Earnings Management toward Zero:
Evidence from Japanese Private Colleges and Universities

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ABSTRACT: Leone and Van Horn (2005) describe the existence of earnings management to adjust discretionary accruals to meet a range just above zero in nonprofit hospitals since nonprofits have loss-avoidance and income-decreasing incentives. The former incentive arises from the effect of losses on a CEO's reputation or to reduce the cost of debt, and the latter incentive arises from retaining the hospitals' tax-exempt status, attracting donations, or receiving price concessions from third-party payers. In this study, I investigate whether managers manage earnings in nonprofit organizations, specifically Japanese private colleges and universities (PC&Us). Japanese PC&Us have specific discretionary capital expenditure items that allow PC&U managers to adjust earnings more easily. I expect that earnings management in Japanese PC&Us exists to decrease income more than was found by previous studies of nonprofit organizations because PC&Us manage these items frequently and have different stakeholder incentives (i.e. students and government). I test 2,973 PC&Us from 2009 to 2013 by using an earnings distribution analysis based on Burgstahler and Dichev (1997). I find evidence of earnings management toward zero to avoid loss, and strong evidence of income decreasing decisions by PC&Us. These results suggest that Japanese PC&Us have incentives to manage earnings toward zero, especially income-decreasing incentives, as compared to previous studies.

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1. Introduction

Managing earnings holds as much importance for managers of hospitals and other large, nonprofit organizations, as it does for managers of for-profit firms. Large nonprofit organizations are answerable to many stakeholders and thus have complicated incentives to manage earnings. In for-profit firms, managers are incentivized to avoid earnings decreases and losses (Burgstahler and Dichev 1997; Degeorge, Patel, and Zeckhauser 1999). This may be accomplished by various means including contracts with executive compensation and debt or by increasing the stock price. Nonprofit organizations not only have incentives to increase income and to avoid losing contracts, but also have incentives to decrease income in order to achieve a tax-exempt status, receive donations, and negotiate favorably with third-party payers. Additionally, since nonprofit organizations do not have any incentive to increase stock price, they do not avoid earnings decreases. Previous research suggests that nonprofit hospital CEOs manage accruals and real accounting activities to meet a benchmark that is just around zero, and do not have any incentive to avoid earnings decreases (Leone and Van Horn 2005; Eldenburg, Gunny, Hee, and Soderstrom 2011).

While Leone and Van Horn (2005) and Eldenburg *et al.* (2011) support their *zero-profit hypothesis* by focusing on nonprofit hospitals only, there are other nonprofit organizations in large industries. In this study, I investigate whether managers manage earnings toward zero in Japanese private colleges and universities (PC&Us), which comprise a large nonprofit industry in Japan. I expect to discover different incentives and stakeholders (i.e., students and government) as compared to nonprofit hospitals[1].

I focus on Japanese PC&Us for two reasons. First, most PC&Us in Japan have similar financial structures. The revenue source of PC&Us in the U.S. includes tuition fees, investment management, donations, governmental grants, licenses, and other program fees. In contrast, the revenue source of PC&Us in Japan depends highly on tuition fees and government grants only and hence, their main stakeholders can be identified as students and the government. This feature of Japanese PC&Us differs from the U.S. hospitals' context (i.e., CEO market, bondholders, regulators, donors, and third-party payers) identified by Leone and Van Horn (2005) and makes it easier to test incentives for earnings management.

Second, PC&Us in Japan have two specific profit indicators, earnings before capital expenditure (*Kizoku-Syushi*) and earnings after capital expenditure (*Syohi-Syushi*), that

[1] Managers of the PC&Us covered in this study are directors of the board of trustees. In most cases, they have the final responsibility to the board to increase profitability in order to sustain their organization.

are based on accounting standards. The earnings after capital expenditure (*EACE*) are calculated by deducting discretionary capital expenditure (*CE*) items from the earnings before capital expenditure (*EBCE*). These two profit indicators play different roles in each stakeholder's evaluation. The Japanese Government, Ministry of Education, Culture, Sports, Science and Technology (MEXT) considers the *EBCE* to be an indicator of *profitability* and emphasizes its importance for the board of trustees or bondholders, similar to for-profit firms. This indicator is mainly dependent on the number of students either enrolled at the PC&U or preparing for examinations. Any losses in the *EBCE* reported by a PC&U are further highlighted and publicized through the country by the press or media. Operating in an intensely competitive, student acquisition environment, managers of PC&Us would want to avoid negative publicity among students. Therefore, I expect managers of PC&Us have a strong incentive to avoid losses in *EBCE*.

On the other hand, the *EACE* is an indicator of *financial stability* to maintain the fixed assets necessary to educate students. Some stakeholders evaluate the *EACE* to allocate their resources. For example, the Promotion and Mutual Aid Corporation for Private Schools of Japan (PMAC), which was established as a special corporation by MEXT, uses *EACE* to evaluate PC&Us when providing governmental grants. If PC&Us have excess cumulative *EACE*, PMAC reduces governmental grants. For other stakeholders, especially donors, can decide to reduce their resources if PC&U managers report excess *EACE*. Therefore, I expect managers in PC&Us to make more income-decreasing decisions for the *EACE* than for the *EBCE*. In this way, it is possible to test *whether* PC&U managers manage earnings differently based on different stakeholder *incentives* with students and government.

For these reasons, the hypotheses in this study are as follows: 1) PC&U managers manage *EBCE* to avoid loss, and 2) PC&U managers manage *EACE* to a range just around zero by varying discretionary capital expenditure. By analyzing the earnings distribution, based on Burgstahler and Dichev (1997), and Degeorge *et al.* (1999), I test *whether* PC&U managers manage both *EBCE* and *EACE* toward zero. In addition, if PC&U managers manage earnings toward zero, then I test whether these results change depending on *incentives* from students, the government, and other stakeholders, based on Beatty, Ke and Petroni (2002).

The results of these tests support my expectations. I find evidence of loss-avoidance accounting choices for *EBCE* and income-decreasing accounting choices for *EACE*. These results indicate the existence of earnings management toward zero for both the *EBCE* and *EACE* through advances received, extraordinary gain or loss and *CE*.

Furthermore, I find evidence that the higher the contractual costs, from students and government, that a manager of a PC&U undertakes, the more earnings management toward zero he/she conducts.

This study makes two contributions to literature and the understanding of accounting choices. First, with this being the first study concerning PC&Us, this study contributes to earnings management literature, especially as it provides additional tests and results related to zero-profit hypothesis and income-decreasing accounting choices in the nonprofit sector. These results provide evidence as to whether managers manage earnings in Japanese PC&Us, which are different from the nonprofit hospitals covered in previous research. While Leone and Van Horn (2005) and Eldenburg *et al.* (2011) suggest that nonprofit managers in hospitals manage earnings through discretionary accruals and real activities, they do not test other large nonprofit industries. The results of this study suggest that their hypothesis is applicable to other large nonprofit industries as well.

Second, the results of this study suggest that PC&U managers manage earnings differently if they have differing stakeholder incentives. Leone and Van Horn (2005) insist that when nonprofit CEOs report earnings, they consider the contracts from the perspective of five stakeholders: the CEO, bondholders, regulators, donors, and third-party payers. In the Japanese PC&U industry, there is no incentive for contracts with third-party payers. Instead, there are more incentives for unique contracts with current and prospective students, and with regulators, than in the U.S. nonprofit hospitals.

The remainder of this paper is organized as follows. Section 2 summarizes the incentives to manage earnings in Japanese PC&Us, and develops the research hypotheses. Section 3 presents the research methodology based on previous studies. Section 4 describes the sample selection procedure and reports the descriptive statistics. Section 5 presents the empirical results for the zero-profit hypothesis and earnings changes hypothesis. Section 6 concludes with a summary of the implications of this study.

2. The incentives to manage earnings in Japanese PC&Us

2.1 The institutions and accounting standards of PC&Us in Japan

Japanese PC&Us are considered Incorporated Educational Institutions, which are corporations formed for the purpose of establishing a private school pursuant to the Private Schools Act. According to this Act, private schools must ensure sound

development and must maintain their educational capacities for medium- to long-term. In addition, PC&U institutions are obliged to prepare an inventory of assets, balance sheets, income and expenditure account statements, and business reports within two months from the end of every fiscal year. These financial statements are prepared in compliance with the Accounting Standards of Incorporated Educational Institutions, which were set by MEXT in 1971 when it started offering grants to PC&Us, and which differ from the standards for calculating and reporting earnings of for-profit institutions[2].

The main purpose of these standards was to control and allocate government grants based on reported financial statements. Even after decades since its establishment, the purposes and contents of these standards have not been changed. As discussed in detail below, these standards set globally unique, discretionary accounting items.

