

Earnings Management, Earnings Manipulation: Evidence from Taiwanese Corporations

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ABSTRACT: Unlike prior literature focusing on capital markets and/or contracting motivations of earnings management, this study investigates characteristics of earnings management and earnings manipulation among Taiwanese firms in the context of the “fraud triangle” of TSAS No. 43. The findings indicate that the earnings manipulators were more motivated to commit fraud than the control group by pressures tied to economic cycles, equity issuance, achievement of management's earnings expectations, and bonus and debt covenant contracts. On average, earnings manipulators were found to have fewer independent directors sitting on their boards, to have fewer independent supervisors on their supervisory boards, and to hold smaller percentages of their firms' equity ownership. A relationship was noted between incentives/pressures and opportunities and more aggressive attitudes and rationalizations expressed by earnings manipulators.

Key Words: *earnings management; earnings manipulation; incentives and pressures; opportunities; attitudes and rationalizations*

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INTRODUCTION

Earnings management is prevalent in financial report preparation, with generally accepted accounting principles (GAAP) providing considerable flexibility in terms of accounting methods and estimates. Since GAAP-compliant earnings management is acceptable and lawful, most executives manage their companies' earnings to achieve specific objectives (e.g., sustaining firm value), but some executives take excessively aggressive approaches to inflating profitability and firm value in the form of channel stuffing, premature revenue recognition, expense recognition deferral, and recognition and measurement abuse. These unlawful behaviors are referred to as *earnings manipulation*. A list of infamous firms that have been charged with materially misrepresenting their financial positions and causing stakeholders to lose thousands of billions of dollars include Enron, WorldCom, MCAFEE, and Tyco, etc.

A currently hot earnings quality issue concerns stakeholder recognition of earnings manipulation in light of unavoidable earnings management in financial statement preparation. The literature contains many descriptions of tactics used by earnings managers (under the supervision of healthy corporate governance boards) who are motivated by pressure from capital markets and/or contracts to minimize, maximize, or otherwise smooth earnings to achieve specific objectives. However, researchers frequently fail to a) distinguish between incentives for earnings management and earnings manipulation, b) openly discuss the conditions under which earnings managers are encouraged to cross red lines, or c) explore differences in aggressive attitudes and rationalizations between earnings managers and manipulators. The goal of the present study is to compare the firm characteristics of earnings management and manipulation in context of what TSAS No. 43 refers to as the "fraud triangle": incentives and pressures,

opportunities, and attitudes and rationalizations.¹

In terms of incentives and pressures, the collected data were used to test a hypothesis that earnings manipulators have greater motivation than the control group to avoid reporting losses or earnings decreases in the face of certain economic forces, future equity offerings, and pressure from managers to meet or exceed earnings expectations. Also tested was a hypothesis that earnings manipulators have greater motivation than the control group in the form of bonus guidelines and debt covenant contracts to report positive earnings or earnings increases. In terms of opportunities, data were used to test a hypothesis stating that compared to the control group, earnings manipulators have greater leeway to inflate earnings when their boards of directors and supervisory boards have fewer independent members and when firm executives hold greater managerial ownership. In terms of attitude and rationalization, the tested hypothesis stated that earnings manipulators are more aggressive than the control group in both areas.

Three significant findings from this research are a) compared to the control group, earnings manipulators face greater capital market and contract motivations to manage earnings; b) earnings manipulators are more inclined to appoint fewer independent directors to their boards, to appoint fewer independent supervisors to their supervisory boards, and to possess considerably less managerial ownership; and c) earnings manipulators are more likely than the control group to express aggressive attitudes and rationalizations to manage earnings changes before interest

¹ Statement of Auditing Standards (SAS) No. 99 is entitled "Consideration of Fraud in a Financial Statement Audit." It specifies three conditions for fraud occurrences: incentives and pressures, opportunities, and attitude and rationalization. Together they are referred to as the "fraud triangle." Since financial statement fraud is closely associated with earnings manipulation, the author examined firm characteristics of earnings management versus earnings manipulation in the context of the fraud triangle. On September 1, 2006, the Auditing Standard Board of the Accounting Research and Development Foundation established and issued Statement of Auditing Standards No. 43 (TSAS No. 43), also entitled "Consideration of Fraud in a Financial Statement Audit". Similar to the U. S. SAS No. 99, TSAS No. 43 delineates that fraud occurrence, either financial reporting fraud or misappropriation of assets, is attributed to incentive/pressure, opportunity, and attitude and rationalization. The present study attempted to explore firm characteristics of earnings management versus earnings manipulation in the Taiwan setting from the perspective of TSAS No. 43 conceptual framework.

and taxes, after taxes, or both. In terms of contributions to the literature, this study is the first to apply the TSAS No. 43 conceptual framework to examine the respective characteristics of earnings management and earnings manipulation, and the first to evaluate attitudes and rationalizations to manage or manipulate earnings changes by analyzing unexplained variations of unexpected earnings changes.

In the following section this study will discuss the concepts used in the development of the seven alternative hypotheses and review the results of previous studies on the impact of incentives/pressures and opportunities on earnings management as well as research on the time-series properties of earnings. Research methods are described in the third section, findings in the fourth section, and conclusions in the final section.

HYPOTHESIS DEVELOPMENT

Based on the content of TSAS No. 43, earnings management characteristics were modeled for this research as:

Earnings Management (EM)

$= f(\text{incentives and pressures, opportunities, attitude and rationalization}) \text{ ----- (1)}$

Incentives and Pressures

The two competing explanations for earnings management incentives and pressures are capital market motivations and contracting motivations (Healy and Wahlen, 1999). The first states that the widespread use of accounting information by investors and financial analysts for stock valuation creates incentives for executives to manage earnings in order to influence short-term stock performance. The second stresses the use of accounting data to monitor and regulate contracts between firms and their stakeholders. Explicit and implicit executive compensation contracts are used to align executive and shareholder incentives, and debt covenants are written

to prevent executive actions that might be deemed objectionable by current or potential creditors. Contracting motivation researchers have suggested that these contracts create incentives for earnings management due to the potential for compensatory committee and creditor costs.

Capital Market Motivation - Economic Cycle

The first three hypotheses address capital market motivations that drive executives to manage earnings. A firm's earnings volatility is positively correlated with *economic cycles*. Sales and earnings grow during periods of economic prosperity, resulting in positive net income or earnings increases; the opposite occurs during periods of economic recession. Whereas the control group moves in tandem with economic cycles, earnings manipulators avoid earnings decreases or net losses regardless of the general economic environment. The first alternative hypothesis states that all other factors being constant, earnings manipulators are more inclined than the control group to avoid disclosing net losses or earnings decreases during times of economic depression or recession and to enhance earnings performance during times of prosperity:

H₁: *Ceteris paribus*, earnings manipulators exhibit greater intention to avoid reporting net losses or earnings decreases than the control group during all parts of an economic cycle.

Capital Market Motivation - Equity Offering

In light of the well-established link between earnings and stock prices (e.g., Ball and Brown, 1968; Beaver, Lambert and Morse, 1980; Easton and Zmijewski, 1989, etc.), earnings management activity seems particularly plausible around *equity offer* dates (when recently reported earnings are most likely to influence issue proceeds and share values). There is strong evidence showing a positive relationship between earnings reported by firms issuing stock and

abnormal stock returns, and a negative relationship between reported earnings and abnormal post-offering stock returns (Aharony, Lin and Loeb, 1993; DuCharme, 1994; DuCharme, Malatesta and Sefcik, 2004; Teoh and Wong, 1998). All other factors being constant, earnings manipulators are more inclined to report positive earnings or earnings increases in the year of or preceding an equity offering to create an illusion of firm growth and a need to raise funds. Accordingly, the second alternative hypothesis is stated as:

H₂: *Ceteris paribus*, earnings manipulators have stronger intention to report positive earnings or earnings increases than the control group in the year of or preceding an equity offering.

Capital Market Motivation - Achievement of Earnings Prospectus

Investors consult *earnings forecasts* as one method for determining if a firm has the potential to achieve or surpass analysts' consensus estimates. All public companies are required to voluntarily publish an earnings prospectus quarterly, semiannually, or annually. While executives tend to manage earnings to meet analysts' forecasts and expected share prices (Abarbanell and Lehavy, 1998), investors tend to view 100% or greater achievement of executives' earnings prospectus as good performance indicators. All other factors being equal, earnings manipulators who feel pressured to show strong earnings potential are more likely to fully meet or exceed an executive earnings prospectus. The third alternative hypothesis is therefore stated as:

H₃: *Ceteris paribus*, earnings manipulators have greater motivation than the control group to report earnings that achieve or surpass their executives' earnings prospectus.

Contracting Motivation - Bonuses

The next two hypotheses address contracting motivation forces. General compensation policies determine *bonuses* based on a specified percentage of reported after-tax net income (Healy, Kang and Palepu, 1987; Healy and Palepu, 1990). In accordance with the observation that executives have access to private information on their firms' net income prior to earnings management, Healy (1985) assumed that executives would manage net income figures so as to maximize their bonuses. Subsequent studies have shown that earnings managers tend to avoid reporting net loss or earnings decreases in consideration of their bonuses. Earnings manipulators share the same motivation, but also show a tendency to present information showing that their firms maintain or surpass previous earnings performance. Accordingly, the fourth alternative hypothesis is stated as

H₄: *Ceteris paribus*, earnings manipulators have stronger intention to avoid reporting net losses or earnings decreases than the control group for the purpose of earning higher bonuses.

Contracting Motivation -Debt Covenants

Debt covenants are tied to a public company's ability to borrow funds. Creditors analyze net income as representative of future net cash inflows, and view a firm's ratio of total debt to total capital as a sign of financial stability; 50% is considered a critical threshold. Creditors are more likely to make loans to firms with higher net incomes and lower total debt-to-capital ratios that are well below 50%. To improve access to capital, executives tend to manage earnings in a manner that leads creditors to believe that a firm has strong potential to generate future net cash inflow (Dechow, Sloan and Sweeney, 1996; Sweeney, 1994). Earnings manipulators are more likely to be found among firms that have ratios that exceed 50%, which makes them default risks in the eyes of creditors. The fifth alternative hypothesis addresses the assumed tendency among

manipulators to use a variety of tactics to present a picture of significant net cash inflow potential:

H₅: *Ceteris paribus*, earnings manipulators who assume higher total debt-to-total capital ratios have stronger intentions than the control group to report positive earnings or earnings increases.

Opportunities

The next hypothesis addresses perceived opportunities to manipulate earnings among executives working with inefficient boards of directors and supervisory boards. According to Dechow et al. (1996), firms that are subject to SEC enforcement actions are significantly less likely to have independent directors or to have an independent director serving on an audit committee. Others have noted that SEC-accused firms are more likely than their non-accused counterparts to have a) significantly lower percentages of independent directors sitting on their boards, b) managers with significant equity holdings, and c) significantly smaller percentages of independent directors sitting on their audit committees (Abbott, Park and Parker, 2000; Beasley, 1996; Carcello, Hermanson, Neal and Riley, 2002; Wallace and Cravens, 1997).

Due to differences in U.S.A. and Taiwan corporate governance systems, the supervisory board of Taiwanese public companies serves the same purpose as the audit committees of U.S. public companies. According to a 2005 amendment to ROC Company Law, “a supervisor shall not be concurrently a director, a managerial officer or other staff or employee of the company” (Article 222). Their main responsibility is to supervise the execution of business operations. At any time they have the power to investigate the business and financial condition of a company, examine its account books and documents, and request directors or managers to report on the state of the firm (Article 218). In addition, supervisors audit statements and records prepared for

submission to shareholders by boards of directors and report their findings and opinions at shareholder meetings. In performing their functional duties, supervisors may appoint certified public accountants to perform external audits on their behalf (Article 219).

Therefore, the sixth alternative hypothesis addresses corporate governance differences between earnings manipulators and the control group in terms of a) seats of independent directors and supervisors relative to all seats of the boards and b) executive equity holdings:

H₆: *Ceteris paribus*, earnings manipulators have lower percentages of independent directors sitting on their boards of directors, have lower percentages of independent supervisors sitting on their supervisory boards, and own higher percentages of executive equity holdings compared to the control group.

Attitudes and Rationalizations

Generally, companies are more likely to save for a better tomorrow by smoothing or minimizing current reported net income. When “taking a bath,” companies write off assets and set up provisions for expected future costs, which enhance the potential for reported net income in the future. Income minimization (considered a less extreme form of taking a bath) includes tactics for regulation or tax relief during periods of high profitability. Examples of profit minimization include writing off capital assets and intangibles, expensing advertising and R&D expenditures, and adopting successful efforts to account for oil and gas exploration costs. Income smoothing consists of the conservative usage of GAAP to reduce reported net income volatility. In contrast, earnings manipulators frequently use such tactics as abusing internally developed R&D expenditures, restructuring charges, and recognizing revenues prematurely. Such activities increase current reported net income while sacrificing future profit.

