

Audit Committee Independence and Earnings Management: How Independent are Independent Directors?

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A recent editorial in *The Wall Street Journal* asked, “Where Were the Boards?” (George 2008) and questions the role, or lack thereof, boards of directors played in the economic turmoil of 2008-2009. The editorial states that despite external efforts to increase corporate governance and despite passage of the Sarbanes-Oxley Act of 2002, “...institutions pursued profits with overleveraged and ill-understood strategies and banished tough risk assessment from the center of decision-making.” The editorial questions why boards of directors allowed what in hindsight were clearly questionable strategies: “Were they lulled into complacency by their CEOs? Or did they lack the insight to see that their firms had placed themselves in great peril if there were major disruptions in financial markets? Or were they looking at computer models rather than applying the judgments they were selected to make?” It notes that the first job of the board of directors is to ensure not only the viability but the survivability of the company and concludes that judging by this criterion, boards failed miserably.

In “Where Were All Those Directors,” Bernhut (2009) asks, “How is it that even a single director, at least as far as we know, did not try to deflate the certitude and hubris exhibited by the likes of Rick Wagoner [prior CEO of General Motors] and the senior managers who developed their companies’ respective strategies?” This paper addresses these questions by investigating if

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director's oversight function is influenced by self-interests similar to those of management by increasing their personal wealth from the same aggressive strategies pursued by management.¹

While it is not possible to separate unambiguously a lack of oversight from willing participation, available evidence may exhibit how the result of either possibility may affect a director's potential personal wealth. The objective of this paper is to examine whether an association exists between evidence of earnings management and cumulative percentage increases in the value of stock and exercisable stock options beneficially owned by *independent* members of the board of directors who may have influence over reported financial results. Existence of such an association, while not definitive, may be an indication of board members placing self-interest above their fiduciary responsibilities of management oversight.

Boards of directors are integral parts of the governance of large organizations, including all public corporations, and have arisen in response to the agency problems inherent in governing any organization (e.g., see Jensen and Meckling 1976). It is the board's job to select, evaluate, and approve appropriate compensation for the company's officers, pay dividends, recommend stock splits, oversee share repurchase programs, recommend or discourage acquisitions and mergers, and approve the company's financial statements.

A basic and widely held assumption is that board effectiveness is a function of the board's independence from management. (see, e.g., Jensen 1993; Milstein and MacAvoy 1998). Most directors can be classified as inside directors, independent directors, and related directors,

¹ In June 2009, the SEC announced it was “actively considering a package of new proxy disclosure rules that will provide further sunshine on compensation decisions.” These rules would require companies, among other things, to disclose how the issuer—and its board—manages risk and analyze how their compensation practices impact risk taking and the implications for long term corporate health of the behavior those compensation practices incent. These matters are of particular interest because many believe that the incentive compensation structures of some financial institutions contributed to the current economic crisis by creating incentives that undermined shareholder value over the long term (SEC 2009).

where inside directors are employees or former employees of the company. Inside directors generally are not thought to be independent of the CEO, since the success of their careers often is tied to the CEO's success. Independent directors are not employees of the company and usually do not have any business ties to the company aside from their directorship, whereas related directors are not employees but do have some business ties. In legal terms, the Sarbanes-Oxley Act of 2002 (SOX) defines independent as "not receiving, other than for service on the board, any consulting, advisory, or other compensatory fee from the issuer, and as not being an affiliated person of the issuer, or any subsidiary thereof."²

Director Ownership of Company Stock

While directors may well be independent by legal definition, many are not independent financially as each director may hold substantial ownership interest in the company through stock and stock options. Equilar, an information services firm that tracks executive and director compensation, recently published an analysis of pay trends for non-employee directors at Fortune 500 companies that shows median director compensation for 2008 was \$182,102 in 2008 (Equilar 2009). Of that amount, 96 percent of the companies paid an annual cash retainer with a median value of \$64,000. An equal percentage of companies also awarded some form of equity-based retainers with a 2008 median value of \$106,601.³

In many cases, such ownership is a requirement established by the company in order to hold a directorship. For example, Dell Computer included the following statement in its 2004 annual proxy statement:

² See Appendix A for other specific definitions issued by the SEC and the stock exchanges.

³ For the period covered by this study, 2003, median director compensation was \$153,156, including a cash retainer of \$37,500. Equity-based director compensation had a median value of \$75,000 (Equilar 2004).

The Board of Directors (Dell Computer) has established stock ownership guidelines for themselves and Dell's executive officers to increase their equity stake in Dell and more closely link their interests with those of Dell's stockholders. Under those guidelines, each director and executive officer must attain no later than March 2006, and maintain thereafter, the following minimum investment position in Dell common stock:

- Non-employee directors — 300% of annual retainer⁴
- Chairman and Chief Executive Officer — 500% of base salary
- Other executive officers — 400% of base salary

In addition to the annual retainer, in 2004 each independent director received options to purchase an additional 11,996 shares of common stock with an exercise price of \$33.345 per share.⁵

Ownership of shares and exercisable options can accumulate to substantial amounts. For example, in 2004 the chair of the audit committee of Dell Computer, an independent director and the designated financial expert, disclosed total beneficial ownership of exercisable options for 1,404,613 shares of Dell with a total potential value of over \$46 million dollars. Given an approximate P/E ratio of 31 for Dell common stock, if earnings can be increased through earnings management by only \$0.01 per share, the potential wealth of the audit committee chair alone can be increased by over \$4 million. Four other independent directors owned either actually or beneficially over one million shares and exercisable stock options and two of those owned almost 2 million shares and exercisable options each.

Overview of this Study

While a number of researchers have examined aspects of boards of directors composition (e.g., Beasley 1996; Abbott and Parker 2000; Beasley and Petroni 2001; Klein 2002a, 2002b; Abbott et al. 2003; Cotter and Silvester 2003; Abbott et al. 2004; Lee et al. 2004), research focusing on the question of director wealth and its association with indications of earnings management is limited. Included in that limited research, Yang and Krishnan (2005) find the

⁴ For this period, the annual retainer was \$60,000.

