Earnings Management using Classification Shifting: Evidence from Japan

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Abstract: The purpose of this study is to investigate whether Japanese firms engage in Classification Shifting (CS). Unlike prior research, I consider the uniqueness of the Japanese financial reporting environment that might affect incentives to exercise CS. Specifically, this study sheds light on two unique points of Japanese GAAP. One is the unique requirement to report several levels of earnings, and the other is the allowance of managerial discretion over classification of line items. These properties enable managers to exercise discretion over classification of line items, but auditors scrutinize misclassification because core earnings are prescribed by GAAP. Considering these points, this study conjectures that Japanese firms do not shift placement of line items on average, but those with the incentive of earnings management tend to engage in it. The main results are as follows. First, I find no evidence that Japanese firms on average shift core expenses as special items. Second, firms with incentives to manage earnings achieve CS using special losses. Third, firms with incentives shift core expenses as non-operating items. However, this result is sensitive to specifications of models and estimation windows. Overall, this study emphasizes the importance of discussing the characteristics of GAAP in each country when examining CS. In addition, contrary to the IFRS approach, the results highlight the importance of requirements to report special or extraordinary items.

Keywords: *income statement classification shifting; earnings management; earnings components; Japanese GAAP*

1. Introduction

In this study, I focus on earnings management using classification shifting (CS, hereafter). CS is a method to manage earnings other than bottom-line earnings by changing the placement of line items within the income statement. The purpose of this study is to investigate whether Japanese firms achieve CS. Even though a few studies examine this research question, they do not discuss or consider the unique Japanese setting. For instance, Japanese GAAP (J GAAP, hereafter) requires reporting six kinds of earnings (gross income, operating income, ordinary income, net income before tax, net income, and comprehensive income). In addition, they do not faithfully replicate the research design developed by McVay (2006), and it is impossible to compare the results for firms in Japan with those of US firms. Thus, before examining the issue, I carefully review prior literature and discuss the uniqueness of the Japanese financial reporting environment that is expected to affect CS.

Managers have incentives to manage core earnings. Textbooks on financial analysis recommend focusing on core earnings rather than bottom-line. That is because core earnings provide the relevant and persistent fundamental information on firm's performance (Palepu et al. 2000; Penman 2012; Lundholm and Sloan 2013). Furthermore, some studies discover that each line item on income statement has different predictability and that investors differently weigh them (Lipe 1986; Fairfield et al. 1996; Ramakrishnan and Thomas 1998; Bartov and Mohanram 2014). This discussion suggests that managers have incentives to execute earnings management in order to make outsider more convenient for themselves.

There are three forms of earnings management, accrual-based earnings man-

agement (AEM, hereafter), real earnings management (REM, hereafter), and CS. I argue that managers engage in CS more than in the other two forms for two reasons. First, CS seems to be less costly than the other methods. These other two methods enable managers to temporarily change earnings. Nevertheless, AEM and REM entail cost in the future because of accrual reversals and the impairment of the firm's long term value, respectively. Thus, managers are expected to easily engage in CS because it does not entail these costs. Another reason is that CS enables managers to manage earnings relatively quickly. While REM requires managers to make a decision on projects and implement it, AEM and CS do not need so much time. This discussion suggests that managers have incentives to engage in CS, rather than AEM and REM, when managing core earnings.

This study incorporates two innovations. First, I provide explicit evidence on CS performed by Japanese firms. There is not much work on CS under J GAAP, and it is rarely discussed whether the models developed by research done in the US can be applied to the Japanese environment. Thus, I confirm the applicability of the models to Japanese setting. Second, this study considers the characteristics of GAAP influencing the behavior of CS. Specifically, J GAAP allows managerial discretion over classification. This fact indicates that (at least) the managers with incentives to manage earnings tend to misclassify the line items within the income statement (H1a). On the other hand, J GAAP mandates managers to report several levels of earnings on the income statement, so auditors scrutinize it, looking for misclassification of line items. Thus, I expect that incentives of managers to engage in CS are mitigated by J GAAP (H1b). Therefore, I predict that even if not all the managers shift placement of line items, managers with strong incentives to manage core earnings engage in CS (H2).

Following McVay (2006) and Barua et al. (BLS) (2010), I find the three points below. First, I find no evidence that Japanese firms utilize CS allocating core expenses as special losses. This result is robust to several sensitivity tests. This is consistent with the idea that managers do not misclassify line items under J GAAP on average. However, as discussed in conclusion section, this does not necessarily indicate that managers do not engage in CS under J GAAP. I also find the same results on CS using non-operating expenses, but they are not robust. Second, firms with incentives to manage earnings classify core expenses as special losses. While firms meeting and beating earnings in the previous period use CS, those reporting zero earnings do not. These results are robust. Third, firms with incentives to manage earnings shift core expenses to non-operating expenses. However, this result is sensitive to specifications of models and estimation windows.

This study makes three contributions. First, it contributes to the literature on CS. I point out the importance of discussing the characteristics of GAAP in each country when examining CS. Constructing the distinct hypotheses from prior research, I present the results supporting them. Second, this study contributes to research on earnings management. Even though there has been growing interest in CS, it is still poorly investigated, especially in Japan. Many studies have been focused on AEM and REM. That is probably because managers cannot change bottom-line earnings and researchers overlooked the importance of core earnings and CS. This study provides empirical evidence of CS in a Japanese setting. Furthermore, and more importantly, this study illustrates the importance to examine CS to promote a comprehensive understanding of earnings management. Finally, this study has implications for standard setters. It highlights the importance of requirements to report special or extraordinary items. IASB

(2011) casts doubt on discretion over classification of line items (para. 104)[1]. However, there is a limitation to discuss whether the extent of discretion to classify the line items impairs the relevance from the classification on the income statement with just theory and intuition. This study provides a useful basis for the discussion of appropriate classification of line items within the income statement. Furthermore, contrary to the IFRS approach, the results highlight the importance of requirements to report special or extraordinary items.

The remainder of this paper proceeds as follows. The next section introduces the concept and the characteristics of CS. Section 3 reviews prior research. In addition, I outline the properties of J GAAP and develop hypotheses. Section 4 describes the research design. Section 5 reports the results, and section 6 summarizes the results of additional tests and robustness tests. Section 7 concludes.

2. Background

2.1 Earnings Management using CS

CS is a tool to manage earnings other than bottom-line earnings by shifting the placement of line items within the income statement. Managers can change investors' sentiment on their firm by CS, because investors weight each accounting item differently.

[1] IASB (2011), para. 99 depicts two ways to classify line items. One is the nature of expense method. Managers need to allocate expenses based on their nature under this method, and do not need to report income statement classified by the functions. For instances, managers must classify depreciation as "depreciation" on the income statement. The other way to classify line items is the function of expense method. Managers need to allocate expenses based on their functions under this method. For instance, managers must judge whether to report depreciation as "costs of sales" or "SG&A" on the income statement. IASB (2011), para. 104 states that function based classification provides relevant information, but casts doubt on it because it allows managers discretion over classification of line items. Thus, it requires managers additionally report a nature based income statement when reporting a function based income statement. For the extent of my investigation, Japanese firms reporting a nature based income statement are only HOYA and Monex Group.

Prior literature indicates this fact. Lipe (1986) observes the market response to the shock of earnings components, and finds the extent of the response depends on the persistence of each component. In addition, he finds the positive relationship between its persistence and the unexpected return to it. Finally, he concludes that recognizing differences among earnings components is relevant for investors, because their different time-series properties provide additional information. On the basis of Lipe (1986), Ramakrishnan and Thomas (1998) consider that explanatory power of earnings components on stock returns can be improved by decomposing the bottom-line into 3 components (permanent, transitory and price-irrelevant components). The results show the significant relationship between the unexpected earning components and unexpected change in stock price.

It is also identified that the stock return to a line item changes when changing its placement within the income statement. Bartov and Mohanram (2014) find the change in the market response to an earnings component after changing its placement on the income statement by GAAP modification. They investigate the market response to gains and losses from early debt extinguishment before and after 2002. Until then, GAAP required managers to classify them as below the line, but they must be reported as a usual item after the change. They observe the market reaction to the item only after the standard change. This result suggests that investors' reaction to a line item depends on its placement. These findings imply that managers can manage market valuation on their firm by shifting the placement of line items.

Some accounting standards allow managerial discretion over the classification of line items on the income statement. For instance, J GAAP permits managers to re-

port provision for doubtful accounts in three ways, as selling, general and administrative expenses (SG&A, hereafter), non-operating expenses, or special losses. Managers must choose which placement is the most appropriate for each provision (Ministry of Finance 1976, Article 87-93). This prescription enables managers to inflate operating income or ordinary income by classifying a provision as a special loss that should have been reported as SG&A. Hence, managers have incentives to shift core expenses as a special or extraordinary loss on purpose to change outsiders' perception and valuation, because accounting standards provides the opportunity to exercise this discretion, and investors assess firms based on the placement of line items on the income statement.

2.2 Characteristics of CS

Managers have incentives to manage core earnings, because core earnings are one of the most important factors when assessing firms. In various valuation models, one needs to expect the value that firms create in the future. Expecting all the specific values in the future is not efficient, so financial analysis textbooks recommend using persistent earnings. They highlight that core earnings, which is derived by subtracting temporary items from the bottom-line, is useful to predict the persistent earnings (Palepu et al. 2000; Penman 2012; Lundholm and Sloan 2013). There is empirical evidence that justifies this suggestion (Fairfield et al. 1996). The above discussion follows that managers tend to change core earnings, because it strongly affects outsiders' assessment.

