlated with each other (-0.941 and -0.787, respectively). Earnings before extraordinary items are found to be positively correlated with CFO, production costs, and discretionary expenses, but negatively correlated with accruals.

The correlations between the excess and total level variables show that excess production costs and excess discretionary expenses are negatively correlated with each other (-0.017 and -0.030, respectively). Excess CFO is negatively correlated (-0.327 and -0.214, respectively) with excess production costs, suggesting that production costs generate consequences for cash flow.

The correlation coefficients between excess CFO and excess accruals are highly negative (-0.836 and -0.647, respectively). There are two possible interpretations. First, managers engage in accruals management and real management at the same time, and second, real management through overproduction has a positive effect on excess accruals but a negative effect on excess CFO.

6. Analysis on Firms that Report Small Positive Profits

6.1 Research Design for Small Positive Profit-reporting Firms

The objective of this paper is to investigate if Japanese firms manage earnings through real activities manipulation to avoid reporting losses. Most prior studies, such as Burgstahler and Dichev (1997), Degeorge, Patel, and Zeckhauser (1999), and Matsumoto (2002) conclude that firms that anticipate small losses have a stronger incentive to manage earnings. The regressions used to estimate if firms that report small positive profits manage earnings upwards through real management to avoid reporting losses are:

$$Y_t = \beta_0 + \beta_1 * (Size)_t + \beta_2 * (MTB)_t + \beta_3 * (EBEI)_t + \beta_4 * (Small) + \varepsilon_t$$
(5)

$$Y_t = \beta_0 + \beta_1 * (Size)_t + \beta_2 * (MTB)_t + \beta_3 * (PRETAX)_t + \beta_4 * (Small) + \varepsilon_t$$
(6)

where

 Y_t = excess value in period t calculated from the estimations in regressions (1) ~ (4).

- Size = natural logarithm of market capitalization in period t, measured by the deviation from the industry-year mean,
- MTB = ratio of Market Capitalization over the Book Value of Equity in period t, measured by the deviation from the industry-year mean,
- *EBEI* = earnings before extraordinary items, measured by the deviation from industry-year mean,
- PRETAX = earnings after extraordinary items, measured by the deviation from the industry-year mean, and,
- Small = an indicator variable, set equal to one if the firm is defined as a small positive profit-reporting firm (i.e., 0 < [pretax income/market capitalization] < 0.03) and zero otherwise.

This paper investigates four excess values—excess accruals, excess CFO, excess production costs, and excess discretionary expenses—to detect if firms that report small positive profits engage in real activities earnings management to avoid reporting losses. The dependent variable Y_t represents these four excess values in period t calculated from estimates of regressions (1) ~ (4).

The regressions also include three control variables: namely, the market-to-book ratio,

size, and an earnings variable defined as either ordinary income (earnings before extraordinary items) or pretax income (earnings after extraordinary items). Throughout this paper, the size of the firm is determined by its market capitalization. Hence, when I use market capitalization as the scaling factor I specify the natural logarithm of market capitalization.

The last and most important control is the earnings variable. Two variables are used to measure earnings: ordinary income and pretax income. The earnings variables are included to control for firm performance. However, these variables also control for the correlation between the excess variable and the indicator variable. If firms manage earnings upward by reducing discretionary expenses, then I expect excess discretionary expenses to correlate negatively with ordinary income and pretax income. If Japanese firms manage earnings upward through a reduction in discretionary expenses, all three earnings measures—operating income, ordinary income, and pretax income—become *managed* earnings measures. For this reason, I expect that the indicator variable will be correlated with excess discretionary expenses, regardless of whether the regression is controlled by ordinary or pretax income.

Alternatively, if firms manage earnings upward through overproduction, I expect that excess production costs will be positively correlated with the indicator variable. However, excess production costs are also expected to be negatively correlated with the earnings variables.

As to excess CFO, it is hard to make expectations. If the firm manages earnings upward through reducing discretionary expenses, it has positive effects to excess CFO in the current period. On the contrary, if the firm uses overproduction to manage earnings upward, it has a negative effect on excess CFO. Therefore, the net effect on excess CFO may be ambiguous.

6.2 Empirical Results for Small Positive Profit-reporting Firms

Tables 3 and 4 present the respective results for regressions (5) and (6). Regressions (5) and (6) are constructed to examine if the excess variables correlate with the indicator variable *Small*.