⁵ The exercise price was the market price on the date of the grant.

extent of stock ownership by audit committee directors is positively associated with quarterly earnings management. Unexpectedly, the degree of stock ownership by independent audit committee directors is significantly positive in two different models. This result suggests definitional independence is not enough and supports concerns that awarding directors with stock or stock options leads to entrenchment by directors, causing the directors to lose their objectivity and independence.

Bedard et al. (2004) include a single variable intended to represent board independence in a regression examining the effect of audit committee expertise on earnings management. While Bedard et al. (2004) do find significance for the variable, which simply is the ratio of total options and actual shares of stock held by related or independent board members to total stock options exercisable in the 60 days following fiscal year-end, the variable does not capture any effect associated with the magnitude of the actual and potential ownership by board members. As larger magnitudes may provide greater incentive for aggressive earnings management, it is important that this relationship be examined rather than a simple ratio between options held by independent board members and others on the board. Accordingly, this study focuses on the value of stock and stock options either actually or beneficially owned.

Our results show that independent directors on the audit committees of companies exhibiting evidence of earnings management benefited from significantly greater percentage increases in the market value of stock and stock options owned than did directors of companies presenting no evidence of earnings management. The results hold regardless of whether the earnings management was income increasing or income decreasing. Similar results hold for audit committee independent chairs.

These results provide valuable and previously unexamined knowledge about the financial incentives held by independent audit committee members of boards of directors and the association of those incentives with evidence of earnings management. The next section of this paper reviews prior research related to corporate governance being demonstrated by the board of directors is summarized. Hypotheses developed are presented, followed by the method of sample selection and descriptive statistics. Results then are shown and the final section provides a discussion of the results and conclusions of the study.

PRIOR RESEARCH

Several existing streams of research are relevant to the issue of board independence. Among these are the effectiveness of board oversight and the relationship of various forms of compensation to evidence of earnings management.

Board Oversight

There is evidence that the composition of the board of directors affects the reliability of financial statements. Abbott et al. (2004) find that the independence and activity level (their proxy for audit committee diligence) of the audit committee exhibit a significant and negative association with the occurrence of restatement. They also document a significant negative association between an audit committee that includes at least one member with financial expertise and restatement. Similarly, Dechow et al. (1996) and McMullen (1996) document a significant negative relation between the presence of an audit committee and fraud.⁶

Using two groups of U.S. firms, one with relatively high and one with relatively low levels of abnormal accruals in fiscal year 1996, Bedard et al. (2004) find a significant association

⁶ Beasley (1996) does not find that audit committee presence is significantly associated with the likelihood of financial statement fraud.

between earnings management and audit committee governance practices. They find that aggressive earnings management is negatively associated with the financial and governance expertise of audit committee members, with indicators of independence, and with the presence of a clear mandate defining the responsibilities of the committee. The association is similar for both income-increasing and income-decreasing earnings management, suggesting that audit committee members are concerned with both types of earnings management and do not exhibit an asymmetric loss function similar to that of auditors.

Klein (2002b) finds the magnitude of abnormal accruals to be more pronounced for firms with audit committees comprised of less than a majority of independent directors. While she finds a negative association between abnormal accruals and the percent of outside directors on the audit committee, she finds no difference in abnormal accruals between firms with and without wholly independent committees. Zhou and Chen (2004) find that banks with more active audit committees, audit committees with greater governance expertise, and boards that are more active are associated with less earnings management. When they further classify firms into high and low earnings management groups, they find that the number of audit committee meetings, audit committee members' governance expertise, and board meetings are negatively related to earnings management for low earnings management banks. For the high earnings management group, audit committee size, independence, meetings, and board size play an important role in constraining earnings management.

Effect of Stock Options as Compensation

Historically, corporate board members were compensated primarily with cash payments for services rendered. Two factors provided impetus for a change in the mix of compensation types to one that was more beneficial both to the company and to the individual director. First, a

change in the tax law in 1993 allowed only \$1 million of annual compensation to be deductible on the corporate tax return. This created an incentive for the company to increase compensation with stock options rather than with cash. For the individual, stock options were desirable as the top personal income tax rate on cash compensation is greater than the capital gains tax rate applied to sales of stock received by exercising stock options. Second, beginning in the latter part of the twentieth century, greater awareness of the importance of corporate governance resulted in a greater focus on the issue of moral hazard. To reduce the moral hazard risk, many companies established stock ownership guidelines for directors to link more closely the interests of the directors with those of company stockholders to reduce agency costs.

While awarding directors stock ownership may reduce some agency costs, it also may increase the incentive for opportunistic behavior by inviting collusion with management or failure to restrain aggressive management decisions. Although empirical work has yielded mixed results regarding the relationship between board independence and firm value in general (Bhagat and Black 1999, 2002), board independence has been shown to have a significant impact on certain specific areas of corporate behavior (e.g., see, Weisbach 1987; Byrd and Hickman 1992; Shivdasani 1993; Brickley et al. 1994; Beasley 1996; Dechow et al. 1996; Cotter et al. 1997; Core et al. 1999; Beasley et al. 2000; Dann et al. 2003; Gillette et al. 2003; Chhaochharia and Grinstein 2006).

Several researchers have examined the relationship between stock options held by management and evidence of earnings management. Safdar (2003) presents evidence consistent with a hypothesis where managers use accruals to shift earnings to increase the stock price prior to and during option exercise periods. On average, firms exhibit significantly positive discretionary accruals during the quarters preceding option exercise, followed by significantly

negative discretionary accruals. However, the evidence suggests that on average the magnitude of earnings management related to stock options is likely to be small. During the quarter immediately preceding option exercise, discretionary accruals range from 0.35 percent to 0.62 percent of total assets and are followed by negative abnormal returns of less than 3 percent (in magnitude) over the two quarters following option exercise.