Both earnings management and earnings manipulation can affect the time-series property of

earnings patterns. Prior researchers note that changes in current-period earnings are not only affected by prior-period earnings changes, but also by other unexpected factors (Ball and Brown, 1968; Kormendi and Lipe, 1987). Their earnings pattern model is expressed as

$$\Delta E_{j,t} = \alpha_0 + \sum_{i=1}^n \alpha_i \Delta E_{j,t-i} + UEC_{j,t} \dots \dots \dots (2),$$

where E_t represents the dollar change in earnings reported for period t , E_{t-1} represents the dollar change in earnings reported for period $t-1$, and UEC_t stands for “unexpected earnings change” (also referred to as earnings innovations) that occur during period t . Earnings persistence can result from such specific firm characteristics as business strategy, capital allocation strategy, customer and supplier relationships, production technology innovation, accounting policy consistency, dividend policies, etc. However, researchers such as Collins and Kothari (1989) have observed that investors generally do not respond very strongly to earnings persistence.

Unexpected earnings changes may be induced by unsystematic risk factors (e.g., economic, industry-specific, political, equity issuance, and pressure to achieve analyst or management expectations) or opportunities and be affected by earnings management in compliance with GAAP and/or earnings manipulation. When combined with formula (1), determinants of unexpected changes in earnings can be expressed as functions (3), (3a), (3b), and (3c):

$$UEC_t = f(\text{Incentives and pressures}_t, \text{Opportunities}_t, \text{Attitudes and rationalizations}_t) \dots (3)$$

$$\text{Incentives and pressures}_t = f(\text{unsystematic risk factor}_t) \dots \dots \dots (3a)$$

$$\text{Opportunities}_t = f(\text{opportunity}_t) \dots \dots \dots (3b)$$

$$\begin{aligned} &\text{Attitudes and rationalizations}_t \\ &= f(\text{earnings managed in compliance with GAAP} + \text{earnings manipulated})_t \dots \dots (3c) \end{aligned}$$

True earnings are affected by unsystematic risk factors that motivate executives to maintain

or exceed earnings targets via the legal and proper use of GAAP. If the options provided by GAAP cannot make up the deficit between true and targeted earnings, executives may violate those practices by inflating earnings with assistance from their inefficient corporate governance bodies. Accordingly, formula (3) can be transformed into formula (4):

$$UEC_{j,t} = \beta_0 + \sum \beta_i \times (\text{unsystematic risk factor})_{j,t} + \sum \beta_k \times (\text{opportunity})_{j,t} + v_{j,t} \dots \dots \dots (4),$$

where i and $k \in (1, \dots, t)$; $j \in \{\text{firm 1, firm 2, \dots, firm N}\}$; $v_{j,t}$ represents the disturbance resulting from earnings management or manipulation. Prior researches assess extent of earnings management with discretionary total accruals or discretionary current accruals (Dechow, Richardson, and Tuna, 2003; Jones, 1991; Rangan, 1998; Sloan, 1996; Teoh, Welch, and Wong, 1998a and 1998b; Xie, 2001.) However, it lacks objectivity to determine discretionary accruals by excluding changes in cash sales and property, plant and equipments from total accruals, and is arbitrary to measure total accruals with working capital items only. Thus, the present study attempts to assess magnitudes of executives' earnings management by analyzing the time-series properties of earnings and after considering impact of other factors—that is, using “ $v_{j,t}$ ” as a proxy for attitude toward and rationalization for earnings management, with higher values indicating greater aggressiveness. The seventh alternative hypothesis assumes that all other factors being constant, earnings manipulators will have higher aggressiveness (higher $v_{j,t}$ values) than the control group:

H_7 : *Ceteris paribus*, earnings manipulators express more aggressive attitudes and rationalizations toward earnings management than the control group.

METHOD

Sample Selection

A total of 90 public firms were identified from a database managed by the Securities and

Futures Bureau of the R. O. C. Financial Supervisory Commission. All had either been indicted by the Bureau or convicted by the ROC Supreme Court of materially misrepresenting financial reports between 1999 and 2004, pursuant to Articles 20² and 20-1³ of the R.O.C. Securities and Exchange Act. Next, 1,051 public firms were selected from the Taiwan Securities and Exchange Corporation database according to three criteria: they matched the indicted/convicted firms in terms of industry type, they had publicly available data, and they were never accused of misrepresenting information on financial reports during the same 1999-2004 period.

As shown in Table 1, firms in the Taiwanese electronics industry accounted for 41% of the earnings manipulator sample, followed by the construction and real estate development (16%) and textile and fiber manufacturing industries (12%). The Bureau data indicate that the highest probability of earnings manipulation during the specified period was in the Taiwanese construction and real estate development industry, with 21 of 100 firms (21%) engaging in earnings management practices in violation of GAAP. It was followed by the food (20%) and the textile and fiber industries (15%).

(Insert Table 1 here)

² Article 20 of the R.O.C. Securities and Exchange Act states: “During the public offering, issuing, private placement, or trading of securities, there shall be no misrepresentations, frauds, or any other acts which are sufficient to mislead other persons. The financial reports or any other relevant financial or business documents filed or publicly disclosed by an issuer in accordance with this Act shall contain no misrepresentations or nondisclosures. Anyone who violates the provisions of paragraph 1 shall be held liable for damages sustained by bona fide purchasers or sellers of the said securities” (<http://eng.selaw.com.tw/>).

³ Article 20-1 of the R.O.C. Securities and Exchange Act states: “When the essential content of the financial reports or relevant financial or business documents referred to in paragraph 2 of the preceding article, or financial reports filed or publicly disclosed pursuant to Article 36, paragraph 1 contain misrepresentations or nondisclosures, the persons under the following subparagraphs shall bear liability for damages suffered by the bona fide purchasers, sellers, or holders of securities issued by the issuer:

1. The issuer and its responsible person.
2. Employees of the issuer who placed their signatures or seals on the financial report or the financial or business document in question.

With the exception of the issuer and the issuer's chairman and general manager, a person under any paragraph of the preceding subparagraph shall not be liable for damages when he or she can demonstrate that they exercised all due diligence and had legitimate cause to believe that the reports or documents contained no misrepresentations or nondisclosures.” (<http://eng.selaw.com.tw/>).

Variables

For variable data collection, 452 valid observations of individual test variables for 90 earnings manipulators were collected for five years leading up to the period in which they were charged.⁴ In all, 5,254 valid observations were collected for 1,051 earnings managers for the same time period. Definitions and measures of all test variables and their data sources are presented in Table 2.

(Insert Table 2 here)

To examine attitudes and rationalizations for managing earnings changes ($V_{(CEBIT)i,t}$ and $V_{(CNI)i,t}$), an effort was made to determine unexpected earnings changes ($UEEBIT_{i,t}$ and $UENI_{i,t}$) with ARIMA (2,1,0) time series models.⁵ Data for individual earnings manipulators were collected for 12 to 17 consecutive reporting periods prior to their being charged with misrepresentation.⁶ Data for each earnings manager were collected over the same time horizon—from 1988 to 2004. Finally, a multivariate regression was constructed with either unexpected change in earnings before interest and taxes (EBIT) or unexpected change in after-tax net income (NI) with incentive or pressure variables (i.e., economic cycle, equity offering, earnings forecast achievement, dollar amount of bonus-to-after tax net income, and total debt-to-capital ratio) and opportunities variables (i.e., percentage of executive equity holdings and percentage of

⁴ The five-year period is the maximum for acts of financial report misrepresentation by firms in the study sample. Some Taiwanese electronics companies were charged with materially misrepresenting financial reports for five years beginning with the year of the initial public offering to the year of accusation by the Securities and Futures Bureau of the ROC Financial Supervisory Commission.

⁵ Based on Kormendi and Lipe's (1987) earnings time-series property theory, changes in EBIT and NI time series models were developed for individual sample firms using the ARIMA (2,1,0) time series processes:

$$\Delta EBIT_{i,t} = \alpha_0 + \alpha_1 \Delta EBIT_{i,t-1} + \alpha_2 \Delta EBIT_{i,t-2} + \Delta UEEBIT_{i,t} \dots \dots \dots (2a)$$

$$\Delta NI_{i,t} = \alpha_0 + \alpha_1 \Delta NI_{i,t-1} + \alpha_2 \Delta NI_{i,t-2} + \Delta UENI_{i,t} \dots \dots \dots (2b)$$

Compared with Beaver et al.'s (1980) ARIMA (0,1,1) model and Easton and Zmijewski's (1989) ARIMA (1,0,0) model, the ARIMA (2,1,0) model proved to be a better fit for this study's earnings observations, since it eliminated the significant residuals autocorrelation problems that plagued the other two models.

⁶ Limited by availability, the author collected data for 12 to 17 consecutive time-series earnings for the earnings manipulator sample.

independent directors and independent supervisors sitting on the boards of a firm). $v_{(CEBIT)_{i,t}}$ and $v_{(CND)_{i,t}}$ were determined by subtracting incentive/pressure and opportunity variables from unexpected earnings changes in a regression.

RESULTS

Descriptive Statistics

(Insert Table 3 here)

Data on mean, standard deviation, and test variable quartiles based on all observations of earnings manipulators and managers are presented in Table 3; results from variance tests⁷ are shown in Table 4. As seen in Table 4, earnings manipulators increased their firms' NI an average of 0.96 units per dollar during the period of interest—significantly higher than the 0.12 units per dollar reported by earnings managers. Within the specified interval of change in EBIT [-67.5, 77.5], earnings manipulators had a stronger tendency to increase their EBIT values within a range of 0-10 units per dollar ($\tau = 7.32$)⁸ compared to 0-5 units per dollar ($\tau = 7.64$) for earnings managers (Fig. 1). Within the specified interval of change in NI [-85, 110], both earnings manipulators and managers showed similar intentions to increase NI values within a range of 0-10 units per dollar, but earnings manipulators reported higher proportions of positive change in

⁷ Since the original earnings manipulator and earnings manager data were not normally distributed, two variance tests (Levene's and Kolmogorov-Smirnov) were performed to determine if the two independent samples came from the same population.

⁸ DeGeorge, Patel and Zeckhauser (1999) developed the τ test statistic to examine earnings management as a threshold point phenomenon. They suggest that the probability distribution of earnings becomes discontinuous if they are managed upward toward a threshold point, and developed a null hypothesis (H0) that earnings probability distribution is continuous and smooth at that threshold point. The τ statistic is computed as: $\tau_n = \{\Delta p(x_n) - \text{mean} [\Delta p(x_i)]\} / \text{standard deviation} [\Delta p(x_i)]$, where $\Delta p(x_i) \equiv (\Delta p(x_n) - \Delta p(x_{n-1}))$; $\Delta p(x_i)$ represents the proportion of the observations lying in the bins covering $[(x_0, x_1), (x_1, x_2), \dots, (x_n, x_{n+1})$, and so on]. Their findings indicate that compared to negative τ values outside the threshold point, the τ value at the threshold point is positive, the largest, and marked by a significant distribution jump. They used the τ value to examine earnings management intention, assuming that relative to other τ values, the bin with a positive τ value represents executive intention to manage earnings upward to a specified point/interval; the greater the τ value, the stronger the intention to manage earnings upward.

NI compared to earnings managers. The NI change distribution for earnings manipulators is both longer and right-tailed.

(Insert Table 4 here)

(Insert Figure 1 here)

Incentives/Pressures Hypotheses Testing Results

The data in Table 5 indicate that earnings manipulators had a greater tendency to report significantly unusual changes in after-tax net income during all parts of an economic cycle. During periods of economic recession (Monitoring Indicator of Economic Cycle (MI) ≤ 17), earnings manipulators disclosed significantly greater decreases in EBIT and increases in NI than the control group. During periods of transition from economic depression ($17 < \text{MI} \leq 23$) to stability ($23 < \text{MI} \leq 32$), earnings manipulators reported significantly smaller increases in EBIT and greater increases in NI than the control group. As the cycle moved into a period of prosperity ($32 < \text{MI} \leq 38$), earnings manipulators reported significantly greater increases than the control group for both EBIT and NI.