Table 3 reports the estimated results of regression (5). In Table 3, each excess variable correlates with ordinary income. As expected, excess production costs are correlated with ordinary income. The coefficient of *EBEI* (earnings before extraordinary items, ordinary income) with excess production costs is -0.32638 and statistically significant at the 1% level. This means that a decrease in excess production costs increases ordinary income by 32.638%. The coefficient for the indicator variable in the excess production costs regression is 0.0463 at the 1% level of statistical significance. This implies that firms that report small positive profits average 4.63% higher production costs than other firms. This is economically significant given that the mean and median production costs as a percentage of the market capitalization for the firms that report small positive profits are 228% and 123% respectively (Table 2).

The excess discretionary expenses are negatively correlated with ordinary income. The coefficient for the indicator variable of excess discretionary expenses is -0.05434 at the 1% level of statistical significance. This indicates that firms that report small positive profits average 5.434% lower discretionary expenses than other firms do. This is also economically significant given that the mean and median discretionary expenses as a percentage of the market capitalization for the firms that report small positive

	Excess	Excess	Excess	Excess
	CFO	Production Cost	Disex	Accruals
Intercent	**_0 00181	***_0 00523	***0 006308	*0.001758
intercept	(-2.265)	(-3.424)	(3.944)	(1.737)
Size	-0.00068	***0.012248	***-0.02641	0.001298
	(-0.409)	(8.153)	(-12.644)	(0.648)
Market-to-Book	-0.00121	-0.00271	-0.00205	-0.00049
	(-0.929)	(-0.849)	(-0.842)	(-0.348)
EBEI	***0.343843	***-0.32638	**-0.07868	***0.209849
	(6.958)	(-9.248)	(-2.318)	(13.322)
Small	***0.016655	***0.046392	***-0.04529	***-0.02619
	(5.609)	(10.445)	(-12.691)	(-10.155)
Adjusted P^2	0.0269722	0.0132932	0.01198	0.0159239

Table 3 - Comparisons of Firms that Report Small Positive Profit Controlling for Ordinary Income

*, **, and *** indicate variable significant at 10%, 5%, and 1% level respectively. Numbers presented in the table are mean coefficients and mean adjusted R-squared. Fama-MacBeth indicates that a cross-sectional regression is estimated each year and the mean coefficients are calculated from the time series coefficients generated by the annual cross-sectional regressions. The Fama-MacBeth t-statistics presented in the parentheses are calculated using the Newey-West procedure for corrected for autocorrelation standard errors. The sample includes 24 industries and 120 industry-years over 2000 to 2004 fiscal-years. **Definition of Variables:** Size: Natural Logarithm of the Market Capitalization, measured as deviation from industry-year mean; *Market-to-Book*: Ratio of Market Capitalization over Book Value of Equity, measured as deviation from industry-year mean; *EBEI*: Earnings before Extraordinary Items, measured as deviation from industry-year mean; *Small*: Indicator variable set equal to one if "0 < IPretax income / MVE] < 0.03" and 0 otherwise.

profits are 82.5% and 56.9% respectively (Table 2).

Table 4 provides the results of regression (6). Each coefficient of pretax income is smaller compared to the coefficients of ordinary income reported in Table 3. This is because most extraordinary items in the sample are income-decreasing as Table 2 documents that mean and median net extraordinary items are negative. Hence, the coefficients for after extraordinary items pretax income are expected to be smaller when compared to the before extraordinary items ordinary income. The signs of the indicator variables of excess production costs and excess discretionary expenses do not change when the earnings variable is changed to control for pretax income.

In Table 3, the excess CFO is positively correlated with ordinary income. Note that the indicator variable is also positively correlated with excess CFO. This is inconsistent with the hypothesis of a lower level of CFO. However, in Table 4, the indicator variable for excess CFO is insignificant when the model controls for pretax income. If the firm sells marketable securities or fixed assets, whether with unrealized holding gains or losses, the firm receives cash inflows. However, if the firm sells marketable securities or fixed assets with unrealized holding losses, the income of the firm decreases. Since most of the reported extraordinary items of the sample firms in this paper are income-decreasing, the increased cash inflows and decreased income cancel each other out: that is, the net effect on excess CFO becomes ambiguous.

Finally, Tables 3 and 4 show that ordinary income and pretax income are positively correlated with excess accruals. This suggests that the positive excess accruals are income-increasing accruals. Hence, given that each indicator variable is negatively correlated with excess accruals (-0.02619 in Table 3 and -0.02965 in Table 4) it indicates that firms that report small positive profits might report income-decreasing accruals to decrease earnings, thereby suggesting the possibility of income smoothing activities.