Baker et al. (2003) examine whether the structure of executive compensation regarding stock options relative to other forms of pay is associated with opportunistic use of discretionary accruals in reported earnings. They find evidence that relatively high option compensation is associated with income-decreasing discretionary accrual choices in periods leading up to option award dates.

Efendi et al. (2005) find the likelihood of a misstated financial statement increases greatly when the CEO has a sizable amount of stock options “in-the-money” (i.e., stock price above exercise price). Misstatements also are more likely for firms that are constrained by an interest-coverage debt covenant, raise new debt or equity capital, or have a CEO who serves as board chair. Further, they find that CEOs at companies that restated their financial statements exercised a higher dollar value of options compared to CEOs at matched firms.

Bartov and Mohanram (2004) find that abnormally large option exercises predict stock return future performance. They also find that abnormally positive earnings performance in the pre-exercise period turns to disappointing earnings performance in the post-exercise period, and that this pattern comes as a surprise to even sophisticated market participants (financial analysts). Collectively, their findings suggest that the private information used by top-level executives to time abnormally large exercises follows from earnings management to increase the cash payout of exercises.

As noted by DuCharme et al. (2004), one view of the relationship between earnings management and stock returns holds that management of some companies opportunistically manipulate earnings upward before stock issues. According to this opportunism hypothesis, investors are deceived and led to form overly optimistic expectations regarding future post-issue earnings. Thus, offering companies would obtain a higher price for their stock issue than they otherwise would, but subsequent earnings would tend to be disappointing. This is supported by Xie (2001), who reports that abnormal accruals are negatively correlated with subsequent stock returns in the population of companies. Yermack (1997) also discusses possible reasons why boards might have agreed to grant option to executives at points in time followed by stock price increases and Bebchuk et al. (2006) show that CEOs are more likely to get grants at monthly lows when the board does not have a majority of independent directors.

Chauvin and Shenoy (2001) calculate that on average in the 10-day period prior to option awards to CEOs stock price decreases reduce the cost of exercising the options by \$20,000. In general, directors hold fewer options than CEOs so the potential gain is less. Additionally, Core and Guay (1999) argue that focusing on single-year grants leads to erroneous influences because the vesting features of prior years' grants have implications for the incentives to engage in earnings management during a given year. Conceivably, this overhang might be large enough to overwhelm the incentive effects of the other compensation components.

Firm Value and Independent Directors Stock Options

Research correlating firm value and independent director stock options is much more limited. Fich and Shivdasani (2005) study firms adopting stock-option plans for outside directors in a sample of Fortune 1000 firms from 1997 to 1999. They find that companies with such plans have higher market-to-book ratios and profitability metrics. In particular, they find that a firm's

market-to-book ratio and several measures of accounting performance are positively and significantly related to the presence of a stock-option award plan for outside directors. They also find that Option plan adoptions for independent directors generate positive cumulative abnormal returns (CARs) and favorable revisions in analysts' earnings forecasts.

Bryan and Klein (2004) find that significantly positive links exist between the ratio of current stock option grants to total compensation and seven future investment, risk and firm performance variables. The investment variables are next period's change in research and development expenditures and change in capital expenditures. The risk variable is next year's stock return volatility. The firm performance variables are next period's Tobin's Q ratio, return on assets (ROA), a market return on current investments, and this period's stock return.

DEVELOPMENT OF HYPOTHESES

Although independent directors have the responsibility of serving as a check on management actions, compensation policies for board members may result in independent directors becoming more aligned with self-interest objectives of management rather than with the long-term interests of outside stockholders. To attract highly qualified independent directors, public companies typically offer lucrative compensation packages combining an annual retainer with stock options. Independent directors also may own actual stock or have beneficial ownership of stock and stock options held either by relatives or by other organizations with which they are associated.⁷ As with management, it may be in the self-interest of independent directors to allow some degree of earnings management to occur in order to increase their own wealth.

⁷ The Securities Exchange Act of 1934 (17 C.F.R. § 240.13d-3) sets forth the test that a person who directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power or investment power over a security is deemed the beneficial owner of such security.

Income-increasing Discretionary Accruals

Extant research indicates that management likely has incentive to attempt to increase short-term stock prices because earnings management can affect stock prices (O'Brien 1988; Stein 1989; Brown and Kim 1991). Accordingly, if management can engage in earnings management, they stand to benefit from an increase in the value of shares they have available to sell. Cheng and Warfield (2005) find results suggesting that stock-based compensation and ownership can lead to incentives for earnings management. They also find that high equity incentive managers can gain even more by selling shares after reporting earnings that meet or beat analysts' forecasts or after recognizing income-increasing abnormal accruals. Beneish and Vargus (2002) find evidence consistent with managers selling more after market participants overprice income-increasing accruals. Consequently, such earnings management behavior likely increases managers' wealth at the expense of outside shareholders. If independent directors are compensated with ownership interests, they stand to benefit in a manner similar to that of management. This leads to the first set of hypotheses related to independent directors of companies where estimated discretionary accruals increase current period income:⁸

H1: The cumulative percentage change in value for independent members of the audit committees of companies reporting income-increasing discretionary accruals will be significantly greater than the cumulative percentage change in value for independent members of the audit committees of companies not reporting discretionary accruals.

H2: The cumulative percentage change in value for independent chairs of the audit committees of companies reporting income-increasing discretionary accruals will be significantly greater than the cumulative percentage change in the value for independent chairs of the audit committees of companies not reporting discretionary accruals.

⁸ For brevity in stating hypotheses, the cumulative percentage change in the value of stocks and exercisable stock options owned or beneficially owned is referred to as "change in value."

