DP2015-12

A Reexamination of Changes in Accounting Policy: Evidence from Japan

Masahiro ENOMOTO

March 19, 2015

A Reexamination of Changes in Accounting Policy: Evidence from Japan

Masahiro Enomoto

Research Institute for Economics & Business Administration
Kobe University
2-1 Rokkodaicho, Nada-ku, Kobe 657-8501, JAPAN.
E-mail: menomoto@rieb.kobe-u.ac.jp
Tel: +81-78-803-7031; fax: +81-78-803-7031.

March 2015

A Reexamination of Changes in Accounting Policy: Evidence from Japan

Abstract

This paper reconsiders various hypotheses tested in the literature concerning income smoothing, the big bath, financial distress, debt covenants, management turnover, ownership structure, and auditors. The results show that changes in accounting policy have been carried out for income smoothing. The analysis also indicates a big bath accounting. A higher debt ratio produces more changes in accounting policy, resulting in both income decreases and increases. A higher bank ownership ratio leads to more changes in accounting policy, which decreases income. Banks serve as both shareholders and creditors. Banks' influence as creditors increases when the debt ratio increases. This paper finds that banks influence both income increases and decreases through changes in accounting policy. The evidence also shows that management turnover promotes income increases through changes in accounting policy, while an audit by a Big N firm effectively restrains accounting policy changes that increase income. I find that management changed its accounting policy depending on circumstances, even when the changes were clear from the disclosures and could be seen as earnings management.

1. Introduction

This paper reconsiders changes in accounting policy, which researchers have often used to proxy for earnings management, focusing on its relation to performance and other factors. Prior literature shows evidence that managers use accounting discretion and/or real discretion to manage earnings. From the 1960s to the 1990s, there have been many studies on accounting discretion—a concept that includes changes in accounting policy— as a means of earnings management.[1] However, after Healy (1985), there has been an increase in papers that use accounting accrual as a way to measure the degree of earnings management rather than changes in accounting policy.

There have been numerous studies on real discretion that focus on individual items, but now, like Roychowdhury (2006), mainstream researchers are turning to studies that comprehensively estimate real discretion. This means that most earnings management studies focus on methods that estimate accounting accrual and real discretion using models. Actually, in the 2000s, the number of studies on changes in accounting policy seems to have been much lower than before, in Japan and elsewhere. However, data on changes in accounting policy in Japanese firms has been published every year since the fiscal year ending March of 1999, enabling easier acquisition of data in larger volumes than before.

This study collects data on changes in accounting policy and reexamines hypotheses on income smoothing, the big bath, financial distress, debt covenants, management turnover, ownership structure, and auditors that have been tested in the prior literature. Virtually no recent research has investigated the relationship between these factors and changes in accounting policy.

Management can handle accounting numbers by changing only accounting policies, and not any real activities. However, accounting changes must be checked by auditors;

---

[1] Instead of changes in accounting policy, Zimijewski and Hagerman (1981) employ the portfolio of accounting procedure, which is combination of various accounting methods.

income increasing changes in particular will easily gain the attention of stakeholders in addition to auditors, because management must disclose in a footnote any changes that have a material effect. It is easy for researchers to know precisely what effect a change in accounting policy will have on earnings management, though it must be noted that not all changes can be used as proxy variables for earnings management.

One feature of changes in accounting policy is that they have effects on future earnings. For example, if a company changes the depreciation method it uses from the declining-balance method to the straight-line method, it will increase current earnings and decrease future earnings. This means that a change may have an adverse effect on future periods. On the other hand, if the change-in-completion method a company applies changes, it will not be clear whether or not this is a reversal. When carrying out a change in accounting policy, management should take into consideration the effects on current and future periods.

Real discretion as a means of earnings management has been widely examined. Individual items employed are SG&A, R&D expenses, advertising expenses, gain and loss of sale of securities and fixed assets, and so on. Studies have also appeared that comprehensively estimate real discretion, such as sales management. This direction of research resembles the study of accounting discretion.

One problem of this method is that it is difficult for researchers to distinguish between the opportunistic management of earnings and daily operating activities. Therefore, real discretion will not be more noticeable to auditors than accounting discretion. When the results of real discretion, such as gains and losses on sales of fixed assets and securities, are disclosed as separate items, they may be discovered out by stakeholders. In contrast, if the results of real discretion are included in regularly appearing accounting items, such as sales, COGS, and SG&A, it is necessary to estimate the amount of real discretion, since it is difficult to identify. In addition, real discretion is likely to have the effect of

decreasing future income.[2] As is the case with real discretion, one of the purposes of using accounting accrual is to comprehensively grasp the degree of earnings management being used—including accounting discretion and real discretion, which are difficult to judge from superficial accounting figures.

Accounting accrual is the difference between earnings and cash flow, reflecting all adjustments to the accrual accounting. In contrast with changes in accounting policy, with accounting accrual it is necessary to estimate the discretionary portion that has accrued due to earnings management. If the estimation model has not been established, it always provokes debate about the model.[3] In contrast, when there are changes in accounting policy, the effect of which becomes clear by disclosure, there are no problems in estimation.

This paper focuses on changes in accounting policy that are costly as a method of earnings management in the sense that a change that has materiality shall be disclosed in a footnote. In which situations does management select such a change in policy? This study considers income smoothing, the big bath, financial distress, debt covenants, management turnover, ownership structure, and auditors as factors influencing changes in accounting policy. This paper uses annual income as a benchmark and also studies first-quarter income (i.e., interim income for fiscal years ending before March 2008) to test hypotheses concerning income smoothing and the big bath.[4] Accounting policies follow a principle of consistency between the year-end and the quarter financial statements, and initial changes in accounting policy are always implemented in the first-quarter statements.

---

[2] Yamaguchi (2009) presents the results for real discretion carried out to decrease future earnings in Japan. In contrast, Gunny (2010) provides evidence that real discretion also has the effect of increasing future earnings

[3] McNichols (2000) recommends methods for estimating individual accounting accrual items.

[4] As quarterly financial statements are effective from the fiscal year beginning in April 2008, managements decide their accounting policies by the end of the first quarter. Before this change, Japanese firms reported their performance twice a year—at the end of the interim period and of the fiscal year. In this paper, "interim" means the first half of the year.

Our analysis also reveals the big bath phenomenon. Similar results are produced when the first-quarter (interim) income is used as a benchmark. Moreover, a higher debt ratio leads to more changes in accounting policy, resulting in both income decreases and increases. A higher bank ownership ratio leads to more changes in accounting policy that decrease income. The evidence also shows that management turnover promotes income increases through changes in accounting policy, while audits by Big N audit firms effectively restrain accounting policy changes that result in income increases.

The primary contribution of this paper is its evidence that managements change accounting policy depending on circumstances, even when the changes are revealed in disclosures and can be seen as earnings management.

Furthermore, as shareholders, banks influence accounting policy changes that decrease income. This influence appears to increase as the debt ratio increases. Hence, higher debt ratios lead to changes in accounting policy that decrease income; even so, however, the results show that some managements choose accounting policies that result in income increases. This paper also contributes by showing that banks influence both income increases and decreases through accounting policy changes.

Another important contribution is that, unlike previous research based on annual income, this study obtains consistent results by considering the income in the first-quarter (interim), when accounting policy changes are initiated.

This paper also contributes by providing new evidence using a single dataset in a study of the factors in accounting policy changes, which has not occurred in the twenty years since Pincus and Wasley (1995).

Section 2 discusses previous literature and rules regarding changes in accounting policy in Japan. Section 3 describes the hypotheses, research design, sample selection and data. Section 4 contains the results of the analysis. Section 5 is a conclusion.

2. Prior literature and rules regarding changes in accounting policy

2.1. Prior literature

There are many papers dealing with the relationship between income smoothing behavior and changes in accounting policy—Cushing (1969), Ronen and Sadan (1981), and Moses (1987), for example. In Japan, Komura (1987), a study of the relationship between changes in accounting policy and performance, examines the income smoothing hypothesis. Using a sample of 100 companies between 1960 and 1984, it investigates firms that change depreciation methods or inventory valuation methods and obtains evidence that supports the income smoothing hypothesis. Other studies in Japan also obtain evidence that supports this hypothesis.

Much research has been conducted on the violation of debt covenants. Many studies use debt ratios (or leverage) as a proxy to measure proximity to covenant violation. Hunt (1985) notes, for example, that the higher the leverage, the more likely firms are to make changes in accounting policy that increase their income. Sweeney (1994) examines cases of covenant violation and shows that firms close to covenant violation tend to change their accounting policy to increase their income.

Beatty and Weber (2003) examine the relationship between changes in accounting policy and debt covenants. The study focuses on 125 firm-years between 1995 and 2000. The results show that the firms that employ income increasing changes in their accounting policies rather than income decreasing changes are more likely to participate in contracts that have performance pricing, dividend constraints, and incur high costs for violation of covenants. They also find that firms that recorded small losses made income increasing changes, and firms that reported large losses made income decreasing changes after changes in management. Suda (2000) also analyzes the relationships between debt covenants and accounting policy, focusing on Japanese firms.

Schwarts (1982) and Lilien et al. (1988) study firms facing financial distress, showing that such firms change their accounting policies in order to increase earnings. Suda et al.