Managers can change core earnings by three methods (Dechow and Skinner 2000; McVay 2006). The first is AEM, earnings management through accrual allocation. This is widely investigated both in the US and Japan (Ronen and Yaari 2008;

Shuto 2010). The second method is to change a firm's real activities (REM), which recently had attracted researchers (Roychowdhury 2006; Cohen et al. 2008). The third is CS discussed in this study.

Two points clarify the differences among the three methods (Table 1). One is whether they change the bottom-line, and the other is whether they entail a change in cash flow. AEM and REM change core earnings and the bottom-line at the same time, but CS does not. In addition, only REM entails a change in cash flow.

[Table 1]

Managers are expected to achieve CS more easily than the other two methods for two reasons. First, CS is less costly. AEM causes reversal of accruals after managing earnings. Even if managers change earnings by adjusting expectation or estimation at a period, earnings changes inversely after the period. REM is likely to impair long-term firm value. Managers might reject the projects that have nonnegative net present value, and increase short-term firm value in order to achieve myopic earnings benchmarks. These facts indicate that AEM and REM have costs to achieve. On the other hand, CS just changes the placement of accounting items, so it is not as costly as AEM and REM. Thus, it is possible that managers relatively easily engage in CS.

Second, CS enables managers to change earnings quickly. Using REM, managers compress (inflate) expenses by quitting (carrying out) incremental projects. Managers need to make decisions on implementation of incremental projects. REM requires a relatively long time. On the other hand, because managers just change expectation and the placement of line items for AEM and CS, respectively, these methods

need less time to carry out than REM. Hence, managers more often use CS at the end of a period than at least REM, when they tend to confront earnings management constraints. According to these two reasons, it is expected managers have incentives to use CS rather than the other methods.

As another reason, one might pose that outsiders do not scrutinize CS (McVay 2006; Chae and Nakano 2015). As discussed above, CS just changes core earnings, but not the bottom-line. US GAAP does not require managers to present core earnings on the income statement, so auditors and regulators might not pay attention to CS (McVay 2006, p. 502). However, this point cannot be applied to firms under J GAAP. J GAAP requires managers to present levels of earnings, so core earnings reported by Japanese forms are audited by outside auditors. I will discuss this point later.

3. Prior Literature and Hypothesis

3.1 Prior Literature

There are some studies on CS since the 1970s (Ronen and Sadan 1975; Barnea et al. 1976). However, CS hasn't become a major topic until McVay (2006) introduces a testable model. She revisits the research from the 1970s, and develops a model based on Jones (1991). This model is often called McVay model. Using this, McVay (2006) investigate CS allocating core expenses to special losses in US firms. The results show that (i) US firms engage in CS on average; (ii) CS is used to meet and beat analyst forecasts; and (iii) stock price does not reflect CS. However, she also points out problems that her model is sensitive to the definition of accruals. Thus, she argues that the expected core earnings estimated by the model contains measurement error (McVay 2008).

Fan et al. (FBCT) (2010) and BLS (2010) introduce modified models.

FBCT(2010) conjecture that firms shift line items that confront constraints to manage earnings by AEM at the end of a period. In addition, they expect that managers facing AEM constraints are more likely to misclassify line items. They replace current period accruals in McVay's (2006) model with adjusted market returns to deal with measurement issues. The results show that although not all U.S. firms use CS, managers with incentive to engage in CS (who face constraints on AEM and meet and beat analyst forecasts) use it at 4Q. BLS (2010) add control variables to McVay's second stage model in order to strictly control performance effects. They find that US firms shift operating expenses as discontinued operations items on average, and CS is more used by managers accomplishing benchmark earnings.

Haw et al. (2011) and Behn et al. (2013) perform cross-country comparisons of CS. Using McVay's (2006) model, Haw et al. (2011) test CS in Asian developing countries. They discover that CS is mitigated by strict legal institutions and high quality outside auditors. Behn et al. (2013) compare the investors protection effects on CS among 40 countries. By BLS's (2010) model, they show that sophisticated investors protection and analyst coverage mitigate CS. These works suggest that outside monitoring mitigate incentives to shift line items.

Using McVay's (2006) framework, Shirato and Nagata (2012) and Chae and Nakano (2015) test CS used by Japanese firms. Shirato and Nagata (2012) test CS allocating ordinary expenses to special losses using FLBT's (2010) model. They conclude that firms meeting and beating management forecasts tend to change placement of line items. Even though they do not explicitly mention it, the results show that managers do not achieve CS on average under J GAAP (Shirato and Nagata 2012, p. 24, Table 4).

Using BLS's (2010) model, Chae and Nakano (2015) show that managers allocate operating expenses as non-operating items under J GAAP. In addition, they find that CS causes analyst forecast dispersion.

Research on CS in Japan has at least three problems. First, they do not replicate the models developed in the US. Shirato and Nagata (2012) follow FBCT's (2010) model for the first stage, but they do not use a regression model for the second stage, instead they use t-test among quintile groups divided by the levels of special items. Even though Chae and Nakano (2015) faithfully replicate BLS's (2010) model, they do not reject the potential alternative explanation of a "change model" used by McVay (2006) and BLS (2010). From these reasons, I cannot compare existing research on CS under J GAAP with that under US GAAP. Second, the definition of core earnings is ambiguous. While research under US GAAP defines core earnings as EBITD (earnings before interest, tax, and depreciation), research under J GAAP defines operating income or ordinary income mandated to present. The concept of operating income under J GAAP is close to EBITD, but ordinary income is not because it substitutes depreciation, amortization, interest expenses, and revenues from EBITD. However, this literature does not confirm the validity for use as core earnings in the model. Third, they do not consider the characteristics of J GAAP that might affect incentives to engage in CS in their hypotheses. For instance, the requirement to present several levels of earnings on the income statement might influence incentives of managers in Japanese firms. Furthermore, Japanese firms often report non-core items (non-operating and special items), as discussed later. Nevertheless, Chae and Nakano (2015) assume that expected non-core items are zero (they do not decompose them). Although Shirato and Nagata (2012) decompose them into expected and unexpected parts, they

use a time-series medium as its expected value which is likely to invalidate their model[2].

3.2 Hypotheses

Incentives to shift line items on income statements are different among J GAAP, US GAAP and IFRS. One reason is that J GAAP mandates managers to present more levels of earnings than US GAAP and IFRS. J GAAP requires managers to report 6 kinds of earnings on the income statement (BAC 1982; ASBJ 2010). US GAAP and IFRS do not at least require them to present ordinary income. The other reason is that J GAAP has less strict criteria to classify line items as special, while US GAAP strictly limits discretion to report a line item as special or extraordinary item (Herrmann et al. 2000). In fact, approximately 90% of Japanese firms report special items every year from 2001 to 2011 (Shirato and Nagata 2012). These properties of J GAAP enable managers to easily shift placement of items. This follows that Japanese firms' incentives to engage in CS are different from US firms'.

The two characteristics imply two competing hypotheses. One is that managers engage in CS under J GAAP. J GAAP prescribes relatively ambiguous criteria on classification of line items, comparing with those of US GAAP. For instance, FASB do not allow managers to report special and extraordinary items even when 9/11 occurred. Meanwhile, J GAAP allows managerial discretion over classification of items. Under J

[2] Figure A1 depicts the time series tendency of special losses reported by Japanese firms. This suggests that the levels and dispersion of special losses are greater in the early 2000s, in 2009 and 2011. These might reflect great modifications of accounting standards (the Accounting Big Bang), Lehman Crisis, and the Great East Japan Earthquake. These facts indicate that time series representative values are influenced by macro shocks. Thus, I conjecture that defining them as expected special losses is not appropriate.

[Figure A1]

GAAP, managers can present provision for doubtful accounts as SG&A, non-operating expenses, or special losses. This fact indicates that managers under J GAAP exercise discretion over classification of line items unlike those under US GAAP. Thus, I predict Japanese firms exercise CS.

H1a: Managers engage in CS under J GAAP.

Another hypothesis is that managers can rarely use CS under J GAAP. Venter et al. (2013) focus on South African GAAP, which requires managers to report "headline earnings" excluding non-recurring items, and test whether market mispricing of each line item (specifically special items) is modified by rule based classification criteria. The results show that the mispricing of special items existing in the US is not observed in South Africa. They interpret the results as evidence that the rule-based criteria to present headline earnings limit the opportunity to manage the earnings. That is because earnings required to report by GAAP are scrutinized by auditors. This is consistent with Haw et al. (2011) and Behn et al. (2013) indicating that auditing significantly affects the incentive of CS. J GAAP also mandates managers to report operating and ordinary income, which are identical to core earnings. Hence, I expect Japanese firms are less likely to implement CS.

H1b: Managers do not engage in CS under J GAAP on average.

Which hypothesis is supported is an empirical issue. If not many firms man-

age placement of line items, I would not find significant results. From insignificant results, I cannot judge which hypothesis is supported. In order to show more persuasive evidence, I also examine CS used by firms with strong incentives to manage core earnings. This study focuses on firms meeting or beating benchmark earnings, which many of studies conjecture have incentives to manage earnings (Burgstahler and Dichev 1997; Matsumoto 2002). I expect that firms meeting or beating benchmark earnings are more likely to use CS.

H2: Among firms reporting under J GAAP, firms with incentives to manage earnings engage in CS under J GAAP.

H2 is coherent with hypotheses proposed by prior research. In addition, although Shirato and Nagata (2012) show results consistent with H1b and H2, they do not explicitly discuss their implication. This study contributes to the research on CS by considering the possibility that Japanese firms do not engage in CS on average.

4. Research Design

4.1 Sample

The sample of the first stage models consists of firms reporting financial statements in March under J GAAP from 2002 to 2014. Because several variables need one prior and former period's data, the initial sample covers the period from 2001 to 2015. The sample is subject to the following screenings.