The cumulative percentage change has been chosen as the best measure of wealth increase for two reasons. First, the cumulative percentage change provides a common-size metric comparable to return-on-investment with investment interpreted as the market value of the shares of stock owned or represented by exercisable options at the beginning of the fiscal year. Second, using absolute dollar values would introduce confounding variables, such as the personal wealth of an individual director, company size, market volatility, etc.

Income-decreasing Discretionary Accruals

A survey by Nelson et al. (2002) indicates that 31 percent of the earnings management attempts are income-decreasing compared to 53 percent that are income-increasing. Income-decreasing earnings management also must be considered when examining boards of director's wealth effects as there are various motivations to reduce earnings. For example, management may want to reduce the value of the company's common stock prior to a management buyout (Perry and Williams 1994) or create opportunities to increase income in future periods (Levitt 1998).

When considering incentives to reduce current-year income, management and directors may anticipate purchasing stock or being granted stock options concurrently with or soon after current period earnings are announced. If current earnings can be depressed through earnings management, the stock may be purchased at a lower per share price or the exercise price of stock options may be lower. When accruals are reversed in subsequent periods, income-increasing reversals will provide larger increases in wealth when the stock and/or stock options are sold or exercised. These possibilities lead to the following hypotheses:

- H3: The cumulative percentage change in value for independent members of the audit committees of companies reporting income-decreasing discretionary accruals will be significantly greater than the cumulative percentage change in value for independent members of the audit committees of companies not reporting discretionary accruals.

H4: The cumulative percentage change in value for independent chairs of the audit committees of companies reporting income-decreasing discretionary accruals will be significantly greater than the cumulative percentage change in value for independent chairs of the audit committees of companies not reporting discretionary accruals.

SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

Prior to selecting a sample of companies and the associated independent directors, the length of time studied and the particular period under investigation had to be established and an appropriate metric for changes in director wealth had to be selected. To isolate any relationship between audited discretionary accruals and changes in market value, only one fiscal period is examined. This avoids possible confounding effects resulting from subsequently reported audited financial statements and the corresponding discretionary accruals.

Fiscal year 2003 (June 2003 to May 2004) was selected for study as it occurred during a relatively non-eventful period and exogenous influences would be minimized to the extent possible. By 2003, the market turmoil in 2001 and 2002 resulting from terrorism, a mild recession, and a number of major accounting frauds had been reduced. Additionally, subsequent to the passage of SOX both management and auditors may have acted more conservatively, making any changes in value corresponding to earnings management less likely. Fiscal year 2003 also was prior to the backdating of stock option grants controversy and prior to a significant accounting change in 2005 requiring expensing of option grants (FASB 2004). The relative financial market stability is reflected in the Dow-Jones industrial average increasing by 15 percent during the year and the Standard and Poor's 500 index increasing by 16 percent, both above the long-term average growth rate of 11 percent, but not at a rate great enough to distort the financial data used in this study.

An appropriate measure of wealth had to be determined. While some research on stock options focuses only on actual achieved benefits rather than longer-term potential benefits, where an increase in wealth can be represented only by benefits received from actually exercising stock options and selling the stock received this view is too restrictive. Individuals logically can perform actions such as managing earnings that may result in future increases both in the value of stocks actually owned and of stock options that are exercisable so that focusing only on exercised options ignores any potential increase in the value of stock actually or beneficially owned. To measure the total change in wealth, this study uses the value of shares actually or beneficially owned plus the number of actually or beneficially owned shares represented by options exercisable within 60 days following fiscal year-end.

Sample Selection

Sample companies are from the complete set of public companies on Compustat with a 2003 fiscal year-end (June 2003 to May 2004) and with complete accruals data for that fiscal year. Companies from the regulated (SIC 4000 to 4900), financial (SIC 6000 to 6900), and government (SIC 9900) sectors have been excluded because their accounting practices make the estimation of discretionary accruals difficult. Also, companies without complete stock price data for the twelve months subsequent to the fiscal year end are excluded.

As noted by Kothari, et al. (2005), the use of estimated discretionary accruals in tests of earnings management and market efficiency is widespread. Accordingly, estimated discretionary accruals are used in this study as the measure of possible earnings management.⁹ The discretionary component of total accruals is estimated with the modified Jones (1991) cross-

⁹ While the term discretionary accruals is commonly used in the literature examining accruals, other terms include abnormal accruals and unexpected accruals.

sectional model (DeFond and Jiambalvo 1994; Francis et al. 1999; Becker et al. 1998). This requires the estimation of a cross-sectional regression for each industry (two-digit SIC codes), so industries with less than ten firms included have been eliminated, leaving 4,969 companies in the final sample.

In the Jones model, discretionary accruals for each company in industry j are defined as the residual from the regression of total accruals (the difference between cash from operations and net income) on two factors that explain nondiscretionary accruals, the change in revenue and the level of fixed assets subject to depreciation. All variables are deflated by total opening assets to reduce heteroscedasticity.

$$ACC_{ijt} = \alpha_0 \left(1/TA_{ijt-1}\right) + \alpha_1 \left(\Delta REV_{ijt}/TA_{ijt-1}\right) + \alpha_2 \left(PPE_{ijt}/TA_{ijt-1}\right) + \varepsilon \quad (1)$$

Where: ACC_{ijt} = Total accruals for company i from industry j in year t , deflated by TA_{ijt-1} ; total accruals are defined as the difference between earnings (before extraordinary items and discontinued operations) and cash flow from operations.

TA_{ijt-1} = Total assets for company i from industry j at the end of year $t-1$

ΔREV = Change in revenue for company i from industry j between years $t-1$ and t

PPE_{ijt} = Gross property, plant and equipment for company i from industry j in year t

ε = An error term

α = The abnormal rate of return on a security or portfolio in excess of what would be predicted by an equilibrium model

Discretionary accruals are calculated as the residual, ε , from equation (1). Consistent with Subramanyam (1996), companies are deleted where operating cash flows, discretionary accruals, or non-discretionary accruals are more than three standard deviations from their respective means. This results in a loss of 62 companies (1.3 percent of the sample), reducing the final population to 4,764 companies.