The standards allow PC&Us to transfer capital expenditures from revenues after calculating earnings, such that PC&Us have two earnings measures, the *EBCE* and *EACE*. They reduce *EBCE* using specific, discretionary accounting items related to the transfer of capital funds. The first item consists of fixed capital assets (e.g., land, buildings, equipment fixtures, and books) that must be permanently maintained in order to educate students, and that are managed through real activities to adjust educational expenditures. The second and third items comprise reserve funds of future expenses by facility plans and scholarship funds from donors respectively, both of which are discretionary accounting adjustments. Figure 1 illustrates an example of a PC&U's financial statements. It also recommends *EACE* as the indicator of future *financial stability* since capital expenditures contribute to the organizational sustainability to educate students.

[Insert Figure 1 here]

According to formal documents and past historical research, MEXT established these unique accounting standards in 1971 due to two reasons. First, PC&Us must maintain their educational capacities for medium- to long-term. Hence, it is desirable for the financial conditions in PC&Us to be reported by balancing *EACE* in the medium- to long-term. Second, radical student movements arose at the time when these standards were set, with activists vehemently insisting on lower tuition fees in PC&Us. These standards enable easy negotiation of tuition fees with activists through their unique,

[2] Although earnings management is conducted by Incorporated Educational Institutions, these are referred to as PC&Us in this study as I focus on the institutions that manage the PC&Us regulated by MEXT.

income-decreasing accounting items that set them apart from for-profit standards.

2.2 The incentives to manage earnings toward zero in PC&U

Previous studies reveal that for-profit firm managers manage reported earnings to avoid small losses, earnings decreases, and negative forecast errors (Burgstahler and Dichev 1997; Degeorge *et al.* 1999) in order to realize the incentives to acquire bonuses, avoid debt covenants, or increase stock price. They describe a histogram of pooled, cross-sectional distributions to find evidence of clear discontinuities at zero in the distribution of earnings levels, earnings changes, and forecast errors. Burgstahler and Dichev (1997) explore how for-profit managers avoid earnings decreases and losses and find evidence that both operating cash flow and changes in working capital have been used to increase earnings.

More recent studies focus on earnings management toward zero in the nonprofit sector through discretionary accruals and real activities (Hoerger 1991; Leone and Van Horn 2005; Eldenburg *et al.* 2011). Leone and Van Horn (2005), an important contribution to literature in this area, finds evidence that hospital managers manage their earnings to avoid losses (*loss-avoidance hypothesis*) because of the incentives for contracts with the market for CEOs and bondholders, similar to for-profit firms. They explain that reporting losses imposes a higher cost of debt on nonprofit CEOs, which increases the likelihood that the CEO is terminated. Therefore, nonprofit CEOs manage earnings to avoid losses.

In addition, they find evidence that hospital managers use income-decreasing accounting items to manage the profit toward zero (*zero-profit hypothesis*) because of the incentives for contracts with regulators, donors, and third-party payers. Reporting high profits imposes costs on nonprofit CEOs from regulators and donors because it implies a failure to allocate available resources towards philanthropic objectives. The zero-profit evidence suggests the different role of earnings between for-profit firms and nonprofit organizations[3].

Similar to the nonprofit hospitals studied by Leone and Van Horn (2005), PC&U managers consider the contracts with stakeholders toward earnings subject to zero profit constraint (Frank and Salkever 1994) and manage earnings toward zero[4]. However, I

[3] Leone and Van Horn (2005) is based on the study of Hoerger (1991), which finds that managers in nonprofit hospitals minimize the variance in reported earnings to achieve a target level of earnings within budget constraints. They examine whether discretionary accruals are positive (negative) when pre-managed earnings are negative (positive) according to the *zero-profit hypothesis* using a model based on Jones (1991).

[4] Managers in PC&Us are presidents of the board of trustees, presidents of the schools, or executive officers. In most cases, they are one of the members of the board of trustees and are responsible to the board for increasing profitability to sustain their organization.

expect that PC&U managers have different stakeholders and incentives to manage earnings compared to nonprofit hospitals. In this study, I summarize the stakeholders and incentives in the order of stakeholders' importance (i.e., (a) students and their parents, (b) government, and (c) other stakeholders) to influence reporting of profits or losses in both *EBCE* and *EACE*.

(a) Students and their parents

With the recent decline in the number of children in Japan, Japanese PC&Us compete intensively for student enrollment. Salamon and Anheier (1996) indicate that 60% of nonprofit revenue in Japan comes from private fees and charges, the highest of any country they examined, and for the most part, this comprises tuition receipts for PC&Us. In the education industry, close to 90% of the income of this important element of the Japanese nonprofit sector takes this form (94). In fact, based on *A PMAC Research Report of PC&U Financial Conditions in 2014*, the revenue source in Japanese PC&Us significantly depends on tuition fees, which comprise approximately 76% of their total revenue. Based on this revenue ratio, current students or students preparing for examinations, and their parents, are the most important stakeholders for Japanese PC&Us.

However, the total number of students entered at Japanese PC&Us has decreased from about 800,000 in 1993 to 670,000 in 2014, and will continue to decrease significantly in the future. In this competitive environment, PC&U managers are unwilling to disclose negative information, especially related to financial distress in providing educational services, to current and prospective students. Recently, media and press (such as *Daily Diamond*, *Daily Toyokeizai*, and *Nikkei-Business*) have disclosed the list of PC&Us that have reported losses in *EBCE* each year. In addition, empirical results of Japanese PC&Us show that once current or prospective students of a PC&U and their parents know of the negative financial *EBCE* conditions of that PC&U, they dis-enroll or discontinue taking the examination (Kuroki 2015). Therefore, the cost of reporting losses in *EBCE* is an increased likelihood of reducing current and future enrollment.

(b) Government

In the U.S., the Internal Revenue Code (IRC) monitors nonprofit hospitals' profitability to assess whether they should maintain their tax-exempt status. When earnings increase, regulatory costs increase from the threat of the divested tax-exempt status (Leone and Van Horn 2005).

In the case of Japanese PC&Us, however, MEXT monitors PC&Us' profitability in *EBCE* to assess whether they could continue to provide educational services in the future. For example, if PC&U managers report losses for two or three years in a row, the MEXT investigation commissioner steps forward to examine the cause for these losses, following which PC&U managers receive orders to improve their financial condition. The cost of reporting losses in *EBCE* is, therefore, an increased likelihood of being audited by MEXT[5].

In addition, PMAC provides subsidies for PC&U operating costs. These subsidies formed approximately 13% of the total revenue of PC&Us in 2014 and were determined based on an evaluation of the PC&U's surpluses of *cumulative EACE*. If a PC&U has large surpluses of *cumulative EACE*, PMAC decreases the subsidies for operating costs. Japanese PC&U managers manage the *EACE* to decrease income because the cost of reporting a high *EACE* profit is a reduction in subsidies.

(c) Other stakeholders

Leone and Van Horn (2005) and other literature highlight other stakeholders' influence on PC&U managers' accounting choices. In this study, I consider the effects of the following three stakeholders: board of trustees, bondholders, and donors.

First, profitability serves as a measure of the manager's ability to sustain a hospital. In Japanese PC&Us, the MEXT suggests that *EBCE* is an indicator of profitability. Hence, boards of trustees in Japan pay attention to the *EBCE*. However, based on survey results conducted in 2012 by the Research Institution in Association of Private Universities of Japan, directors on the board of trustees of PC&Us retain their job for 13.4 years on average, and appear free from job termination pressures. Hence reporting losses in *EBCE* appears to only weakly increase the likelihood that the manager is terminated, as compared to previous studies.

Second, nonprofit hospital managers have the incentive to manage earnings toward zero to minimize earnings variance, similar to for-profit firms as suggested by Trueman and Titman (1988). Most Japanese PC&Us also raise debt. The PC&U bondholders pay attention to profitability as a measure of the PC&U's capacity to repay this debt. PC&U managers have an incentive to reduce the cost of debt by managing the EBCE through loss-avoidance activities, similar to for-profit firms, as reporting losses in the *EBCE* increases the cost of debt.

Third, reported earnings influence donors' decisions. If nonprofit organizations report

[5] However, MEXT does not focus on the large excess *EBCE*. Thus, I expect that PC&U managers do not have incentives for income-decreasing choices in *EBCE*.

high earnings, donors are less likely to make donations since the organization does not appear to be a "needy charity." Therefore, donors view the presence of profits in a nonprofit organization as evidence that the philanthropic goal has either been met or is not being pursued appropriately. Previous studies suggest that donations comprise approximately 2% to 3% of nonprofit revenue (Okten and Weisbrod 2000; Leone and Van Horn 2005). This ratio also applies to Japanese PC&Us, with *A PMAC Research Report of PC&U Financial Conditions in 2014* indicating that revenues from donors comprise approximately 2% of total PC&U revenue. Donors make decisions in view of the two indicators, *EBCE* and *EACE*, since they are interested in both the profitability and financial stability of PC&Us. Japanese PC&U managers manage *EBCE* and *EACE* to decrease income or increase expenditures.