(2007) also show that firms in distress change accounting policies to increase earnings just before going bankrupt in Japan.

Okabe (1994) focuses on the relationships between changes in accounting policy and shareholding structures of Japanese firms, showing that firms are more likely to change their accounting policy to decrease earnings if they have high management ownership or bank ownership ratios.

Pincus and Wasley (1994) analyze a large volume of data on changes in accounting policy, which is closely related to this study. They investigate 2,978 cases of voluntary accounting changes and 3,689 cases of mandatory accounting changes between 1969 and 1988. The most frequent change in voluntary accounting changes is a change in inventory (38.1%). Others reported as proportionately high are changes in reporting entities, revenue recognition, and depreciation method. In addition, their study examines the relationship between changes in accounting policy and producer price index, GNP, tax system, and earnings response coefficient (ERC).

Enomoto (2014a) analyzes over 400 changes in accrued retirement benefits (i.e., accounting policy changes) for the fiscal year end of March 2000, showing that accounting policy changes that decreased income occurred in big bath contexts, in which debt ratios were low and bank ownership ratios high. This analysis is limited, however, to accounting policy changes concerning retirement benefits. Enomoto (2014b) demonstrates a relationship between recent changes in accounting policy and income smoothing and/or the big bath. He finds that the higher the bank ownership ratios (the lower the management ownership ratios), the more accounting policy changes are made to increase income (decrease income), although the correlation may have depended on the size of the firm. Management turnover is also shown to be related to changes that produce both income increases and decreases. Enomoto (2014b) does not employ regression analysis and therefore does not consider the relationship among the factors involved in accounting policy changes.

The prevailing method uses accounting accrual as a proxy for earnings management (after Healy, 1985); as a result, the amount of research on changes in accounting policy has decreased. Very few attempts have been made to examine the relationship between changes in accounting policy and managerial incentives to manage earnings. Therefore, this paper arranges data from recent years and reexamines this relationship.

2.2. Rules on changes in accounting policy in Japan

Changes in accounting policy are generally disclosed in financial statements and audit reports. Only audit reports noting material changes in accounting policy have been examined in this study.

The Accounting Standards Board of Japan (ASBJ) issued Accounting Standard for Accounting Changes and Error Corrections (ASBJ Statement No.24) and Guidance on Accounting Standard for Accounting Changes and Error Corrections (ASBJ Guidance No.24) in December, 2009.

These standards changed how entries concerning accounting policy changes are recorded in financial statements. Prior to their implementation, accounting policy changes were not applied retroactively. Therefore, Cabinet Office Regulations required the description of the summary, the reason for the change in accounting policy, and the effect of the change on the financial statement. Further, the Guideline of Cabinet Office Regulations also required giving the effect of the change on operating income, ordinary income, net income before taxes, net income, or other important items.[5] In practice, there were few cases that disclose all income given in the Guidelines, so disclosure can be omitted for items that have no effect or are self-evident.

---

[5] Operating income in Japanese income statement is different from that in International Financial Reporting Standards (IFRS) or the U.S. GAAP. Operating income is calculated as sales minus cost of goods sold minus selling, general, and administrative expenses. Nonrecurring items are included in "special items," the Japanese definition of which is broader than that in the IFRS and the U.S. GAAP. Japanese operating income responds more to firms' operating activities. Ordinary income is calculated as operating income plus profits and losses on financial activities such as interest income and expenses.

An entity shall apply the Accounting Standard and the Guidance to accounting change which are made after the beginning of the fiscal year beginning on or after April 1, 2011. Now, accounting policy changes are applied retroactively. The effect on the current period is disclosed in a note when the retroactive application of changes to a previous period is difficult and when the standards do not require disclosure of the effect on the previous period.

A change in an accounting estimate is accounted for in the period of the change if the change affects that period. Methods of depreciation for tangible fixed assets and of amortization for intangible fixed assets are included in accounting policies, but those changes are treated as a case when it is difficult to distinguish between a change in an accounting policy and a change in an accounting estimate. In other words, those changes is not accounted for retrospectively. A disclosure on the effect on current-period earnings is made when a change in the depreciation method occurs, when retroactive application is difficult, and/or accounting standards do not require it.

In the audit report, a change in accounting policy is disclosed if the auditors judge it likely to have a materiality bearing on the decision making of the users of the financial statements. While the audit report's format changed significantly at the fiscal year end of March 2003 and again in March 2012, the auditors' judgment criteria have remained largely the same.

For changes in accounting policies, two parties—management and auditor—judge the materiality. Changes that affect performance to similar degrees will be disclosed, or not, based on the judgment made by the management or the auditor. Actually, although changes in accounting policies are disclosed in the footnotes of a financial statement, some auditors did not treat it as explanatory paragraph on audit reports.

3. Hypothesis Development, research design, sample selection, and data

This research posits the hypotheses below based on previous research.[6]

3.1. Hypothesis Development and research design

Income Smoothing and Big-bath

Graham et al. (2005) perform a questionnaire to management in the United States, asking questions about management and accounting. The results show that management considered income smoothing desirable in order to suggest the market participants, analysts, clients, suppliers and other stakeholders that business is stable. Hanaeda and Suda (2008) conducted a similar questionnaire survey on management in Japan and obtained similar results.[7]

For this paper, I consider an income smoothing hypothesis similar to those posited in previous studies. This study's hypothesis is that when earnings before a change in accounting policy substantially exceed target earnings, they will be decreased by the change in the accounting policy, and that when the earnings are substantially lower than the target, they will be increased by the change in policy.

Management might avoid changing accounting policies when earnings before a potential change are near their target, for fear of causing auditors and stakeholders to take notice. There is also a possibility of the so-called *big-bath*—that is, when income is substantially lower than expected, a change in accounting policy is made to decrease income even further. I will also investigate the big-bath hypothesis.

The following hypotheses are proposed in consideration of the foregoing. Hypotheses 1-1 and 1-2 relate to income smoothing behavior, while Hypothesis 1-3 relates to the big

---

[6] The hypotheses in this section were created with reference to Enomoto (2014a).

[7] According to the evidence from Graham et al. (2005), however, U.S. managers are passive about making changes in accounting estimates in order to achieve target earnings. In research on Japanese managers, Hanaeda and Suda (2008) report similar results. It is presumed from these findings that managers do not make changes in accounting policies towards achieving target earnings. Nakamura (2006) do not find evidence of changes in accounting policy used as an earnings management tool by firms that reported small earnings. This suggests that these firms do not use changes in accounting policy to meet or beat target earnings. It is difficult for management to use changes in accounting policy to achieve earnings benchmarks, because it would be clear to stakeholders if they did so.

bath:

Hypothesis 1-1: Firms make income-decreasing accounting policy changes when earnings are very high.

Hypothesis 1-2: Firms make income-increasing accounting policy changes when earnings are very low.

Hypothesis 1-3: Firms make income-decreasing accounting policy changes when earnings are very low.

Financial Distress

According to Schwarts (1982) and Lilien et al. (1988), the greater the financial distress a firm faces, the more likely it is to changes its accounting policy to increase earnings. Suda et al. (2007) show that, in Japan also, the closer a firm is to bankruptcy and the greater its level of financial distress, the more likely it is to change its accounting policy in an attempt to improve its financial situation. We thus propose the following hypotheses:

Hypothesis 2-1: The greater a firm's financial distress, the more likely it is to make income-increasing changes to its accounting policy.

Hypothesis 2-2: The greater a firm's financial distress, the less likely it is to make income-decreasing changes to its accounting policy.

Debt Covenants

Most of the research on debt covenant violation employs debt ratios (or leverage) as proxies to measure proximity to covenant violation. Many studies have highlighted that firms close to their debt covenants (i.e., with a high debt ratio) implemented changes in accounting policy to increase their income and thus avoid a violation (Hunt 1985; Sweeney 1994).

The research suggests that the higher a firm's debt ratio, the more likely it is to choose an accounting policy that increases income. It can thus be assumed that such a firm is less likely to choose an accounting policy that decreases income, which would worsen the debt ratio. We thus propose the following:

Hypothesis 3-1: The higher a firm's debt ratio, the more likely it is to make income-increasing changes to its accounting policy.

Hypothesis 3-2: The higher a firm's debt ratio, the less likely it is to make income-decreasing changes to its accounting policy.

Management Turnover

Research has highlighted the relationship between management turnover and changes in accounting policy. Beatty and Weber (2003) reveal, for example, that newly appointed management tends to change accounting policy to decrease earnings if a huge loss has occurred (i.e., a big bath) before the change.

Strong and Meyer (1987) and Elliot and Shaw (1988) also report that newly appointed management in their first fiscal year used big-bath strategies based on impairment accounting. They found that management reported an impairment loss to decrease earnings with the aim of lowering expectations concerning future earnings.

Using Japanese data, Yamaguchi (2013) also reports that newly appointed management performed earnings management to decrease income. Shuto (2010) also reveals cases of income-increasing earnings management. Together, these studies show that management turnover provides an opportunity to change accounting policies. Using Japanese evidence, then, the following hypotheses are proposed:

Hypothesis 4-1: Newly-appointed management makes income-increasing changes to the accounting policies.