(Insert Table 5 here)

(Insert Figure 2 & Figure 3 here)

The data show that the control group tend to report *symmetric* EBIT change probability distributions and changes in NI, and that earnings manipulators tend to report *asymmetric* EBIT change probability distributions and changes in NI in all parts of an economic cycle (Figs. 2 and 3). During periods of economic recession, earnings manipulators tend to have greater intention to manage EBIT upward within a range of 0-7.5 units per dollar ($\tau = 5.34 > 4.79$) and to manage NI upward within a range of 0-3.75 units per dollar ($\tau = 5.93 > 5.31$). As the cycle moves toward economic depression, earnings manipulators show greater intention to manage EBIT upwards

within a range of 0-2.5 units per dollar ($\tau = 7.24 > 6.62$) and to manage NI upwards within a range of 0-5.0 units per dollar ($\tau = 6.03 > 5.77$). During periods of stability, earnings manipulators show equally strong intention to manage EBIT upward within a range of 0-6.4 units per dollar ($\tau = 4.79$ versus 4.81) and to manage NI upward within a range of 0-7.5 units per dollar ($\tau = 4.25$ versus 4.29). During periods of prosperity, earnings manipulators show greater intention to manage EBIT upward within a wider range of 0-10.0 units per dollar ($\tau = 7.79 > 7.76$) and to manage NI upward within a smaller range of 0-5.0 units per dollar ($\tau = 7.26 > 7.11$). According to these findings, the first alternative hypothesis (H_1) is not rejected—in other words, *ceteris paribus*, earnings manipulators exhibit significantly greater intention to avoid reporting net losses or earnings decreases than the control group during all parts of an economic cycle.

Study results show that earnings manipulators reported larger positive EBIT and NI values than the control group in pre-equity offering years, but smaller positive EBIT and NI than the control group during equity offering years (Table 6). Earnings manipulators had stronger intention to report significantly higher NI growth than the control group (118% versus 13%) via average mark-ups ranging from 0-5.0 units per dollar in pre-equity offering years. During equity offering years, earnings manipulators had an equally strong intention to report significantly larger NI increases (8.0%) than the control group (7.7%) by increasing the markup range by an average of 0-5.0 units to 1.25-6.25 (versus 0-5.0 units to 1.25-3.75) (Table 6, Fig. 5). The second alternative hypothesis (H_2) is therefore also not rejected, since the data indicate that *ceteris paribus*, earnings manipulators have stronger intention to report positive earnings or earnings increases than the control group in the year of or preceding an equity offering.

(Insert Table 6 here)

(Insert Figure 4 & Figure 5 here)

According to the findings, earnings manipulators achieved or surpassed executive earnings forecasts by an average of 110%, significantly higher than the 74% for the control group (Table 7). Earnings manipulators had stronger intention to surpass earnings forecasts by [125 to 625%] compared to [-125 to 375%] for the control group (Fig. 6). Thus, the third alternative hypothesis (H₃) is not rejected: *ceteris paribus*, earnings manipulators have greater motivation than the control group to report earnings that achieve or surpass their management earnings prospectus.

(Insert Table 7 here)

(Insert Figure 6 here)

As indicated by the data in Table 8, earnings manipulators earned significantly larger bonuses than the control group — 2.88% versus 1.82% of reported after-tax net income. The findings also indicate that earnings manipulators had greater incentive than the control group to report higher NI values and higher NI increases for the purpose of earning larger bonuses (Table 4, Fig. 1). Accordingly, the fourth alternative hypothesis is not rejected, since *ceteris paribus*, earnings manipulators have stronger intention to avoid reporting net losses or earnings decreases than the control group for the purpose of collecting larger bonuses.

(Insert Table 8 here)

Regarding the debt covenant hypothesis, the findings show that earnings manipulators carry significantly higher debt-to-total capital ratios than the control group (73.38% versus 40.38%) and that earnings manipulators tend to report higher NI values or larger NI increases than the control group (Table 4, Fig. 1). Thus, the fifth alternative hypothesis is not rejected. The findings indicate that *ceteris paribus*, earnings manipulators who assume higher debt-to-total capital ratios have stronger intentions than the control group to report positive earnings or earnings increases.

Opportunities Hypothesis Testing Results

Regarding the opportunities hypothesis, the data indicate that the earnings manipulators in the sample had significantly fewer independent directors and fewer independent supervisors on their boards (5.45%) than the control group (15.13%) (Table 8). The findings also show that executives of earnings manipulator firms own significantly smaller percentages of equity holdings (67.98%) than the executives of the control group (89.60%). This represents rejection to the sixth alternative hypothesis (H_6). In other words, *smaller* percentages of independent directors and supervisors sitting on boards of directors and on supervisory boards and *fewer* executive equity holdings give earnings manipulators significant opportunities to avoid reporting net losses or decreases in NI.

Attitudes and Rationalizations Hypothesis Testing Results

As the data in Tables 9 and 10 indicate, unexpected change in EBIT and unexpected change in NI were both significantly and positively correlated with economic cycle, executive earnings forecast achievement rate, and dollar amount of bonus-to-after tax net income. The same data show a significant and negative correlation between unexpected change in EBIT or NI with equity offering and percentage of independent directors and supervisors sitting on the boards. Furthermore, nonparametric test results indicate a significant and negative correlation between unexpected change in NI and percentage of executive equity holdings.

(Insert Table 9 and Table 10 here)

Two additional findings are derived from the data in Table 11: a) all other factors being equal, approximately 12.8% of unexpected change in EBIT may be due to economic cycle timing, equity offering, and achieving/surpassing executive earnings forecasts; and b) all other conditions being constant, approximately 10.6% of unexpected change in NI may be due to

economic cycle timing, equity offering, achieving/surpassing executive earnings forecasts, and the percentage of independent directors and supervisors sitting on the boards of directors and the supervisory boards.

(Insert Table 11 here)

It is worth noting that 87% of unexpected change in EBIT and 89% of unexpected change in NI cannot be explained by the incentives/pressures and opportunities variables (Table 11). According to formula (3), unexplained variation in unexpected EBIT and in unexpected NI change may result from unknown incentives/pressures and opportunities variables and attitudes/rationalizations for managing earnings ($v_{(CEBIT)_{i,t}}$ and $v_{(CNI)_{i,t}}$). Given unknown variables for incentives/pressures and opportunities being constant, any unexplained variation of unexpected change in EBIT or NI is assumed to be the result of attitudes/rationalizations to manage earnings ($v_{(CEBIT)_{i,t}}$ and $v_{(CNI)_{i,t}}$). In other words, all other identified variables being equal, greater unexpected changes in EBIT or NI indicate more aggressive attitudes/rationalizations to manage earnings (higher $v_{(CEBIT)_{i,t}}$ and $v_{(CNI)_{i,t}}$). The data in Table 12 indicate that earnings manipulators show significantly higher $v_{(CEBIT)_{i,t}}$ and $v_{(CNI)_{i,t}}$ values than the control group. Instead of normal distributions, the $v_{(CEBIT)_{i,t}}$ and $v_{(CNI)_{i,t}}$ probability distributions of the earnings manipulators in the sample were *asymmetric*—longer and right-tailed (Figs. 7 and 8). Thus, the seventh alternative hypothesis (H_7) is not rejected, since *ceteris paribus*, earnings manipulators express more aggressive attitudes and rationalizations than the control group toward earnings management.

(Insert Table 12 here)

(Insert Figure 7 & Figure 8 here)

SUMMARY AND DISCUSSION

The study purpose was to identify conflicting characteristics in earnings manipulators and the control group among Taiwanese firms in the context of TSAS No. 43. Case studies in the literature show that most corporate accounting scandals involve earnings manipulation leading to significant losses for stakeholders. Subsequently, there is a need to identify differences in earnings manipulation and management characteristics. To achieve this goal, a sample was constructed consisting of 90 Taiwanese firms found guilty by the ROC Supreme Court or indicted by the ROC Financial Supervisory Bureau for materially misrepresenting financial position and operating results between 1999 and 2004. The control group consisted of 1,035 firms listed in the Taiwanese Securities and Exchange Corporation database as not being accused of fraudulent acts during the same period. All publicly available variable data were collected on a time-series basis.

The findings show that even though earnings manipulators in the sample reported smaller EBIT values and smaller changes in EBIT compared to the control group (at a 5% significance level), they reported significantly higher or greater increases in after-tax net income than the control group. Results from the analysis confirm that three elements—incentives and pressures, opportunities, and attitudes and rationalizations—are sufficient for explaining asymmetric and longer right-tailed distributions of changes in EBIT and NI as reported by earnings manipulators.

The results show that capital market and contracting motivations provide significantly stronger incentives for earnings manipulators—a finding that is consistent with those reported by previous researchers. In terms of capital market motivations, the earnings manipulators in the sample expressed significantly stronger intention to avoid reporting net losses or decreased earnings when confronted with economic recession or depression, when they plan to issue new equity securities, and when they feel pressured to meet or surpass executive earnings

expectations. In terms of contracting motivations, earnings manipulators have significantly stronger incentives (in the form of potential bonuses or a desire to borrow capital) to report larger earnings increases and larger positive earnings.

Inefficient corporate governance structures provide executives with opportunities to manipulate earnings. In the same manner as previous studies, this one gathered evidence indicating that earnings manipulators are more likely than the control group to have significantly smaller percentages of independent directors and supervisors sitting on their boards of directors and supervisory boards. However, the findings from this study contradict those from previous efforts showing that earnings manipulators own *significantly smaller percentages* of equity holdings than the control group.

In line with the identified incentives/pressures and opportunities, the author assumed that attitudes and rationalizations to manage earnings could be used to explain variations in unexpected changes in earnings. Surprisingly, the findings show instead that *unexplained variations in unexpected* EBIT and NI changes for earnings manipulators were *significantly greater* than those for the control group. In terms of frequency analysis, the probability distribution of *unexplained variations* of unexpected EBIT and NI changes for earnings manipulators were *more asymmetric and right-tailed* compared to those of the control group. Combined, the data indicate that earnings manipulators show significantly more aggressive attitudes and rationalizations than the control group when reporting EBIT and NI.

The present study makes three contributions to the current literature, and the findings suggest several future research avenues. It is the first to examine and compare the characteristics of earnings management versus earnings manipulation in the context of TSAS No. 43. Future researchers may want to explore other incentive/pressure, opportunity, and

attitude/rationalization variables that influence earnings management. Second, to the author's knowledge this is the first study to present evidence that *contradicts* previous findings showing that larger manager equity holdings provide opportunities for executives to manipulate earnings. Researchers may want to reconsider the relationship between agency problems and earnings manipulation. Finally, this study is the first to assess attitudes/rationalizations of executives for managing earnings by analyzing the time-series properties of earnings. This relationship warrants greater attention.

Table 1
Earnings Manipulators versus Earnings Managers across Industries

Industrial Sector	Earnings Manipulators		Earnings Managers		Frequency of Earnings Manipulation by the Industry
	Number	Percentile	Number	Percentile	
Cement	1	1.11%	10	0.95%	9.09%
Chemical & Pharmaceutical	1	1.11%	55	5.23%	1.79%
Construction & Real Estate Development	14	15.56%	52	4.95%	21.21%
Electric & Engineering	2	2.22%	36	3.43%	5.26%
Electronics	37	41.11%	581	55.28%	5.99%
Food	7	7.78%	28	2.66%	20.00%
Glass & Ceramics	1	1.11%	9	0.86%	10.00%
Motors	0	0.00%	8	0.76%	0.00%
Plastics	1	1.11%	23	2.19%	4.17%
Pulp & Paper	1	1.11%	10	0.95%	9.09%
Retail	2	2.22%	18	1.71%	10.00%
Rubber	1	1.11%	11	1.05%	8.33%
Steel & Metal	6	6.67%	43	4.09%	12.24%
Textile & Fiber	11	12.22%	62	5.90%	15.07%
Tourism & Hospitality	1	1.11%	14	1.33%	6.67%
Transportation	1	1.11%	26	2.47%	3.70%
Wire & Cable	1	1.11%	17	1.62%	5.56%
Others	2	2.22%	48	4.57%	4.00%
Total	<u>90</u>	<u>100.00%</u>	<u>1,051</u>	<u>100.00%</u>	