2.3 Hypothesis development

In summary, stakeholders are interested in the financial conditions of PC&Us, and there are costs to reporting *EBCE* and *EACE*. Based on Leone and Van Horn (2005) and Eldenberg *et al.* (2011), I hypothesize that PC&U managers minimize reporting costs by making discretionary accruals that move reported profits toward zero[6].

Zero-profit hypothesis. When the *EBCE* and *EACE* are below (above) zero, PC&U managers make loss-avoidance (income-decreasing) accruals to achieve profits closer to just above zero.

The zero-profit hypothesis, therefore, consists of two working hypotheses, which are the loss-avoidance hypothesis and the income-decreasing hypothesis. These working hypotheses are related to managers' incentives to reduce the cost of reporting profits or losses. Figure 2 summarizes managers' incentives to manage both the *EBCE* and *EACE* in PC&Us.

[Insert Figure 2 here]

First, reporting a small loss in the *EBCE* has negative effects including reduced current and future enrollment, increased government audit, and higher cost of debt. Based on the Accounting Standards, PC&U managers are restricted in the management of *EBCE* as, for instance, they do not use accounts receivable or account reserves. They

[6] Eldenburg et al. (2011) set the benchmark of earnings and tested whether managers will decrease (increase) real spending, when nonprofit organizations' performance is likely to be below (above) benchmark. I have also focused on defining the benchmark for earnings in this research.

can only use advances received and extraordinary gain or loss to manage earnings in *EBCE*. Therefore, I expect the existence of loss-avoidance decisions in *EBCE* using mainly these two measures.

Hypothesis 1a (H1a). The distribution of the *EBCE* surrounding zero will be non-normal just below zero.

Second, it is costly to report a high *EACE* because a high *EACE* decreases subsidies from the PMAC and deters donors. Added to this, MEXT recommends that the financial conditions in PC&Us are desirable when they report balanced *EACE* in the medium- to long-term. When *EBCE* is higher than expected, managers transfer more discretionary capital expenditures to capital funds in order to manage *EACE* toward zero. Therefore, I also expect that Japanese PC&Us make more income-decreasing choices toward zero than found in previous studies of nonprofit organizations, since they can easily manage these items.

Hypothesis 1b (H1b). The distribution of the *EACE* surrounding zero will be concentrated to use discretionary capital expenditures.

Assuming H1a and H1b are supported, I test whether these results change depending on incentives from the main stakeholders, namely students and government. I expect that the PC&Us with higher dependence on tuition fees as a revenue source, have more incentive to avoid a loss in *EBCE* as any reduction in current and future enrollment directly affects their financial condition. In addition, I expect that PC&Us that are highly likely of being audited by MEXT have more incentive to avoid a loss in *EBCE* thereby reducing the MEXT audit likelihood.

Hypothesis 2a (H2a). PC&Us with more dependence on tuition fees, tend to report slightly positive earnings in *EBCE*.

Hypothesis 2b (H2b). PC&Us with greater incentive to avoid MEXT audit, tend to report slightly positive earnings in *EBCE*.

As mentioned earlier, if a PC&U has a large number of calculated surpluses of *cumulative EACE*, PMAC decreases the subsidies for operating costs. Therefore, PC&U managers avoid a reduction in governmental grants through earnings management toward zero using *CE*.

Hypothesis 2c (H2c). PC&Us with greater incentive to avoid a decrease in governmental grants, tend to report surrounding zero in *EACE*.

Finally, I set an earnings changes hypothesis similar to Leone and Van Horn (2005). In for-profit firms, earnings decreases are avoided due to pressure from stock markets (Burgstahler and Dichev 1997; Degeorge et al. 1999). However, the stock market has no influence on nonprofit organizations. Hence, changes in reported earnings are relatively less important than for for-profit firms. For this reason, I expect that PC&Us do not avoid earnings decreasing decisions for both the *EBCE* and *EACE*.

Hypothesis 3 (H3). The distribution of both the *EBCE* and *EACE* changes surrounding zero will be normal.

3. Research Design

3.1 Research Methods for testing H1a, H1b and H3

To test H1a and H1b related to whether Japanese firm managers engage in earnings management toward zero to avoid reporting loss and high profits respectively, I adapt the earnings distribution analysis based on Burgsthaler and Dichev (1997). This study presents a histogram of the pooled, cross-sectional empirical distributions of scaled earnings. In constructing the histogram, based on the previous studies (Degeorge *et al.* 1999; Beatty *et al.* 2002), I use a bin width of twice the inter-quartile range of the variable, multiplied by the negative cube root of the sample size. The results of this estimation indicate that the bin width is 0.003849 in *EBCE* level, 0.004231 in *EACE* level, 0.002217 in *EBCE* change, and 0.003447 in *EACE* change[7].

In this study, the earnings levels (changes) are reflected in cross-sectional distributions in the form of unusually low frequencies of small losses (decreases) and unusually high frequencies of earnings level (changes) increases if PC&U managers conduct loss-avoidance (decrease-avoidance) management on account of the *EBCE*. Thus, this study supports H1a (H3). Similarly, the earnings are reflected in cross-sectional distributions in the form of unusually low frequencies of higher *EACE* than *EBCE* if PC&U managers conduct income-decreasing accounting choices. Thus,

[7] I scale both the *EBCE* and *EACE* by the beginning-of-the–year total assets because earnings observations are drawn from a broad range of PC&Us sizes. This analysis is criticized by Durtschi and Easton (2005: 2009) for its inherent sample selection bias. Therefore, I alternate the deflating indicator with total revenue as a robustness check and the results remained the same.

this study supports H1b.

To test the statistical significance of H1a, H1b, and H3, I construct a statistical test based on Burgstahler and Dichev (1997). This test assumes that under no earnings management, the cross-sectional distributions of *EBCE*, *EACE*, and their respective changes are relatively smooth. The definition of smoothness is that the expected number of observations in any given interval of the distribution is the average of the number of observations in its two immediately surrounding intervals. When I test for a discontinuity at zero, I focus on one standardized difference and report the corresponding standardized difference to the right of zero in parentheses[8].

3.2 Research Methods for testing H2a, H2b, and H2c

To test how PC&U managers manage earnings in relation to hypotheses H2a, H2b, and H2c, I investigate whether the results for H1a and H1b change depending on incentives from the two main stakeholders, namely, students and the government. I test the effects of the student enrollment incentive and the government incentives on the distribution of both *EBCE* and *EACE* levels. Based on Beatty et al. (2002), Burgstahler et al. (2006), and Shuto and Iwasaki (2014), I establish two Probit regression models, which denote the signs of small earnings levels (Equations (1) and (2)). Equation (1) tests the effects of student enrollment incentive and government incentive on the distribution of *EBCE*, and Equation (2) tests the effect of government incentive on the distribution of *EACE*.

$$\begin{aligned} EBCEPOS_{i,t} = {} & \alpha_0 + \beta_1 Incentive\_Student_{i,t} \\ & + \beta_2 Incentive\_Government_{i,t} + \beta_3 LnASSET_{i,t-1} + \beta_4 \Delta ASSET_{i,t} \\ & + \beta_5 \Delta CFO_{i,t} + \beta_6 WCA_{i,t} + \beta_7 EXT_{i,t} + \beta_8 BOND_{i,t} + \beta_9 DON_{i,t} \\ & + \beta_{10-13} YEAR + \varepsilon_t \end{aligned} \quad (1)$$

$$\begin{aligned} Benchmark_{i,t} = {} & \alpha_0 + \beta_1 Incentive\_Government_{i,t} + \beta_2 LnASSET_{i,t-1} + \beta_3 \Delta ASSET_{i,t} \\ & + \beta_4 \Delta CFO_{i,t} + \beta_5 CE1_{i,t} + \beta_6 CE2_{i,t} + \beta_7 CE3_{i,t} + \beta_8 BOND_{i,t} + \beta_9 DON_{i,t} \\ & + \beta_{10} TUITION_{i,t} + \beta_{11-14} YEAR + \varepsilon_t \end{aligned} \quad (2)$$

where $EBCEPOS_{i,t}$ = an indicator variable that takes the value 1 if *EBCE* falls within the interval between 0 (exclusive) and 0.00769 (inclusive), and 0 otherwise. *Benchmark* = Three Dependent Variables: (1) $EACEPOS_{i,t}$ = an indicator variable that takes the value 1 if EACE falls within the interval between 0 (exclusive) and 0.00846 (inclusive), and 0

[8] Denoting the probability that an observation will fall into interval i by p_i, the variance of the differences between the observed and expected number of observations for interval i is approximately $Np_i(1-p_i) + (1/4)N(p_{i-1} + p_{i+1})(1-p_{i-1}-p_{i+1})$.