However, after considering that most net extraordinary items of the firm-years in the

<u> </u>	Excess	Excess	Excess	Excess
· · · ·	CFO	Production Cost	Disex	Accruals
Intercept	0.00009262	***-0.00687	***0.006126	***0.002245
	(0.123)	(-3.831)	(4.096)	(2.869)
Size	-0.00032	***0.01063	***-0.02492	0.000343
	(-0.191)	(7.995)	(-13.676)	(0.181)
Market-to-Book	-0.00197	-0.00118	-0.00201	-0.00205
	(-1.523)	(-0.366)	(-0.847)	(-1.641)
Pretax	0.006587	0.032839	***-0.05285	***0.053682
	(0.637)	(1.6139)	(-3.593)	(4.352)
Small	-0.00083	***0.061144	***-0.04466	***-0.02965
	(-0.292)	(13.993)	(-12.381)	(-14.139)
Adjusted R^2	0.002895	0.002645	0.013562	0.013164

Table 4 - Co	mparisons	of Firms t	hat Rer	ort Smal	l Positive	Profit	Controlling	Pretax Incom
--------------	-----------	------------	---------	----------	------------	--------	-------------	--------------

*, **, and *** indicate variable significant at 10%, 5%, and 1% level respectively. Numbers presented in the table are mean coefficients and mean adjusted R-squared. Fama-MacBeth indicates that a cross-sectional regression is estimated each year and the mean coefficients are calculated from the time series coefficients generated by the annual cross-sectional regressions. The Fama-MacBeth t-statistics presented in the parentheses are calculated using the Newey-West procedure for corrected for autocorrelation standard errors. The sample includes 24 industries and 120 industry-years over 2000 to 2004 fiscal-years. **Definition of Variables:** *Size*: Natural Logarithm of the Market Capitalization; measured as deviation from industry-year mean, *Market-to-Book*: Ratio of Market Capitalization over Book Value of Equity; measured as deviation from industry-year mean, *Pretax*: Earnings before Extraordinary Items; measured as deviation from industry-year mean, *Small*: Indicator variable set equal to one if "0 < [Pretax income / MVE] < 0.03" and 0 otherwise

sample are income-decreasing, an alternative explanation is that the indictor variable merely captures the income-decreasing effect of the extraordinary items. In this case, when firms that report small positive profits record income-decreasing accruals that result from income-decreasing extraordinary items, they will have a stronger incentive to manage earnings upward to avoid reporting losses.

In sum, the results reported in Tables 3 and 4 provide some evidence that firms that report small positive profits may engage in earnings management through real activities management to manage earnings upward.

6.3 Analysis for Cross-sectional Variation for Small Positive Profit-reporting Firms

Additional variables proposed in Roychowdhury (2006) are added to further explore the sources of cross-sectional variation in incentives for real activities management. The four new variables are: (a) the sum of inventories and receivables over total assets, (b) current liabilities, excluding short-term debt, over total assets, (c) the presence of debt, and (d) inclusion in the manufacturing industry. These new regressions are based on regressions (5) and (6), and the variables for cross-sectional variation. The regressions to be estimated are as follows:

$$Y_{t} = \alpha_{0} + \alpha_{1} * (PRETAX)_{t} + \alpha_{2} * (Small)_{t} + \alpha_{3} * (Mfg)_{t} + \alpha_{4} * (Debt)_{t}$$

$$+ \alpha_{5} * (MTB)_{t} + \alpha_{6} * (CL)_{t} + \alpha_{7} * (INVREC)_{t} + \alpha_{8} * (Size)_{t}$$

$$+ \alpha_{9} * (Small * Mfg)_{t} + \alpha_{10} (Small * Debt)_{t} + \alpha_{11} (Small * MTB)_{t}$$

$$+ \alpha_{12} (Small * CL)_{t} + \alpha_{13} (Small * INVREC)_{t} + \alpha_{14} (Small * Size)_{t} + \varepsilon_{t}$$
(7)