Table 2
Definition and Measure of Test Variables and Their Data Sources

	Test Variable	Definition and Measure	Data Sources
Incentives and Pressures	<i>Capital Market Motivations:</i> H ₁ Economic cycle (ECS _{it})	Monitoring Indicator ≤ 17: Economic recession 17 < Monitoring Indicator ≤ 23: Depressing economy 23 < Monitoring Indicator ≤ 32: Stable economy 32 < Monitoring Indicator ≤ 38: Economic prosperity Monitoring Indicator > 38: Over-propering economy	Annual Reports of Business Indicators by <i>Council for Economic Planning and Development in Taiwan</i>
	H ₂ Equity offering (EO _{it})	0 = The year at which a sample firm issues its stocks to the market.	Prospectuses (Annually)
	H ₃ Surpassing or achieving executives' earnings forecast (FERR _{it})	Forecast achievement rate = Actual earnings _{it} / Management's forecasted earnings _{it}	Financial Forecasts (Annually)
	<i>Contracting Motivations:</i> H ₄ Bonus contracting (BOCE _{it})	Dollar amount of bonus _{it} / Reported after-tax net income _{it}	a) Public Announcements of Regular Shareholders' Meetings (Annually) b) Annual Income Statements
	H ₅ Debt covenants (LSE _{it})	Total debt _{it} / (Total debt _{it} + Total stockholders' equities _{it})	Annual Balance Sheets
Opportunities	H ₆ (a) Percentage of independent directors and supervisors seating in the boards of directors and in the supervisory boards (INDS _{it})	(Number of <i>independent</i> directors / Total number of directors seating in the board) _{it} + (Number of <i>independent</i> supervisors / Total number of supervisors in the supervisory board) _{it}	a) Compilation Reports of Shareholdings of Directors, Supervisors, Managers and Major Shareholders (Annually)
	H ₆ (b) Percentage of executives' equity holdings (ESH _{it})	The number of common shares executives hold _{it} / Total number of outstanding common shares _{it}	b) Prospectuses (Annually)
Attitude and Rationalization	H ₇ Extent of aggressive attitude and rationalization toward earnings management (v _{it})	$v_{i,t} = UEC_{i,t} - (\beta_0 ECS_{i,t} + \beta_1 EO_{i,t} + \beta_2 FERR_{i,t} + \beta_3 BOCE_{i,t} + \beta_4 LSE_{i,t} + \beta_5 INDS_{i,t} + \beta_6 ESH_{i,t})$	

Table 3
Descriptive Statistics

	Valid Observations	Mean	Standard Deviation	Percentiles		
				25th	50th(Median)	75th
Earnings before Interests and Taxes (EBIT _{i,t})	5706	\$ 299,857	\$ 1,133,129	\$ 18,672	\$ 98,611	\$ 287,313
Changes in Earnings before Interests and Taxes (Δ EBIT _{i,t})	5706	0.29	5.14	-0.36	0.15	0.84
After-Tax Net Income (NI _{i,t})	5706	\$ 210,303	\$ 1,068,221	\$ 7,775	\$ 68,587	\$ 223,163
Changes in After-Tax Net Income (Δ NI _{i,t})	5706	0.18	7.75	-0.42	0.17	0.94
Forecast Achievement Rate (FAR _{i,t})	5706	0.77	3.05	0.19	0.56	0.97
Dollar Amount of Bonus / After-Tax Net Income (BOCE _{i,t})	5706	1.90%	9.85%	0.00%	0.00%	0.00%
Total Debt / Total Capital (LSE _{i,t})	5706	43.00%	23.69%	29.46%	41.65%	53.93%
Percentage of Independent Directors and Supervisors Seating in the Boards of Directors and in the Supervisory Boards (INDS _{i,t})	5706	14.36%	28.33%	0.00%	0.00%	0.00%
Percentage of Executives' Equity Holdings (ESH _{i,t})	5706	87.88%	202.84%	0.00%	6.00%	73.25%

Table 4
Descriptive Statistics and Tests of Variances
(Earnings Manipulators versus the Control Group)

	Earnings Manipulators (452 valid observations)		Control Group (5,254 valid observations)	
	Mean	Standard Deviation	Mean	Standard Deviation
Descriptive Statistics:				
Earnings before Interests and Taxes (EBIT _{i,t})	\$ 261,177	\$ 792,645	\$ 303,185	\$ 1,157,748
Changes in Earnings before Interests and Taxes (Δ EBIT _{i,t})	-0.26	10.79	0.34	4.32
After-Tax Net Income (NI _{i,t})	\$ 305,104	\$ 816,156	\$ 202,147	\$ 1,086,855
Changes in After-Tax Net Income (Δ NI _{i,t})	0.96	11.09	0.12	7.39
Tests of Variances Equality:				
	Levene's Test		Kolmogorov-Smirnov Test	
	F statistic	Significance*	Z statistic	Significance*
Earnings before Interests and Taxes (EBIT _{i,t})	6.81	0.009	3.514	0.000
Changes in Earnings before Interests and Taxes (Δ EBIT _{i,t})	119.24	0.000	3.526	0.000
After-Tax Net Income (NI _{i,t})	0.31	0.579	1.927	0.001
Changes in After-Tax Net Income (Δ NI _{i,t})	29.29	0.000	2.589	0.000

* Significance at any level with the p -value less than 5%.

Table 5
Results of Incentives/Pressures - Economic Cycles Hypothesis (H_1) Tested

Mean	Economic Cycle			
	MI \leq 17	17 < MI \leq 23	23 < MI \leq 32	32 < MI \leq 38
Valid Observations	Y90	Y91/Y92	Y89	Y93
Earnings Manipulators	104	183	110	55
Control Group	1091	2321	1021	821
Earnings before Interests and Taxes				
Earnings Manipulators	\$ 391,721	\$ 183,800	\$ 252,561	\$ 289,021
Control Group	\$ 181,353	\$ 306,348	\$ 381,223	\$ 359,091
F statistic of the Levene's Test	1.37	8.35	2.23	4.34
(<i>p</i> -value) ²	(0.242)	(0.004)	(0.136)	(0.038)
Changes in Earnings before Interests and Taxes				
Earnings Manipulators	-2.03	0.20	0.11	0.81
Control Group	-0.12	0.50	0.61	0.13
F statistic of the Levene's Test	90.22	8.11	5.39	92.59
(<i>p</i> -value)	(0.000)	(0.004)	(0.020)	(0.000)
After-Tax Net Income				
Earnings Manipulators	\$ 440,734	\$ 220,236	\$ 310,854	\$ 319,519
Control Group	\$ 63,489	\$ 214,104	\$ 269,488	\$ 268,857
F statistic of the Levene's Test	3.22	2.49	0.01	2.45
(<i>p</i> -value)	(0.073)	(0.115)	(0.932)	(0.118)
Changes in After-Tax Net Income				
Earnings Manipulators	1.13	0.86	2.12	1.33
Control Group	-0.49	0.43	0.40	0.32
F statistic of the Levene's Test	12.83	1.37	12.98	29.12
(<i>p</i> -value)	(0.000)	(0.242)	(0.000)	(0.000)
Notes:				
<p>¹. According to the definition of the terminology by Council for Economic Planning and Development in Taiwan, "MI" stands for the monitoring indicator of economic cycle. When "MI" is less than Score 17, it represents <i>economic recession</i>. As "MI" is greater than Score 17 but less than or equal to Score 23, it denotes <i>economic depression</i>. When "MI" is greater than Score 23 but less than or equal to Score 32, it stands for <i>economic stability</i>. When "MI" is greater than Score 32 but less than or equal to Score 38, it denotes <i>economic prosperity</i>. As "MI" is greater than Score 38, it stands for <i>economic over-prosperity</i>.</p>				
<p>². Significance at any level with the <i>p</i> -value less than 5%.</p>				

Table 6
Results of Incentives/Pressures - Equity Offering Hypothesis (H₂) Tested

	<i>Pre</i> -Equity Offering Years		<i>During</i> Equity Offering Years	
	Earnings	Control	Earnings	Control
	Manipulators	Group	Manipulators	Group
Valid Observations	364	4123	88	1131
Earnings before Interests and Taxes				
Mean	\$ 267,648	\$ 252,837	\$ 234,413	\$ 486,725
Standard Deviation	699,687	1,034,025	1,101,553	1,512,540
Levene's Test ¹	F = 2.454 (0.117)		F = 3.608 (0.058)	
Kolmogorov-Smirnov Test ²	Z = 2.000 (0.001)		Z = 4.015 (0.000)	
Changes in Earnings before Interests and Taxes				
Mean	-0.048	0.399	-1.140	0.117
Standard Deviation	10.677	4.708	11.310	2.375
Levene's Test	F = 58.539 (0.000)		F = 136.524 (0.000)	
Kolmogorov-Smirnov Test	Z = 2.675 (0.000)		Z = 2.836 (0.000)	
After-Tax Net Income				
Mean	\$ 313,621	\$ 161,940	\$ 269,872	\$ 348,722
Standard Deviation	709,538	961,132	1,162,293	1,447,107
Levene's Test	F = 0.108 (0.743)		F = 0.999 (0.318)	
Kolmogorov-Smirnov Test	Z = 2.386 (0.000)		Z = 3.307 (0.000)	
Changes in After-Tax Net Income				
Mean	1.176	0.126	0.080	0.077
Standard Deviation	11.835	7.639	7.244	6.425
Levene's Test	F = 20.991 (0.000)		F = 13.805 (0.000)	
Kolmogorov-Smirnov Test	Z = 1.971 (0.001)		Z = 2.543 (0.000)	

¹. Significance at any level with the *p*-value less than 5%.

². Significance at any level with the *p*-value less than 5%.

Table 7
Results of Incentives/Pressures - Earnings Forecast Achievement Hypothesis (H₃) Tested

	Total Sample	Earnings Manipulators	Control Group
Valid Observations	5706	452	5254
Descriptive Statistics of Forecast Achievement Rates:			
Mean	0.77	1.10	0.74
Standard Deviation	3.05	3.72	2.99
Percentiles			
25th	0.19		
50th (Median)	0.56		
75th	0.97		
Test of Variances Equality:			
Levene's Test ¹		F = 29.008 (0.000)	
Kolmogorov-Smirnov Test ²		Z = 4.226 (0.000)	

¹ Significance at any level with the *p* -value less than 5%.

² Significance at any level with the *p* -value less than 5%.

Table 8
Results of Incentives/Pressures - Contracting Hypothesis (H_4 & H_5) and Opportunities (H_6) Tested

Variables Tested	Earnings Manipulators (452 valid observations)		Control Group 5,254 valid observations		Levene's Test Statistic (sig.) ¹	Kolmogorov-Smirnov Test Statistic (sig.) ²
	Mean	Standard Deviation	Mean	Standard Deviation		
	H_4 : $BOCE_{i,t}$	2.88%	7.30%	1.82%		
H_5 : $LSE_{i,t}$	73.38%	53.53%	40.38%	16.65%	183.946 (0.000)	11.156 (0.000)
$H_{6(a)}$: $INDS_{i,t}$	5.45%	18.34%	15.13%	28.90%	241.281 (0.000)	2.981 (0.000)
$H_{6(b)}$: $ESH_{i,t}$	67.98%	162.42%	89.60%	205.87%	7.12 (0.008)	2.025 (0.001)

Note:

¹. Significance level at any level with the p -value less than 5%.

². Significance level at any level with the p -value less than 5%.

³. $BOCE_{i,t}$ = Dollar Amount of Bonus / After-Tax Net Income

$LSE_{i,t}$ = Total Debt / Total Capital

$INDS_{i,t}$ = Percentage of Independent Directors and Supervisors Seating in the Boards of Directors
and in the Supervisory Boards ($INDS_{i,t}$)

$ESH_{i,t}$ = Percentage of Executives' Equity Holdings

Table 9
Pearson Correlation Analysis

	$\Delta EBIT_{i,t}$	$\Delta UE EBIT_{i,t}$	$\Delta NI_{i,t}$	$\Delta UENI_{i,t}$	$ECS_{i,t}$	$EO_{i,t}$	$FAR_{i,t}$	$BOCE_{i,t}$	$LSE_{i,t}$	$INDS_{i,t}$	$ESH_{i,t}$
$\Delta EBIT_{i,t}$	1.000										
<i>sig.</i>	-										
$\Delta UE EBIT_{i,t}$	0.716	(1.000)									
<i>sig.</i>	(0.000)	-									
$\Delta NI_{i,t}$	0.312	0.236	1.000								
<i>sig.</i>	(0.000)	(0.000)	-								
$\Delta UENI_{i,t}$	0.235	0.330	0.713	1.000							
<i>sig.</i>	(0.000)	(0.000)	(0.000)	-							
$ECS_{i,t}$	0.042	0.042	0.015	0.032	1.000						
<i>sig.</i>	(0.002)	(0.002)	(0.266)	(0.014)	-						
$EO_{i,t}$	-0.027	-0.032	-0.007	-0.034	0.006	1.000					
<i>sig.</i>	(0.042)	(0.014)	(0.590)	(0.011)	(0.635)	-					
$FAR_{i,t}$	0.108	0.069	0.099	0.069	0.030	0.001	1.000				
<i>sig.</i>	(0.000)	(0.000)	(0.000)	(0.000)	(0.025)	(0.967)	-				
$BOCE_{i,t}$	0.023	0.017	0.024	-0.006	0.239	0.104	0.010	1.000			
<i>sig.</i>	(0.077)	(0.197)	(0.076)	(0.655)	(0.000)	(0.000)	(0.429)	-			
$LSE_{i,t}$	-0.045	-0.008	-0.036	-0.009	0.047	-0.044	0.024	-0.017	1.000		
<i>sig.</i>	(0.001)	(0.535)	(0.007)	(0.498)	(0.000)	(0.001)	(0.071)	(0.195)	-		
$INDS_{i,t}$	0.006	-0.014	-0.002	-0.030	0.258	0.048	-0.012	0.101	-0.064	1.000	
<i>sig.</i>	(0.634)	(0.298)	(0.876)	(0.025)	(0.000)	(0.000)	(0.358)	(0.000)	(0.000)	-	
$ESH_{i,t}$	-0.003	-0.012	-0.012	-0.012	0.058	-0.003	-0.026	0.009	0.003	0.171	1.000
<i>sig.</i>	(0.806)	(0.385)	(0.350)	(0.364)	(0.000)	(0.825)	(0.046)	(0.508)	(0.801)	(0.000)	-

Notes:

¹. The Pearson coefficient is significant when its p-value is less than 5%.