Hypothesis 4-2: Newly-appointed management makes income-decreasing changes to the accounting policies.

Bank Ownership Ratio

Hypothesis 3 uses debt ratio as a proxy to measure debt covenant constraints. Japanese banks often hold shares in the firms they finance in order to foster a long-term relationship. As a stable stockholder, the bank plays an important role in the firm's governance. Sometimes, a number of banks hold shares in the financed firm; even then, however, a *main bank* plays a monitoring role, observing and controlling the firm and thereby disciplining management (Aoki and Patrick 1994). The higher the bank ownership ratio, therefore, the greater the monitoring effect. With management under watch, accounting policy changes as a proxy of discretionary behavior can be assumed to be under control.

Hamamoto (2001) asserts, however, that an accounting system to decrease earnings is effective within the *main bank* system. Banks have positions as both shareholders and creditors; given their need to reclaim their loans, an accounting policy change made to improve earnings would be unwelcome, as it could lead to more cash flowing out of the firm and into management compensation and dividends.

Furthermore, Okabe (1994) argues, from the viewpoint of ownership, that increased earnings would lead to negotiating disadvantages (such as salary and pay negotiations with labor unions or price negotiations with suppliers and clients), causing the banks, acting as owners, to seek to prevent management from adopting an accounting policy that would increase income. It can thus be assumed that, given the opportunity, they would choose accounting policy changes designed to decrease income. As a case in point, Okabe (1994) found that firms with a high bank ownership ratio chose accounting policies that decreased income. It can therefore be assumed that the higher a firm's bank ownership ratio, the less likely it is to change its accounting policy to increase income. We thus

13

propose the following:

Hypothesis 5-1: The higher the bank ownership ratio, the less likely the firm is to make income-increasing changes to its accounting policy.

Hypothesis 5-2: The higher the bank ownership ratio, the more likely the firm is to make income-decreasing changes to its accounting policy.

Management Ownership Ratio

Traditional agency theory holds that, as management ownership of shares grows, it becomes increasingly possible to align the interests of management with those of shareholders (Jensen and Meckling 1976). The theory posits that the owners and managers of firms with a high management ownership ratio can enter into accord, thereby preventing the *moral hazard* of management and enabling the efficient use of resources. The theory argues that the actions of management become directly intertwined with their own wealth as shareholders and that this naturally prevents them from taking actions that fail to maximize corporate value. In light of this view, and supposing that earnings management does not maximize corporate value, an increase in the management ownership ratio would naturally decrease earnings management (e.g., Warfield et al. 1995).

As mentioned, Okabe (1994) notes that a higher management ownership ratio causes firms to avoid accounting policies that increase income in order to avoid disadvantageous negotiating positions caused by increased earnings. The argument here is that the managements of firms with a high management ownership ratio are more incentivized to maximize corporate value and thus refrain from choosing accounting policies that increase income. In either case, accounting policy changes that increase income are under control. We thus propose the following:

14

Hypothesis 6-1: The higher the management ownership ratio, the less likely the firm is to make income-increasing changes to its accounting policy.

Hypothesis 6-2: The higher the management ownership ratio, the more likely the firm is to make income-decreasing changes to its accounting policy.

Auditors

Auditors pay close attention to changes in accounting policy and thus exert a significant influence on them. Even when accounting policy changes are legitimate, they can still be employed to manage earnings. The higher the quality of the audit, the less likely the auditors are to permit accounting policy changes intended to manage earnings. DeAngelo (1981) notes that the larger the audit firm, the higher the quality of their audit. It can thus be assumed that companies audited by Big N firms are less likely to change their accounting policies than are those audited by non-Big N audit firms, regardless of whether the changes are to increase or decrease income.

In this study, accounting policy changes are understood as acts of accounting discretion. Research on auditors and accounting discretion has been conducted by Becker et al. (1998) and Francis et al. (1999). Both show that firms audited by Big N audit firms have lower discretionary accruals than do those audited by non-Big N audit firms. This result is consistent with the prediction that these firms will choose not to make accounting policy changes that increase income. The research also shows that the absolute values of the discretionary accruals for firms audited by Big N audit firms are relatively low, a result consistent with the prediction that these firms will choose not to change accounting policies. Concerning Japanese firms, Yazawa (2010) and Takada and Muramiya (2013) offer conflicting results depending on whether the firms have income-decreasing discretionary accruals. As income-decreasing accounting policy changes can improve a firm's fiscal health, auditors may focus less on those and more on changes that increase income. Indeed, Nelson et al. (2002) demonstrate that auditors pay less attention to clients

seeking to decrease earnings than to those seeking to increase them.

Given the above, the following hypothesis is proposed:

Hypothesis 7: Firms that are clients of a Big N audit firm are less likely to make income-increasing accounting policies changes than are firms audited by a non-Big N audit firm.

3.2. Regression Model

We examine the above hypotheses by estimating the coefficients in Equations (1) to (4) below:

$$NIBTD_{it} = \beta_0 + \beta_1 UPP1_{it} + \beta_2 LOW1_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it} \qquad (1)$$

$$NIBTD_{it} = \beta_0 + \beta_1 UPP2_{it} + \beta_2 LOW2_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it} \qquad (2)$$

$$NIBTD_{it} = \beta_0 + \beta_1 UPP3_{it} + \beta_2 LOW3_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it} \qquad (3)$$

$$NIBTD_{it} = \beta_0 + \beta_1 UPP4_{it} + \beta_2 LOW4_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it} \qquad (4)$$

The dependent variables, *NIBTD*, indicate whether a change in accounting policy increases or decreases net income before taxes. *NIBTD* is 1 if the change in accounting policy increases net income before taxes, -1 if the change decreases it, and 0 otherwise.[8] The number of disclosures regarding the effect on operating income, ordinary income and/or net income is less than those for the effect on net income before tax.[9] I employ generalized ordered logit models for ordinal dependent variables to estimate the parameters.[10] The definitions of each independent variable are as follows:

*UPP*1	=	1 if the difference between net income before tax (hereafter *NIBT*) before the accounting policy change and *NIBT* of the previous period is above the median of nonzero positive values of this variable, and 0 otherwise.
*LOW*1	=	1 if the difference between *NIBT* before the accounting policy change and *NIBT* of the previous period is below the median of nonzero negative values of this variable, and 0 otherwise.
*UPP*2	=	1 if *NIBT* before the accounting policy change is above the median of nonzero positive values of this variable, and 0 otherwise.
*LOW*2	=	1 if *NIBT* before the accounting policy change is below the median of nonzero negative values of this variable, and 0 otherwise.
*UPP*3	=	1 if the difference between first quarter (interim) *NIBT* before the accounting policy change and *NIBT* of the same period of the previous

---

[8] For the dependent variables and the independent variables (*UPP*, *LOW*), dummy variables are used that do not reflect the extent of total change. For income before the change, it is based on the difference between the total change and actual income, but when the dependent variables are also included in the total change, the correlation from this process brings about a bias. Thus, dummy variables are used for analysis in this paper.

[9] The effect on ordinary income is disclosed next to *NIBT*. Japanese stakeholders attach importance to ordinary income as a measure of recurring activities.

[10] Proportionality of coefficients is not assumed between changing an accounting policy to increase income (*NIBTD* = 1) and choosing not to change a policy (*NIBTD* = 0), and between choosing not to change a policy (*NIBTD* = 0) and changing a policy to decrease income (*NIBTD* = -1). Generalized ordered legit models are therefore used.

		fiscal year is above the median of nonzero positive values of this variable, and 0 otherwise.
*LOW*3	=	1 if the difference between first quarter (interim) *NIBT* before the accounting policy change and *NIBT* of the same period of the previous fiscal year is below the median of nonzero negative values of this variable, and 0 otherwise.
*UPP*4	=	1 if first quarter (interim) *NIBT* before the accounting policy change is above the median of nonzero positive values of this variable, and 0 otherwise.
*LOW*4	=	1 if first quarter (interim) *NIBT* before the accounting policy change is below the median of nonzero negative values of this variable, and 0 otherwise.
ALTMAN	=	The index in the bankruptcy prediction model developed at Altman (1968), which is used as the variable indicating the extent of financial distress (the formula is: *ALTMAN* $= 0.12 * X_1 + 0.14 * X_2 + 0.33 * X_3 + 0.006 X_4 + 0.999 X_5$, $X_1 = $ working capital / total assets, $X_2 = $ retained earnings / total assets, $X_3 = $ Eearnings before interest and taxes / Total assets, $X_4 = $ Market value equity / Book value of total debt, $X_5 = $ Sales / Total assets.
DEBT	=	Total amount of debt, total debt/total assets at the beginning of the period.
MGT	=	1 if there is a change of management in the period, 0 if not.
FIN	=	The ratio of the shares owned by banks at the beginning of the period.
OWN	=	The ratio of the shares owned by all directors at the beginning of the period.
BIGN	=	1 if auditors are in a brand-name auditors, 0 if not (brand-name auditors are Asahi Audit Corporation, Century Ota Showa & Co.,

		Chuo Aoyama audit corporation, Deloitte Touche Tohmatsu LLC,
		Ernst & Young Shin Nihon LLC, KMPG Azsa & Co., Misuzu Audit
		Corporation, and Price Waterhouse Coopers Arata).[11]
SIZE	=	Natural logarithm of total assets at the beginning of the period,
NOA	=	Net operating assets relative to sales (the formula is: (shareholders'
		equity - cash - marketable securities + total debt) / sales).
MTB	=	Market to book.
YEAR	=	Year dummy.
INDUSTRY	=	Industry dummy.
i	=	Firm *i*.
t	=	Time *t*.