where

a mit i i i i i i i i i i i i i i i i i i	Excess	Excess	Excess	Excess
	CFO	Production Cost	Disex	Accruals
Intercept	***-0.00453	***0.064299	***-0.10241	-0.00271
	(-3.760)	(16.738)	(-40.197)	(-1.303)
PRETAX	0.004923	*0.034609	***-0.05656	***0.057224
	(0.558)	(1.779)	(-4.047)	(4.682)
Small	*-0.0245	**0.055532	***-0.04878	-0.01343
	(-1.685)	(2.300)	(-2.723)	(-1.275)
Mfg	0.002564	-0.00201	0.001779	-0.00166
5	(1.2617)	(-0.597)	(0.521)	(-0.676)
Debt	**0.003559	***-0.07431	***0.113366	***0.006792
	(2.078)	(-24.514)	(64.424)	(3.152)
Market-to-Book	**-0.00273	-0.00057	**-0.00538	-0.00216
	(-2.089)	(-0.147)	(-2.064)	(-1.670)
Current Liabilities	***0.080561	***-0.04204	***0.03502	***-0.06293
	(5.026)	(-2.806)	(3.942)	(-4.531)
INVREC	***-0.21028	0.057543	***0.208731	***-0.11278
	(-8.063)	(0.630)	(3.170)	(-3.229)
Size	-0.00118	***0.014543	***-0.0268	-0.00093
	(-0.694)	(11.639)	(-30.177)	(-0.457)
Small*	-0.0175	-0.01967	***0.033419	***0.023797
Mfg	(-0.090)	(-1.113)	(4.0717)	(2.808)
Small*	***0.034983	0.021678	**-0.03009	**-0.02678
Debt	(3.504)	(1.011)	(-2.074)	(-2.540)
Small*	0.001233	**0.00966	-0.00107	**0.003241
Market-to-Book	(0.082)	(2.077)	(-0.324)	(2.621)
Small*	-0.07242	***0.254695	***-0.23537	**0.089053
Current Liabilities	(-1.609)	(5.428)	(-4.106)	(2.190)
Small*	**-0.11058	***0.333647	***-0.43707	***0.232022
INVREC	(-2.545)	(4.287)	(-5.218)	(5.144)
Small*	***-0.00434	***-0.02132	***0.025076	0.002362
Size	(-3.108)	(-10.317)	(8.551)	(1.573)
Adjusted R^2	0.008039	0.002266	0.019886	0.014543

Table 5 - Cross-sectional Variation of	Firms that Report S	Small Positive Profit
--	---------------------	-----------------------

*, **, and *** indicate variable significant at 10%, 5%, and 1% level respectively. Numbers presented in the table are mean coefficients and mean adjusted R-squared. Fama-MacBeth indicates that a cross-sectional regression is estimated each year and the mean coefficients are calculated from the time series coefficients generated by the annual cross-sectional regressions. The Fama-MacBeth t-statistics presented in the parentheses are calculated using the Newey-West procedure for corrected for autocorrelation standard errors. The sample includes 24 industries and 120 industry-years over 2000 to 2004 fiscal-years. **Definition of Variables:** *Pretax*: Earnings before Extraordinary Items, measured as deviation from industry-year mean; *Small*:

Definition of variables: Pretax: Earnings before Extraordinary items, measured as deviation from industry-year mean; Small: Indicator variable set equal to one if "0 < [Pretax income / MVE] < 0.03" and 0 otherwise; Mfg: Indicator variable set to one if the firm is categorized as a manufacturing company and zero otherwise; Debt: Indicator variable set to one if the firm has any short-term or long-term debt outstanding and zero otherwise; Market-to-Book: Ratio of Market Capitalization over Book Value of Equity, measured as deviation from industry-year mean; Current Liabilities: Ratio of Current liabilities excluding short-term debt over total assets, measured as deviation from industry-year mean; Size: Natural Logarithm of the Market Capitalization, measured as deviation from industry-year mean.

- Mfg = indicator variable that is one if the firm is categorized as a manufacturing company, zero otherwise,
- *Debt* = indicator variable that is one if the firm has any short- or long-term debt outstanding, zero otherwise,
- CL = ratio of current liabilities, excluding short-term debt, over total assets, measured by the deviation from the industry-year mean,
- *INVREC* = ratio of sum of inventories and receivables over total assets, measured by the deviation from the industry-year mean,

		The second se		
	Excess	Excess	Excess	Excess
	CFO	Production Cost	Disex	Accruals
Intercept	***0.026057	***0.048405	***-0.0782	***0.007102
	(12.115)	(16.271)	(-34.699)	(2.751)
PRETAX	0.006426	0.02914	***-0.04671	***0.053881
	(0.644)	(1.416)	(-3.033)	(4.473)
Small	**-0.03218	0.019386	*-0.03545	-0.01784
	(-2.448)	(0.105)	(-1.783)	(-1.418)
Mfg	0.003212	**-0.0072	***0.010453	-0.00031
	(1.528)	(-2.147)	(3.015)	(-0.123)
Debt	**0.002443	***-0.06628	***0.106586	-0.00036
	(2.295)	(-42.630)	(69.297)	(-0.293)
MTB_Rank	***-0.03879	***0.041873	***-0.06884	0.003335
	(-22.552)	(29.009)	(-28.868)	(1.145)
CL_Rank	-0.00271	***-0.0378	***0.055078	*0.004136
	(-1.269)	(-14.910)	(27.027)	(1.852)
INVREC_Rank	***-0.04118	***0.029265	0.001864	***-0.01109
	(-11.659)	(3.904)	(0.453)	(-3.628)
Size Rank	***0.014241	***-0.00847	***-0.03468	**-0.00571
_	(12.362)	(-4.219)	(-35.351)	(-2.394)
Small*	*-0.01476	-0.00284	**0.022748	**0.014611
Mfg	(-1.958)	(-0.283)	(2.509)	(2.400)
Small*	0.009901	0.029291	*-0.02541	*-0.01666
Debt ·	(0.786)	(1.380)	(-1.715)	(-1.914)
Small*	***0.029259	*0.013644	***0.041212	***-0.02171
MTB Rank	(4.037)	(1.821)	(7.285)	(-2.803)
Small [*]	***0.065633	***0.043748	***-0.03146	***-0.05817
CL Rank	(20.126)	(4.337)	(-3.037)	(-13.062)
Small*	**-0.00827	0.013221	***-0.03893	***0.038224
INVREC_Rank	(-2.120)	(1.311)	(-4.512)	(13.152)
Small*	-0.00421	***-0.02351	***0.017513	***0.016201
Size_Rank	(-1.007)	(-3.236)	(3.032)	(3.859)
Adjusted R^2	0.003632	0.001643	0.016388	0.010065