otherwise; (2) $EACENEG_{i,t}$ = an indicator variable that takes the value 1 if EACE is within the interval between -0.00846 (exclusive) and 0 (inclusive), and 0 otherwise; and (3) $JustZERO_{i,t}$ = an indicator variable that takes the value 1 if EACE falls within the interval between -0.00846 (exclusive) and 0.00846 (inclusive). $Incentive\_Student_{i,t}$ = educational fees, divided by total assets at the end of the previous year. $Incentive\_Government_{i,t}$ = an indicator variable that takes the value 1 if the number of calculated surpluses of *cumulative EACE* is more than 0, and 0 otherwise. $ASSET_{i,t-1}$ = the natural log of total assets for PC&U *i* at the end of the previous year. $\Delta ASSET_{i,t}$ = the first difference in total assets, divided by total assets, at the end of the previous year. $\Delta CFO_{i,t}$ = the first difference in cash flows, divided by total assets, at the end of the previous year. $WCA_{i,t}$ = the first difference in advances received, divided by total assets, at the end of the previous year. $EXT_{i,t}$ = extraordinary items, divided by total assets, at the end of the previous year. $CE_{i,t}$ = the number of transferring capital expenditures of PC&U *i* in period *t* to report the results using the first fund to third fund. $BOND_{i,t}$ = the interest cost, divided by total assets at the end of the previous year. $DON_{i,t}$ = donation, divided by total assets at the end of the previous year; $TUITION_{i,t}$ = educational fees, divided by total assets at the end of the previous year, which is identical to $Incentive\_Student_{i,t}$.

First, to grasp earnings management to avoid loss, I focus on reporting small profits and losses using *EBCEPOS* to investigate the level of scaled *EBCE* within two intervals: one between -0.00769 (inclusive) and 0 (exclusive), and the other between 0 (inclusive) and 0.00769 (exclusive), which is an interval size twice the bin width, based on Beatty *et al.* (2002).

Second, to grasp income-decreasing accounting choice toward zero using *CE*, I focus on reporting only small profits and losses, noted as *Benchmark* in the *EACE* histogram. *Benchmark* is composed of three intervals: $EACEPOS_{i,t}$, $EACENEG_{i,t}$, and $JustZERO_{i,t}$. $EACEPOS_{i,t}$ *is* an indicator variable that takes the value 1 if *EACE* falls within the interval between 0 (exclusive) and 0.00846 (inclusive), and 0 otherwise. In addition, I test reporting small losses ($EACENEG_{i,t}$) and reporting small profits and losses ($JustZERO_{i,t}$) in the *EACE* because I expect there are weak incentives to avoid losses in *EACE* and MEXT recommends that the earnings in PC&Us are desirable to report zero for medium- to long-term results in *EACE*.

In the regression model, the coefficient of *Incentive* measures the relationship between the earnings benchmark and two incentives of earnings management: students and the government. First, it is expected that PC&Us that have a higher level of dependency on tuition have more incentive to avoid loss in *EBCE* because reducing

current and future enrollment directly affects their financial condition. If the relationship is consistent with the prediction of H2a, the coefficient of *Incentive_Student* should be positive. Second, it is expected that the high likelihood of an audit by MEXT would give PC&Us more incentive to avoid loss in *EBCE*. If the relationship is consistent with the prediction of H2b, the coefficient of *Incentive_Government* should be positive. Third, if PC&Us have a large number of calculated surpluses of *cumulative EACE*, PMAC decreases the operating cost subsidies. Therefore, if the relationship is consistent with the prediction of H2c, the coefficient of *Incentive_Government* should be positive.

Similar to previous research models, I control for PC&Us size ($ASSET_{i,t-1}$), growth ($\Delta ASSET_{i,t}$), and profitability ($\Delta CFO_{i,t}$). Consistent with previous research results, if larger PC&Us have higher growth, and are increasingly more profitable or more likely to manage earnings, the coefficients of $ASSET_{i,t-1}$, $\Delta ASSET_{i,t}$, and $\Delta CFO_{i,t}$ should be positive. I also control for the three methods of discretionary accounting choices: working capital accruals ($WCA_{i,t}$), extraordinary items ($EXT_{i,t}$), and capital expenditures ($CE_{i,t}$). As these accruals are likely to be used to manage earnings, the coefficients of these three variables are expected to be positive. In addition, I set the extent to strengthen from bondholders ($BOND_{i,t}$) and donors ($DON_{i,t}$). If the bondholders' and donors' incentives promote the management of earnings toward zero, the coefficients of these three variables are expected to be positive.

4. Sample Selection and Descriptive Statistics

This study includes all available observations from the annual financial database of PC&Us, Toyo Keizai, Inc. The earnings level (change) sample for the period 2009 through 2013 is presented in Table 1, which shows the descriptive statistics of the asset-scaled *EBCE* and *EACE* for the earnings distribution analysis. Panel A (B) shows the *EBCE* (*EACE*) level and Panel C (D) shows the *EBCE* (*EACE*) change.

[Insert Table 1 here]

In Panels A and B, the average *EBCE* level for the sample period is 0.005 and the average *EACE* level is -0.016. This indicates that the *EBCE* level is generally more than the *EACE* level because of the transferring discretionary *CE*, which has an average of 0.021. However, in Panels C and D, the average *EBCE* change for the sample period is 0.003, and the average *EACE* change is 0.003. This indicates that the *EBCE* and *EACE* changes are very similar.

Table 2 summarizes the descriptive statistics of the variables for the regression analysis to test H2a, H2b and H2c. Panel A suggests the statistics in Equation (1) to test loss avoidance. The mean of $EBCEPOS_t$ is 0.588, which indicates that 58.8% of observations in our two interval sample report slight positive earnings in *EBCE*. Panel B suggests the statistics in Equation (2) to test decreasing income. The mean of $EACEPOS_t$, $EACENEG_t$, and $JustZERO_t$ are 0.134, 0.163, and 0.297, which indicates that 29.3% of observations in our full sample report slight profits or losses in *EACE*.

[Insert Table 2 here]

Table 3 suggests the correlation matrix among the variables used in Equations (1) and (2). In the correlation analyses, *Incentive_Student* and *Incentive_Government* are positively associated with *EBCEPOS*, *EACEPOS*, *EBCENEG*, and *JustZERO*, which is consistent with H2a, H2b, and H2c. There are no multicollinearity relationships among the variables used in Equations (1) and (2).

[Insert Table 3 here]

5. Empirical Results

5.1 H1a and H1b results for the existence of earnings management

From the histograms used to test H1a and H1b, the earnings distribution in Japanese PC&Us can be observed. Figure 3 compares the distributions of the scaled *EBCE* (Panel A) and *EACE* (Panel B). First, Panel A shows that there are discontinuities at zero in the scaled *EBCE* distribution in Japanese PC&Us, which suggests that Japanese PC&U managers have incentive to avoid losses in *EBCE*, consistent with H1a.

Second, Panel B demonstrates that there are discontinuities at the right half of the histogram, indicating more than zero in the distribution of the scaled *EACE* in Japanese PC&Us, which suggests that Japanese PC&U managers have incentive to decrease income in *EBCE*, consistent with H1b[9].

[Insert Figure 3 here]

Table 4 summarizes the standardized differences and the earnings management ratio

[9] The histograms are described with histogram intervals widths computed by the Degeorge et al. (1999) method. Using interval sizes 0.5, 1, 2, and 3 times the bin width does not affect our results.

in the distributions. The standardized differences are used to test the significance of the irregularities near the zero *EBCE*, through a statistical test based on Burgstahler and Dichev (1997). The standardized differences tests indicate that irregularities near zero earnings are statistically significant under the 5% levels in only Panel A, which means that the PC&U managers manage the *EBCE* to avoid loss, consistent with H1a.

[Insert Table 4 here]

5.2 Results for H2a and H2b to test for incentives related to loss-avoidance

The results of Panels A and B in Figure 3 suggest that Japanese PC&U managers avoid losses in the *EBCE*. The incentives related to loss-avoidance are tested, and Table 5 summarizes the Probit regression results of Equation (1) to examine H2a and H2b. The regression result in the two interval sample shows that the signs of the coefficient of *Incentive_Student* and *Incentive_Government* are positive and significant at the 1% level, as expected. The results mean that PC&Us with more dependence on tuition or with greater incentive to avoid MEXT audit tend to report slightly positive earnings, which are consistent with H2a and H2b[10].

[Insert Table 5 here]

5.3 Results for H2c to test for incentives related to decreased income

Table 5 reports the results of the Probit model of Equation (2) as to whether the government incentive is related to a decreased income. As predicted by H2c as the decreased income hypothesis, *Incentive_Government* is positive and has less than 1% significance for three intervals ($EACEPOS_t$, $EACENEG_t$, and $JustZERO_t$). These results are consistent with the prediction that PC&U managers with greater incentive to avoid reduction of government grants tend to report surrounding zeros, which supports H2c.