To test the income smoothing and big bath hypotheses, the two variables *UPP*1 and *LOW*1 are calculated in a way similar to Riedl (2004).[12] The variables highlight whether earnings are high or low.

The current *NIBT* level is also tested, as well as the change in *NIBT*. This results in *UPP*2 and *LOW*2. Following these are *UPP*3 and *LOW*3.

In evaluating performance of firms and management, naturally annual income weighs more heavily than quarter or interim results.[13] However, in principle, changes in accounting policy are applied at the beginning of an accounting period, which means that

---

[11] Century Ota Showa & Co. is now Ernst & Young Shin Nihon LLC. Asahi Audit Corporation is now KMPG Azsa & Co. Chuo Aoyama Audit Corporation is the predecessor of Misuzu Audit Corporation and Price Waterhouse Coopers Arata.

[12] Riedl (2004) tests income smoothing and big bath using variables similar to *UPP*1 and *LOW*1.

[13] According to Auditing and Assurance Practice Report No. 36 (JICPA), the accounting method for the preparation of quarterly (or interim) financial statement and annual financial statements must adhere to the principle of consistency. When quarterly (or interim) and annual financial statements do not maintain consistency, there are strong concerns that financial statements will lose their usefulness. Therefore, when consistency has not been maintained, appropriate disclosures must be made in the footnotes of the reports. Of particular relevance to this paper, when a quarterly (or interim) financial statement follows the accounting methods of the previous period and a change in accounting policies is made at the end of the year, Report No. 36 requires that the reason for change be reported in a footnote in the year-end report, not the quarterly (or interim) report.

management should decide on it by the end of the first quarter (interim) period. A change at year's end is also allowable, but supplemental disclosure is required. Therefore, if a firm makes a discretionary change in accounting policy, it must make that change based on the prospective annual income at the end of the first quarter (interim) period. With this as a premise, detailed adjustments cannot be made to achieve earnings benchmarks for the annual base income. Thus, this paper also analyzes performance for the first quarter (interim) period in relation to changes in accounting policy, excluding firms that changed accounting policies at year's end. Actually, some firms disclose the changes at the end of year, not at the end of the interim period.

As noted, the time at which an accounting policy is decided differs depending on the fiscal year. Thus, there are also differences in the timing for calculating *UPP*3 and *LOW*3. The impact of an accounting policy change is calculated as being a quarter of the annual change for first-quarter earnings or half of the annual change for interim earnings.[14] *UPP*4 and *LOW*4 are calculated in the same manner as *UPP*2 and *LOW*2.

Firms that changed their accounting policy after the second quarter (i.e., before the fiscal year end of March 2009, when firms first changed their accounting policies in their yearly financial statements) are not included in the estimation of the coefficients for Equations (3) and (4).

Altman's Z-Score (Altman 1968) is used as a proxy to measure financial distress. When testing Hypothesis 3, debt ratio, *DEBT*, is used in line with previous research on the debt ratio.

A variable for management turnover, *MGT*, is created in order to analyze the relationship between management turnover and changes in accounting policy. For fiscal years ending before March 2008, management turnover is deemed as having occurred when a new president or CEO is appointed before September of that fiscal year.[15]

---

[14] A database was used to obtain data on first quarter and interim income.
[15] For fiscal years ending after March 2009 (when quarterly reporting was made mandatory), management turnover is deemed to have occurred when a new president or CEO has been appointed before June of that

20

FIN and *OWN* serve to calculate the bank ownership and management ownership ratios respectively. For *BIGN*, auditors are grouped as Big N audit firms and non-Big N audit firms.

Other control variables include *SIZE,* measuring scale, *NOA*, used by Barton and Simko (2002) to represent accounting flexibility, and *MTB* to show growth.

I include industry and year dummies in Equations (1) to (4). The expected signs of the coefficients are given in Table 4.

3.3. Sample selection and data

The base sample uses in this study is selected as follows:

(1) Firms whose fiscal year end is March 31 between 2000 and 2013

(2) Firms listed on any of the markets in Japan as of each balance sheet date (any of the stock exchanges: Tokyo, Osaka, Nagoya, Sapporo, Kyoto, Fukuoka, JASDAQ)[16]

(3) Firms that disclose consolidated financial statements based on Japanese standards

(4) Firms not belonging to banks, insurance companies, securities traders, or other financial institutions

In addition to meeting these four requirements, firms must have the data I need available.

Data regarding changes in accounting policy is collected from data book of change in accounting policy from 2000 to 2013. This data book, titled "Kaikeishori no Henkou Jitsureishu" (An Actual Case of Change in Accounting Policy, in Japanese), is edited by the *Weekly Report on Financial Accounting* (Zeimu Kenkyukai). [17] Changes in

---

fiscal year.

[16] The Kyoto stock exchange was merged with Osaka Stock Exchange in February, 2001. JASDAQ moved to the stock exchange after December, 2004. Until then, it was an over the counter securities trading market.

[17] It includes all changes in accounting policy for each year. The collection source of these materials is the firms listed on the stock exchange from 2000 to 2002, and after 2003, included JASDAQ (over-the-counter Japan Securities Dealers Association). For over-the-counter companies from 2000 to 2002, data was added by obtaining audit reports and the footnotes to financial statements from annual reports. The book did not appear in 2011 or 2013, however. For 2011, the *Weekly Report on Financial Accounting* is used (the September 26 and October 10 issues), and 2013 data were obtained from their website (http://www.zeiken.co.jp/mgzn/index_zaimu.html).

accounting policies reported in audit reports are recorded there. The collected data include voluntary but not mandatory accounting changes made to comply with accounting standards and legally enforced changes in accounting policies reported in audit reports. The collected data present 2,547 cases of accounting policy changes across 2,207 firm-years. The data comprise 26,966 firm-years, including firm-years without changes in accounting policy.

Firms whose total effect is zero or cannot be calculated are excluded—when they do not disclose the effect against net income before taxes. These changes are hand-collected by the author.[18] The numbers used in each analysis vary depending on the analysis, as reported in each table.

In addition, financial data is extracted from *Nikkei NEEDS-CD ROM Financial Data* (Nikkei Media Marketing). Auditor data is hand-collected from *eol DB Service* (eol), annual reports for each firm, *Who Audit Japan* (Zeimu Kenkyukai), and *KigyoKihon Data* (Nikkei Media Marketing) ; data on changes in management comes from *Executives Quarterly Journal* (Toyo Keizai Shinposha) and *The Japan Company Handbook* (Toyo Keizai Shinposha).

4. Results

4.1. Descriptive statistics

Table 1 shows descriptive statistics on the effect of changes in accounting policy on *NIBT* from 2000 to 2013. *NIBT* is divided by total assets at the beginning of the period. As Table 1 shows, all accounting policy changes have the overall effect of lowering *NIBT*, although they have recently been increasing it. Moreover, the number of changes is decreasing year by year because of a series of new accounting standards and revisions

---

[18] In keeping with data collection, items not disclosed in footnotes or the audit report is treated as missing values. Also, when there is "No effect on gain or loss," "no effect on financial statement," or "immaterial effect" the effect on all income is made zero. Further, in making a disclosure, it is rare for firms to disclose every effect in operating income, ordinary income, net income before taxes and net income for the period. Among these types of income, the effect of net income before taxes is the most frequently reported.

made since 2000 to bring Japanese accounting standards closer to the IFRS and/or U.S. GAAP. [19] New accounting standards and revisions usually increase the number of accounting policy changes before the effective year and then decrease them thereafter. Many firms change their accounting policy to bring themselves closer to the new standards before their adoption in order to decrease their financial impact when they come into effect. [20] As the early adoption of new accounting standards is included as an accounting policy change, changes increase before mandatory adoption. At the same time, adopting new accounting standards tends to lessen management's accounting policy options, which leads to fewer accounting policy changes following adoption. [21] The overall decreases in the number of accounting policy changes can be assumed to be due to the adoption of the new accounting standards, showing a fading of the initial increase and the concurrent post-adoption drop in changes.

[Insert Table 1 here]

Table 2 summarizes the frequency and the effect on net income before taxes by the type of change. A change in provision is the most frequent type of change. There are more than 200 cases under retirement benefit, depreciation methods for fixed assets, recognition of revenue and expenses, change in classification of income statements, effect of early adoption of new accounting standards. The mean and median effect on net income before taxes is mostly negative. The greatest impact on earnings comes from changes in accounting policy regarding accounting accrued retirement benefits. The impact on

---

[19] Changes in accounting policy might have decreased due to the Enron scandal and the stricter audits that followed.

[20] In 2000, the period just before the application of Accounting Standard for Retirement Benefit, a lot of firms changed the calculation method for retirement benefits. Most of them were changed to increase the provision of the retirement benefits. Certainly, these changes were for the purpose of reducing the difference arising from the initial application of the standard.