Table 6 - Cross-sectional Varia	ation of Firms that Re	port Small Positive Profit
---------------------------------	------------------------	----------------------------

*, **, and *** indicate variable significant at 10%, 5%, and 1% level respectively. Numbers presented in the table are mean coefficients and mean adjusted R-squared. Fama-MacBeth indicates that a cross-sectional regression is estimated each year and the mean coefficients are calculated from the time series coefficients generated by the annual cross-sectional regressions. The Fama-MacBeth t-statistics presented in the parentheses are calculated using the Newey-West procedure for corrected for autocorrelation standard errors. The sample includes 24 industries and 120 industry-years over 2000 to 2004 fiscal-years. **Definition of Variables:** *Pretax*: Earnings before Extraordinary Items, measured as deviation from industry-year mean; *Small*:

Definition of variables: *Pretax*. Earlings before Excludinary items, measured as deviation from industry-year mean, *Small*: Indicator variable set equal to one if "0 < [Pretax income / MVE] < 0.03" and 0 otherwise; *Mfg*: Indicator variable set to one if the firm is categorized as a manufacturing company and zero otherwise; *Debt*: Indicator variable set to one if the firm has any short-term or long-term debt outstanding and zero otherwise; *MTB_Rank*: Rank variable set equal to one if MTB is above the median value for the corresponding year, and 0 otherwise; *INVREC_Rank*: Rank variable set equal to one if INVREC is above the median value for the corresponding year, and 0 otherwise; *Size_Rank*: Rank variable set equal to one if SIZE is above the median value for the corresponding year, and 0 otherwise; *Size_Rank*: Rank variable set equal to one if SIZE is above the median value for the corresponding year, and 0 otherwise; *Size_Rank*: Rank variable set equal to one if SIZE is above the median value for the corresponding year, and 0 otherwise; *Size_Rank*: Rank variable set equal to one if SIZE is above the median value for the corresponding year, and 0 otherwise; *Size_Rank*: Rank variable set equal to one if SIZE is above the median value for the corresponding year, and 0 otherwise.

and

2

$$Y_{t} = \alpha_{0} + \alpha_{1} * (PRETAX)_{t} + \alpha_{2} * (Small)_{t} + \alpha_{3} * (Mfg)_{t} + \alpha_{4} * (Debt)_{t}$$

$$+ \alpha_{5} * (MTB _ Rank)_{t} + \alpha_{6} * (CL _ Rank)_{t} + \alpha_{7} * (INVREC _ Rank)_{t}$$

$$+ \alpha_{8} * (Size _ Rank)_{t} + \alpha_{9} * (Small * Mfg)_{t} + \alpha_{10} (Small * Debt)_{t} \qquad (8)$$

$$+ \alpha_{11} (Small * MTB _ Rank)_{t} + \alpha_{12} (Small * CL _ Rank)_{t}$$

$$+ \alpha_{13} (Small * INVREC _ Rank)_{t} + \alpha_{14} (Small * Size _ Rank)_{t} + \varepsilon_{t}$$

where

MTB_Rank = rank variable equal to one if the firm's ratio of market capitalization over the book value of equity is above the median value for the corresponding year, zero otherwise.

CL_Rank = rank variable equal to one if CL is above the median value for the corresponding year, zero otherwise,

INVREC_Rank = rank variable equal to one if INVREC is above the median value for the corresponding year, zero otherwise,

Size_Rank = rank variable equal to one if SIZE is above the median value for the corresponding year, zero otherwise.