To evaluate earnings management, the 4,764 companies were ranked by estimated discretionary accruals. In a manner similar to Bedard et al. (2004), the 100 companies with evidence of the greatest income-increasing discretionary accruals (“Income-increasing”), the 100 companies with evidence of the greatest income-decreasing discretionary accruals (“Income-decreasing”), and the 100 with the lowest evidence of discretionary accruals, (“Neutral”), are identified. As noted by Bedard et al. (2004), several studies indicate that all existing models measure abnormal accruals with error (e.g., see Dechow et al. 1995). By including only companies with high and low abnormal accruals plus the Neutral companies in the sample, the power of our tests are improved by mitigating the error measurement problem.

To be included in each final sub-sample, the first prospectus (Form DEF 14-A) subsequent to the 2003 fiscal year-end must be available as well as month-end stock prices for a 12 month period subsequent to fiscal year-end. Descriptive statistics for these companies are shown in Table 1.

Table 1: Number of Population and Sample Companies by Industry

2-Digit SIC Code	Population	Sample Companies—Effect of Estimated Discretionary Accruals		
		Income Increasing	Neutral	Income Decreasing
10 Mining	361	17	1	4
20 Construction	991	17	15	26
30 Manufacturing	1,741	33	37	39
50 Wholesale and Retail Trade	613	8	16	1
70-80 Services	1,263	25	31	30
Total	4,969	100	100	100

Table 1 indicates the three groups to be somewhat different in terms of industry composition. The Income-increasing group includes more companies from the mining industry,

while the Neutral group includes more from the Wholesale and Retail trade and the Income-decreasing group has more from the Construction industry. Other industries are distributed relatively evenly between the three groups. These differences are taken into account in the computation of discretionary accruals by estimating accruals by industry.

Panel A of Table 2 shows that both the Income-increasing and Income-decreasing groups are significantly smaller than the Neutral group in terms of total assets, total sales, net income, and cash flow from operations. Both groups also have a significantly smaller stock price at fiscal year end than does the neutral group and both remain significantly smaller for every month of the subsequent twelve months. Market betas for both groups are significantly larger than beta for the neutral group, but not significantly different from one another.

Panel A also shows that the Income-decreasing group is significantly smaller than the Income-increasing group in total assets and total sales, significantly larger in net income, but not significantly different in terms of cash flows from operations. Return on assets (ROA) for both the Neutral group and the Income-decreasing group is significantly less negative than ROA for the Income-increasing group. ROA for the Neutral group, however, is not significantly different from that of the Income-decreasing group.

Panel B of Table 2 shows the larger Neutral group being approximately evenly split between membership in the NYSE and the NASDAQ exchanges, with a minimal number having stock traded on other exchanges. Approximately three-fourths of both the Income-increasing and the Income-decreasing groups trade on the NASDAQ, with one-fourth each traded on other exchanges.

Panel B also shows the Neutral group being audited almost exclusively by the Big 4 audit firms while the other two groups have a more even distribution between Big 4 audit firms and

non-Big 4 firms. Auditors' reports on 2003 financial statements do show interesting results with two-thirds of the larger, more profitable Neutral group receiving an unqualified report but with additional explanatory language. The Income-increasing group also received such reports with 60 percent being unqualified with additional language. Conversely, 71 percent of the much smaller Income-decreasing group received an unqualified report with no additional language.

Table 2: Descriptive Statistics at 2003 Fiscal Year-end for Sample Companies

Panel A: Financial characteristics

	Means by Effect of Estimated Discretionary Accruals		
	Income Increasing	Neutral	Income Decreasing
Estimated discretionary accruals ^a	0.51	0.00	-0.52
Total assets (millions)	\$ 220.83	\$ 1,806.69	\$ 42.08
Total sales (millions)	\$ 193.97	\$ 1,803.49	\$ 45.55
Net income (loss) (millions)	\$ (34.40)	\$ 88.41	\$ 4.93
Cash flow from operations (millions)	\$ 46.80	\$ 140.95	\$ (2.64)
Return on assets ^b	(83.52)	(1.39)	(5.60)
Earnings per share	\$ (2.37)	\$ 0.76	\$ 0.33
Stock Price	\$ 7.93	\$ 19.59	\$ 5.89
Market beta ^c	1.64	0.92	1.21

Panel B: Other information

	Income Increasing	Neutral	Income Decreasing
Stock exchange			
• NYSE	9	42	2
• AMEX	12	9	22
• NASDAQ	75	44	73
• Other	4	5	3
Auditor			
• Big 4	60	93	39
• Non-Big 4	40	7	61
Audit opinion			
• Unqualified	40	34	71
• Modified ^d	60	66	29

^a Deflated by opening total assets

^b Return on Assets is Income Before Extraordinary Items–Available for Common, divided by Total Assets, defined as the sum of current assets, net property, plant, and equipment, and other non-current assets. This is then multiplied by 100.

^c Beta is a measurement of the sensitivity of a company’s stock price to the overall fluctuation in the Standard & Poor’s 500 Index Price calculated for a 60-month time period.

^d Unqualified with Additional Language. Auditor expressed an unqualified opinion regarding the financial statements but added explanatory language to the auditor’s standard report.

Independent Audit Committee Members

Data on stocks and stock options exercisable within 60 days beneficially owned by independent members of the board of directors of each sample company were obtained from the annual proxy statement (Form DEF14-A) filed by each sample company for the 2003 fiscal year.¹⁰ As shown in Table 3, for the 300 sample companies, 894 audit committee members were identified, of which 820 were identified as being independent members of the audit committee: 246 for the Income-increasing group, 326 for the Neutral group, and 247 for the Income-decreasing group. Of these, 61 served as chair of the audit committee of the Income-increasing group, 82 were chair of the audit committee for the Neutral group, and 52 chaired the audit committee for the Income-decreasing group. For the Income-increasing group, 15 companies did not identify the audit committee chair, 17 chairs were not identified in the Neutral group, and 34 were not identified for the Income-decreasing group. All such directors were included in the independent, non-chair category..