(i) Excluding firms in banking, insurance and securities industry based on the Nikkei Medium Classification Industry Code.

(ii) Excluding firms whose financial data is unavailable.

(iii) Excluding firms whose net operating assets is negative.

(iv) Excluding firms without at least twenty observations per year-industry.

(v) Eliminating all samples with 1% and 99% levels with regard to all variables.

The final sample used in the model inferring expected core earnings is 18,780 firm-year observations, and the sample used in the model inferring expected change in core earnings is 17,622 firm-year observations. Using this sample, the first stage models are estimated by OLS per industry and fiscal year.

The main analysis sample is subject to the following conditions.

(i) The sample requires all variables used in the analysis to be available.

(ii) 20 observations per year-industry are required.

(iii) Eliminating all samples with 1% and 99% levels with regard to all variables.

The final sample used in the main analysis consists of 14,962 firm-year observations. All the data are obtained from Nikkei NEEDS Financial Quest 2.0.

4.2 Models

When estimating expected core earnings and its expected change, this study follows the models proposed by McVay (2006) and BLS (2010) for two purposes. One is to confirm the validity of those models in Japan. While BLS (2010) and FBCT (2010) do not report the results of their first stage models, McVay (2006) does. Using results of her first stage models, I can discuss the validity of the models when applying

them to Japanese firms. Another purpose is to observe whether I can control for factors that are not controlled in McVay's (2006) model. BLS's (2010) second stage model explicitly controls for the variables. Using BLS's (2010) model, I can show the validity of modified models when applying to Japanese firms.

In order to estimate the expected core earnings and its expected change, this study uses the following models:

$$CE_t = \beta_0 + \beta_1 CE_{t-1} + \beta_2 ATO_t + \beta_3 ACCRUALS_{t-1} + \beta_4 ACCRUALS_t + \beta_5 \Delta SALES_t + \beta_6 NEG\_\Delta SALES_t + \varepsilon_t \quad (1)$$

$$\Delta CE_t = \phi_0 + \phi_1 CE_{t-1} + \phi_2 \Delta CE_{t-1} + \phi_3 \Delta ATO_t + \phi_4 ACCRUALS_{t-1} + \phi_5 ACCRUALS_t + \phi_6 \Delta SALES_t + \phi_7 NEG\_\Delta SALES_t + \upsilon_t \quad (2)$$

Table 2 describes the variables definitions. I follow BLS's (2010) specification[3,4]. Following McVay (2006), I use earnings before interest, tax and depreciation (EBITD, hereafter). It appears that defining core earnings as ordinary income is desirable when testing Japanese firms, because managers think them the important factors

[3] Variables in model (1) are included for the following reasons. Lagged core earnings (CE_{t-1}) is included to control earnings persistence. Its predicted coefficient sign is positive. Nissim and Penman (2001) find a negative association between the assets turnover ratio (ATO_t) and profit margin. I include this, because the definition of core earnings in this paper is close to profit margin. The expected sign is negative. It is familiar that accruals explains firm's future performance (Sloan 1996), so I include lagged accruals ($ACCRUALS_{t-1}$) in the model. The accruals component of earnings is less persistent than the cash flow component. Since earnings with larger accruals do not persist, the expected sign is negative. DeAngelo et al. (1994) discover that extreme performance entails a large change in accruals. Extreme good performance is associated with increase in accruals, and extreme bad performance is associated with its decrease. To control for extreme performance, I include the current period's accruals ($ACCRUALS_t$). The expected sign is positive. Although I divide core earnings by sales, the assumption that core earnings linearly relate to sale is not appropriate because firms achieve scale merit when they grow. To control this effect, I include change in sales ($\Delta SALES_t$). The expected sign is positive. To control adjustment stickiness discussed by Anderson et al. (2003), I add change in sales of firms experiencing decrease in sales ($NEG\_\Delta SALES_t$). The expected sign is positive.

[4] Variables in model (2) are included for the following reasons. I include the previous year's core earnings and change in core earnings from (t-2) to (t-1) in order to control for earnings reversions. The expected sign is negative. I replace change in asset turnover ratio (ΔATO_t) from its level. I include the other variables ($ACCRUALS_{t-1}$; $ACCRUALS_t$; $\Delta SALES_t$; $NEG\_\Delta SALES_t$) in model (1) for the same reasons ad mentioned footnote 3.

(Suda and Hanaeda 2008). However, since earnings prescribed by J GAAP are different from EBITD, I use EBITD as core earnings in order to avoid discussing the appropriateness of variable definitions. In additional tests, I estimate the models by defining ordinary income as core earnings.

[Table2]

To test the association between expected core earnings and expected change in core earnings and non-core items, I use the following models:

$$UE\_CE_t = \alpha_0 + \alpha_1 \%X_t + \alpha_2 SIZE_t + \alpha_3 BM_t + \alpha_4 ACCRUALS_t + \alpha_5 OCF_t + \alpha_6 ROA_t + \varepsilon_t \quad (3)$$

$$UE\_\Delta CE_{t+1} = \eta_0 + \eta_1 \%X_t + \eta_2 \%X_{t+1} + \eta_3 SIZE_t + \eta_4 BM_t + \eta_5 ACCRUALS_t + \eta_6 OCF_t + \eta_7 ROA_t + \upsilon_{t+1} \quad (4)$$

I follow BLS's (2010) specification. Non-core items ($\%X_t$) are defined as special losses ($\%SI_t$) and it unexpected components ($\%UE\_SI_t$) in main tests. In additional analysis, I also use non-operating expenses ($\%NOE_t$) and its unexpected components ($\%UE\_NOE_t$) in order to check the robustness to variable definitions. I define industry-year median of non-core items as their expected components. Although Shirato and Nagata (2012) use a time-series median from 5 years prior to previous year, time-series proxies of non-core items are sensitive to the choice of research window (footnote 2). Thus, this study controls for the year and industry effects by subtracting the industry median value in a year from non-core items reported by each firm. This study's interest is the signs of α_1 and η_1. H1a is supported if $\alpha_1 > 0$ and $\eta_1 < 0$, otherwise

the results are consistent with H1b.

To take into account of incentives for earnings management, I estimate the following models:

$$UE\_CE_t = \gamma_0 + \gamma_1 \%X_t + \gamma_2 M\&B\_Dummy + \gamma_3 M\&B * X + \gamma_4 SIZE_t + \gamma_5 BM_t + \gamma_6 ACCRUALS_t + \gamma_7 OCF_t + \gamma_8 ROA_t + \varepsilon_t \quad (5)$$

$$UE\_\Delta CE_{t+1} = \delta_0 + \delta_1 \%X_t + \delta_2 \%X_{t+1} + \delta_3 M\&B\_Dummy + \delta_4 M\&B * X + \delta_5 SIZE_t + \delta_6 BM_t + \delta_7 ACCRUALS_t + \delta_8 OCF_t + \delta_9 ROA_t + \upsilon_{t+1} \quad (6)$$

$M\&B\_Dummy$ is an indicator taking 1 if firms report core earnings exceeding benchmark earnings by 100 million yen (approx. one million US dollars), say meet and beat firms, and 0 otherwise. $M\&B * X$ is an interaction term between $M\&B\_Dummy$ and non-core items, which indicate non-core items of meet and beat firms. In this model, I assume that benchmark earnings are zero EBITD and prior year's EBITD. The variables of interests are $\%X_t$ and $M\&B * X$. If (i) $(\gamma_1 + \gamma_3) > 0$ and $(\delta_1 + \delta_4) < 0$ or (ii) $\gamma_3 > 0$ and $\delta_4 < 0$, H2 is supported. Moreover, H1a is supported if $\alpha_1 > 0$ and $\eta_1 < 0$.

4.3 Descriptive Statistics

Table 3 presents the descriptive statistics of the variables used in the analyses. Panel A and Panel B report those used to estimate expected core earnings and its expected change, respectively. Panel C depicts those used in the main analysis. Comparing the variables in Panel A and B with those in McVay (2006), (i) core earnings (CE_t), its change (ΔCE_t), accruals ($ACCRUALS_t$) and change in sales ($\Delta SALES_t$) are less dispersive; and (ii) mean, median, and standard deviation of asset turnover ratio (ATO_t)

are larger. The reason for (ii) is that the Japanese firms are cash rich, and their net operating assets (NOA_t), which are the denominator of ATO_t, are smaller than US firms. Mean and median of unexpected core earnings (UE_CE_t) and its unexpected change ($UE\_\Delta CE_{t+1}$) are smaller than those reported by McVay (2006).

[Table 3]

Table 4 shows a Spearman/Pearson correlation matrix of the variables used in the first stage model. In Panel A, the correlation coefficients are more than 0.3 between previous year core earnings (CE_{t-1}) and accruals in the previous and the current period ($ACCRUALS_t;\ ACCRUALS_{t-1}$), and between accruals in the previous year and that in the current year. Among independent variables in Panel B, the correlation coefficients are over 0.3 between previous year core earnings and its change from two years before to one year before (ΔCE_{t-1}), previous year core earnings and accruals in the previous and current period, core earnings in the previous year and change in asset turnover ratio from the previous period to the current period (ΔATO_t), and accruals in the previous year and in the current year. Nevertheless, because I estimate the first stage models per industry-year, it is impossible to judge whether there are multicollinearity problems from Table 4. For the same reason, I cannot check VIF (Variance Inflation Factor) for each estimation. Thus, in additional tests, I exclude current year accruals from the models, which are strongly correlated with other dependent variables.