The estimated results of regressions (7) and (8) are reported in Tables 5 and 6 respectively. Small*Mfg is not correlated with excess production costs throughout the analysis. Small*MTB_Rank is negatively correlated with excess discretionary expenses and positively correlated with excess production costs, showing an increasing pressure from the stock market for firms to report profits. Small*CL Rank is negatively correlated with excess discretionary expenses and positively correlated with excess production costs. This is consistent with the prediction that firms with higher current liabilities (as a percentage of total assets) will have higher production costs and lower discretionary expenses. Small*INVREC Rank is negatively correlated with excess discretionary expenses, indicating that firms actively reduce discretionary expenses when inventories and receivables are high. Small*INVREC is positively correlated to excess production costs, consistent with the prediction that firms with a high level of inventories and receivables over total assets have greater excess production costs than firms that are not small positive profit-reporting firms. This is because firms with higher levels of inventories and receivables more easily absorb fixed costs, thereby accelerating the recognition of sales.

7. Concluding Remarks

This paper investigates whether Japanese firms engage in earnings management through the manipulation of real activities to avoid reporting losses. In particular, this paper investigates if Japanese firms that report small positive profits engage in real activities management to avoid reporting losses.

Since the so-called Accounting Big Bang was introduced into Japanese GAAP in 2000, mark-to-market accounting obliges firms to report unrealized gains and losses stemming from historical cost accounting conventions through extraordinary items. However, while many Japanese firms recognize income-decreasing extraordinary items, few firms report annual losses. I hypothesize and find evidence indicating that firms that report small positive profits might manage earnings upwards by cutting discretionary expenses and overproducing to avoid reporting losses.

The evidence also indicates that firms that report small positive profits also report income-decreasing accruals in the same time. Considering that most net extraordinary items of the firm-years in the sample are income-decreasing, an alternative explanation is that the indictor variable merely captures the income-decreasing effect of the extraordinary items. In this case, when firms that report small positive profits record income-decreasing accruals that result from income-decreasing extraordinary items, the firms that report small positive profits will have a stronger incentive to manage earnings upward to avoid reporting losses.

This paper finds evidence that the Japanese firms that report small positive profits engage in earning management through real activities at the operational income level. Japanese firms also have many opportunities to manage earnings through the manipulations of non-operating income or expenses; however, these are beyond the scope of the current paper. Future research that studies earnings management through real activities by Japanese firms will benefit from examining non-operating income and non-operating expenses.

Furthermore, different from accrual-based earnings management, real activities earnings management is achieved by manipulating the activities with direct cash flow consequences. In terms of SG&A expenses, Anderson, Banker, and Janakiraman (2002) find that any increases or decreases are not symmetric to the increases and decreases in sales volume. Based on Anderson, Banker, and Janakiraman (2002), Hirai and Shiiba (2006) find that Japanese firms share identical cost behavior with their U.S. counterparts. If any future research that studies the real activities earnings management by Japanese firms, it is suggested that Anderson, Banker, and Janakiraman (2002) to be taken into empirical consideration when estimating SG&A expenses.

Acknowledgement

I appreciate Masao Tsuji (my dissertation supervisor), Yoshinori Kawamura, Masashi Okumura, Takanori Suzuki, Shinya Sakano, and Eiko Tsujiyama at Waseda University, Kunimaru Takahashi and Kazutoshi Yanai at Aoyama Gakuin University, Masakatsu Oshima, Kenji Wakabayashi and Hajime Yasukuni at the Asia University, Tsuneto Miyosawa at Ritsumekan University, Hiroki Yamashita at Aichi University, Audrey Wen-hsin Hsu at National Taiwan University, Kentaro Koga at University of Illinois at Urbana-Champaign and two anonymous referees for valuable comments and suggestions. I also appreciate the helpful comments from participants at the 2005 Annual Meeting of the Japanese Association of Management Accounting, workshop participants at the joint Accounting Workshop by Waseda IRBA and Waseda Accounting Institute at Waseda University. The author claims the ownership of all remaining errors.

¹ See Burgstahler and Dichev (1997), Degeorge, Patel, and Zeckhauser (1999), Kasznik and McNichols (2001), Bartov, Givoly, and Hayn (2002), Matsumoto (2002) and Xue (2004) for details on how firms manage earnings to avoid negative earnings surprises or exceed specific thresholds.

² Negative earnings surprises usually include: (1) losses, (2) earnings decreases, and (3) missing analysts' expectations. The thresholds that managers have a strong incentive to exceed are identical to those for negative earnings surprise: namely, (1) zero threshold (to not report a loss), (2) last period's earnings (to not report decreased earnings), and (3) analysts' forecasts (to not miss analysts' expectations).