[21] The prohibition of LIFO in inventory accounting standards has the effect of changing LIFO into some other evaluation method. For example, no changes in accounting policy pertaining to LIFO will be made post-adoption.

earnings from the early adoption of new accounting standards is also substantial. The impact of changes in depreciation methods is also large, but the mean and median values, as shown in Table 2, offset the positive and negative effects. The only positive mean value is 0.0064 while the only negative mean value is -0.0064.

[Insert Table 2 here]

Table 3 presents descriptive statistics for the variables used in the regression. Firm years with changes in accounting policies are grouped into firm years that increased *NIBT* and those that decreased *NIBT* by the change.

There are more income decreasing changes in accounting policies than income increasing changes. This result is the reason why income decreasing changes might be recommended from the perspective of conservative accounting. Even the words "financial soundness" are seen occasionally for the reasons for change.

[Insert Table 3 here]

Table 3 compares the variables of firm years that increased their *NIBT* through a change in accounting policy (*NIBTD* = 1; hereafter the "income-increasing changes group") with those of firm years that did not disclose voluntary changes in accounting policy, drawn from the samples selected in section 3.3 in the audit reports (*NIBTD* = 0; hereafter "other firm-years group") and also compares the variables of firm years that decreased their *NIBT* through accounting policy changes (*NIBTD* = 1; hereafter, "income-decreasing changes group") with those of the "other firm-years group."[22]

First, we focus on the variables *UPP*1 to *UPP*4 and *LOW*1 to *LOW*4. The mean and

---

[22] When a firm makes an income-increasing change one year, an income-decreasing change in another year, and no change in the others, the firm's firm years are classified into three groups according to the change.

median of *UPP*1 to *UPP*4 for the income-increasing changes group are lower than those of the other firm-years group. *LOW*1 to *LOW*4 show the opposite tendency. These results suggest that the income-increasing changes group has lower earnings than the other firm-years group.

On the other hand, the income-decreasing changes group tends to have higher levels of earnings than the other firm-years group. These results are consistent with income smoothing.

ALTMAN, showing the levels of financial distress, revealed that firm-years that increased or decreased their *NIBT* are smaller than other firms and have higher levels of financial distress. This result is consistent with Hypothesis 2-1 but not Hypothesis 2-2.

DEBT is higher for the income-increasing and income-decreasing changes groups than for the other firm-years group. This result is in line with Hypothesis 3-1 but not Hypothesis 3-2.

MGT shows that management turnover is more likely to have occurred in the income-increasing and income-decreasing changes groups than in the other firm-years group. This result supports both Hypothesis 4-1 and Hypothesis 4-2.

FIN is higher for the income-increasing and income-decreasing changes groups than for the other firm-years group, supporting Hypothesis 5-1. *OWN* is smaller for the income-increasing and income-decreasing changes groups than for the other firm-years group. This result supports Hypothesis 6-2. *BIGN* shows no meaningful differences.[23]

4.2. Regression Results

Table 4 is a correlation matrix. Table 5 shows the estimated coefficients from regression equations (1) through (4).[24] The upper half of Table 5 shows the estimated coefficients regarding whether an accounting policy change is employed for the income-decreasing

---

[23] The analysis in Table 3 is, strictly speaking, the reverse in cause and effect from hypothesis testing and is thus not used as hypothesis testing.

[24] I winsorize independent variables at the one percent and 99 percent levels except dummy variables.

changed group and the other firm-years group ($NIBTD = -1$ and $NIBTD = 0$). The lower half shows the estimated coefficients regarding whether a change in accounting policy is employed for the income-increasing changes group and the other firm-years group ($NIBTD = -1$ and $NIBTD = 0$). The second column from the left shows the predicted signs. The third column from the left shows the estimated coefficient from Equation 1, and the fourth column shows the z-value.

[Insert Table 4 and Table 5 here]

The upper half shows that the coefficient for $UPP1$ is negative and significant, indicating that firms with higher earnings change their accounting policies more frequently (i.e., for income smoothing).

The coefficient for $LOW1$ is also significantly negative. This is consistent with the big bath hypothesis, showing that changes in accounting policy are made to increase future income after a large drop in earnings. Hypothesis 1-1 and Hypothesis 1-3 are thus both supported.

The coefficient for FIN is significantly negative, showing that a higher bank ownership ratio leads to more conservative (i.e., income-decreasing) changes in accounting policy. This supports Hypothesis 5-2.

The coefficient for $BIGN$ is significant and positive, indicating that firms audited by Big N firms are more likely to make accounting policy changes that do not decrease income.

None of the coefficients for $ALTMAN$, $DEBT$, MGT, or OWN gives significant results.

Concerning the coefficients in the lower half, $LOW1$ is significantly positive, showing that income-increasing accounting policy changes are more likely to occur in firms with lower earnings levels. This result supports the income-smoothing Hypothesis 1-2.

The coefficient for $DEBT$ is positive and significant, suggesting that a higher debt ratio

26

is more likely to lead to income-increasing accounting policy changes, supporting Hypothesis 3-1.

The *MGT* coefficient is positive and significant, suggesting that management turnover increases the chances of income-increasing accounting policy changes, supporting Hypothesis 4-1.

The coefficient for *BIGN* is negative and significant, indicating that firms audited by *Big N* firms are unlikely to make income-increasing accounting policy changes, supporting Hypothesis 7. Hypotheses 2 and 6 are not supported.

The results of Equation (2), which based its analysis on levels of earnings, are similar, apart from those for *DEBT* in the upper half and *UPP*2 in the lower half. The coefficient of *DEBT* conflicts with Hypothesis 3-2.

The results of columns 7 and 8 from the left focus on earnings in the first-quarter (interim), when new accounting policies come into effect. The results of Equation (3) are similar to those for Equation (1), apart from *LOW*3 (which is not significant) and *DEBT* (which is significant) in the upper half. Regarding the results of Equation (4), the coefficient for *LOW*4 in the upper half produces a result opposite to that of *LOW*1. Thus, the result of *LOW*1 in Equation (1) cannot be regarded as robust. The results are otherwise mostly unchanged from Equation (1). There are a few divergences from Equation (1) in the lower half, apart from the variable for *UPP*4, which is negative and significant and therefore supports the hypothesis on income smoothing.

Thus, the evidence concerning accounting policy changes supports the income-smoothing hypothesis. The big bath hypothesis is partially supported but is not robust. Contrary to previous findings, management turnover is shown to promote income-increasing accounting policy changes.

While a higher bank ownership ratio is found to lead to income-decreasing accounting policy changes, a higher debt ratio leads to both income-decreasing and income-increasing changes. This result indicates that banks tend to produce income-decreasing

27

accounting policy changes in their role as shareholders and creditors. However, some managements prefer to make income-increasing changes to accounting policies in order to improve financial indicators when their debt ratio is high. The influence of banks as creditors increases as the debt ratio increases. The results show that banks influence both income-increasing and income-decreasing changes in accounting policies.

We also see that Big N audit firms were not influential regarding income-increasing changes.

Finally, we see that the control variable *SIZE* is significant in all regression analyses, indicating that larger firms are more likely to make both income-increasing and income-decreasing changes to their accounting policies.

The coefficient for *NOA* is not significant, while that for *MTB* is significant only in some cases.

4.3.   Additional Test

Consolidated interim income became available for use after the fiscal year end of September 2001. Therefore, the sample periods available for Equations (3) and (4) differ from those available for Equation (1) and (2) by one or two years. To address this fact, data that would be used in Equations (1) and (2) are decreased to the portions that would also be used in Equations (3) and (4). The results of the analysis are qualitatively the same as those obtained in Section 4.2 (not tabulated).

Regarding the effect an accounting policy change has on earnings, the influence on ordinary income (following *NBIT*) is disclosed in many cases.[25] For further analysis, variables are set and an analysis performed for ordinary income as for *NBIT*. We similarly calculate *UPP*5 to *UPP*8 and *LOW*5 to *LOW*8. The definitions are presented in the footnotes to Table 6. The results are fundamentally unchanged from those for *NBIT*.

---

[25] Ordinary income is explained in footnote 5.

[Insert Table 6 here]

To analyze the managerial decision to change accounting policies more precisely, it is ideal to focus on forecasts of annual earnings at the time they disclose the first quarter earnings. They should decide on changes with reference to the forecasted annual earnings, following the principle of accounting consistency, if management is to opportunistically decide on a change. However, it is impossible to determine the extent to which forecasts of annual income include such a change. I use the forecast of annual sales instead of the forecast of annual income. While, of course, sales increases and decreases do not link directly with increases and decreases in income, it is sufficient as information about management's performance prospects for the fiscal year. This sales analysis excluded changes that disclose influence on sales. I computed *UPP_sales* and *LOW_sales* based on the difference between annual forecasted sales and the actual sales of the previous period.[26] The results are similar to those discussed above (non-tabulated).

5. Conclusion

This paper reexamines several hypotheses tested in previous studies. The analysis has shown that, depending on the situation, managements change accounting policies even when earnings management would be made apparent in disclosures.