[Table 4]

Table 5 presents a Spearman/Pearson correlation matrix of the variables used in the main analysis. Among dependent variables, the correlation coefficients are more than 0.3 between asset core earnings ratio (ROA_t) and book to market ratio (BM_t), asset core earnings ratio and accruals ($ACCRUALS_t$), asset core earnings ratio and operating cash flow (OCF_t), and accruals and operating cash flow. To confirm whether the multicollinearity is serious in the results, I re-estimate the models excluding asset core earnings ratio and operating cash flow.

[Table5]

5. Results[5]

5.1 The first stage model

Table 6 reports the results of the models estimating expected core earnings and expected change in core earnings. It presents mean and median coefficients, and percent results consistent with predicted signs and statistically significant at the 10 % level. Panel A reports the results of model (1). While percent results consistent with prediction is identical with the results of McVay (2006), percent significant results are lower. In particular, coefficients on ATO_t are scarcely significant. However, the weak association between core earnings and ATO_t is coherent with implications of prior literature (Soliman 2004; McVay 2006, p. 515; Soliman 2008).

[Table 6]

[5] Since there are over 10,000 observations used in all the analysis in this paper, I interpret results at under the 5% level as significant. Nevertheless, I also mention the results at the 10% level.

Panel B presents the results of model (2). As with the results in Panel A, while percent results consistent with prediction is identical with McVay (2006) percent significant results are lower. In particular, coefficients on ΔATO_t are scarcely significant. This is also consistent with prior literatures.

Overall, while the signs of coefficients are consistent with prior research and prediction, there are fewer significant results. One reason for these findings is differences between characteristics of Japanese firms and US firms. As shown in Table 3, variation in most variables is smaller than in prior research. I conjecture that a reason for fewer significant results is less variation in variables. From these results, I confirm the validity of applying the first stage model to Japanese firms despite some small problems.

5.2 Hypothesis 1a and 2b

Table 7 reports the results of H1a and H1b. Panel A presents the results of model (3) examining the relationship between unexpected core earnings and (unexpected) special items. Columns (1) and (2) depict the results estimated by McVay's (2006) second stage model, and columns (3) and (4) depict the results estimated by BLS's (2010) second stage model. Coefficients on $\%SI_t$ ($\%UE\_SI_t$) are significantly opposite from expectation (insignificant).

[Table 7]

Panel B presents the results of model (4) testing the association between unexpected change in core earnings and (unexpected) special items. Columns (1) and (2)

depict the results from McVay's (2006) second stage model, and columns (3) and (4) describe the results estimated by BLS's (2010) second stage model. In both models, coefficients on $\%SI_t$ and $\%UE\_SI_t$ are significantly opposite from expectation. These results indicate that Japanese firms do not engage in CS using special loss on average. This is consistent with H1b.

Two pieces of evidence suggest that including control variables is necessary. First, all coefficients, except that on $SIZE_t$ in model (3), are significant. Second, referring to the results estimated by the BLS model in Panel A, the coefficients on $\%X_t$ are not significant, which are also insignificant in McVay model. The above findings indicate that the results estimated by McVay's (2006) model are influenced by performance effects pointed out by FBCT (2010) (p. 1312). Thus, I will refer to the results estimated by BLS's (2010) model from here onward.

5.3 Hypothesis 2

Table 8 presents the results of H2, with regression results of models (5) and (6) considering incentives to exercise earnings management. In the main analysis, I define benchmark earnings on basis of EBITD. Columns (1) and (2) define benchmark earnings as zero, and Columns (3) and (4) define it as the previous period's earnings.

Panel A shows the result of model (5) using unexpected core earnings as a dependent variable. In Columns (1) and (2), coefficients on interaction terms of (unexpected) special losses are significantly positive only at the 5% (10%) level. In Columns (3) and (4), they are significantly positive at the 0.1% (1%) level. Panel B presents the results of model (6) using unexpected change in core earnings as the dependent variable. Coefficients of interaction terms are negative but insignificant in Columns (1) and

(2). In Columns (3) and (4), they are significantly negative at 1% (1%) level for (unexpected) special losses.

[Table 8]

The following two points about coefficients other than those on interaction terms are important in Table 8. One point is the association between the dependent variables and non-core items for meet and beat firms (partial differential coefficients on non-core items, $\partial UE\_CE_t/\partial\,\%X_t$ and $\partial UE\_\Delta CE_{t+1}/\partial\,\%X_t$, when assuming $M\&B\_Dummy = 1$). When defining the benchmark as zero, the partial differential coefficients are not significant in Panel A, and they are significantly positive in Panel B. Meanwhile, when defining the benchmark as lagged earnings, while the partial differential coefficients are significantly consistent with predictions in Panel A, they are significantly opposite from the expected direction in Panel B. This is because coefficients on $\%X_t$ are significantly positive. The other point is the results of the models using unexpected change in core earnings (Panel B). Panel B of Table 8 shows that unexpected change in core earnings from the current period to the former period is positively associated with $\%SI_t$ and $\%UE\_SI_t$. Panel B of Table 9 also reports the same results. These findings are consistent with big bath accounting. Nevertheless, coefficients of interaction terms in Panel B of Table 9 indicate that these big bath effects are mitigated for firms meeting and beating lagged earnings.

These findings follow two interpretations. The first is that Japanese firms do not engage in CS on average. Comparing results between Tables 8 and 9 with regard to

all the firms except for meet and beat firms, I do not observe results coherent with prediction. These results imply that Japanese firms do not shift line items. Hence, the results are consistent with H1b. The second interpretation is that firms use CS when defining benchmark earnings as the previous period's earnings. When it comes to these firms, Panel A of Table 9 reports results consistent with prediction, and Panel B shows that big bath effects observed in all sample are mitigated in the firms.

6. Additional Tests

6.1 Definitions of benchmark earnings

I use EBITD as core earnings in order to abstract meet and beat firms. However, Japanese firms might consider GAAP earnings. Hence, I re-estimate models (5) and (6) by defining $M\&B\_Dummy$ based on operating income and ordinary income.

Table 9 reports the results when defining $M\&B\_Dummy$ based on operating income. Panel A shows the results of model (5), and Panel B those of model (6). Results in Panel A are consistent with the main tests (Table 8). In Panel B, assuming the benchmark is zero earnings (Columns (1) and (2)), I find the same results as the main analysis. When defining the benchmark as lagged level (Columns (3) and (4)), there are three points different from the main tests. First, coefficients on non-core items ($\%SI_t$ and $\%UE\_SI_t$) are not consistent with CS (significantly opposite directions). Second, those on interaction terms are significantly negative. Third, partial differential coefficients on non-core items are significantly consistent with prediction. These findings indicate that (i) CS is not achieved on average under J GAAP, and (ii) firms meeting or beating prior period's earnings use CS.

[Table 9]

Table 10 shows the results when defining $M\&B\_Dummy$ based on ordinary income. Panel A shows the results of models using unexpected core earnings as a dependent variable, and Panel B presents those using unexpected change in core earnings as a dependent variable. All the results are identical with the main tests. These indicate that (i) CS is not achieved on average, and (ii) firms meeting or beating lagged ordinary income engage in CS.

[Table 10]

6.2 Definitions of core earnings

Japanese firms might regard GAAP earnings more important than pro-forma earnings, such as EBITD used by McVay (2006). Thus, following Shirato and Nagata (2012) and Chae and Nakano (2015), I define core earnings in the first models (CE_t and ΔCE_t) as operating income and ordinary income. Untabulated results are consistent with results in the main analysis and the above additional test.

6.3 Definitions of non-core items

I re-examine all the tests after defining non-core items as non-operating expenses in order to confirm the robustness of the main tests to the definitions of non-core items. Untabulated results show that (i) Japanese firms do not change placement of line items on average, (ii) firms meeting and beating zero earnings (EBITD and operating income[6]) engage in CS, and (iii) firms meeting and beating lagged earnings

[6] In this section, I do not examine models (5) and (6) when defining target earnings as ordinary income. It is meaningless for managers to misclassify non-operating expenses as special losses in order to manage

carry out CS in order to achieve the benchmark based on operating income (not EBITD). This indicates that the results regarding H1b are consistent with main tests, but the results are different when changing the definition of benchmark earnings.

6.4 Robustness tests

To check the robustness of the results, I examine their sensitivity to (a) specification of the first stage models, (b) specification of the second stage models, and (c) estimation windows. First, I re-estimate all the models after excluding current year's accruals from the first models. Untabulated results suggest that (i) Japanese firms do not engage in CS on average, (ii) firms meeting and beating zero earnings do not exercise CS, and (iii) firms meeting and beating lagged earnings (only when defining core earnings as operating income) achieve CS. This follows that the robustness of the main results is partly questionable.

Next, I re-estimate all the models after eliminating variables from the second stage models which possibly have multicollinearity problems (OCF_t and ROA_t). The results are consistent with the main analyses. This explicates that main results are robust to the specifications of the second stage models.

Finally, I examine the robustness to the estimation window. Non-core items tend to be influenced by macro-economic situations. In particular, they are relatively large in the early 2000s, late 2000s, and early 2010s (see footnote 2). The great non-core earnings are reported because of large-scale reformation of J GAAP (the Accounting Big Bang), the Lehman crisis, and the Great East Japan Earthquake, respectively.

operating income, because operating income is above non-operating expenses.

In order to exclude their effects, I re-examine the main analyses by defining the estimation window as from FY2004 to FY2008, and FY 2012 to FY 2014. The results show that (i) Japanese firms do not shift line items on average, and (ii) firms meeting and beating the previous period's core earnings achieve CS. The main results are robust to estimation windows.