Audit Committee

As shown in Table 3, for independent members of the audit committee, the mean market value at fiscal year-end differed both between groups and by responsibility within groups. The mean market value at fiscal year-end 2003 of \$1,206,488 for the Neutral group was larger than the \$818,193 mean for the Income-increasing group, but not significantly so, while the mean for the Neutral group was significantly larger than the \$592,259 mean for the Income-decreasing group. Median market values for the three groups were \$294,155 for the Neutral group, \$131,603 for the Income-increasing group, and \$82,617 for the Income-decreasing group.

¹⁰ For brevity in the remainder of this paper, the 2003 fiscal year-end market value of beneficially owned stocks and stock options exercisable within 60 days generally will be referred to simply as “market value.”

Table 3: Beneficial Ownership Interests of Independent Members of Audit Committee and Independent Audit Committee Chairs at 2003 Fiscal Year-end

	Effect of Estimated Discretionary Accruals		
	Income-increasing	Neutral	Income-decreasing
Independent members of audit committee ^a n ^b			
Mean	246	326	247
Median	\$818,193	\$1,206,488	\$592,259
Range	\$131,603 \$1,470—\$22,507,142	\$294,155 \$1,500—\$52,369,560	\$82,617 \$507—\$41,058,775
Independent chair of audit committee ^a n ^c			
Mean	61	82	52
Median	\$820,693	\$762,196	\$273,121
Range	\$126,439 \$2,000—\$15,619,634	\$306,475 \$10,880—\$10,141,086	\$87,972 \$780—\$4,220,428

^a Mean, Median and Range reflect corresponding market values of beneficial ownership of stock and stock options exercisable within 60 days at 2003 fiscal year-end (June 2003 to May 2004).

^b Not included are twenty-eight audit committee members who were not independent. Those directors had beneficial ownership of stock and stock options exercisable within 60 days at 2003 fiscal year-end with a mean market value of \$1,058,315 per director. Sixteen independent directors and two non-independent directors who were members of the audit committee had no beneficial interest in the associated companies.

^c Not included is one audit committee chair who was not independent. That director had beneficial ownership of stock and stock options exercisable within 60 days at 2003 fiscal year-end with a value of \$3,714,037. Seventeen companies did not identify the audit committee chair. Fourteen independent directors and three non-independent directors who were members of the audit committee had no beneficial interest in the associated companies. Twenty companies did not identify the audit committee chair.

While the Neutral group has a larger mean and median market value than the other two groups, Panel A of Figure 1 shows that the distribution patterns of market values for each group are similar. Market values for all three groups predominately are less than \$250,000, but all three groups have a substantial percentage of market values greater than \$1,000,000 (20 percent for the Neutral group, 15 percent for the Income-increasing group, and 9 percent for the Income-decreasing group.) Of those greater than \$1,000,000, the Neutral group includes 10 directors with a beneficial ownership valued greater than \$10,000,000, with a maximum value of \$52,369,560. The Income-increasing group includes five directors with a beneficial ownership valued greater than \$10,000,000 and a maximum of \$22,507,142, and the Income-decreasing group had two such directors with a maximum of \$41,058,775.

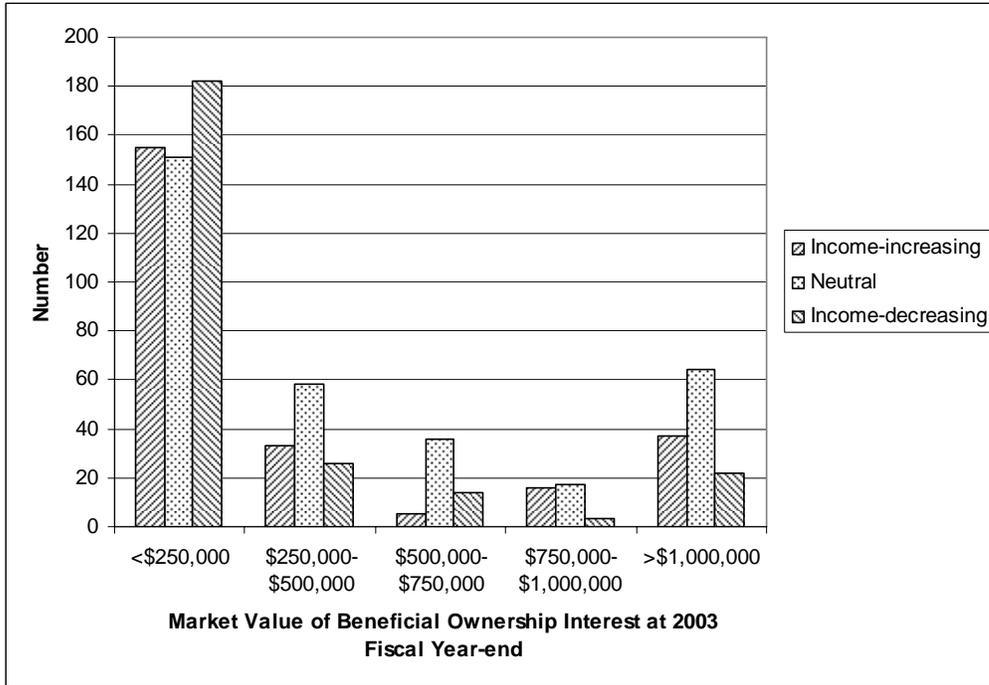
Audit Committee Independent Chairs

Examination of Table 3 for the independent audit committee chairs reveals that the chairs of the Income-increasing group own stock and stock options with a greater mean market value at fiscal year-end than the other two groups, but a t-test indicates no significant difference for either. Medians for the three groups were \$306,475 for the Neutral group, \$126,439 for the Income-increasing group, and \$87,972 for the Income-decreasing group.