². $\Delta EBIT_{i,t}$ = Changes in Earnings before Interests and Taxes

$\Delta UE EBIT_{i,t}$ = Unexpected Changes in Earnings before Interests and Taxes

$\Delta NI_{i,t}$ = Changes in After-Tax Net Income

$\Delta UENI_{i,t}$ = Unexpected Changes in After-Tax Net Income

$ECS_{i,t}$ = Economic cycle

$EO_{i,t}$ = Equity offering

$FAR_{i,t}$ = Forecast Achievement Rate

$BOCE_{i,t}$ = Dollar Amount of Bonus / After-Tax Net Income

$LSE_{i,t}$ = Total Debt / Total Capital

$INDS_{i,t}$ = Percentage of Independent Directors and Supervisors Seating in the Boards of Directors and in the Supervisory Boards

$ESH_{i,t}$ = Percentage of Executives' Equity Holdings

Table 10
Spearman Correlation Analysis

	$\Delta EBIT_{i,t}$	$\Delta UE EBIT_{i,t}$	$\Delta NI_{i,t}$	$\Delta UENI_{i,t}$	$ECS_{i,t}$	$EO_{i,t}$	$FAR_{i,t}$	$BOCE_{i,t}$	$LSE_{i,t}$	$INDS_{i,t}$	$ESH_{i,t}$
$\Delta EBIT_{i,t}$	1.000										
<i>sig.</i>	-										
$\Delta UE EBIT_{i,t}$	0.710	1.000									
<i>sig.</i>		-									
$\Delta NI_{i,t}$	0.920	0.637	1.000								
<i>sig.</i>	(0.000)	(0.000)	-								
$\Delta UENI_{i,t}$	0.644	0.866	0.695	1.000							
<i>sig.</i>	(0.000)	(0.000)	(0.000)	-							
$ECS_{i,t}$	0.068	0.062	0.062	0.053	1.000						
<i>sig.</i>	(0.000)	(0.000)	(0.000)	(0.000)	-						
$EO_{i,t}$	-0.059	-0.068	-0.057	-0.075	-0.019	1.000					
<i>sig.</i>	(0.000)	(0.000)	(0.000)	(0.000)	(0.146)	-					
$FAR_{i,t}$	0.417	0.259	0.417	0.254	0.079	0.082	1.000				
<i>sig.</i>	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	-				
$BOCE_{i,t}$	0.061	0.041	0.065	0.027	0.302	0.113	0.036	1.000			
<i>sig.</i>	(0.000)	(0.002)	(0.000)	(0.044)	(0.000)	(0.000)	(0.006)	-			
$LSE_{i,t}$	0.009	0.014	-0.009	0.021	0.055	-0.033	-0.019	-0.007	1.000		
<i>sig.</i>	(0.503)	(0.277)	(0.498)	(0.119)	(0.000)	(0.012)	(0.161)	(0.595)	-		
$INDS_{i,t}$	0.019	-0.022	0.027	-0.029	0.158	0.060	0.012	0.082	-0.059	1.000	
<i>sig.</i>	(0.155)	(0.100)	(0.039)	(0.030)	(0.000)	(0.000)	(0.378)	(0.000)	(0.000)	-	
$ESH_{i,t}$	-0.003	-0.019	0.004	-0.027	0.138	0.055	0.005	0.085	0.018	0.285	1.000
<i>sig.</i>	(0.809)	(0.154)	(0.783)	(0.045)	(0.000)	(0.000)	(0.725)	(0.000)	(0.186)	(0.000)	-

Notes:

¹. The Spearman's rho is significant when its p-value is less than 5%.

². $\Delta EBIT_{i,t}$ = Changes in Earnings before Interests and Taxes

$\Delta UE EBIT_{i,t}$ = Unexpected Changes in Earnings before Interests and Taxes

$\Delta NI_{i,t}$ = Changes in After-Tax Net Income

$\Delta UENI_{i,t}$ = Unexpected Changes in After-Tax Net Income

$ECS_{i,t}$ = Economic cycle

$EO_{i,t}$ = Equity offering

$FAR_{i,t}$ = Forecast Achievement Rate

$BOCE_{i,t}$ = Dollar Amount of Bonus / After-Tax Net Income

$LSE_{i,t}$ = Total Debt / Total Capital

$INDS_{i,t}$ = Percentage of Independent Directors and Supervisors Seating in the Boards of Directors and in the Supervisory Boards

$ESH_{i,t}$ = Percentage of Executives' Equity Holdings

Table 11
Regression on Unexpected Changes in EBIT and Unexpected Changes in NI

Variables ³	Unexpected Changes in EBIT ¹		Unexpected Changes in NI ²	
	Predicted Sign	Coefficient	Predicted Sign	Coefficient
Intercept		-0.68		-0.81
(sig.) ⁴		(0.048)		(0.169)
Incentives/Pressures				
ECS _{i,t}	+	1.10	+	1.66
(sig.)		(0.001)		(0.003)
EO _{i,t}	-	-0.53	-	-0.80
(sig.)		(0.010)		(0.024)
FERR _{i,t}	+	0.23	+	0.30
(sig.)		(0.000)		(0.000)
BOCE _{i,t}	+	0.45	+	-1.07
(sig.)		(0.610)		(0.476)
LSE _{i,t}	?	-0.55	?	-1.06
(sig.)		(0.280)		(0.227)
Opportunities				
INDS _{i,t}	-	-0.54	-	-1.46
(sig.)		(0.081)		(0.006)
ESH _{i,t}	+	-0.03	+	-0.01
(sig.)		(0.479)		(0.938)
Adjusted R ²		12.80%		10.60%
F-test Statistic (sig.)		98.30 (0.000)		80.33 (0.000)

$$^1 \text{ Unexpected changes in EBIT}_{i,t} (\Delta UE EBIT_{i,t}) = \beta_0 + \beta_1 ECS_{i,t} + \beta_2 EO_{i,t} + \beta_3 FERR_{i,t} + \beta_4 BOCE_{i,t} + \beta_5 LSE_{i,t} + \beta_6 INDS_{i,t} + \beta_7 ESH_{i,t} + \mathbf{v}_{(CEBIT)_{i,t}}$$

$$^2 \text{ Unexpected changes in NI}_{i,t} (\Delta UENI_{i,t}) = \beta_0 + \beta_1 ECS_{i,t} + \beta_2 EO_{i,t} + \beta_3 FERR_{i,t} + \beta_4 BOCE_{i,t} + \beta_5 LSE_{i,t} + \beta_6 INDS_{i,t} + \beta_7 ESH_{i,t} + \mathbf{v}_{(CNI)_{i,t}}$$

³ ECS_{i,t} = Economic cycle

EO_{i,t} = Equity offering

FAR_{i,t} = Forecast Achievement Rate

BOCE_{i,t} = Dollar Amount of Bonus / After-Tax Net Income

LSE_{i,t} = Total Debt / Total Capital

INDS_{i,t} = Percentage of Independent Directors and Supervisors Seating in the Boards of Directors and in the Supervisory Boards

ESH_{i,t} = Percentage of Executives' Equity Holdings

⁴ Significance at any p-value less than 5%.

Table 12
Results of the Attitude and Rationalization (H₇) Testsed

Panel A: Tests for Attitude/Rationalization to Manage Changes in Earnings before Interests and Taxes ($V_{(CEBIT)_i,t}$)

	Earnings Manipulators	Control Group	Levene's Test Statistic (<i>sig.</i>) *	Kolmogorov-Smirnov Test Statistic (<i>sig.</i>) *
Mean	0.07	0.00	219.11 (0.000)	3.45 (0.000)
Standard Deviation	15.66	6.12		
Percentiles				
25th	-2.36	-1.01		
50th (Median)	0.43	-0.05		
75th	2.71	0.97		
Test for Normality:				
Skewness	0.31	0.00		
Standard error of Skewness	0.12	0.03		
Kurtosis	15.29	45.09		
Standard error of Kurtosis	0.23	0.07		

Panel B: Tests for Attitude and Rationalization to Manage Changes in After-Tax Net Income ($V_{(CND)_i,t}$)

	Earnings Manipulators	Control Group	Levene's Test Statistic (<i>sig.</i>) *	Kolmogorov-Smirnov Test Statistic (<i>sig.</i>) *
Mean	0.14	0.00	54.28 (0.000)	3.17 (0.000)
Standard Deviation	15.94	10.49		
Percentiles				
25th	-2.32	-1.22		
50th (Median)	0.46	0.02		
75th	2.82	1.24		
Test for Normality:				
Skewness	0.16	0.08		
Standard error of Skewness	0.12	0.03		
Kurtosis	19.58	42.69		
Standard error of Kurtosis	0.23	0.07		

* Significance at any p-value less than 5%.

Figure 1
 Probability Distributions of Changes in Earnings before Interests and Taxes & Changes
 in After-Tax Net Income

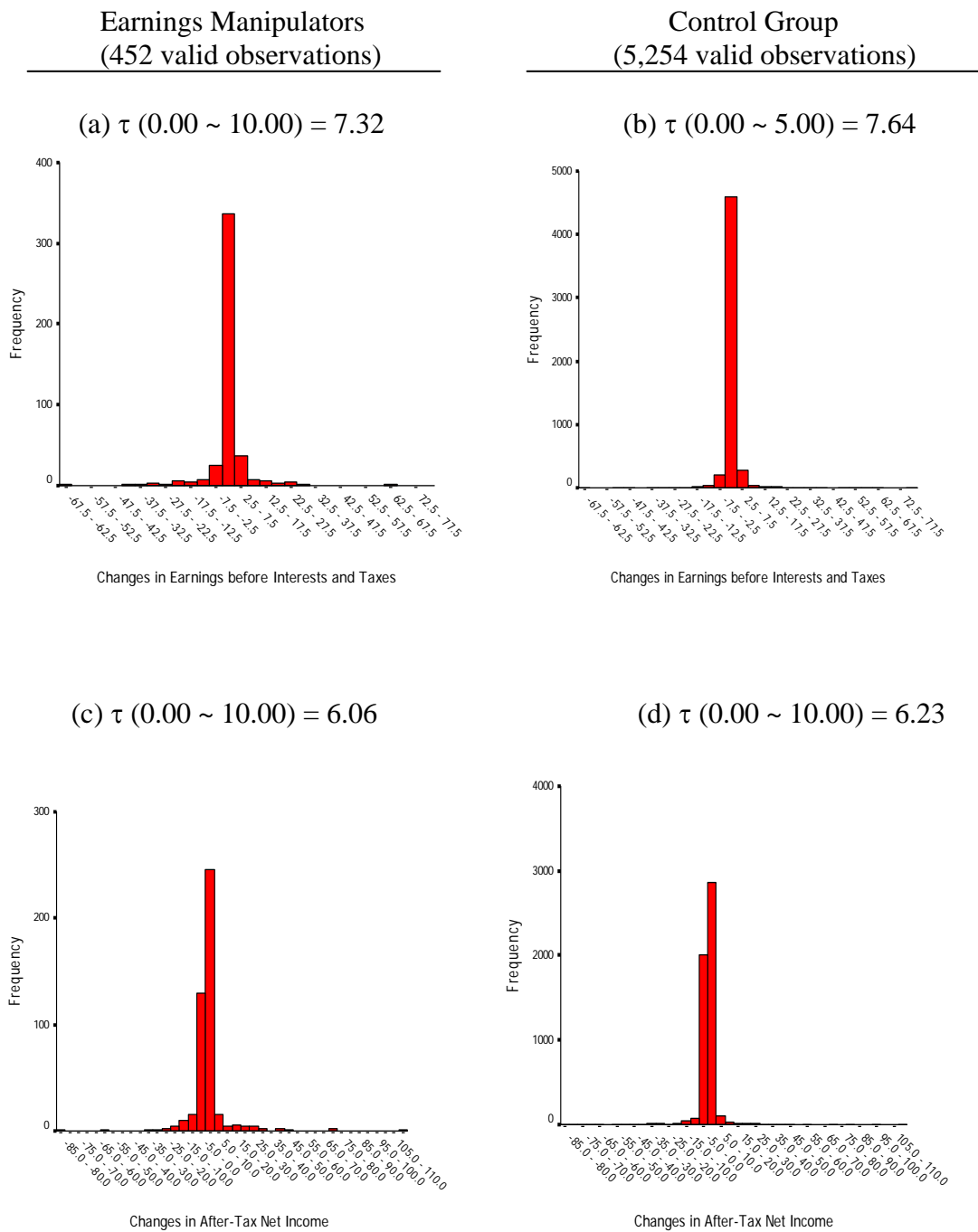


Figure 2
Probability Distributions of Changes in Earnings before Interests and Taxes in the
Context of **Economic Cycle**