Furthermore, I also perform all the robustness tests when defining non-core items as non-operating expenses. The results are not robust. First, the evidence that firms exercise CS on average is not supported when changing the specifications of the second stage models, but is supported when changing the first stage models and estimation window. Second, the results do not support the hypothesis of firms meeting and beating zero earnings when changing the first stage models, but is supported when changing the specifications of the second stage models and estimation window. Third, the results are not consistent with the hypothesis of firms meeting and beating zero earnings when changing the second stage models, but is supported when changing the specifications of the first stage models and estimation window. This indicates that the evidence of CS using non-operating expenses is not clear.

7. Conclusions

This study focuses on CS, which has rarely been investigated, and tests whether Japanese firms engage in CS. I discuss the uniqueness of J GAAP, and construct two hypotheses. One is that Japanese firms hardly engage in CS. J GAAP mandates firms to report several levels of earnings on the income statement, and auditors scrutinize them for misclassification of line items. The other hypothesis is that firms with strong incentives to change earnings carry out CS. Although auditing is strict, J

GAAP allows managers discretion over classifications. Thus, I expect that Japanese firms do not exercise CS on average, but those with incentives of earnings management tend to use it.

The results partly support those expectations. Specifically, this study discovers three points. First, I do not observe the evidence that Japanese firms on average shift core expenses as special losses. This result is robust to several sensitivity tests. This is consistent with the fact managers do not use CS under J GAAP. However, as discussed below, this does not necessarily support the hypothesis. I also find the same results on CS using non-operating expenses, but they are not robust. Second, firms with incentives to manage earnings classify core expenses as special. While firms meeting and beating earnings in previous the period use CS, those meeting and beating zero earnings do not. These results are robust. Third, firms with incentives to manage earnings classify core expenses as non-operating expenses. However, this result is sensitive to specifications of models and estimation windows.

This study's findings make three contributions. First, I emphasize the importance of discussing the characteristics of GAAP when examining CS. This study constructs hypotheses considering the uniqueness of J GAAP, and finds results consistent with the predictions. This suggests that it is important to discuss prescriptions on levels of earnings and discretion over classification. One might find different evidence on CS even in countries adopting IFRS. For instance, one might find no evidence of CS used in South Africa, where managers are required to report earnings other than bottom-line despite IFRS adoption. When discussing characteristics of GAAP, one might reveal new perspectives on CS. Second, this study finds evidence of CS under J GAAP. Most research on earnings management of Japanese firms test

AEM, and recently start focusing on REM. However, few studies investigate CS use by Japanese firms. This study provides empirical evidence of CS under J GAAP. In addition, I confirm the validity of the models developed in the US with explicit evidence. Third, it also provides implications to standard setters. IASB (2011) casts doubt on discretion over classification of line items (para. 104). However, discussion is limited to whether the discretion impairs the relevance from the classification on income statement with just theory and intuition. This study provides useful underpinnings for standard setters to consider proper standards on classification of line items within income statement. The results of this paper indicate that mandating reporting of core earnings by GAAP mitigates to incentives to shift line items. Hence, contrary to the IFRS approach, the results highlight the importance of requirements to report special or extraordinary items.

This study has three limitations below. First, I do not provide the evidence that Japanese firms do not shift line items on average. This study just does not find the results consistent with the hypothesis that they use CS, so the results do not support the hypothesis. To test the hypothesis directly, we must design better research. Second, this study does not control effects of big bath accounting. The results show that most Japanese firms tend to report core earnings and non-core items, which are consistent with big bath. Since it is possible that big bath accounting conceals the evidence consistent with CS, we must modify the models to control for it. Third, I cannot directly discuss the effects of accounting standards on CS, since this study only tests firms under J GAAP. Although it highlights the discussion on characteristics of GAAP when investigating CS, this study does not directly test their effects. Dealing with these issues moves research on CS forward.

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Tables and Figures

Table 1. Characteristics of Three Methods of Earnings Management

	Change in bottom-line	Change in cash flow
AEM	✓	-
REM	✓	✓
CS	-	-

"✓" indicates the characteristics corresponding to each method of earnings management, "-" otherwise.

Table 2. Variable Definitions

Variables	Definition
CE_t	Core earnings. In main analysis, Sales core earnings ratio in period t (= $(Sales - Cost\ of\ goods\ sold - Sales, general, and\ administrative\ expenses + Depreciation)/Sales$).
ΔCE_t	Change in core earnings from (t-1) to t (= $CE_t - CE_{t-1}$).
ATO_t	Asset turnover ratio in period t (= $\text{Sales}/((NOA_t + NOA_{t-1})\ /\ 2)$).
ΔATO_t	Change in asset turnover ratio from (t-1) to t (=$ATO_t - ATO_{t-1}$).
NOA_t	Net operating assets in period t (= $(Current\ Assets - Cash - Short\ Term\ Investment) - (Current\ Liability - Short\ Term\ Debt)$).
$ACCRUALS_t$	Accruals in period t (= $(Core\ Earnings - Cash\ Flow\ from\ Operations)/Sales$).
$\Delta SALES_t$	Change in sales from (t-1) to t (=$(SALES_t - SALES_{t-1})/SALES_{t-1}$).
$NEG\_\Delta SALES_t$	Change in sales if $\Delta SALES_t$ is negative, 0 otherwise.
UE_CE_t	Unexpected components of core earnings in period t (Reported core earnings – Expected core earnings inferred from model (1)).
ΔUE_CE_t	Unexpected change in core earnings (Change in reported core earnings – Expected change in core earnings inferred by model (6)).
$\%X_t$	Sales non-core items ratio ($\in \{\%NOE_t;\ \%SI_t;\ \%UE\_NOE_t;\ \%UE\_SI_t\}$).
$\%NOE_t$	Sales non-operating expenses ratio (=$Non\text{-}Operating\ expenses/Sales$).
$\%SI_t$	Sales special losses ratio (=$Special\ losses/Sales$).
$\%UE\_NOE_t$	Unexpected sales non-operating expenses ratio, calculated as $\%NOE_t$ minus median value of $\%NOE_t$ in the same industry and period.
$\%UE\_SI_t$	Unexpected sales special losses ratio, calculated as $\%SI_t$ minus median value of $\%SI_t$ in the same industry and period.
$M\&B\_Dummy$	An indicator taking 1 if the firm is meeting and beating benchmark earnings, 0 otherwise. When defining zero earnings as the benchmark, $M\&B\_Dummy = 1$ if a firm reports core earnings greater or equal to zero and less than 100 million JPN yen (approximately 1 million US dollars), 0 otherwise. When defining lagged earnings as the benchmark, $M\&B\_Dummy = 1$ if the change in core earnings from the previous period are greater or equal to zero and less than 100 million JPN yen.
$M\&B * X$	Interaction term between $M\&B\_Dummy$ and $\%X_t$.
$SIZE_t$	Natural logarithm of total assets in period t.
BM_t	Book to market ratio in period t.
OCF_t	Sales cash flow from operations ratio in period t (=Cash flow from operations / Sales).
ROA_t	Assets core earnings ratio in period t (=$CE_t/Total\ Assets$).

Table 3. Descriptive Statistics

Panel A: Model(1) (n=18,780)

Variables	Mean	Median	SD	1Q	3Q
CE_t	0.0531	0.0457	0.0707	0.0220	0.0785
CE_{t-1}	0.0526	0.0450	0.0719	0.0217	0.0782
ATO_t	10.2037	5.8979	15.8968	3.8710	10.4976
$ACCRUALS_{t-1}$	-0.0010	-0.0017	0.0727	-0.0303	0.0258
$ACCRUALS_t$	-0.0012	-0.0020	0.0736	-0.0299	0.0252
$\Delta SALES_t$	0.0387	0.0254	0.2052	-0.0407	0.0930
$NEG\_\Delta SALES_t$	-0.0365	0	0.0760	-0.0407	0

Panel B: Model(2) (n=17,622)

Variables	Mean	Median	SD	1Q	3Q
ΔCE_t	0.0000	0.0009	0.0508	-0.0115	0.0127
CE_{t-1}	0.0528	0.0452	0.0717	0.0217	0.0785
ΔCE_{t-1}	0.0005	0.0010	0.0538	-0.0114	0.0133
ΔATO_t	-0.1948	-0.0336	10.4565	-0.7125	0.6104
$ACCRUALS_{t-1}$	-0.0010	-0.0016	0.0735	-0.0300	0.0258
$ACCRUALS_t$	-0.0024	-0.0026	0.0738	-0.0308	0.0243
$\Delta SALES_t$	0.0349	0.0234	0.1991	-0.0435	0.0912
$NEG\_\Delta SALES_t$	-0.0379	0	0.0776	-0.0435	0

Panel C: Main Analysis (n=14,962)

Variables	Mean	Median	SD	1Q	3Q
UE_CE_t	0.0070	0.0050	0.0376	-0.0085	0.0208
$UE\_\Delta CE_{t+1}$	0.0071	0.0060	0.0372	-0.0077	0.0214
$\%SI_t$	0.0152	0.0062	0.0337	0.0020	0.0156
$\%NOE_t$	0.0090	0.0062	0.0095	0.0027	0.0123
$\%UE\_SI_t$	0.0076	0.0000	0.0329	-0.0031	0.0073
$\%UE\_NOE_t$	0.0019	0.0000	0.0086	-0.0025	0.0044
$SIZE_t$	10.9631	10.7985	1.4553	9.9819	11.8598
BM_t	1.2703	1.0912	0.8226	0.7003	1.6189
$ACCRUALS_t$	-0.0046	-0.0035	0.0655	-0.0319	0.0227
OCF_t	0.0537	0.0535	0.0604	0.0229	0.0853
ROA_t	0.0528	0.0461	0.0540	0.0234	0.0767

All observations falling in the top or bottom 1 % with respect to each variable are excluded. All variables are defined in Table 2.