³ The fiscal year in Japan starts in April and ends the following March. For example, fiscal year 2000 is the fiscal year that starts in April 1999 and ends in March 2000.

⁴ Healy (1985), and Teoh, Welch and Wong (1998a, 1998b) are some of the few studies that directly use annual changes in accruals as evidence of earnings management. However, Teoh, Welch and Wong (1998a, 1998b) fail to consider the effects that transaction costs have caused to the changes in accruals in initial public and seasoned equity offerings.

Gunny (2006) cites Herrmann, Inoue, and Thomas (2003) by including sales of fixed assets and

管理会計学 第17巻 第1号

investments with unrealized gains as real activities management. However, this is not the case in Japan. The U.S. accounting standard treats gains and losses from the sales of fixed assets and marketable securities as operating income and expenses while these are considered as gains or losses from extraordinary items under Japanese GAAP.

⁶ Schipper (1989), Healy and Wahlen (1999), and Dechow and Skinner (2000) provide detailed literature surveys of earnings management.

¹ The main purpose of earnings management is to create a deviation between the realized and reported financial numbers. Whether this is good or bad depends on how earnings management is regarded. For instance, Dechow and Skinner (2000) argue that regulators believe that earnings management will mislead the market and thus eventually create chaos. However, some other academics do not regard earnings management as a major problem.

⁸ Managers usually engage in these activities either because they have perceived private benefits from meeting reported goals or because they are acting as agents in value transfers between stakeholders.

⁹ For example, the land price of Koshien Stadium has a book value of some 8 million yen. However, the unrealized gain is estimated to be somewhere between 15 and 20 billion yen, at least 170 times the book value.

¹⁰ I do not deflate the intercept term as in other studies found in the literature. The reasoning is a follows. First, deflating the intercept may alter the slope of the regression and thus produce biased estimates. Second, as argued in Ball and Shivakumar (2006), there is no theoretical guidance for intercept deflating. Roychowdhury (2006) argues that including a scaled intercept when estimating accruals is to avoid the spurious correlation between scaled CFO and scaled sales due to the variation in total assets. He adds that an unscaled intercept does not affect the results but eliminating a scaled intercept will materially change the results. This is probably because total assets deflate everything in Roychowdhury (2006). Since assets are a function of accruals, deflating accruals with total assets only adds trouble to the empirical results.

Reference

- Anderson, M. C., R. Banker, and S. N. Janakiraman, 2002. Are Selling, General, and Administrative Costs 'Sticky'? *Journal of Accounting Research* 41: 47-63.
- Ball, R. and L. Shivakumar, 2006. The Role of Accruals in Asymmetrically Timely Gain and Loss Recognition. *Journal of Accounting Research* 42: 207-242.
- Bartov, E., D. Givoly, and C. Hayn, 2002. The Reward to Meeting or Beating Earnings Expectations. Journal of Accounting Economics 33: 173-204
- Beaver, W., M. McNichols, and K. Nelson, 2007. An Alternative Interpretation of the Discontinuity in Earnings Distributions. *Review of Accounting Studies* 12: 525-556.
- Burgstahler, D., and I. Dichev, 1997. Earnings Management to Avoid Earnings Decreases and Losses. Journal of Accounting and Economics 24: 99-126.
- Cohen, D., A. Dey, and T. Lys, 2008. Real and Accruals-Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods. *Accounting Review* 83: 757-787.
- Dechow, P., and I. Dichev, 2002. The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors. *The Accounting Review* 77: 35-59.
- Dechow, P., and D. Skinner, 2000. Earnings Management: Reconciling the Views of Accounting Academics, Practitioners, and Regulators. *Accounting Horizons* 14: 235-250.
- Dechow, P.M., S.P. Kothari and R.L. Watts, 1998. The Relation between Earnings and Cash Flows. Journal of Accounting and Economics 25: 133-168.
- Dechow, P., S. Richardson, and I. Tuna, 2003. Why Are Earnings Kinky? An Examination of the Earnings Management Explanation. *Review of Accounting Studies* 8: 355-384.
- Dechow, P.M., R. Sloan and A. Sweeney, 1995. Detecting Earnings Management. Accounting Review 70: 193-225.
- Degeorge, F., J. Patel, and R. Zeckhauser. 1999. Earnings Management to Exceed Thresholds. Journal of Business 72: 1-33.
- Durtschi, C., and P. Easton, 2005. Earnings Management? The Shapes of the Frequency Distributions of Earnings Metrics Are Not Evidence Ipso Facto. *Journal of Accounting Research* 43: 557-592.
- Fama, E., and J. MacBeth, 1973. Risk, Return and Equilibrium: Empirical Tests. Journal of Political Economy 81: 607-636.