The results of our analysis mostly support the income smoothing hypothesis. In particular, income decreasing changes are made especially at high levels of performance. In contrast, there is inconsistent evidence for the big-bath hypothesis. Changes in accounting policies are described in footnotes to financial statements and audit reports so that they are revealed to the stakeholders. This is the important point that differs from research on real discretion and accounting accruals. The cost is very high when achieving

---

[26] Earnings forecast data by management comes from *Nikkei NEEDS Kaisha Yosou* (Earnings Forcast by Management) by Nikkei Media Marketing.

target earnings via a change in accounting policy. However, if earnings before the change are far from the target, the cost is relatively low. Because the examinations of this study focus on performance which is relatively far from the target, its results might support the income smoothing hypothesis.

The debt ratio is also seen to influence both income-increasing and income-decreasing changes, while the ratio of shareholding is seen to influence income-decreasing changes. Both of these could be interpreted as proxies for pressure from banks. This paper finds that banks influence both income-increasing and income-decreasing changes to accounting policies. Management turnover is also seen to promote income-increasing changes, while Big N audit firms are seen to control income-increasing changes.

In the future, another possible expansion is the linkage with mandatory change. For example, the mandatory application of accounting standards for retirement benefits triggered voluntary changes in accounting policy due to additions to the provisioning of retirement benefits in anticipation of the effect of new standards. Even after the accounting standards for retirement benefits were effective, accounting standards that substantially affect earnings, such as accounting standards for impairment of fixed assets, were newly applied. The relationship with these mandatory changes is also important when considering the economic impact related to the adoption of accounting standards.

Furthermore, managers have access to a variety of methods of earnings management, including not just changes in accounting policy (accounting discretion) but also real discretion. When based on annual income, if accounting policy is changed in the first quarter (interim) period, the change in accounting policy comes first, and then real discretion is affected. Since the characteristics of a change in accounting policy for which discretion is revealed by disclosure is different from that of real discretion, incorporation of both is an interesting challenge.

References

Altman,E. 1968. Financial Ratios, Discriminant. Analysis and the Prediction of Corporate Bankruptcy. *The Journal of Finance*. Volume 23, Issue 4, pages 589–609.

Aoki, M. and Patrick, H. (Eds.) 1994. The Japanese Main Bank System: Its Relevance for Developing and Transforming Economies. Oxford University Press.

Barton, J. and P. J. Simko. 2002. The Balance Sheet as an Earnings Management Constraint. *The Accounting Review* 77 (Supplement): 1-27.

Beatty, A. and J. Weber, 2003. The Effects of Debt Contracting on Voluntary Accounting Method Changes. *The Accounting Review* 78 (1): 119-142.

Becker, C. L., M. L. DeFond, J. Jiambalvo and K. R. Subramanyam, 1998. The Effect of Audit Quality on Earnings Management. *Contemporary Accounting Research* 15 (1) :1-24.

Cushing, B. E. 1969. An Empirical Study of Changes in Accounting Policy. *Journal of Accounting Research* 7 (2): 196-203.

DeAngelo, L. E. 1981. Auditor Size and Audit Quality. *Journal of Accounting and Economics* 3 (3):183-199.

Elliott, J. and W. Shaw. 1988. Write-Offs as Accounting Procedures to Manage Perceptions. *Journal of Accounting Research* 26 (Supplement): 91-119.

Enomoto,. M. 2014a. Shin-kaikeikijyun no Dounyu to Houkokurieki Kanri. (Tsuji, M. ed. *Tokubetu Iinkai Saishu Houkokusyo,* Japan Accounting Associasion) (in Japanese)

Enomoto,. M. 2014b. A Basic Analysis of Accounting Change. *Journal of Ecnomics and Business Administration* 210 (5): 29-65. (in Japanese)

Francis, J. R., E. L. Maydew., H. C. Sparks, and M. C. Building. 1999. The Role of Big 6 Auditors in the Credible Reporting of Accruals. *Auditing: A Journal of Practice and Theory* 18 (2): 17-34.

Graham, J. R., C. R. Harvey, and S. Rajgopal. 2005. The Economic Implications of Corporate Financial Reporting. *Journal of Accounting and Economics* 40 (1-3): 3-

73.

Gunny, K. 2009. The Relation between Earnings Management Using Real Activities Manipulation and Future Performance: Evidence from Meeting Earnings Benchmarks. *Working Paper*.

Hamamoto, M. 2001. The Effects of Control Structure upon Accounting Behavior of Japanese Firms. *Yokohama Business Review* 13 (4): 329-336. (in Japanese)

Hanaeda, K. and K., Suda. 2008. Corporate Financial Reporting Strategy: Survey Evidence from Japanese Firms. *Securities Analysts Journal* 46 (5): 51-69. (in Japanese)

Healy, P. M. 1985. The Effect of Bonus Schemes on Accounting Decisions. *Journal of Accounting and Economics* 7 (1-3): 85-107.

Hunt, H. 1985. Potential Determinants of Corporate Inventory Accounting Decisions. *Journal of   Accounting Research* 23 (2): 448-467.

Jensen, M. C. and W. H. Meckling. 1976. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics* 3 (4): 305-360.

Koumura, M. 1987. Gendai Kigyou Kaikei to Syouken Shijyou. Doubunkan-Shuppan. (in Japanese)

Lilien, S. B., Mellman, M. and Pastena, V. 1988. Accounting Changes: Successful versus Unsuccessful Firms. *The Accounting Review* 63 (4):642-656.

McNichols, M. 2000. Research Design Issues in Earnings Management Studies. *Journal of Accounting and Public Policy* 19 (4-5) 313-345.

Moses, O.D. 1987. Income Smoothing and Incentives: Empirical Tests Using Accounting Changes. *The Accounting Review* 62 (2): 358-377.

Nakamura, D. 2006. Earnings Management to Kaikei-Hasseidaka: Kaikei Houshin Henkou no Modai wo Hukumete. *Nenpo Keiei Bunseki Kenkyu* 22: 76-84. (in Japanese)

Nelson, M., J. Elliott, and R. Tarpley. 2002. Evidence from Auditors about Managers' and Auditors' Earnings Management Decisions. *The Accounting Review* 77 (4): 175–202.

Okabe, T. 1994. *Kaikei Houkoku no Riron.* Moriyama Shoten. (in Japanese)

Pincus M. and C. Wasley. 1994. The Incidence of Accounting Changes and Characteristics of Firms Making Accounting Changes. *Accounting Horizons* 8 (2):1-24.

Riedl, E. J. 2004. An Examination of Long-lived Asset Impairments. *The Accounting Review* 79 (3): 823-852.

Ronen, J. and S. Sadan. 1981. Smoothing Income Numbers, Objectives, Means, and Implications. Addison Wesley.

Roychowdhury, S. 2006. Earnings Management through Real Activities Manipulation. *Journal of Accounting and Economics* 42 (3): 335-370.

Schwartz, K. B. 1982. Accounting Changes by Corporations Facing Possible Insolvency. *Journal of Accounting, Auditing & Finance* 6 (1):32-43.

Shuto, A. 2010. Earnings Management: *Theory and Empirical Evidence from Japan.* Chuokeizai-Sha (in Japanese)

Strong, J. S., and J. R. Meyer. 1987. Asset Writedowns: Managerial Incentives and Security Returns. *Journal of Finance* 42 (3): 643-661.

Suda, K. 2000. *Positive Theory of Financial Accouting.* Hakuto-shobo. (in Japanese)

Suda, K., S. Otomasa, and T. Yamamoto. 2007. *Accounting Manipulation.* Daimond-Sha

Sweeney, A. 1994. Debt-Covenant Violations and Managers' Accounting Responses. *Journal of Accounting and Economics* 17 (3),:281-308.

Takada, T, and K. Muramiya 2013. The Analysis on Big 4 Auditor Conservatism. *Journal of Ecnomics and Business Administration* 208 (5): 53-68. (in Japanese)

Warfield, T. D., J. J. Wild, and K. L. Wild. Managerial Ownership, Accounting Choices, and Informativeness of Earnings. *Journal of Accounting and Economics* 20 (1): 61-

91.

Yamaguchi, T. 2009. Opportunistic Real Discretion and Future Operating Performance. *Accounting Progress* 10: 117-137. (in Japanese)

Yamaguchi, T. 2013. Management Turnover and Earnings Management: Empirical Analysis of Big Bath by Incoming Managers. *Securities Analysts Journal* 51 (5): 20-23. (in Japanese)

Yazawa, K. 2010. Big4 and Audit Quality: Audit Cost Hypothesis and Conservative Accounting Hypothesis *Aoyama Journal of Business* 44 (4): 165-181. (in Japanese)

Weekly Report on Financial Accounting. 2000 – 2010. *Kaikeishori no Henkou Jitsureishu.* Zeimu Kenkyukai. (in Japanese)

Weekly Report on Financial Accounting. 2012. *Kaijijitsurei to Keikou.* Zeimu Kenkyukai. (in Japanese)

Zmijewski, M. and R. Hagerman. 1981. An Income Strategy Approach to the Positive Theory of Accounting Standard Setting/Choice. *Journal of Accounting and Economics* 3 (2): 129-149.