Table 4. Spearman/Pearson Correlation Matrix of Variables Used in the First Stage Models

Panel A: Model (1) (n=18,780)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1)	CE_t		0.7842	-0.1078	0.1936	0.3218	0.3478	0.3447
(2)	CE_{t-1}	0.7492		-0.1361	0.3280	0.2789	0.0989	0.1174
(3)	ATO_t	-0.0317	-0.0466		-0.0489	0.0234	0.0996	0.1231
(4)	$ACCRUALS_{t-1}$	0.2389	0.4320	-0.0351		0.3139	0.0330	0.0242
(5)	$ACCRUALS_t$	0.4462	0.3086	-0.0005	0.2828		0.2370	0.2196
(6)	$\Delta SALES_t$	0.2377	-0.0284	0.0605	0.0507	0.2112		0.8772
(7)	$NEG\_\Delta SALES_t$	0.3063	0.0530	0.0799	0.0152	0.1948	0.5462	

Panel B: Model (2) (n=17,622)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	ΔCE_t		-0.2526	-0.0538	0.2936	-0.2070	0.0560	0.3913	0.3522
(2)	CE_{t-1}	-0.3687		0.2812	-0.1012	0.3258	0.2784	0.1011	0.1186
(3)	ΔCE_{t-1}	-0.1624	0.3107		0.0224	0.0594	0.1947	0.1132	0.1240
(4)	ΔATO_t	0.0518	-0.0221	-0.0027		-0.2897	-0.1523	0.3321	0.2916
(5)	$ACCRUALS_{t-1}$	-0.2835	0.4351	0.1711	-0.0569		0.3082	0.0260	0.0207
(6)	$ACCRUALS_t$	0.1805	0.3302	0.1882	-0.0421	0.2789		0.2361	0.2224
(7)	$\Delta SALES_t$	0.4083	-0.0143	0.0286	0.0878	0.0470	0.2208		0.8832
(8)	$NEG\_\Delta SALES_t$	0.3691	0.0488	0.0707	0.0710	0.0105	0.1993	0.6584	

Pearson correlation coefficients are reported at the lower left diagonal matrix, and Spearman correlation coefficients are reported at the lower right diagonal matrix.
All observations falling in the top or bottom 1 % with respect to each variable are excluded. All variables are defined in Table 2

Table5. Spearman/Pearson Correlation Matrix of Variables used in Main and additional tests

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	UE_CE_t		0.004	0.0561	0.1173	0.0082	0.0339	0.0239	-0.0293	-0.3461	0.5163	0.1657
(2)	$UE\_\Delta CE_{t+1}$	-0.0766		0.1711	0.1115	0.0814	0.0305	0.0308	0.0715	-0.0732	-0.0706	-0.1572
(3)	$\%SI_t$	-0.06	0.1479		0.3263	0.7938	0.1731	0.1442	-0.039	-0.1348	-0.0632	-0.207
(4)	$\%NOE\_t$	0.09	0.0896	0.2844		0.1603	0.7641	0.1745	-0.1582	-0.1692	-0.0111	-0.1625
(5)	$\%UE\_SI_t$	-0.0648	0.1243	0.9858	0.2454		0.2326	0.1383	-0.0264	-0.0719	-0.0918	-0.1656
(6)	$\%UE\_NOE_t$	0.0534	0.0436	0.2479	0.9086	0.2517		0.1704	-0.1479	-0.0883	-0.0675	-0.1421
(7)	$SIZE_t$	0.0294	0.0428	-0.0133	0.1358	-0.0162	0.1217		-0.2103	-0.0159	0.0995	0.0852
(8)	BM_t	-0.0095	0.0692	-0.0068	-0.1027	-0.0123	-0.1061	-0.2097		-0.2148	-0.1923	-0.4091
(9)	$ACCRUALS_t$	-0.2124	-0.153	-0.083	-0.0846	-0.0676	-0.0444	0.0083	-0.1845		-0.4678	0.3884
(10)	OCF_t	0.4419	-0.0868	-0.1333	-0.0703	-0.1353	-0.0922	0.0843	-0.1473	-0.4631		0.5172
(11)	ROA_t	0.1965	-0.228	-0.2151	-0.1571	-0.2004	-0.1423	0.049	-0.3555	0.381	0.5096	

Pearson correlation coefficients are reported at the lower left diagonal matrix, and Spearman correlation coefficients are reported at the lower right diagonal matrix.
All observations falling in the top or bottom 1 % with respect to each variable are excluded. All variables are defined in Table 2.

Table 6. The First Stage Model

Panel A: Model (1) (n=18,780)

		Dependent Variable: CE_t			
Independent Variables	Pred	Mean Coefficient	Median Coefficient	Percent with Sign Consistent with Prediction	Percent Significant ($p \leq 10\%$)
Intercept		0.0131	0.0114		
CE_{t-1}	+	0.8090	0.8217	100.0	100.0
ATO_t	-	0.0000	0.0000	57.1	11.2
$ACCRUALS_{t-1}$	-	-0.0770	-0.0656	76.2	46.6
$ACCRUALS_t$	+	0.1179	0.1143	79.9	59.6
$\Delta SALES_t$	+	0.0537	0.0374	74.4	51.0
$NEG\_\Delta SALES_t$	+	0.1282	0.0837	78.3	47.9
Panel B: Model (2) (n=17,622)					
Intercept		0.0123	0.0106		
CE_{t-1}	-	-0.1806	-0.1698	88.0	74.9
ΔCE_{t-1}	-	-0.0573	-0.0475	59.0	35.8
ΔATO_t	+	0.0002	0.0001	60.7	13.1
$ACCRUALS_{t-1}$	-	-0.0696	-0.0613	77.0	45.5
$ACCRUALS_t$	+	0.1193	0.1033	82.2	55.9
$\Delta SALES_t$	+	0.0500	0.0354	73.4	46.2
$NEG\_\Delta SALES_t$	+	0.1328	0.0764	75.4	44.7

The table reports the results obtained by Model (1), $CE_t = \beta_0 + \beta_1 CE_{t-1} + \beta_2 ATO_t + \beta_3 ACCRUALS_{t-1} + \beta_4 ACCRUALS_t + \beta_5 \Delta SALES_t + \beta_6 NEG\_\Delta SALES_t + \varepsilon_t$, and by Model (2), $\Delta CE_t = \phi_0 + \phi_1 CE_{t-1} + \phi_2 \Delta CE_{t-1} + \phi_3 \Delta ATO_t + \phi_4 ACCRUALS_{t-1} + \phi_5 ACCRUALS_t + \phi_6 \Delta SALES_t + \phi_7 NEG\_\Delta SALES_t + \upsilon_t$.
Column 4 ("Percent Significant") reports the percent consistent results which show that p-value is under 10% in a one-tailed test.
All observations falling in the top or bottom 1 % with respect to each variable are excluded. All variables are defined in Table 2.

Table 7. Hypothesis 1

PanelA: Dependent Variables = UE_CE_t

		McVay Model		BLS Model	
Independent	$\%X_t$=	$\%SI_t$	$\%UE\_SI_t$	$\%SI_t$	$\%UE\_SI_t$
Variables	Pred	(1)	(2)	(3)	(4)
$\%X_t$	+	-0.076	-0.075	-0.001	-0.001
		[-8.47]***	[-8.32]***	[-0.18]	[-0.08]
$SIZE_t$				0	0
				[-1.72]†	[-1.72]†
BM_t				0.002	0.002
				[4.26]***	[4.27]***
$ACCRUALS_t$				0.06	0.06
				[7.69]***	[7.69]***
OCF_t				0.331	0.331
				[35.92]***	[35.93]***
ROA_t				-0.046	-0.046
				[-4.58]***	[-4.57]***
YearFixedEffects		Included	Included	Included	Included
IndustryFixedEffects		Included	Included	Included	Included

_cons		-0.004	-0.005	-0.017	-0.017
		[-2.47]*	[-3.22]**	[-6.08]***	[-6.11]***
%Adj-R-squared		8.20	8.19	26.45	26.45

PanelB: Dependent Variables = $UE\_\Delta CE_{t+1}$

		McVay Model		BLS Model	
Independent	$\%X_t$=	$\%SI_t$	$\%UE\_SI_t$	$\%SI_t$	$\%UE\_SI_t$
Variables	Pred	(1)	(2)	(3)	(4)
$\%X_t$	-	0.132	0.13	0.1	0.097
		[14.95]***	[14.60]***	[11.10]***	[10.81]***
$\%X_{t+1}$				-0.104	-0.103
				[-11.52]***	[-11.43]***
$SIZE_t$				0.001	0.001
				[5.80]***	[5.80]***
BM_t				-0.002	-0.002
				[-4.13]***	[-4.16]***
$ACCRUALS_t$				-0.078	-0.078
				[-9.23]***	[-9.25]***
OCF_t				-0.073	-0.073
				[-7.34]***	[-7.36]***
ROA_t				-0.067	-0.067
				[-6.17]***	[-6.19]***
YearFixedEffects		Included	Included	Included	Included
IndustryFixedEffects		Included	Included	Included	Included
_cons		0.013	0.015	0.009	0.009
		[7.56]***	[8.89]***	[3.10]**	[3.11]**
%Adj-R-squared		8.85	8.79	13.20	13.16

Panel A reports the results obtained by McVay model, $UE_{CE_t} = \alpha_0 + \alpha_1 \%X_t + \varepsilon_t$, and BLS model, $UE_{CE_t} = \alpha_0 + \alpha_1 \%X_t + \alpha_2 SIZE_t + \alpha_3 BM_t + \alpha_4 ACCRUALS_t + \alpha_5 OCF_t + \alpha_6 ROA_t + \varepsilon_t$. Panel B reports the results obtained by McVay model, $UE\_\Delta CE_{t+1} = \eta_0 + \eta_1 \%X_t + \upsilon_{t+1}$, and BLS model, $UE\_\Delta CE_{t+1} = \eta_0 + \eta_1 \%X_t + \eta_2 \%X_{t+1} + \eta_3 SIZE_t + \eta_4 BM_t + \eta_5 ACCRUALS_t + \eta_6 OCF_t + \eta_7 ROA_t + \upsilon_{t+1}$. Each model controls for year and industry fixed effects.