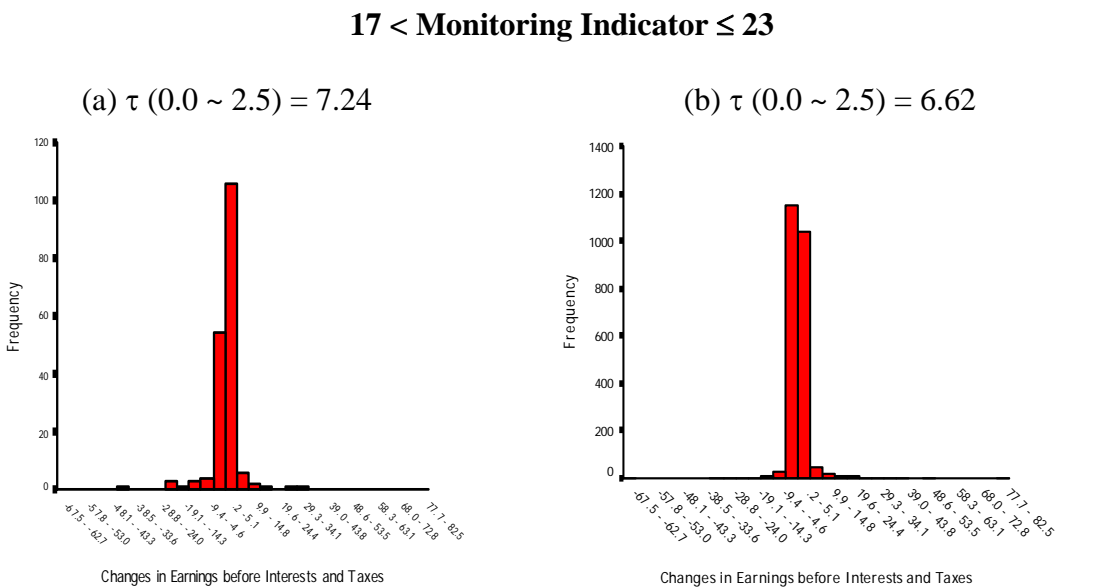
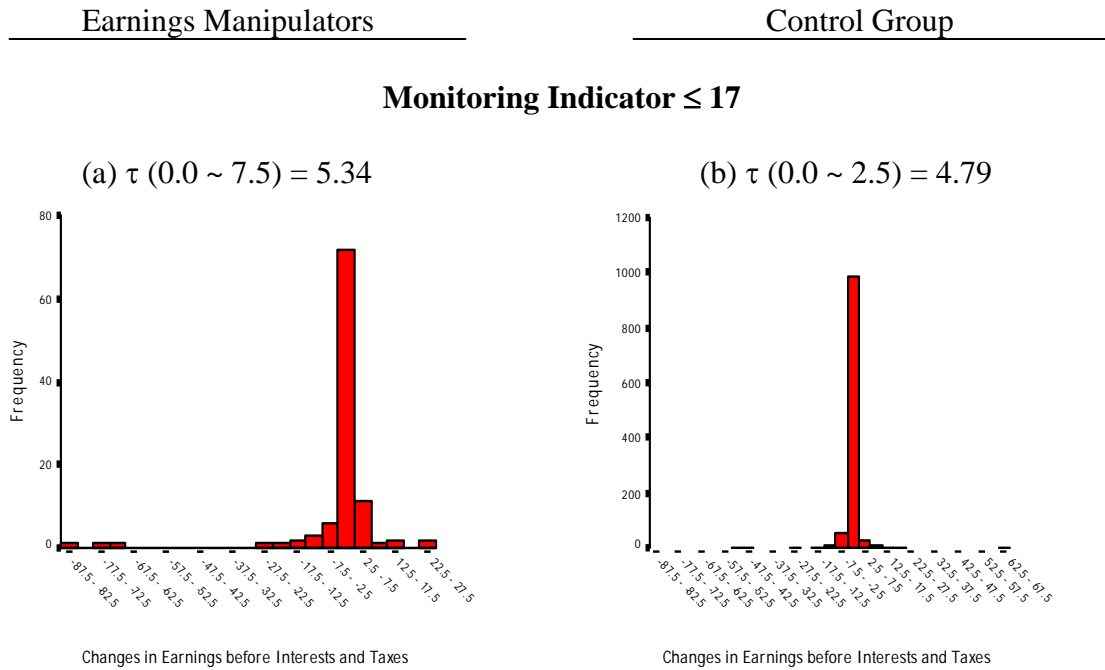


Figure 2 (continued)
 Probability Distributions of Changes in Earnings before Interests and Taxes in the
 Context of **Economic Cycle**

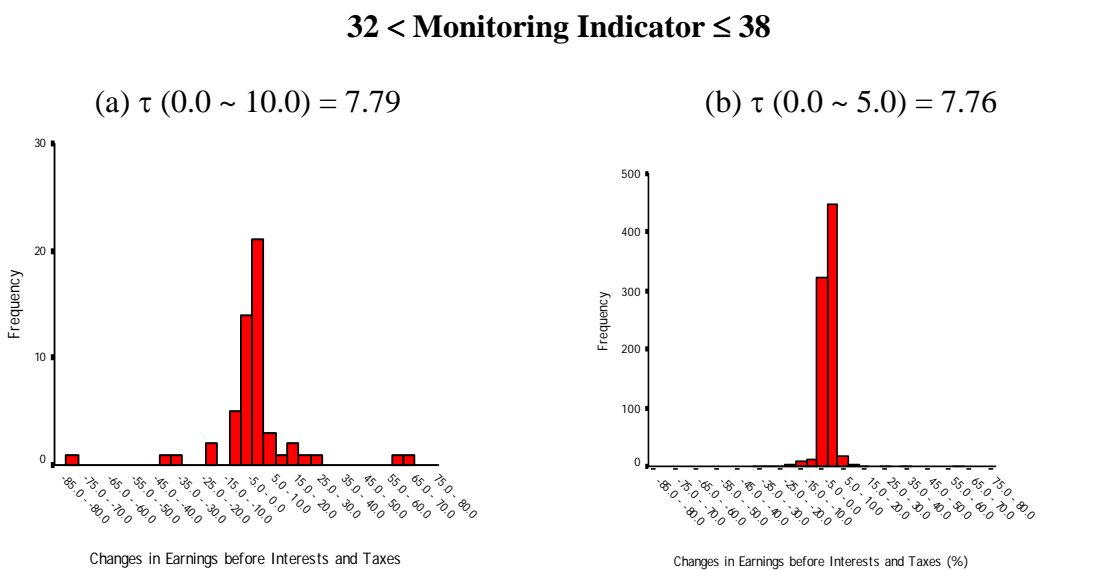
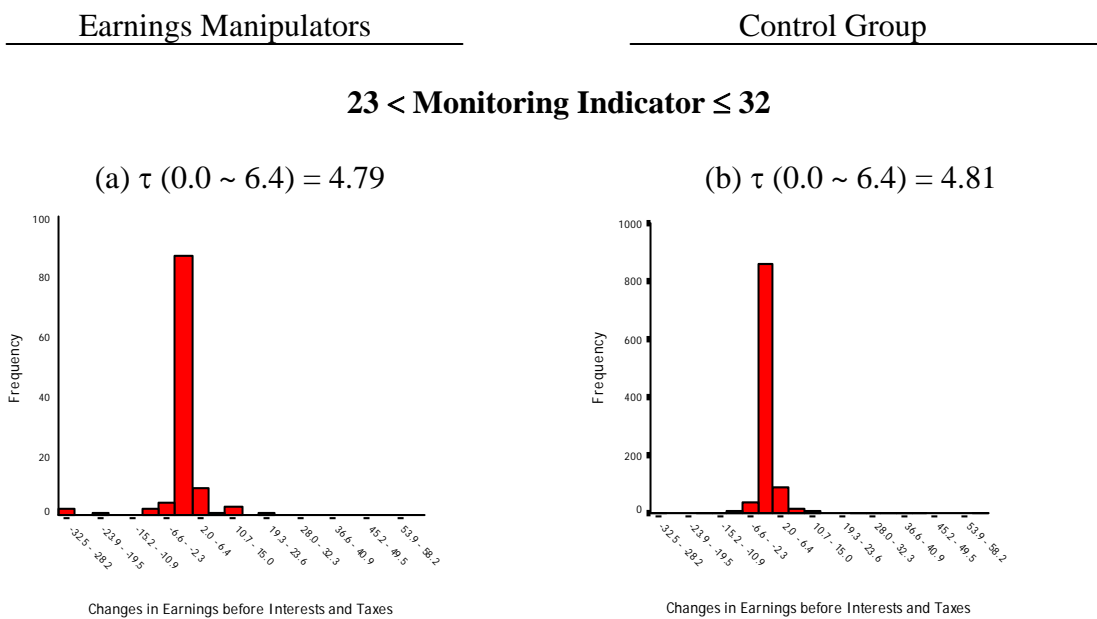


Figure 3
Probability Distributions of Changes in After-Tax Net Income in the Context of
Economic Cycle

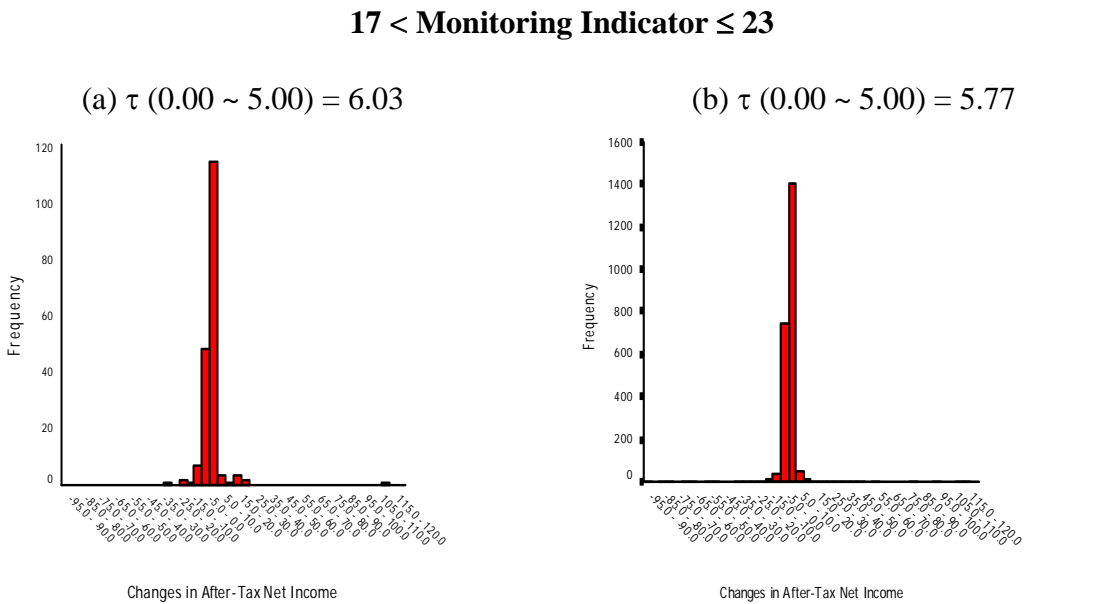
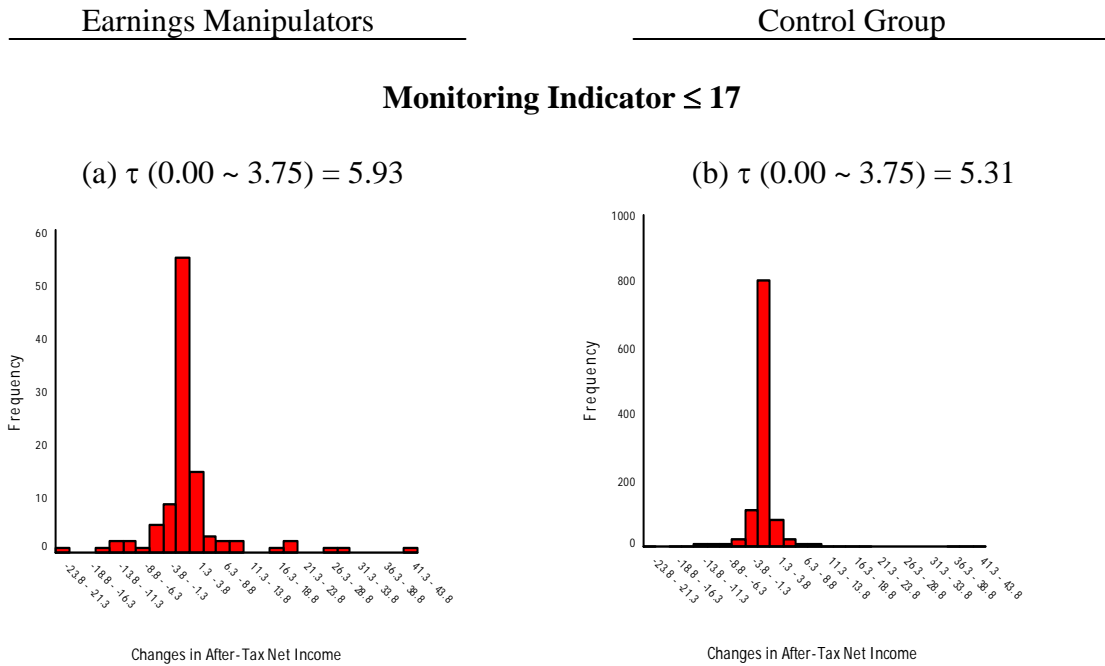
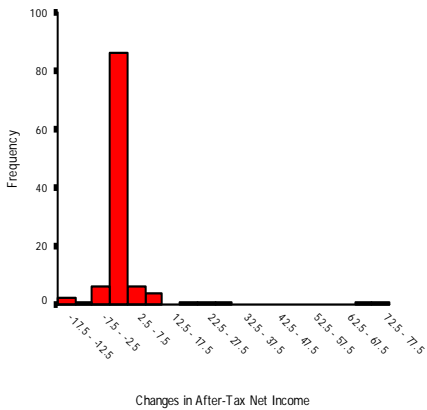