[Insert Table 6 here]

5.4 H3 results for the existence of earnings management changes

To test the earnings changes hypothesis (H3), the distribution of the *EBCE* and *EACE* changes was examined. As presented in Figure 7, the distribution is symmetric, centered on zero, and has no obvious discontinuity below zero. Therefore, standardized

[10] Moreover, the regression result in column (c) shows that the sign of the coefficient of WCAt and EXTt are positive and significant at the 10% level. These results mean that PC&U managers use advances received and extraordinary items to avoid losses.

differences tests in Table 4 indicate that irregularities near zero earnings are not statistically significant in Panels A and B in Figure 7. These results are consistent with H2 and those of Leone and Van Horn (2005), and inconsistent with the for-profit firms case presented by Burgstahler and Dichev (1997). This means that PC&U managers do not manage earnings, similar to for-profit firms, to report earnings growth.

[Insert Figure 4 here]

6. Conclusion

In this study, I investigate whether Japanese PC&U managers manage earnings to avoid losses and decrease income. While Leone and Van Horn (2005) and Eldenburg et al. (2011) investigate U.S. hospitals, it is important to determine other organizations' accounting practices in the nonprofit sector. Japanese PC&U managers have different incentives for earnings management compared to U.S. hospitals, and can use the unique account items of discretionary capital expenditures. I focus on this accounting practice in Japanese PC&Us, and test the existence and incentives of earnings management through earnings distribution analysis in line with Burgstahler and Dichev (1997).

First, I find evidence that the distribution of the *EBCE* surrounding zero is non-normal just below zero. I also find evidence that PC&Us with more dependence on tuition, or with greater incentive to avoid a MEXT audit, tend to report slightly positive earnings. This means that PC&U managers have incentives to avoid losses with contracts with not only current and prospective students, but also the government. Second, I find that the distribution of the *EACE* in the right half of the histogram is non-normal and decreasing. In addition, I also find evidence that PC&U managers with greater incentive to avoid government grant reduction tend to report a surrounding zero. This means that PC&U managers have incentives to decrease income from the Japanese government toward zero in the *EACE*. Finally, I find that not avoiding earnings decreasing changes is consistent with the findings of Leone and Van Horn (2005) due to the lack of stock market influences on nonprofit organizations.

These findings have implications for stakeholders, and especially for the regulators of accounting standards in the nonprofit sector. Although regulators considered amending the Accounting Standards for Incorporated School Institutions and focused on the role of discretionary capital expenditures for managers and financial statement users, they did not have evidence of earnings management in PC&Us using this expenditure. The evidence in this study suggests that if the managers of nonprofit organizations use more

discretionary account items and have specific incentives, they could improve their management of earnings. This signifies that the accounting standards for the nonprofit sector are important for stakeholders, and future research should examine the relationships between each incentive and the extent of earnings management.

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Table 1. Descriptive statistics of the variables for Regression Analysis

Panel A EBCE levels						
	n	mean.	sd.	Q1	med.	Q3
2009	583	0.003	0.027	-0.010	0.004	0.019
2010	622	0.003	0.027	-0.012	0.005	0.018
2011	597	0.004	0.028	-0.012	0.005	0.018
2012	585	0.007	0.025	-0.006	0.007	0.019
2013	586	0.008	0.025	-0.005	0.007	0.022
合計	2,973	0.005	0.027	-0.009	0.006	0.019
Panel B EACE levels						
	n	mean.	sd.	Q1	med.	Q3
2009	583	-0.019	0.030	-0.031	-0.014	-0.001
2010	622	-0.019	0.030	-0.032	-0.015	0.000
2011	597	-0.017	0.029	-0.030	-0.012	0.001
2012	585	-0.014	0.027	-0.027	-0.010	0.002
2013	586	-0.014	0.027	-0.026	-0.010	0.002
合計	2,973	-0.016	0.029	-0.030	-0.012	0.001
Panel C EBCE changes						
	n	mean.	sd.	Q1	med.	Q3
2009	583	0.007	0.033	-0.005	0.002	0.012
2010	622	0.001	0.027	-0.007	0.000	0.009
2011	597	0.002	0.030	-0.009	0.000	0.009
2012	585	0.004	0.024	-0.004	0.002	0.011
2013	586	0.002	0.022	-0.006	0.001	0.009
合計	2,973	0.003	0.027	-0.006	0.001	0.010
Panel D EACE changes						
	n	mean.	sd.	Q1	med.	Q3
2009	583	0.006	0.039	-0.009	0.002	0.017
2010	622	0.001	0.036	-0.011	0.001	0.013
2011	597	0.003	0.035	-0.011	0.002	0.015
2012	585	0.003	0.031	-0.008	0.002	0.015
2013	586	0.001	0.030	-0.011	0.001	0.012
合計	2,973	0.003	0.034	-0.010	0.002	0.015

Note. The *EBCE* (*EACE*) is earnings before (after) capital expenditures scaled by the total assets at the end of the previous year.

Table 2. Descriptive statistics of the variables for Equation (1) and (2)

Panel A: Test variable for Equation (1)								
Variable	N	mean	sd	min	p25	p50	p75	max
$EBCEPOS_t$	844	0.588	0.493	0.000	0.000	1.000	1.000	1.000
Incentive_Student	844	0.131	0.050	0.022	0.096	0.130	0.160	0.364
Incentive_Government	844	0.418	0.494	0.000	0.000	0.000	1.000	1.000
$ASSET_{t-1}$	844	9.983	1.048	7.345	9.287	9.945	10.719	12.711
$\Delta ASSET_t$	844	-0.002	0.019	-0.092	-0.010	-0.003	0.004	0.155
ΔCF_t	844	0.000	0.022	-0.079	-0.010	0.001	0.011	0.090
WCA_t	844	-0.006	0.017	-0.088	-0.005	0.000	0.001	0.014
EXT_t	844	-0.002	0.005	-0.044	-0.002	0.000	0.000	0.020
$BOND_t$	844	0.001	0.001	0.000	0.000	0.000	0.001	0.008
DON_t	844	0.002	0.005	0.000	0.000	0.001	0.002	0.044
Panel A: Test variable for Equation (2)								
Variable	N	mean	sd	min	p25	p50	p75	max
$EACEPOS_t$	2,973	0.134	0.340	0.000	0.000	0.000	0.000	1.000
$EACENEG_t$	2,973	0.163	0.370	0.000	0.000	0.000	0.000	1.000
$JustZERO_t$	2,973	0.297	0.457	0.000	0.000	0.000	1.000	1.000
Incentive_Government	2,973	0.396	0.489	0.000	0.000	0.000	1.000	1.000
$ASSET_{t-1}$	2,973	9.944	1.136	7.345	9.165	9.891	10.715	12.711
$\Delta ASSET_t$	2,973	0.004	0.034	-0.092	-0.014	0.003	0.018	0.155
ΔCF_t	2,973	0.002	0.026	-0.079	-0.010	0.002	0.014	0.090
$CE1_t$	2,973	0.016	0.025	-0.072	0.003	0.011	0.024	0.121
$CE2_t$	2,973	0.000	0.010	-0.052	0.000	0.000	0.000	0.040
$CE3_t$	2,973	0.001	0.006	0.000	0.000	0.000	0.000	0.046
$BOND_t$	2,973	0.001	0.001	0.000	0.000	0.000	0.001	0.008
DON_t	2,973	0.003	0.006	0.000	0.000	0.001	0.002	0.044
$TUITION_t$	2,973	0.141	0.060	0.022	0.101	0.138	0.177	0.364

Note. All variables winsorized by year at the extreme 1% and 99%. $EBCEPOS_{i,t}$ = an indicator variable that takes the value 1 if *EBCE* in the interval between 0 (exclusive) and 0.00769 (inclusive), and 0 otherwise; *Benchmark* = Three Dependent Variables (1) $EACEPOS_{i,t}$ = an indicator variable that takes the value 1 if EACE in the interval between 0 (exclusive) and 0.00846 (inclusive), and 0 otherwise; 2) $EACENEG_{i,t}$ = an indicator variable that takes the value 1 if EACE in the interval between -0.00846 (exclusive) and 0 (inclusive), and 0 otherwise; 3) $JustZERO_{i,t}$ = an indicator variable that takes the value 1 if EACE in the interval between -0.00846 (exclusive) and 0.00846 (inclusive)); $Incentive\_Student_{i,t}$ = educational fees, divided by total assets at the end of the previous year; $Incentive\_Government_{i,t}$ = an indicator variable that takes the value 1 if the number of calculated surpluses of *cumulative EACE* is more than 0, and 0 otherwise; $ASSET_{i,t-1}$ = the natural log of total assets for PC&U *i* at the end of the previous year; $\Delta ASSET_{i,t}$ = first difference in total assets, divided by total assets at the end of the previous year; $\Delta CFO_{i,t}$ = first difference in cash flows, divided by total assets at the end of the previous year; $WCA_{i,t}$ = first difference in advances received, divided by total assets at the end of the previous year; $EXT_{i,t}$ = extraordinary items, divided by total assets at the end of the previous year; $CE_{i,t}$ = the number of transferring capital expenditures of PC&U *i* in period *t* to report the results using the first fund to third fund; $BOND_{i,t}$ = interest cost, divided by total assets at the end of the previous year; $DON_{i,t}$ = donation, divided by total assets at the end of the previous year; $TUITION_{i,t}$ = educational fees, divided by total assets at the end of the previous year, which is identical with $Incentive\_Student_{i,t}$.