Table 1
The Effect of Changes in Accounting Policy on Net Income Before
Taxes from 2000 to 2013

Year	mean	median	N
2000	-0.0189	-0.0084	644
2001	-0.0032	-0.0016	187
2002	-0.0041	-0.0008	178
2003	-0.0045	-0.0009	143
2004	-0.0110	-0.0048	253
2005	-0.0150	-0.0047	406
2006	-0.0026	-0.0006	160
2007	-0.0072	-0.0039	159
2008	-0.0048	-0.0023	161
2009	0.0001	0.0000	105
2010	0.0027	0.0000	46
2011	-0.0005	-0.0001	30
2012	0.0049	0.0050	29
2013	0.0081	0.0066	45
Total	-0.0097	-0.0030	2,546

Net income before tax is divided by total assets at the beginning of the
period.

Table 2
The Effect of Each Change in Accounting Policy on Net Income before Tax

Change	mean	median	N
Securities	-0.0045	-0.0011	63
Inventory	-0.0021	-0.0003	135
Depreciation	0.0025	0.0027	305
Deferral Asset	-0.0021	-0.0007	25
Foreign Currency Translation	0.0010	0.0003	60
Provision	-0.0064	-0.0038	634
Hedge Accounting	0.0022	0.0000	7
Retirement Benefit	-0.0254	-0.0148	515
Revenue and Expense Recognition	-0.0001	0.0008	232
Classification	-0.0003	0.0000	89
Effect of Early Adoption of New Accounting	-0.0172	-0.0071	448
Other	-0.0004	0.0005	33
Total	-0.0097	-0.0030	2,546

Provision is excluded Retirement Benefit. I relied on *Kaikeisyori no Henkou Jitsureishu* for the classification of each accounting policy. Net income before tax is divided by total assets at the beginning of the period.

Table 3

Comparison of Income-increasing Change Group, Income-decreasing Change Group, and Other Firm-years group

Variables	Income-Increasing Change Group ($NIBTD = 1$)				Income-Decreasing Change Group ($NIBTD = -1$)				Other Firm-years Group ($NIBTD = 0$)			
	mean	median	s.d.	N	mean	median	s.d.	N	mean	median	s.d.	N
UPP1	0.2698	0.0000	0.4443	530	0.3733 ***	0.0000 ***	0.4838	1,677	0.2767	0.0000	0.447	24,759
LOW1	0.2547 **	0.0000 **	0.4361	530	0.1825 ***	0.0000 ***	0.3863	1,677	0.2191	0.0000	0.413	24,759
UPP2	0.2472 ***	0.0000 ***	0.4318	530	0.4812 ***	0.0000 ***	0.4998	1,677	0.4085	0.0000	0.491	24,759
LOW2	0.1226 ***	0.0000 ***	0.3283	530	0.0900	0.0000	0.2863	1,677	0.0899	0.0000	0.286	24,759
UPP3	0.2112 **	0.0000 **	0.4086	412	0.4964 ***	0.0000 ***	0.5003	838	0.2564	0.0000	0.436	21,819
LOW3	0.3058 ***	0.0000 ***	0.4613	412	0.1229 ***	0.0000 ***	0.3285	838	0.2386	0.0000	0.426	21,819
UPP4	0.2461 ***	0.0000 ***	0.4312	451	0.5241 ***	1.0000 ***	0.4997	935	0.4096	0.0000	0.491	23,562
LOW4	0.1752 ***	0.0000 ***	0.3805	451	0.0481 ***	0.0000 ***	0.2142	935	0.0895	0.0000	0.285	23,562
ALTMAN	0.9938 ***	0.8985 ***	0.5208	530	1.0557 ***	0.9344 ***	0.6121	1,677	1.1094	0.9725	0.638	24,759
DEBT	0.6281 ***	0.6499 ***	0.2001	530	0.5997 ***	0.6170 ***	0.1965	1,677	0.5480	0.5573	0.210	24,759
MGT	0.1925 ***	0.0000 ***	0.3946	530	0.1610 *	0.0000 *	0.3676	1,677	0.1449	0.0000	0.352	24,759
FIN	0.2543 ***	0.2363 ***	0.1483	530	0.2691 ***	0.2500 ***	0.1491	1,677	0.2165	0.1931	0.138	24,759
OWN	0.0392	0.0039 ***	0.0881	530	0.0506	0.0067 ***	0.0927	1,677	0.0772	0.0107	0.821	24,759
BIGN	0.7547	1.0000	0.4307	530	0.7823	1.0000	0.4128	1,677	0.7819	1.0000	0.413	24,759
SIZE	11.531 ***	11.3589 ***	1.5723	530	11.2536 ***	11.0743 ***	1.5413	1,677	10.827	10.6483	1.489	24,759
NOA	1.2378	0.9250 ***	1.8654	530	1.1670	0.8837 ***	2.8985	1,677	1.0819	0.8150	3.976	24,759
MTB	1.2600	0.8718	1.4741	530	2.3676	1.0167 ***	40.842	1,677	1.3775	0.8771	14.90	24,759

***, **, * denote significance at the 0.01, 0.05, and 0.1 levels, respectively, for two-tailed t-tests (two-tailed Wilcoxson tests) of differences in means (medians). The differences between the income-increasing change group (firm-years that increased their *NIBT* by a change in accounting policy, *NIBTD* = 1) and other firm-years group (firm-years that did not disclose voluntary changes in accounting policy in the audit reports, *NIBTD* = 0), and those between income-increasing change group (firm-years that decreased their *NIBT* by change in accounting policy, *NIBTD* = -1) and other firm-years group (*NIBTD* = 0) are tested, respectively.

Table 4

Correlation Matrix

	UPP1	LOW1	UPP2	LOW2	UPP3	LOW3	UPP4	LOW4	ALTMAN	DEBT	MGT	FIN	OWN	BIGN	SIZE	NOA	MTB
UPP1	1																
LOW1	-0.3293	1															
UPP2	0.2276	-0.2200	1														
LOW2	-0.0898	0.3879	-0.2572	1													
UPP3	0.2187	-0.0123	0.1929	0.1300	1												
LOW3	0.0310	0.1825	-0.0749	0.0199	-0.3328	1											
UPP4	0.1684	-0.1581	0.6376	-0.2571	0.3086	-0.1475	1										
LOW4	-0.0946	0.2769	-0.2585	0.2886	-0.1213	0.0927	-0.2584	1									
ALTMAN	-0.0140	-0.0060	0.0668	-0.0507	0.0088	0.0049	0.0400	-0.0401	1								
DEBT	-0.0023	-0.0610	-0.3099	0.0415	-0.0471	-0.0535	-0.2565	0.0851	0.1211	1							
MGT	0.0101	0.0092	-0.0339	0.0486	-0.0028	0.0166	-0.0265	0.0182	-0.0036	0.0358	1						
FIN	-0.0474	-0.0556	0.0354	-0.1162	-0.0321	-0.0694	0.0439	-0.0279	-0.1536	0.0634	-0.0064	1					
OWN	0.0141	0.0040	0.0324	-0.0045	0.0092	0.0094	0.0216	-0.0087	0.0154	-0.0233	-0.0106	-0.0567	1				
BIGN	-0.0183	-0.0169	0.0741	-0.0640	0.0057	-0.0140	0.0744	-0.0319	0.0008	-0.0052	-0.0014	0.0988	-0.0061	1			
SIZE	-0.0842	-0.0671	-0.0203	-0.1201	-0.0650	-0.0960	-0.0013	-0.0180	-0.1766	0.2006	0.0227	0.6151	-0.0613	0.1730	1		
NOA	-0.0243	-0.0184	-0.0627	0.0135	-0.0292	-0.0229	-0.0554	0.0191	-0.1621	0.0889	0.0093	0.0373	-0.0068	-0.0358	0.1328	1	
MTB	0.0200	-0.0025	0.0059	0.0008	0.0022	0.0130	0.0052	-0.0040	0.0058	0.0313	0.0181	-0.0058	0.0022	0.0035	0.0065	-0.0029	1

N=23,069. The correlation matrix is computed by using the firm years with no missing variables. The definition of the variables are provided in section 3.3.