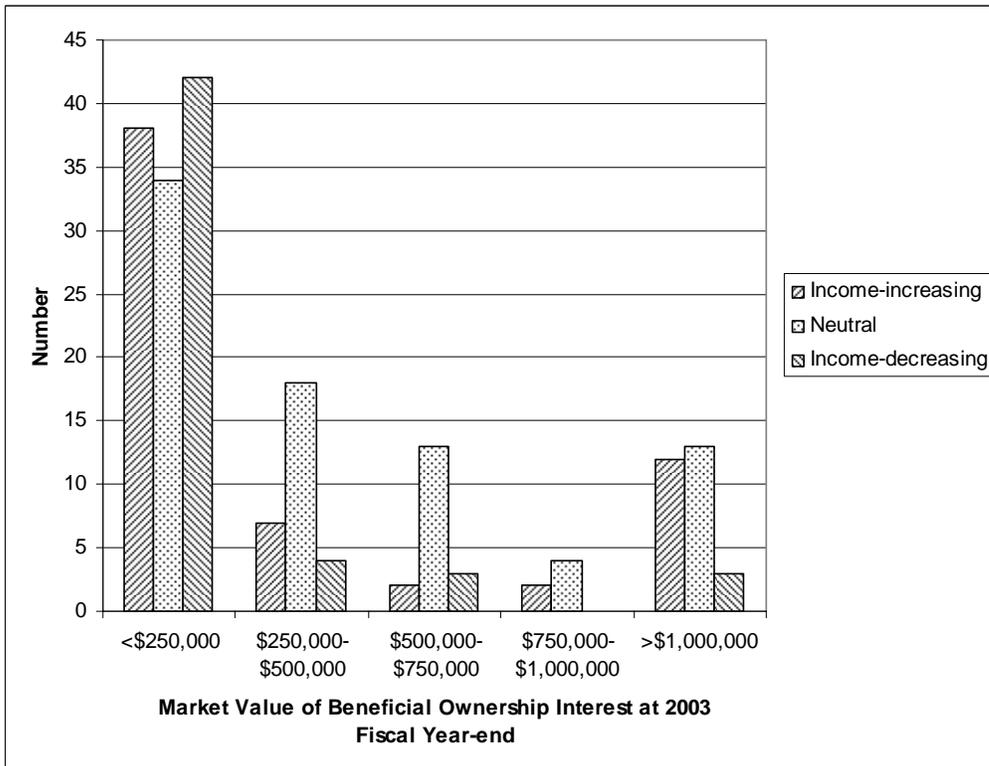
Panel B of Figure 1 shows that as with the group of all independent committee members, the distribution patterns of market values for each group are similar. Market values for all three groups predominately are less than \$250,000, but all three groups have a substantial percentage of market values greater than \$1,000,000 (16 percent for the Neutral group, 6 percent for the Income-increasing group, and 20 percent for the Income-decreasing group.) Of those greater than \$1,000,000, the Neutral group includes one director with a beneficial ownership valued at \$10,141,086. The Income-increasing group had one director with a beneficial ownership valued

**Figure 1: Distribution of Market Value of Beneficial Ownership Interests at 2003
 Fiscal Year-end**

Panel A: Independent Members of Audit Committee



Panel B: Audit Committee Independent Chairs



at \$15,619,634, and the Income-decreasing group had no directors with a beneficial ownership over \$10,000,000.

RESULTS

As the market value of stocks and stock options exercisable within 60 days and owned beneficially at fiscal year-end 2003 differ substantially both between groups and by responsibility within groups, simply comparing changes in dollar magnitudes may give misleading results. For each category of responsibility, the three groups are compared by examining the cumulative percentage change in market value over the 2003 fiscal year. Market values are calculated by multiplying month-end stock prices for each company by the number of shares and exercisable stock options owned or beneficially owned by each identified committee member at the beginning of the fiscal year. Populations of each group are compared using Tukey's HSD test and results are summarized in Table 4 and discussed in detail below.

Table 4: Differences in Cumulative Percentage Increase in Mean Market Value of Beneficial Ownership of Stock and Stock Options Exercisable Within 60 days

	Months After 2003 Fiscal Year-end			
	3	6	9	12
Income Increasing > Neutral for:				
Audit Committee (H1)		①	①	①
Audit Committee Chair (H2)		①	①	①
Income-decreasing > Neutral for:				
Audit Committee (H3)	②	②	②	②
Audit Committee Chair (H4)	②	②	②	②

① Income-increasing group significantly greater than Neutral group at $p < 0.05$ using Tukey's HSD test

② Income-decreasing group significantly greater than Neutral group at $p < 0.05$ using Tukey's HSD test

Audit Committee Independent Members

Figure 2 Panel A shows that the mean market values for all three groups increased during the 2003 fiscal year. However, when cumulative percentage increases are compared (see Figure 2 Panel B), Table 4 indicates that within six months of 2003 fiscal year-end, the Income-increasing group displays a significantly greater (Tukey's HSD, $p < 0.05$) cumulative percentage increase than does the Neutral group and a significantly greater difference continues for the remainder of the 2003 fiscal year. Thus, hypothesis H1 is supported for three of the four 2003 fiscal quarters.