Figure 3 (continued)
 Probability Distributions of Changes in After-Tax Net Income in the Context of
Economic Cycle

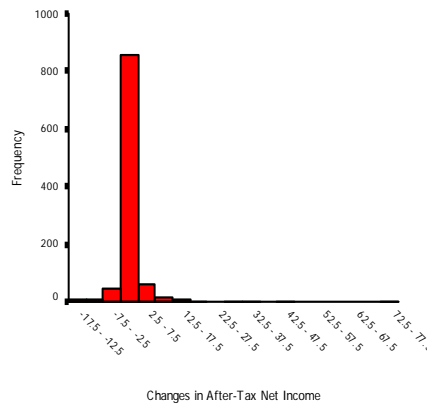
Earnings Manipulators Control Group

23 < Monitoring Indicator ≤ 32

(a) $\tau(0.00 \sim 7.50) = 4.25$

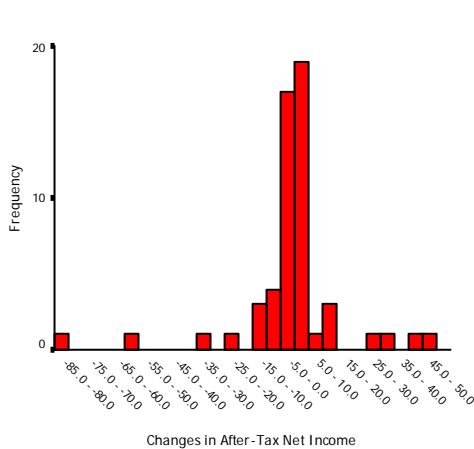


(b) $\tau(0.00 \sim 7.50) = 4.29$



32 < Monitoring Indicator ≤ 38

(a) $\tau(0.00 \sim 5.00) = 7.26$



(b) $\tau(0.00 \sim 5.00) = 7.11$

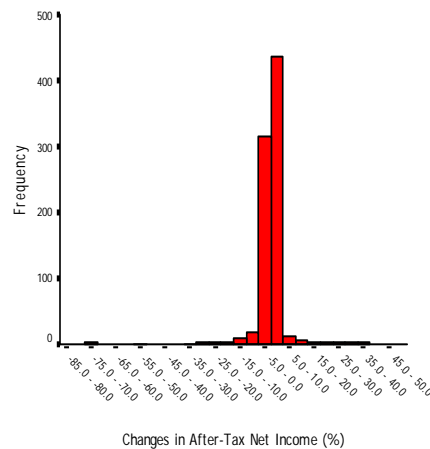


Figure 4
 Probability Distributions of Changes in Earnings before Interests and Taxes:
Pre-Equity Offering Years versus *During* Equity Offering Years

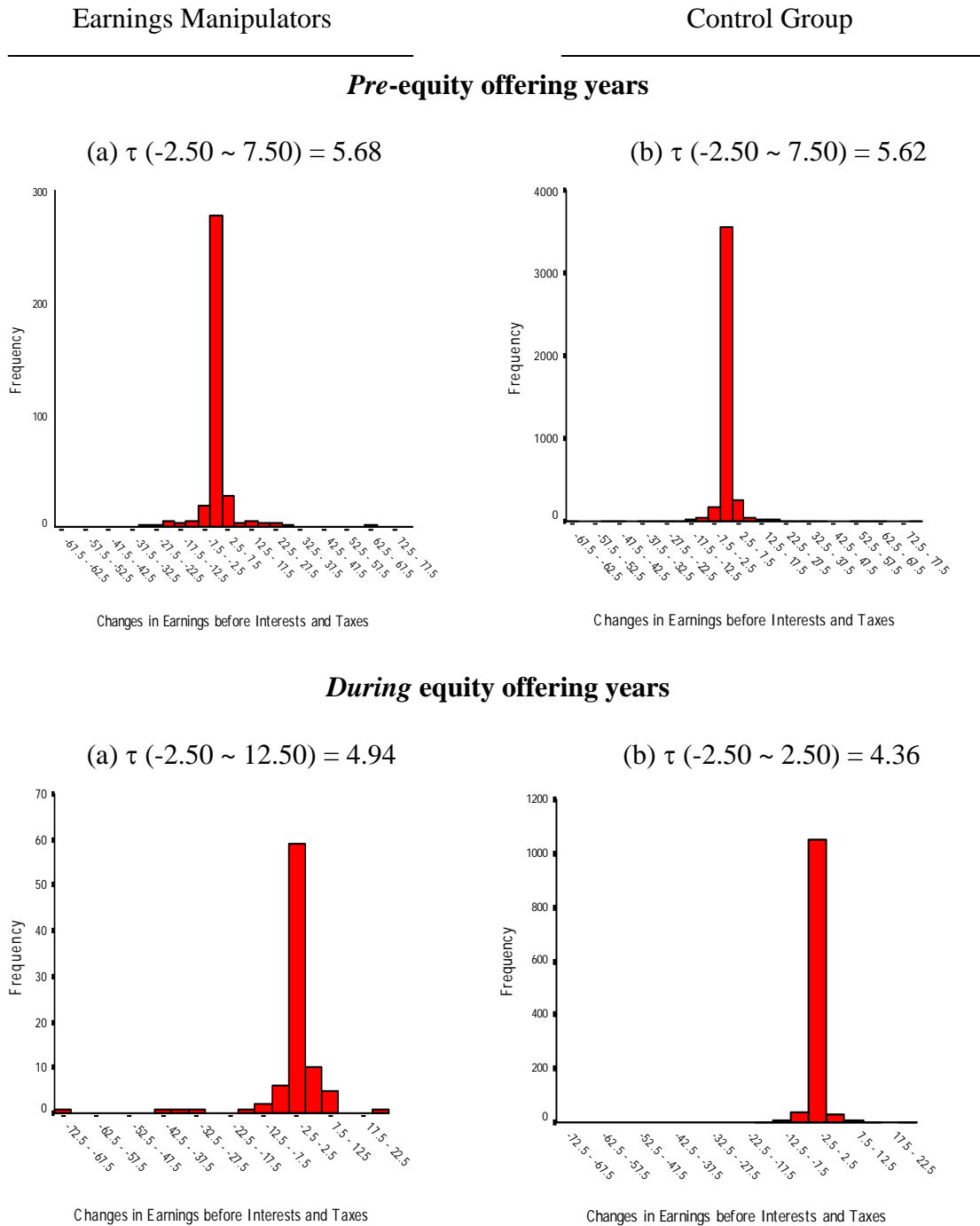


Figure 5
 Probability Distributions of Changes in After-Tax Net Income:
Pre-Equity Offering Years versus *During* Equity Offering Years

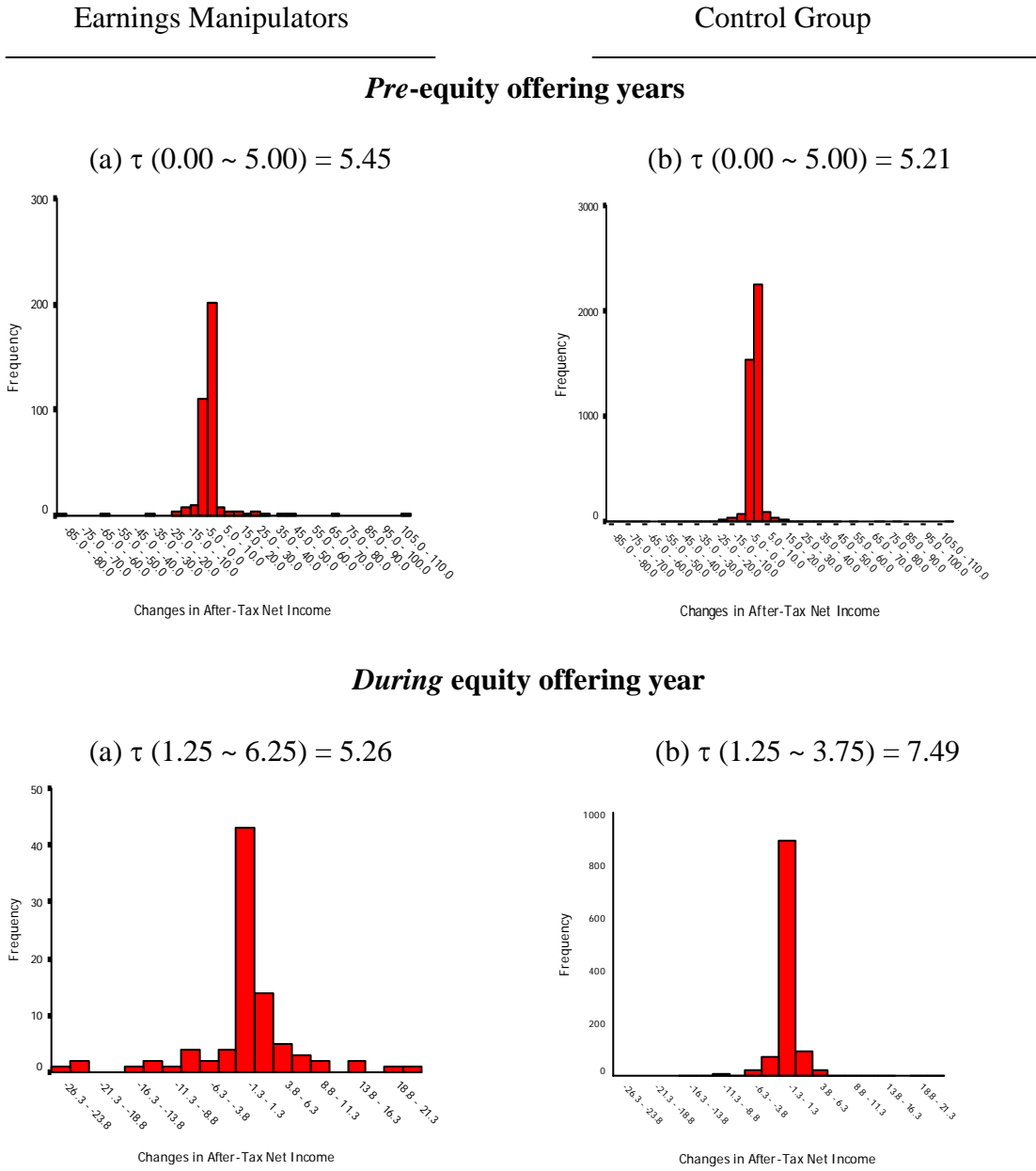
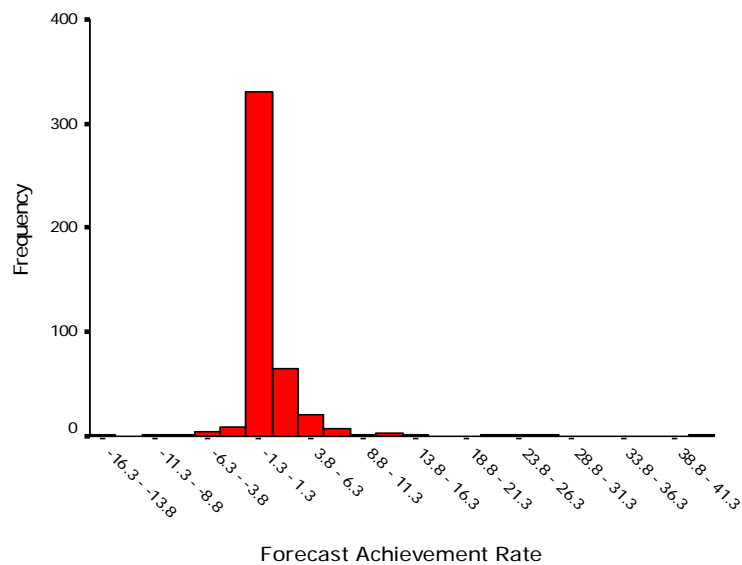