日本企業の実質活動による報告利益管理

Gunny, K., 2005. What are the Consequences of Real Earnings Management? Unpublished Ph.D. Dissertation, University of California at Berkeley. Working Paper, University of Colorado at Boulder.
Hayn, C., 1995. The Information Content of Losses. Journal of Accounting and Economics 20: 125-154.

Healy, P. M., and J. Wahlen, 1999. A Review of the Earnings Management Literature and its Implications for Standard Setting. *Accounting Horizons* 13: 365-383.

- Herrmann, D., T. Inoue and W. B. Thomas, 2003. The Sale of Assets to Manage Earnings in Japan. *Journal* of Accounting Research 41: 80-108.
- Hirai, H., and A. Shiiba, 2006. Cost Behavior of Selling, General, and Administrative Costs. *Journal of Management Accounting*, Japan 14: 15-27.
- Jones, J., 1991. Earnings Management during Import Relief Investigations. Journal of Accounting Research 29: 193-319.
- Kasznik, R., and M. McNichols, 2001. Does Meeting Earnings Expectations Matter? Evidence from Analysts Forecast Revisions and Share Prices. *Journal of Accounting Research* 40: 727-759.
- Matsumoto, D., 2002. Management's Incentives to Avoid Negative Earnings Surprises. Accounting Review 77: 483-514.
- Mande, V., R. File, and W., Kwak, 2000. Income Smoothing and Discretionary R&D Expenditures of Japanese Firms. *Contemporary Accounting Research* 17: 263-302.
- Onuma, H., 2004. Possibility of Use of Deferred Taxes Assets for Earnings Management: Evidence of Banking Industry, in Japanese. *Accounting* (Kigyo Kaikei): 522-528.
- Pan, K. C., (2006). Deferred Taxes Assets and Earnings Management Firms' Changing Behaviors in Reporting Deferred Income Taxes and Extraordinary Items (Zeikokakaikei no dounyu to sono houkokurieki no kanri - kigyo no houjinzei chouseigaku to tokubetsu soneki no keijyou koudou ni okeru henka, in Japanese), in Masao Tsuji (ed.), *The Meaning of the Accounting Big Bang and its Evaluation - The Empirical Approaches* (Kaikei Big Bang no igi to hyouka - jissho ni yoru apurochi), *Sanken Series* 38 (Chapter 4), Institute for Research in Business Administration, Waseda University, March 2006.
- R Development Core Team, 2008. R: A language and environment for statistical computing. R Foundation for Statistical Computing. Vienna, Austria. ISBN 3-900051-07-0, URL http://www.R-project.org.
- Roychowdhury, S., 2006. Earnings Management through Real Activities Manipulation. Journal of Accounting and Economics 42: 335-370.
- Schipper, K., 1989. Earnings Management. Accounting Horizons 3: 91-102.
- Shuto, A., 2000. The Earnings Management Activities of Japanese Firms, in Japanese. Sangyo Keiri: 128-139.
- Shuto, A., 2007. Executive Compensation and Earnings Management: Empirical Evidence from Japan. Journal of International Accounting, Auditing and Taxation 16: 1-26.
- Suda, K., and A. Shuto, 2001. Management Earnings Forecasts and Discretionary Accounting Choice, in Japanese. *Sangyo Keiri*: 46-57.
- Suda, K., and A. Shuto, 2005. Earnings Management to Avoid Earnings Decreases and Losses: Empirical Evidence from Japan. Working paper, *Waseda University*.
- Teoh, S., I. Welch and T. Wong, 1998a. Earnings Management and the Long-run Underperformance of Initial Public Offerings. *Journal of Finance* 53: 1935-1974.
- Teoh, S., I. Welch and T. Wong, 1998b. Earnings Management and the Long-run Underperformance of Seasoned Equity Offerings. *Journal of Financial Economics* 50: 63-100.
- Yamashita, H., and K. Otogawa, 2008. Do Japanese Firms Manage Earnings in Response to Tax Rate Reductions in the Late 1990s. *Journal of Management Accounting*, Japan 16: 41-59.
- Xue, Y., 2004. Information Content of Earnings Management: Evidence from Managing Earnings to Exceed Thresholds. Working paper. *Massachusetts Institute of Technology*.
- Zang, A., 2007. Evidence on the Tradeoff Between Real Manipulation and Accrual Manipulation. Unpublished Ph.D. Dissertation, *Duke University*. Working Paper Series, *University of Rochester*.
- Zeileis, A., 2004. Econometric Computing with HC and HAC Covariance Matrix Estimators. *Journal of Statistical Software* 11: 1-17. URL http://www.jstatsoft.org/v11/i10/