Table 3. Correlations matrix among the variables for Equation (1) and (2)

Panel A: Test variable for Equation (1) (n=844)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	$EBCEPOS_t$	1.000	0.095	0.032	0.178	0.339	0.065	0.041	-0.031	0.025	0.051
(2)	Incentive_Student	0.100	1.000	-0.254	-0.171	-0.065	-0.017	0.007	-0.096	0.418	0.114
(3)	Incentive_Government	0.032	-0.275	1.000	0.061	0.151	-0.011	-0.434	0.002	-0.237	-0.449
(4)	$ASSET_{t-1}$	0.171	-0.189	0.045	1.000	0.195	-0.058	-0.008	-0.312	-0.021	0.082
(5)	$\Delta ASSET_t$	0.216	0.065	0.059	0.094	1.000	0.180	-0.205	-0.076	-0.272	-0.023
(6)	ΔCF_t	0.062	0.011	-0.013	-0.086	0.180	1.000	-0.120	0.007	-0.037	-0.073
(7)	WCA_t	0.047	-0.165	-0.492	0.054	-0.063	-0.071	1.000	0.060	-0.012	0.452
(8)	EXT_t	0.023	-0.060	-0.024	-0.202	-0.021	-0.003	0.050	1.000	-0.074	-0.043
(9)	$BOND_t$	-0.001	0.307	-0.151	-0.103	-0.101	-0.022	-0.111	-0.010	1.000	0.101
(10)	DON_t	-0.028	-0.036	-0.170	0.054	-0.017	-0.008	0.183	-0.016	0.023	1.000

Panel B: Test variable for Equation (2) (n=2,973)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	$EACEPOS_t$	1.000	-0.174	0.604	0.044	0.040	0.191	0.132	-0.080	0.027	0.040	-0.047	0.005	0.030
(2)	$EACENEG_t$	-0.174	1.000	0.680	0.081	0.085	0.065	0.078	-0.053	-0.030	-0.004	-0.031	0.047	-0.024
(3)	$JustZERO_t$	0.604	0.680	1.000	0.099	0.098	0.195	0.162	-0.103	-0.004	0.026	-0.060	0.042	0.003
(4)	Incentive	0.044	0.081	0.099	1.000	0.090	0.093	0.009	-0.020	0.052	-0.415	-0.207	-0.465	-0.166
(5)	$ASSET_{t-1}$	0.033	0.083	0.092	0.070	1.000	0.219	-0.028	0.138	0.010	0.011	0.020	0.109	-0.196
(6)	$\Delta ASSET_t$	0.124	0.046	0.130	0.058	0.132	1.000	0.311	0.328	0.084	-0.124	-0.058	0.104	0.237
(7)	ΔCF_t	0.093	0.047	0.107	0.001	-0.058	0.301	1.000	-0.085	-0.038	-0.123	0.018	-0.040	0.124
(8)	$CE1_t$	-0.081	-0.050	-0.101	0.011	0.098	0.342	-0.144	1.000	-0.184	-0.075	0.259	0.109	0.267
(9)	$CE2_t$	-0.004	-0.028	-0.026	0.016	-0.022	0.049	-0.043	-0.267	1.000	0.027	-0.058	0.030	0.012
(10)	$CE3_t$	0.035	-0.013	0.016	-0.499	0.068	-0.095	-0.099	-0.098	0.044	1.000	-0.037	0.422	-0.047
(11)	$BOND_t$	-0.060	-0.065	-0.097	-0.134	-0.086	-0.034	0.034	0.097	-0.020	-0.099	1.000	0.103	0.296
(12)	DON_t	-0.026	0.046	0.018	-0.174	-0.019	0.088	-0.018	0.094	0.008	0.177	0.071	1.000	0.064
(13)	$TUITION_t$	0.027	-0.034	-0.008	-0.160	-0.241	0.243	0.143	0.182	0.037	-0.179	0.196	-0.040	1.000

Note. All variables winsorized by year at the extreme 1% and 99%. The upper-right-hand portion of the table reports the Spearman rank-order correlations, and the lower-left-hand portion presents the Pearson correlations. $EBCEPOS_{i,t}$ = an indicator variable that takes the value 1 if *EBCE* in the interval between 0 (exclusive) and 0.00769 (inclusive), and 0 otherwise; *Benchmark* = Three Dependent Variables (1) $EACEPOS_{i,t}$ = an indicator variable that takes the value 1 if EACE in the interval between 0 (exclusive) and 0.00846 (inclusive), and 0 otherwise; 2) $EACENEG_{i,t}$ = an indicator variable that takes the value 1 if EACE in the interval between -0.00846 (exclusive) and 0 (inclusive), and 0 otherwise; 3) $JustZERO_{i,t}$ = an indicator variable that takes the value 1 if EACE in the interval between -0.00846 (exclusive) and 0.00846 (inclusive)); $Incentive\_Student_{i,t}$ = educational fees, divided by total assets at the end of the previous year; $Incentive\_Government_{i,t}$ = an indicator variable that takes the value 1 if the number of calculated surpluses of *cumulative EACE* is more than 0, and 0 otherwise; $ASSET_{i,t-1}$ = the natural log of total assets for PC&U *i* at the end of the previous year; $\Delta ASSET_{i,t}$ = first difference in total assets, divided by total assets at the end of the previous year; $\Delta CFO_{i,t}$ = first difference in cash flows, divided by total assets at the end of the previous year; $WCA_{i,t}$ = first difference in advances received, divided by total assets at the end of the previous year; $EXT_{i,t}$ = extraordinary items, divided by total assets at the end of the previous year; $CE_{i,t}$ = the number of transferring capital expenditures of PC&U *i* in period *t* to report the results using the first fund to third fund; $BOND_{i,t}$ = interest cost, divided by total assets at the end of the previous year; $DON_{i,t}$ = donation, divided by total assets at the end of the previous year; $TUITION_{i,t}$ = educational fees, divided by total assets at the end of the previous year, which is identical with $Incentive\_Student_{i,t}$.

Table 4. Standardized differences

Figure / Panel	Values for test intervals		Values for standardized differences of remaining intervals			
	Standardized difference to the left of 0	Standardized difference to the right of 0	mean.	med.	min.	max.
Figure 3. Panel A	-1.652 **	0.570	-0.127	0.000	-2.921	2.448
Figure 3. Panel B	-0.718	1.689 **	-0.184	-0.109	-2.251	2.031
Figure 4. Panel A	3.142 ***	-1.006	-0.162	-0.203	-1.893	1.568
Figure 4. Panel B	0.000	2.952 ***	-0.129	0.000	-2.047	2.118

*,**,*** Represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Note. The standardized difference is the difference between the observed and expected number of firm-years in an interval, standardized by the estimated standard deviation of the difference. The standardized difference for the interval immediately to the left of 0 is expected to provide a more powerful test for earnings management to avoid a loss (decrease) in earnings.