†, *, **, *** indicate significance at the 10, 5, 1, 0.1% levels, respectively, using a two-tailed test. Amounts reported are estimated coefficients on each variable with t-values.

All observations falling in the top or bottom 1% with respect to each variable are excluded. All variables are defined in Table 2.

Table 8. Hypothesis 2

PanelA: Dependent Variables = UE_CE_t

		Zero Earnings		Prior Period Earnings	
Independent	$\%X_t$=	$\%SI_t$	$\%UE\_SI_t$	$\%SI_t$	$\%UE\_SI_t$
Variables	Pred	(1)	(2)	(3)	(4)
$\%X_t$		-0.004	-0.003	-0.012	-0.011
		[-0.45]	[-0.39]	[-1.35]	[-1.21]
M&B Dummy		0.005	0.005	0	0.001
		[2.28]*	[2.72]**	[0.41]	[0.92]
M&B$\%X_t$	+	0.086	0.099	0.077	0.074
		[1.85]†	[2.07]*	[3.32]***	[3.18]**
$SIZE_t$		0	0	0	0
		[-1.15]	[-1.14]	[-1.29]	[-1.29]
BM_t		0.002	0.002	0.002	0.002
		[4.28]***	[4.30]***	[4.28]***	[4.29]***
$ACCRUALS_t$		0.06	0.06	0.059	0.059
		[7.60]***	[7.60]***	[7.56]***	[7.57]***
OCF_t		0.331	0.331	0.33	0.33
		[35.88]***	[35.89]***	[35.87]***	[35.87]***

ROA_t	-0.044	-0.043	-0.045	-0.045
	[-4.35]***	[-4.34]***	[-4.51]***	[-4.50]***
YearFixedEffects	Included	Included	Included	Included
IndustryFixedEffects	Included	Included	Included	Included
_cons	-0.018	-0.018	-0.017	-0.018
	[-6.51]***	[-6.56]***	[-6.20]***	[-6.28]***
%Adj-R-squared	26.52	26.52	26.51	26.50

PanelB: Dependent Variables = $UE\_\Delta CE_{t+1}$

		Zero Earnings		Prior Period Earnings	
Independent	$\%X_t$=	$\%SI_t$	$\%UE\_SI_t$	$\%SI_t$	$\%UE\_SI_t$
Variables	Pred	(1)	(2)	(3)	(4)
$\%X_t$		0.099	0.097	0.11	0.107
		[10.90]***	[10.68]***	[11.47]***	[11.15]***
M&B Dummy		-0.011	-0.011	-0.001	-0.002
		[-5.04]***	[-5.28]***	[-1.07]	[-1.57]
$M\&B*\%X_t$	-	-0.006	-0.025	-0.077	-0.074
		[-0.12]	[-0.49]	[-3.09]**	[-2.94]**
$\%X_{t+1}$		-0.104	-0.103	-0.104	-0.104
		[-11.54]***	[-11.44]***	[-11.60]***	[-11.50]***
$SIZE_t$		0.001	0.001	0.001	0.001
		[4.80]***	[4.80]***	[5.14]***	[5.13]***
BM_t		-0.002	-0.002	-0.002	-0.002
		[-4.20]***	[-4.23]***	[-4.15]***	[-4.19]***
$ACCRUALS_t$		-0.077	-0.077	-0.077	-0.077
		[-9.15]***	[-9.17]***	[-9.10]***	[-9.13]***
OCF_t		-0.072	-0.073	-0.072	-0.072
		[-7.32]***	[-7.33]***	[-7.28]***	[-7.29]***
ROA_t		-0.071	-0.071	-0.067	-0.068
		[-6.53]***	[-6.56]***	[-6.25]***	[-6.28]***
YearFixedEffects		Included	Included	Included	Included
IndustryFixedEffects		Included	Included	Included	Included
_cons		0.012	0.012	0.01	0.01
		[3.94]***	[3.95]***	[3.42]***	[3.48]***
%Adj-R-squared		13.37	13.33	13.27	13.22

Panel A reports the results obtained by $UE\_CE_t = \gamma_0 + \gamma_1 \%X_t + \gamma_2 M\&B\_Dummy + \gamma_3 M\&B * X + \gamma_4 SIZE_t + \gamma_5 BM_t + \gamma_6 ACCRUALS_t + \gamma_7 OCF_t + \gamma_8 ROA_t + \varepsilon_t$. Panel B reports the results obtained by $UE\_\Delta CE_{t+1} = \delta_0 + \delta_1 \%X_t + \delta_2 \%X_{t+1} + \delta_3 M\&B\_Dummy + \delta_4 M\&B * X + \delta_5 SIZE_t + \delta_6 BM_t + \delta_7 ACCRUALS_t + \delta_8 OCF_t + \delta_9 ROA_t + \upsilon_{t+1}$. Each model controls for year and industry fixed effects.

†, *, **, *** indicate significance at the 10, 5, 1, 0.1% levels, respectively, using a two-tailed test. Amounts reported are estimated coefficients on each variable with t-values. *M&B Dummy* in Columns (1) and (2) is an indicator taking 1 if a firm reports EBITD greater or equal to zero and less than 100 million JPN yen (approximately 1 million US dollars), 0 otherwise. *M&B Dummy* in Columns (3) and (4) is an indicator taking 1 if the change in EBITD from the previous period is greater or equal to zero and less than 100 million JPN yen, 0 otherwise.

All observations falling in the top or bottom 1% with respect to each variable are excluded. The other variables are defined in Table 2.

Table 9. Definitions of M&B Dummy (Operating Income)

PanelA: Dependent Variables = UE_CE_t

		Zero Earnings		Prior Period Earnings	
Independent	$\%X_t$=	$\%SI_t$	$\%UE\_SI_t$	$\%SI_t$	$\%UE\_SI_t$
Variables	Pred	(1)	(2)	(3)	(4)
$\%X_t$		-0.005	-0.004	-0.01	-0.009
		[-0.57]	[-0.53]	[-1.18]	[-1.05]
M&B Dummy		0.006	0.006	0	0.001
		[3.02]**	[3.58]***	[0.30]	[0.83]

$M\&B*\%X_t$	+	0.112	0.125	0.08	0.077
		[2.53]*	[2.78]**	[3.18]**	[3.03]**
$SIZE_t$		0	0	0	0
		[-0.94]	[-0.94]	[-1.32]	[-1.32]
BM_t		0.002	0.002	0.002	0.002
		[4.39]***	[4.40]***	[4.27]***	[4.28]***
$ACCRUALS_t$		0.059	0.059	0.06	0.06
		[7.56]***	[7.56]***	[7.61]***	[7.62]***
OCF_t		0.33	0.33	0.331	0.331
		[35.88]***	[35.89]***	[35.88]***	[35.89]***
ROA_t		-0.043	-0.043	-0.045	-0.045
		[-4.28]***	[-4.26]***	[-4.54]***	[-4.53]***
YearFixedEffects		Included	Included	Included	Included
IndustryFixedEffects		Included	Included	Included	Included
_cons		-0.019	-0.019	-0.017	-0.017
		[-6.67]***	[-6.73]***	[-6.18]***	[-6.26]***
%Adj-R-squared		26.57	26.58	26.50	26.50

PanelB: Dependent Variables = $UE\_\Delta CE_{t+1}$

		Zero Earnings		Prior Period Earnings	
Independent	$\%X_t$=	$\%SI_t$	$\%UE\_SI_t$	$\%SI_t$	$\%UE\_SI_t$
Variables	Pred	(1)	(2)	(3)	(4)
$\%X_t$		0.099	0.097	0.112	0.11
		[10.89]***	[10.67]***	[11.85]***	[11.55]***
M&B Dummy		-0.01	-0.01	0	-0.001
		[-5.09]***	[-5.32]***	[-0.29]	[-0.98]
$M\&B*\%X_t$	-	-0.01	-0.028	-0.114	-0.112
		[-0.20]	[-0.58]	[-4.19]***	[-4.08]***
$\%X_{t+1}$		-0.104	-0.103	-0.105	-0.104
		[-11.53]***	[-11.43]***	[-11.62]***	[-11.52]***
$SIZE_t$		0.001	0.001	0.001	0.001
		[4.73]***	[4.72]***	[5.22]***	[5.21]***
BM_t		-0.002	-0.002	-0.002	-0.002
		[-4.30]***	[-4.33]***	[-4.14]***	[-4.18]***
$ACCRUALS_t$		-0.077	-0.077	-0.077	-0.077
		[-9.13]***	[-9.15]***	[-9.13]***	[-9.16]***
OCF_t		-0.072	-0.073	-0.072	-0.072
		[-7.32]***	[-7.33]***	[-7.28]***	[-7.30]***
ROA_t		-0.071	-0.071	-0.067	-0.067
		[-6.54]***	[-6.57]***	[-6.23]***	[-6.25]***
YearFixedEffects		Included	Included	Included	Included
IndustryFixedEffects		Included	Included	Included	Included
_cons		0.012	0.012	0.01	0.01
		[3.98]***	[3.99]***	[3.33]***	[3.40]***
%Adj-R-squared		13.37	13.33	13.30	13.26

Panel A reports the results obtained by $UE\_CE_t = \gamma_0 + \gamma_1\%X_t + \gamma_2 M\&B\_Dummy + \gamma_3 M\&B * X + \gamma_4 SIZE_t + \gamma_5 BM_t + \gamma_6 ACCRUALS_t + \gamma_7 OCF_t + \gamma_8 ROA_t + \varepsilon_t$. Panel B reports the results obtained by $UE\_\Delta CE_{t+1} = \delta_0 + \delta_1\%X_t + \delta_2\%X_{t+1} + \delta_3 M\&B\_Dummy + \delta_4 M\&B * X + \delta_5 SIZE_t + \delta_6 BM_t + \delta_7 ACCRUALS_t + \delta_8 OCF_t + \delta_9 ROA_t + \upsilon_{t+1}$. Each model controls for year and industry fixed effects.