Table 5
Regression Results

NIBT = -1, 0	Sgn	Eqn. (1) Coe	z-stat	Eqn. (2) Coef	z-stat	Eqn. (3) Coef	z-stat	Eqn. (4) Coef	z-stat
Constant	?	3.2177	9.7742***	4.9026	14.4737***	5.3823	11.7968***	5.2097	11.9295***
UPP1	-	-	-7.6378***						
LOW1	±	-	-1.7428*						
UPP2	-			-0.5915	-8.9249***				
LOW2	±			-0.3329	-3.2203***				
UPP3	-					-1.0289	-		
LOW3	±					0.1110	0.9414		
UPP4	-							-0.5875	-7.1665***
LOW4	±							0.3862	2.3318**
ALTMAN	-	-	-1.2984	-0.0161	-0.1938	-0.0650	-0.6026	-0.0609	-0.5951
DEBT	+	-	-1.3316	-0.7360	-4.3752***	-0.4451	-2.1690**	-0.6879	-3.2966***
MGT	-	-	-0.5951	-0.0555	-0.7431	0.0386	0.3597	-0.0111	-0.1126
FIN	-	-	-4.1653***	-0.8836	-3.7279***	-0.7516	-2.2559**	-0.6520	-2.0956**
OWN	-	0.2876	0.8502	0.5687	1.6512*	0.4727	0.9242	0.8433	1.7306*
BIGN	?	0.1451	2.1220**	0.1555	2.2408**	0.0805	0.8105	0.0590	0.6223
SIZE	?	-	-4.8119***	-0.1131	-4.3120***	-0.1746	-4.8977***	-0.1407	-4.2496***
NOA	-	-	-0.3370	-0.0366	-0.5750	-0.1131	-1.4093	-0.0902	-1.2112
MTB	?	0.0423	1.7228*	0.0725	2.6650***	0.0313	0.7908	0.0291	0.8783
NIBT=0, 1									
Constant	?	-	-11.8537***	-7.7160	-	-7.5507	-	-7.2574	-12.2263***
UPP1	-	0.0733	0.6673						
LOW1	+	0.2561	2.2656**						
UPP2	-			-0.5248	-4.4690***				
LOW2	+			0.1086	0.7564				
UPP3	-					-0.0886	-0.6670		
LOW3	+					0.4175	3.4061***		
UPP4	-							-0.5120	-4.1378***
LOW4	+							0.4517	3.4137***
ALTMAN	-	-	-1.3905	-0.1593	-0.9523	-0.2172	-1.1711	-0.1581	-0.8744
DEBT	+	1.2225	4.7634***	0.7513	2.7874***	1.1377	3.9916***	0.6625	2.2477**
MGT	+	0.2420	2.1786**	0.2320	2.0898**	0.3004	2.3743**	0.2856	2.3566**
FIN	-	-	-0.6190	-0.1642	-0.3779	-0.5967	-1.2102	-0.4229	-0.8922
OWN	-	-	-0.8859	-0.2817	-0.4421	-0.2521	-0.3543	-0.0377	-0.0554
BIGN	-	-	-2.7318***	-0.2882	-2.6078***	-0.3319	-2.7062***	-0.3212	-2.7201***
SIZE	?	0.2354	5.5996***	0.2392	5.7264***	0.2481	5.3727***	0.2587	5.8532***
NOA	-	-	-0.5262	-0.0827	-0.6330	-0.0588	-0.3838	-0.1004	-0.7152
MTB	?	-	-1.3599	-0.0160	-0.3922	-0.0770	-1.2678	-0.0169	-0.3392
obs		26,966		26,966		23,069		24,948	
Pseudo R²		0.145		0.147		0.139		0.120	

***, **, and * indicate significance at the 1%, 5%, and 10% levels (two-tailed). The definitions of variables are provided in section 3.2. The z-statistics are based on robust standard errors clustered by firm.

$NIBTD_{it} = \beta_0 + \beta_1 UPP1_{it} + \beta_2 LOW1_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it}$ (1)

$NIBTD_{it} = \beta_0 + \beta_1 UPP2_{it} + \beta_2 LOW2_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it}$ (2)

$NIBTD_{it} = \beta_0 + \beta_1 UPP3_{it} + \beta_2 LOW3_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it}$ (3)

$NIBTD_{it} = \beta_0 + \beta_1 UPP4_{it} + \beta_2 LOW4_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it}$ (4)

Table 6
Additional Tests

	Sgn	Eqn. (1)		Eqn. (2)		Eqn. (3)		Eqn. (4)	
NIBT = -1, 0		Coef	z-stat	Coef	z-stat	Coef	z-stat	Coeff	z-stat
Constant	?	3.1798	7.5325***	2.9951	6.9635***	3.5825	5.2866***	5.0240	8.9569***
*UPP*1	-	-0.4458	-5.6029***						
*LOW*1	±	-0.1617	-1.6324						
*UPP*2	-			-0.4026	-				
*LOW*2	±			0.2534	1.3317				
*UPP*3	-					-0.4928	-		
*LOW*3	±					-0.0237	-0.1773		
*UPP*4	-							-0.3594	-
*LOW*4	±							0.0707	0.3246
ALTMAN	-	-0.1371	-1.3366	-0.0619	-0.5838	-0.1676	-1.0916	-0.2150	-1.5708
DEBT	+	-0.4059	-2.1731**	-0.7927	-	-0.6729	-2.4812**	-0.8316	-
MGT	-	0.0021	0.0216	-0.0169	-0.1770	0.1093	0.7665	0.0100	0.0798
FIN	-	-1.2050	-4.0617***	-1.0604	-	-1.3522	-	-1.1799	-
OWN	-	0.0351	0.0865	0.2336	0.5716	-0.1748	-0.2815	0.2607	0.4563
BIGN	?	0.1386	1.7083*	0.1451	1.7812*	0.0779	0.6552	0.0011	0.0101
SIZE	?	-0.0213	-0.6713	0.0040	0.1226	-0.0046	-0.0975	0.0051	0.1231
NOA	-	-0.0746	-0.9608	-0.0807	-1.0125	-0.1531	-1.3655	-0.1387	-1.3768
MTB	?	0.0335	1.2365	0.0432	1.5191	-0.0522	-1.3984	-0.0221	-0.7636
NIBT=0, 1									
Constant	?	-5.7579	-11.9522***	-5.4418	-	-7.1555	-	-6.5523	-
*UPP*1	-	0.0205	0.2061						
*LOW*1	+	0.3290	3.2395***						
*UPP*2	-			-0.4177	-				
*LOW*2	+			0.0324	0.1872				
*UPP*3	-					-0.0285	-0.2370		
*LOW*3	+					0.2517	2.1595**		
*UPP*4	-							-0.4527	-
*LOW*4	+							0.5991	3.9373***
ALTMAN	-	-0.0856	-0.6552	-0.0084	-0.0639	-0.1657	-1.0446	-0.1180	-0.7534
DEBT	+	0.9688	4.2482***	0.5278	2.1701**	1.1675	4.4312***	0.6971	2.5606**
MGT	+	0.2403	2.4556**	0.2380	2.4200**	0.3283	2.9222***	0.2963	2.7270***
FIN	-	0.0709	0.1892	0.1792	0.4742	-0.2403	-0.5393	-0.0595	-0.1397
OWN	-	-0.9375	-1.6619*	-0.6346	-1.1315	-0.5388	-0.8125	-0.3836	-0.6069
BIGN	-	-0.0906	-0.8752	-0.0738	-0.7155	-0.1900	-1.6281	-0.1993	-1.7730*
SIZE	?	0.2210	5.8148***	0.2193	5.8023***	0.2420	5.5817***	0.2556	6.2567***
NOA	-	-0.0787	-0.7896	-0.1021	-1.0157	-0.0842	-0.6664	-0.1469	-1.2242
MTB	?	-0.0563	-1.3596	-0.0222	-0.5778	-0.1035	-1.7329*	-0.0248	-0.5097
obs		26,405		26,405		22,885		24,823	
Pseudo R²		0.0996		0.100		0.0853		0.0885	

***, **, and * indicate significance at the 1%, 5%, and 10% levels (two-tailed). The definitions of the variables except *UPP*5 to *UPP*8 and *LOW*5 to *LOW*8 are provided in section 3.2. The *z*-statistics are based on robust standard errors clustered by firm.

$OID_{it} = \beta_0 + \beta_1 UPP5_{it} + \beta_2 LOW5_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it}$ (5)

$OID_{it} = \beta_0 + \beta_1 UPP6_{it} + \beta_2 LOW6_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it}$ (6)

$OID_{it} = \beta_0 + \beta_1 UPP7_{it} + \beta_2 LOW7_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it}$ (7)

$OID_{it} = \beta_0 + \beta_1 UPP8_{it} + \beta_2 LOW8_{it-1} + \beta_3 ALTMAN_{it-1} + \beta_4 DEBT_{it-1} + \beta_5 MGT_{it-1} + \beta_6 FIN_{it-1} + \beta_7 OWN_{it-1} + \beta_8 BIGN_{it-1} + \beta_9 SIZE_{it-1} + \beta_{10} NOA_{it-1} + \beta_{11} MTB_{it-1} + \beta YEAR + \beta INDUSTRY + \varepsilon_{it}$ (8)

(*Continued*)

(*Continued*)

*UPP*5 = 1 if the difference between ordinary income before the accounting policy change and ordinary income of the previous period is above the median of nonzero positive values of this variable, and 0 otherwise.. *LOW*5 = 1 if the difference between ordinary income before the accounting policy change and ordinary income of the previous period is below the median of nonzero negative values of this variable, and 0 otherwise. *UPP*6 = 1 if ordinary income before the accounting policy change is above the median of nonzero positive values of this variable, and 0 otherwise. *LOW*6 = 1 if ordinary income before the accounting policy change is below the median of nonzero negative values of this variable, and 0 otherwise. *UPP*7 = 1 if the difference between first quarter (interim) ordinary income before the accounting policy change and ordinary income of the same period of the previous fiscal year is above the median of nonzero positive values of this variable, and 0 otherwise. *LOW*7 = 1 if the difference between first quarter (interim) ordinary income before the accounting policy change and ordinary income of the same period of the previous fiscal year is below the median of nonzero negative values of this variable, and 0 otherwise. *UPP*8 = 1 if first quarter (interim) ordinary income before the accounting policy change is above the median of nonzero positive values of this variable, and 0 otherwise. *LOW*8 = 1 if first quarter (interim) ordinary income before the accounting policy change is below the median of nonzero negative values of this variable, and 0 otherwise.