Table 5. Probit analysis results for Equation (1)

Independent Variables	Predicted Sign	Equation (1): Dependent variable = $EBCEPOS_t$					
		(a)		(b)		(c)	
Constant		-2.611	***	-2.245	***	-3.187	***
		(-4.892)		(-4.338)		(-5.678)	
Incentive_Student	+			0.259	**	0.436	***
				(2.165)		(3.444)	
Incentive_Government	+	3.866	***			4.982	***
		(3.819)				(4.654)	
$ASSET_{t-1}$	+	0.249	***	0.216	***	0.254	***
		(5.304)		(4.703)		(5.394)	
$\Delta ASSET_t$	+	15.077	***	15.078	***	14.576	***
		(5.417)		(5.492)		(5.239)	
ΔCF_t	+	3.083		2.987		3.676	*
		(1.466)		(1.424)		(1.728)	
WCA_t	+	7.007		2.449		9.017	*
		(1.406)		(0.512)		(1.791)	
EXT_t	+	16.840	*	13.987		18.159	*
		(1.689)		(1.418)		(1.810)	
$BOND_t$	+	12.518		64.116	**	28.084	
		(0.386)		(2.010)		(0.857)	
DON_t	?	-10.882		-11.785		-9.860	
		(-1.200)		(-1.273)		(-1.075)	
YEAR		YES		YES		YES	
N		844		844		844	
pseudo R		0.0811		0.0723		0.0916	

*,**,*** Represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Note. All variables winsorized by year at the extreme 1% and 99%. $EBCEPOS_{i,t}$ = an indicator variable that takes the value 1 if *EBCE* in the interval between 0 (exclusive) and 0.00769 (inclusive), and 0 otherwise; $Incentive\_Student_{i,t}$ = educational fees, divided by total assets at the end of the previous year; $Incentive\_Government_{i,t}$ = an indicator variable that takes the value 1 if the number of calculated surpluses of *cumulative EACE* is more than 0, and 0 otherwise; $ASSET_{i,t-1}$ = the natural log of total assets for PC&U *i* at the end of the previous year; $\Delta ASSET_{i,t}$ = first difference in total assets, divided by total assets at the end of the previous year; $\Delta CFO_{i,t}$ = first difference in cash flows, divided by total assets at the end of the previous year; $WCA_{i,t}$ = first difference in advances received, divided by total assets at the end of the previous year; $EXT_{i,t}$ = extraordinary items, divided by total assets at the end of the previous year; $BOND_{i,t}$ = interest cost, divided by total assets at the end of the previous year; $DON_{i,t}$ = donation, divided by total assets at the end of the previous year;

Table 6. Probit analysis results for Equation (2)

Independent Variables	Predicted Sign	Equation (2): Dependent Variables = Benchmark					
		$EACEPOS_t$		$EACENEG_t$		$JustZERO_t$	
Constant		-2.049	***	-2.281	***	-2.014	***
		(-6.042)		(-7.284)		(-7.169)	
Incentive_Government	+	0.239	***	0.289	***	0.373	***
		(3.051)		(3.929)		(5.586)	
$ASSET_{t-1}$	+	0.067	**	0.117	***	0.122	***
		(2.347)		(4.414)		(5.152)	
$\Delta ASSET_t$	+	8.158	***	2.381	**	6.730	***
		(7.450)		(2.309)		(7.042)	
ΔCF_t	+	1.719		1.688		2.186	**
		(1.313)		(1.380)		(1.984)	
$CE1_t$	+	-12.465	***	-6.747	***	-12.331	***
		(-7.708)		(-4.673)		(-9.121)	
$CE2_t$	+	-10.016	***	-8.701	***	-12.653	***
		(-3.230)		(-3.097)		(-4.902)	
$CE3_t$	+	-18.078	***	-9.427	*	-17.616	***
		(-2.837)		(-1.834)		(-3.690)	
$BOND_t$	?	-54.842	**	-56.823	**	-69.095	***
		(-2.078)		(-2.401)		(-3.304)	
DON_t	?	-9.552		16.239	***	8.430	.
		(-1.450)		(3.409)		(1.811)	
$TUITION_t$	?	0.885		0.344		0.793	
		(1.513)		(0.634)		(1.619)	
YEAR		Yes		Yes		Yes	
N		2,973		2,973		2,973	
pseudo R		0.089		0.052		0.115	

*,**,*** Represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Note. All variables winsorized by year at the extreme 1% and 99%. *Benchmark* = Three Dependent Variables (1) $EACEPOS_{i,t}$ = an indicator variable that takes the value 1 if EACE in the interval between 0 (exclusive) and 0.00846 (inclusive), and 0 otherwise; 2) $EACENEG_{i,t}$ = an indicator variable that takes the value 1 if EACE in the interval between -0.00846 (exclusive) and 0 (inclusive), and 0 otherwise; 3) $JustZERO_{i,t}$ = an indicator variable that takes the value 1 if EACE in the interval between -0.00846 (exclusive) and 0.00846 (inclusive)); $Incentive\_Government_{i,t}$ = an indicator variable that takes the value 1 if the number of calculated surpluses of *cumulative EACE* is more than 0, and 0 otherwise; $ASSET_{i,t-1}$ = the natural log of total assets for PC&U *i* at the end of the previous year; $\Delta ASSET_{i,t}$ = first difference in total assets, divided by total assets at the end of the previous year; $\Delta CFO_{i,t}$ = first difference in cash flows, divided by total assets at the end of the previous year; $CE_{i,t}$ = the number of transferring capital expenditures of PC&U *i* in period *t* to report the results using the first fund to third fund; $BOND_{i,t}$ = interest cost, divided by total assets at the end of the previous year; $DON_{i,t}$ = donation, divided by total assets at the end of the previous year; $TUITION_{i,t}$ = educational fees, divided by total assets at the end of the previous year. *t.*

Figure 1. Example Japanese PC&U Balance Sheet and Income and Expense Statement

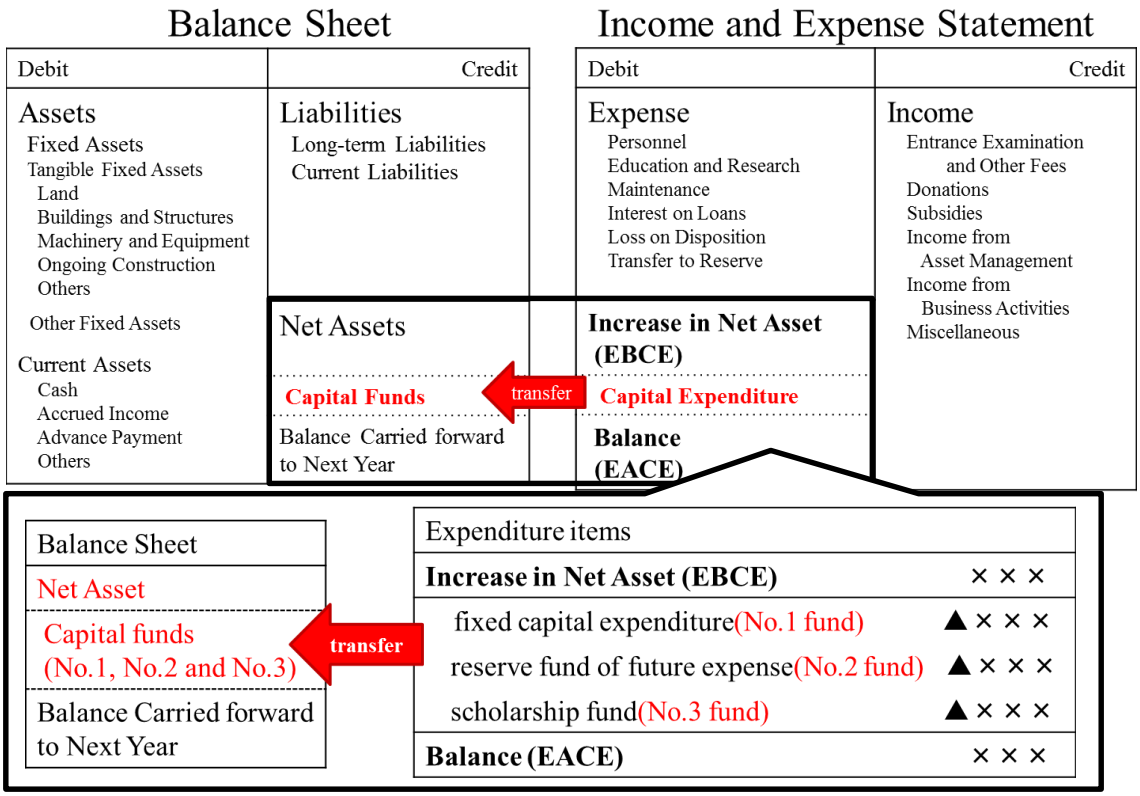


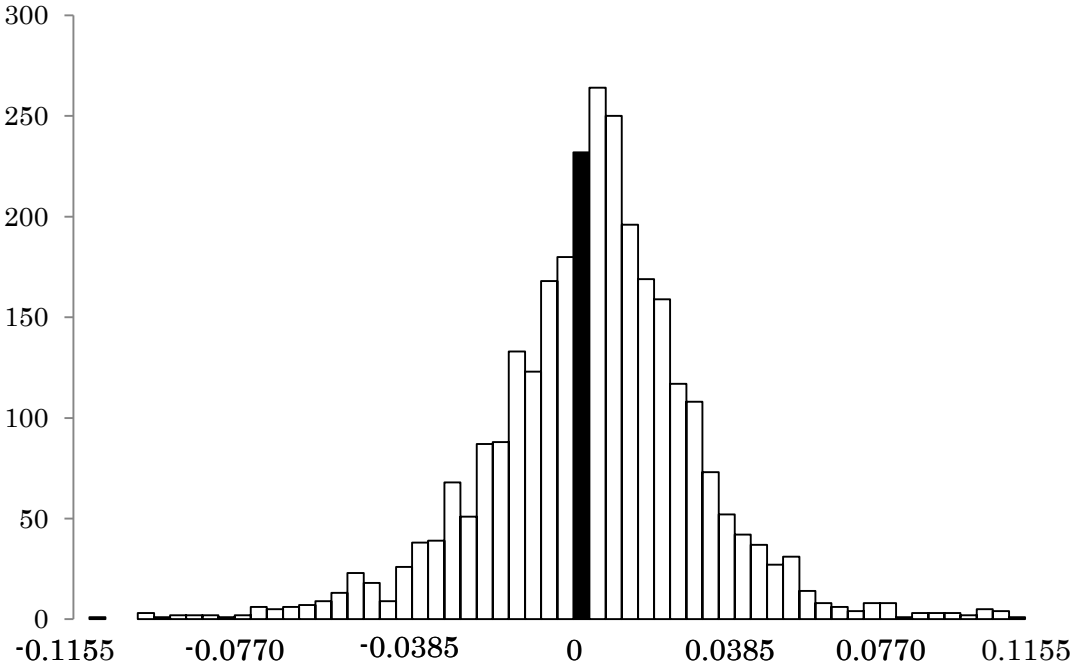
Figure 2. Incentives for earnings management in PC&Us