†, *, **, *** indicate significance at the 10, 5, 1, 0.1% levels, respectively, using a two-tailed test. Amounts reported are estimated coefficients on each variable with t-values. *M&B Dummy* in Columns (1) and (2) is an indicator taking 1 if a firm reports operating income greater or equal to zero and less than 100 million JPN yen (approximately 1 million US dollars), 0 otherwise. *M&B Dummy* in Columns (3) and (4) is an indicator taking 1 if the change in operating income from the previous period is greater or equal to zero and less than 100 million JPN yen, 0 otherwise.

All observations falling in the top or bottom 1% with respect to each variable are excluded. The other variables are defined in Table 2.

Table 10. Definitions of M&B Dummy (Ordinary Income)

PanelA: Dependent Variables = UE_CE_t

		Zero Earnings		Prior Period Earnings	
Independent	$\%X_t$=	$\%SI_t$	$\%UE\_SI_t$	$\%SI_t$	$\%UE\_SI_t$
Variables	Pred	(1)	(2)	(3)	(4)
$\%X_t$		-0.006	-0.006	-0.01	-0.009
		[-0.76]	[-0.70]	[-1.15]	[-1.08]
M&B Dummy		0.006	0.008	-0.001	0
		[3.13]**	[4.38]***	[-0.46]	[0.12]
M&B$\%X_t$	+	0.227	0.240	0.096	0.098
		[4.46]***	[4.65]***	[3.46]***	[3.49]***
$SIZE_t$		0.000	0.000	0.000	0.000
		[-0.64]	[-0.62]	[-1.47]	[-1.46]
BM_t		0.002	0.002	0.002	0.002
		[4.37]***	[4.39]***	[4.26]***	[4.28]***
$ACCRUALS_t$		0.059	0.06	0.06	0.06
		[7.61]***	[7.62]***	[7.67]***	[7.68]***
OCF_t		0.33	0.33	0.331	0.331
		[35.90]***	[35.91]***	[35.92]***	[35.93]***
ROA_t		-0.042	-0.042	-0.046	-0.045
		[-4.21]***	[-4.19]***	[-4.56]***	[-4.55]***
YearFixedEffects		Included	Included	Included	Included
IndustryFixedEffects		Included	Included	Included	Included
_cons		-0.019	-0.019	-0.017	-0.017
		[-6.91]***	[-6.97]***	[-6.05]***	[-6.13]***
%Adj-R-squared		26.71	26.72	26.50	26.50

PanelB: Dependent Variables = $UE\_\Delta CE_{t+1}$

		Zero Earnings		Prior Period Earnings	
Independent	$\%X_t$=	$\%SI_t$	$\%UE\_SI_t$	$\%SI_t$	$\%UE\_SI_t$
Variables	Pred	(1)	(2)	(3)	(4)
$\%X_t$		0.099	0.097	0.106	0.103
		[10.90]***	[10.68]***	[11.28]***	[10.95]***
M&B Dummy		-0.013	-0.013	0	-0.001
		[-6.34]***	[-6.88]***	[-0.27]	[-0.72]
M&B$\%X_t$	-	-0.023	-0.047	-0.069	-0.064
		[-0.43]	[-0.85]	[-2.32]*	[-2.13]*
$\%X_{t+1}$		-0.103	-0.102	-0.104	-0.104
		[-11.43]***	[-11.33]***	[-11.58]***	[-11.48]***
$SIZE_t$		0.001	0.001	0.001	0.001
		[4.31]***	[4.30]***	[5.37]***	[5.36]***
BM_t		-0.002	-0.002	-0.002	-0.002
		[-4.31]***	[-4.34]***	[-4.14]***	[-4.18]***
$ACCRUALS_t$		-0.077	-0.077	-0.077	-0.078
		[-9.11]***	[-9.14]***	[-9.21]***	[-9.24]***
OCF_t		-0.072	-0.072	-0.073	-0.073
		[-7.27]***	[-7.28]***	[-7.33]***	[-7.35]***
ROA_t		-0.072	-0.072	-0.067	-0.067
		[-6.67]***	[-6.70]***	[-6.19]***	[-6.22]***
YearFixedEffects		Included	Included	Included	Included
IndustryFixedEffects		Included	Included	Included	Included
_cons		0.013	0.013	0.01	0.01
		[4.30]***	[4.31]***	[3.24]**	[3.28]**
%Adj-R-squared		13.51	13.47	13.22	13.18

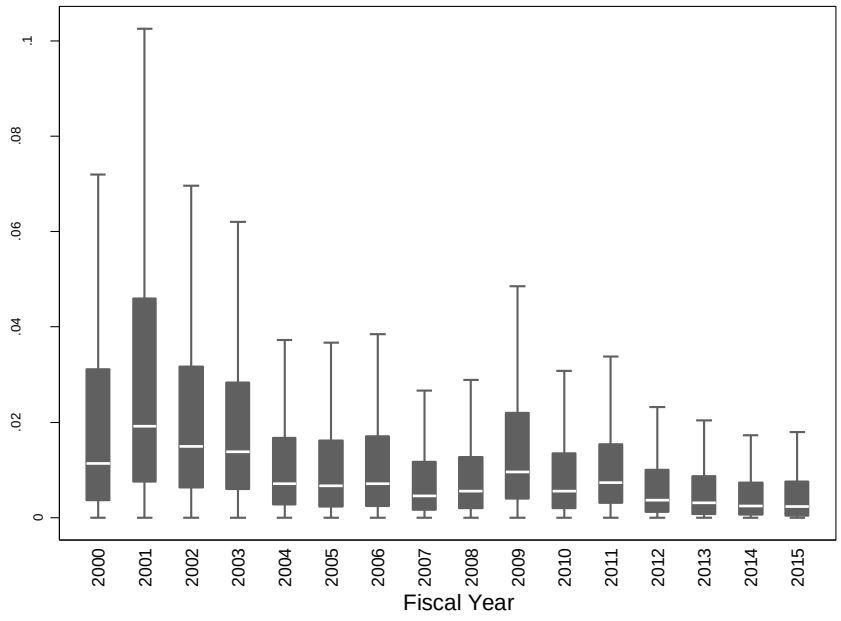
Panel A reports the results obtained by $UE\_CE_t = \gamma_0 + \gamma_1 \%X_t + \gamma_2 M\&B\_Dummy + \gamma_3 M\&B * X + \gamma_4 SIZE_t + \gamma_5 BM_t + \gamma_6 ACCRUALS_t + \gamma_7 OCF_t + \gamma_8 ROA_t + \varepsilon_t$. Panel B reports the results obtained by $UE\_\Delta CE_{t+1} = \delta_0 + \delta_1 \%X_t + \delta_2 \%X_{t+1} + \delta_3 M\&B\_Dummy + \delta_4 M\&B * X + \delta_5 SIZE_t + \delta_6 BM_t + \delta_7 ACCRUALS_t + \delta_8 OCF_t + \delta_9 ROA_t + \upsilon_{t+1}$. Each model controls for year and industry fixed effects.
†, *, **, *** indicate significance at the 10, 5, 1, 0.1% levels, respectively, using a two-tailed test. Amounts reported are estimated coefficients on each variable with t-values. *M&B Dummy* in Columns (1) and (2) is an indicator taking 1 if a firm reports ordinary income greater or equal to zero and less than 100 million JPN yen (approximately 1 million US dollars), 0 otherwise. *M&B Dummy* in Columns (3) and (4) is an indicator taking 1 if the change in ordinary income from the previous period is greater or equal to zero and less than 100 million JPN yen, 0 otherwise.
All observations falling in the top or bottom 1% with respect to each variable are excluded. The other variables are defined in Table 2.

Table 11. Summary of Results

		Main Tests	Additional Tests (6.1)		Robustness Tests (6.4)		
		(Benchmark is EBITD)	Meet or beat Operating earnings	Meet or beat Ordinary earnings	Specification of the first stages	Specification of the second stages	Estimation Window
Special Losses	On Average	×	×	×	×	×	×
	Zero Earnings	×	×	×	×	×	×
	Lagged Earnings	✓	✓	✓	Δ (Benchmark is operating income)	✓	✓
Non-operating Expenses (6.3)	On Average	×	×	-	✓	×	✓
	Zero Earnings	✓	✓	-	×	✓	✓
	Lagged Earnings	×	✓	-	✓	×	✓

"✓ (×)" indicates that results (do not) support the existence of CS. "Δ" indicate that they partially support it.

Figure A1. Time-series trends of sales-special losses ratio of Japanese firms (n=23,485)



This figure presents the time-series trends of sales special losses ratio. The vertical axis is special losses deflated by sales in the same period. The lines in boxes are median sales special losses ratio in each period. The boxes describe their distribution: the upper hinge of the boxes is the 75th percentile, and the lower is the 25th percentile. The sample period is from 2000 to 2015.