Figure 6
Probability Distributions of Earnings Forecast Achievement Rates

Earnings Manipulators

$$\tau (1.25 \sim 6.25) = 5.45$$



Control Group

$$\tau (-1.25 \sim 3.75) = 7.09$$

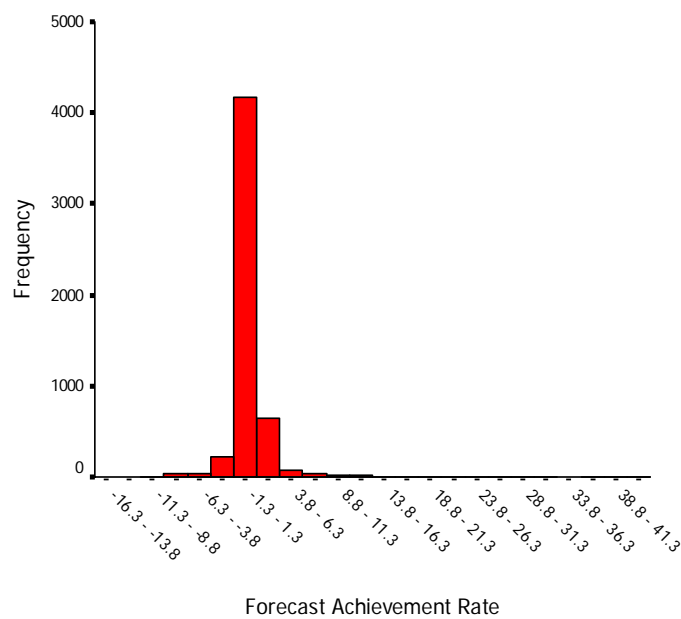
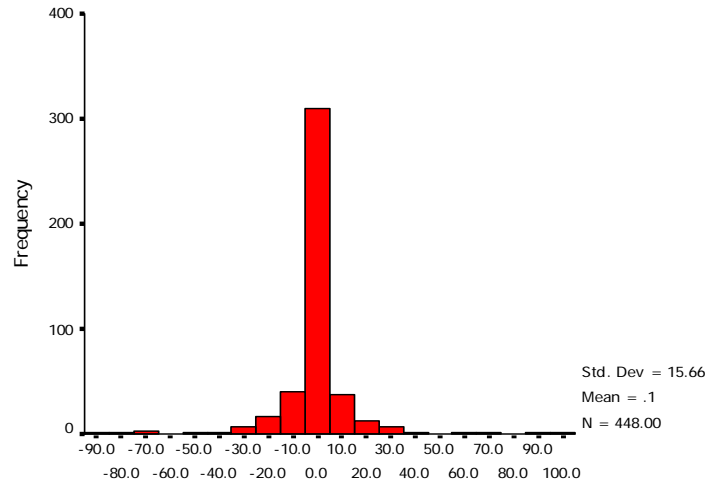


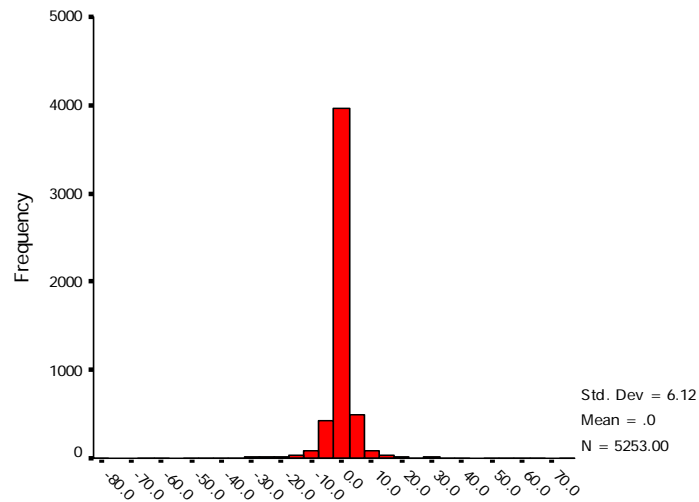
Figure 7
 Probability Distributions of Attitude and Rationalization to Manage Changes in Earnings
 before Interests and Taxes

Earnings Manipulators



Attitude and Rationalization to Manage Changes in EBIT (Vcebit)

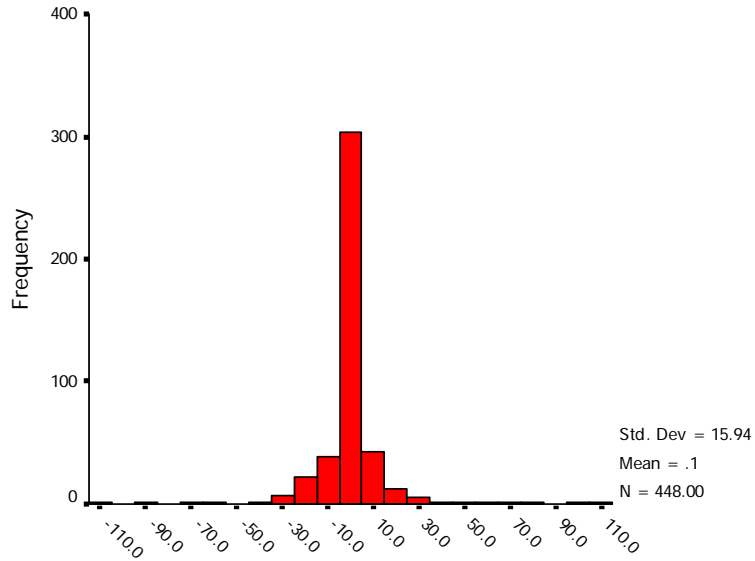
Control Group



Attitude and Rationalization to Manage Changes in EBIT (Vcebit)

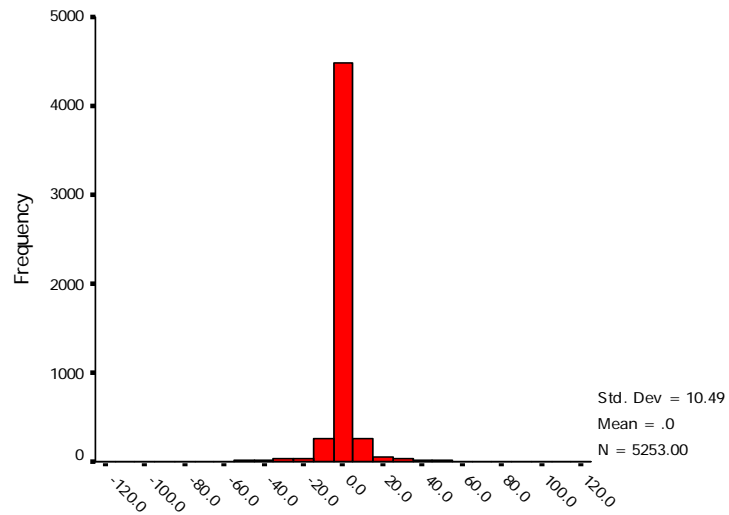
Figure 8
 Probability Distributions of Attitude and Rationalization to Manage Changes in After-Tax Net Income

Earnings Manipulators



Attitude and Rationalization to Manage Changes in NI (Vcni)

Control Group



Attitude and Rationalization to Manage Changes in NI (Vcni)

REFERENCES

- Aharony, J., C. J. Lin, and M. Loeb. 1993. Initial public offerings, accounting choices, and earnings management. *Contemporary Accounting Research* 10(1): 61-81.
- Abbott, L. J. , Y. Park, and S. Parker. 2000. The effect of audit committee activity and independence on corporate fraud. *Managerial Finance* 26(11): 55-67.
- Beasley, M. S. 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review* 71(4): 443-465.
- Beaver, W., R. Lambert, and D. Morse. 1980. The information content of security prices. *Journal of Accounting and Economics* 2(1):3-28.
- Ball, R., and P. Brown. 1968. An empirical evaluation of accounting income numbers. *Journal of Accounting Research* 6(2): 159-178.
- Burgstahler, D., and I. Dichev. 1997. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24(1): 99-126.
- Carcello, J. V., D. R. Hermanson, T. L. Neal, and R. A. Riley Jr. 2002. Board characteristics and audit fees. *Contemporary Accounting Research* 19(3): 365-384.
- Collins, D. W., and S. P. Kothari. 1989. An analysis of intertemporal and cross-sectional determinants of earnings response coefficients. *Journal of Accounting and Economics* 11(2-3): 143-181.
- Dechow, P.M., R. G. Sloan, and A. P. Sweeney. 1996. Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research* 13(1): 1-36.

- Dechow, P. M., S. A. Richardson, and I. Tuna. 2003. Why are earnings kinky? An examination of the earnings management explanation. *Review of Accounting Studies* 8, 355-384.
- DeGeorge F, J. Patel, R. Zeckhauser. 1999. Earnings management to exceed thresholds. *Journal of Business* 72(1): 1-33.
- DuCharme, L. L., P. H. Malatesta, and S. E. Sefcik. 2004. Earnings management, stock issues, and shareholder lawsuits. *Journal of Financial Economics* 71(1): 27-49.
- Easton, P.D., and M. E. Zmijewski. 1989. Cross-sectional variation in the stock market response to accounting earnings announcements. *Journal of Accounting and Economics* 11(2-3): 117-141.
- Friedlan, J. M. 1994. Accounting choices of issuers of initial public offerings. *Contemporary Accounting Research* 11(1): 1-31.
- Healy, P. M. 1985. The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics* 7(1-3): 85-107.
- Healy, P. M., S. Kang, and K. G. Palepu. 1987. The effect of accounting procedure changes on CEO's cash salary and bonus compensation. *Journal of Accounting and Economics* 9(1): 7-34.
- Healy, P. M., and K. G. Palepu. 1990. Effectiveness of accounting-based dividend covenants. *Journal of Accounting and Economics* 12(1-3): 97-124.
- Healy, P. M., and J. M. Wahlen. 1999. A review of the earnings management literature and its implications for standard setting. *Accounting Horizons* 13(4): 365-383.
- Jones, J. J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29: 193-228.

- Kormendi, R., and R. Lipe. 1987. Earnings innovations, earnings persistence, and stock returns. *Journal of Business* 60(3): 323-345.
- Rangan, S. 1998. Earnings management and the performance of seasoned equity offerings. *Journal of Financial Economics* 50(1): 101-122.
- Sloan, R. 1996. Do stock prices fully impound information in accruals about future earnings? *The Accounting Review* 71: 289-315.
- Sweeney, A. P. 1994. Debt-covenant violations and managers' accounting responses. *Journal of Accounting and Economics* 17(3): 281-308.
- Teoh, S. H., I. Welch, and T. J. Wong. 1998a. Earnings management and the post-issue performance of seasoned equity offerings. *Journal of Financial Economics* (October): 63-99.
- Teoh, S. H., I. Welch, and T. J. Wong. 1998b. Earnings management and the long-term market performance of initial public offerings. *Journal of Finance* (December): 1935-1974.
- Wallace, W. A., and K. S. Cravens. 1997. Evaluating control risk from a corporate governance perspective. *Managerial Finance* 23(12): 22-36.
- Xie, Hong. 2001. The mispricing of abnormal accruals. *The Accounting Review* 76(3): 357-373.