	Stakeholders of nonprofit organizations	Incentives for earnings management	Main indicator	Types of earnings management
(a)	Current or Prospective students	Avoid loss of students	*EBCE*	Loss-avoidance
(b)	Government (MEXT and PMAC)	Avoid governmental audit	*EBCE*	Loss-avoidance
		Avoid decreased government grants	*EACE*	Income-Decreasing
(c)	Board of trustees	Decreased chance of termination	*EBCE*	Loss-avoidance
	Bondholders	Decreased bond costs	*EBCE*	Loss-avoidance
	Donors	Avoid loss donations	*EACE*	Income-Decreasing

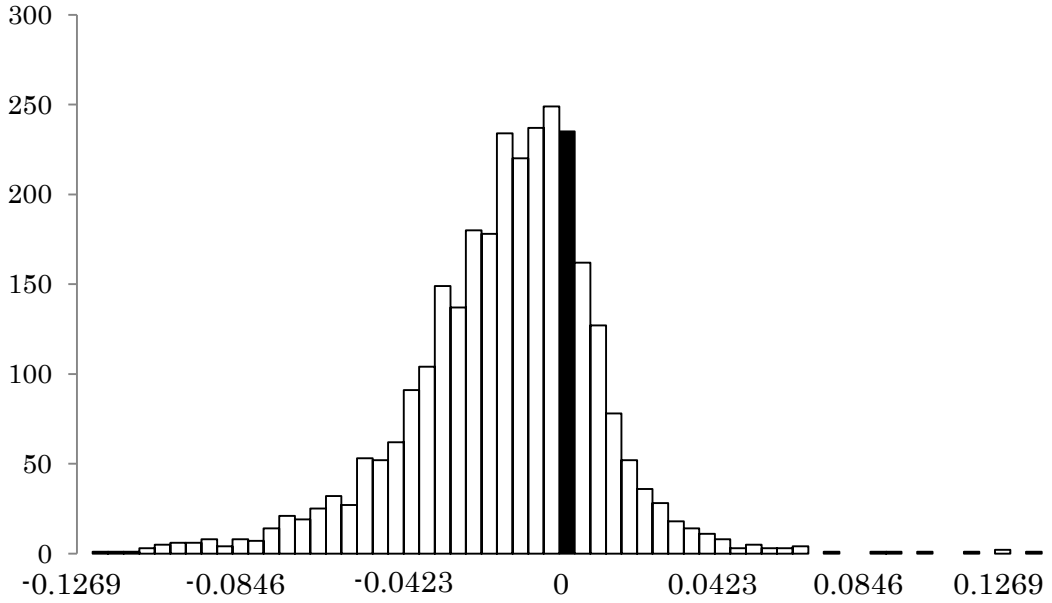
Note. The *EBCE* (*EACE*) is earnings before (after) capital expenditures scaled by the total assets at the end of the previous year.

Figure 3. The distribution of the scaled *EBCE* and *EACE*

Panel A: The distribution of *EBCE* (n=2,973)



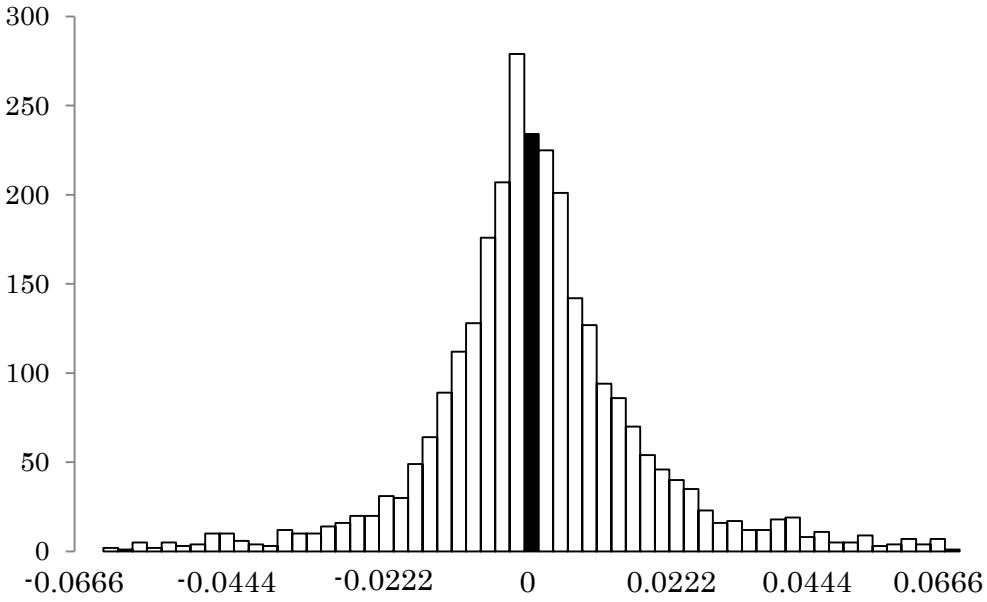
Panel B: The distribution of *EACE* (n=2,973)



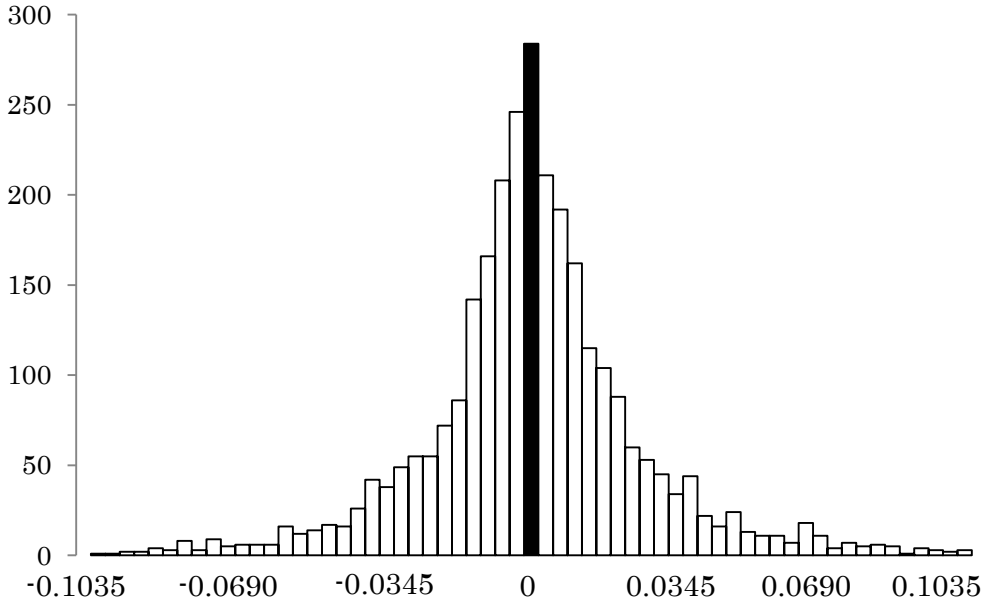
Note. In Panel A (B), the distribution interval widths are 0.00385 (0.00423) calculated as in Degeorge *et al.* (1999). The first interval to the right of 0 contains observations in the [0.00000, 0.00385 (0.00000, 0.00423)], the second interval contains [0.00385, 0.00770 (0.00423, 0.00846)].

Figure 4. The distribution of the scaled *EBCE* and *EACE* changes

Panel A: The distribution of the *EBCE* changes (n=2,973)



Panel B: The distribution of the *EACE* changes (n=2,973)



Note. In Panel A (B), the distribution interval widths are 0.00222 (0.00345) calculated as in Degeorge *et al.* (1999). The first interval to the right of 0 contains observations in the [0.00000, 0.00222 (0.00000, 0.00345)], the second interval contains [0.00222, 0.00444 (0.00345, 0.00690)].