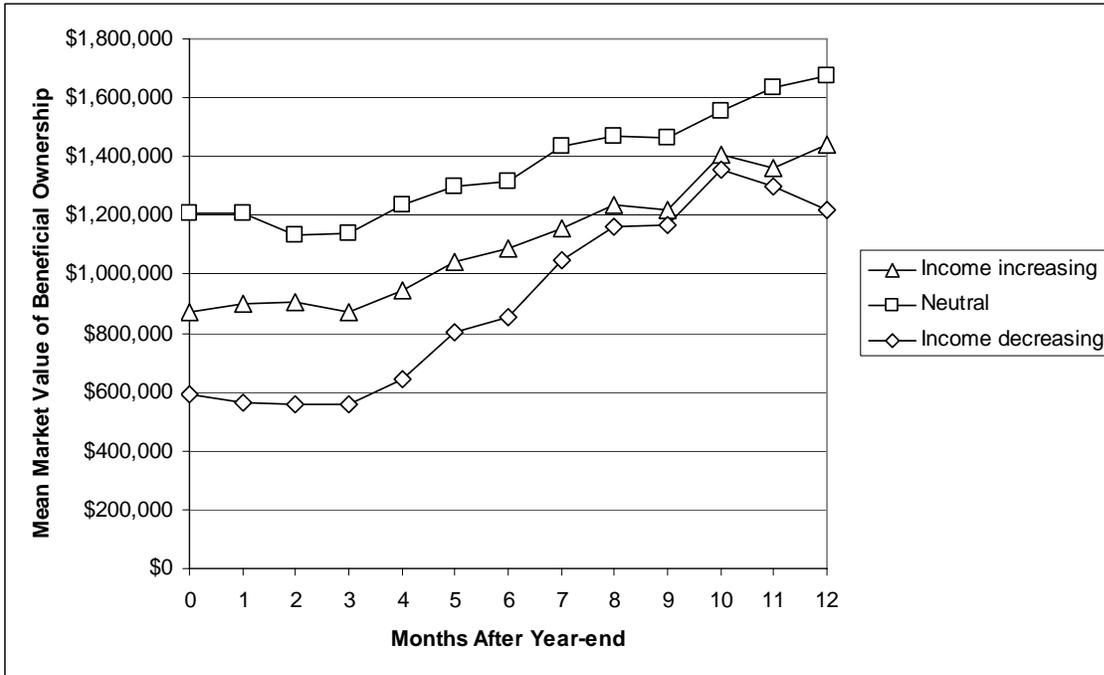
Audit committee independent members in the Income-decreasing group recognized significantly greater benefits even sooner than did those in the Income-increasing group (see Figure 2, Panel B.) Table 4 indicates that within three months, the cumulative percentage increase for the Income-decreasing group became significantly greater (Tukey's HSD, $p < 0.05$) than that for the Neutral group and remained significantly greater for the remainder of the 2003 fiscal year. Thus, hypothesis H3 is supported for all 2003 fiscal quarters. Interestingly, although not hypothesized, the cumulative percentage change for the Income-decreasing group also became significantly greater than that for the Income-increasing group after six months and remained so for the remainder of the year.

Audit Committee Independent Chairs

For audit committee independent chairs, the Income-increasing group had beneficially owned stock and exercisable stock options with a market value greater than that owned either by the Neutral group or by the Income-decreasing group (see Figure 3 Panel A.) As with all independent members of the audit committee, Table 4 indicates that within six months of 2003 fiscal year-end, the Income-increasing group displays significantly greater cumulative percentage

Figure 2: Mean Market Value of Beneficial Ownership and Cumulative Percentage Increase in Mean Market Value of Beneficial Ownership—Audit Committee Independent Members

Panel A: Mean Market Value of Beneficial Ownership—Audit Committee Independent Members



Panel B: Cumulative Percentage Increase in Mean Market Value of Beneficial Ownership—Audit Committee Independent Members

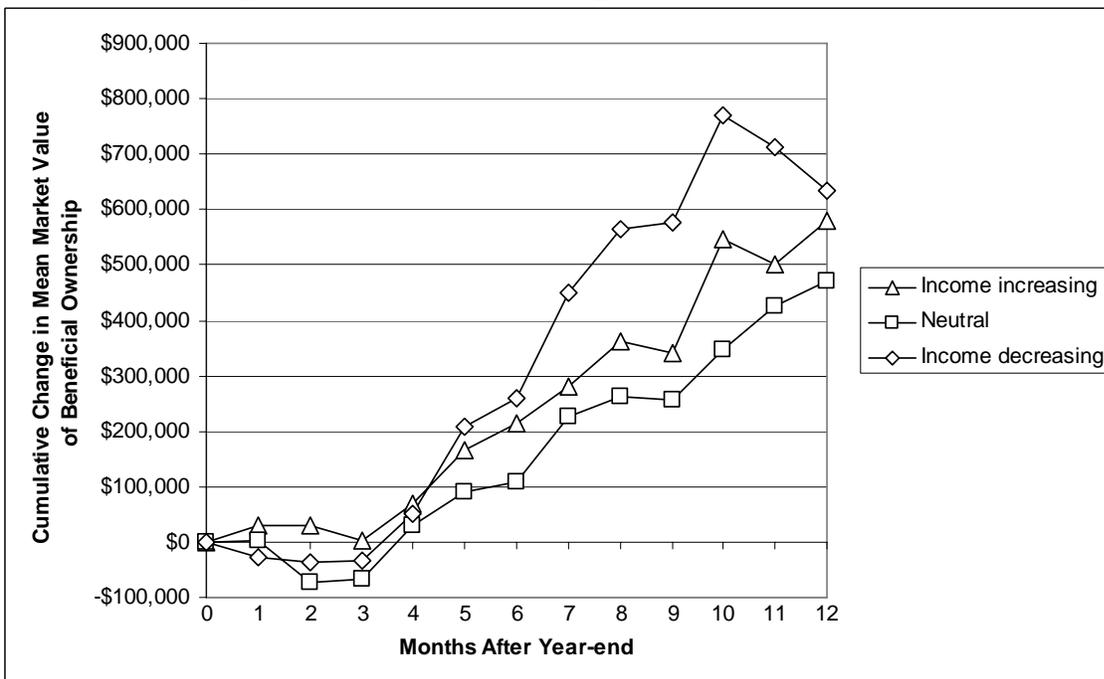
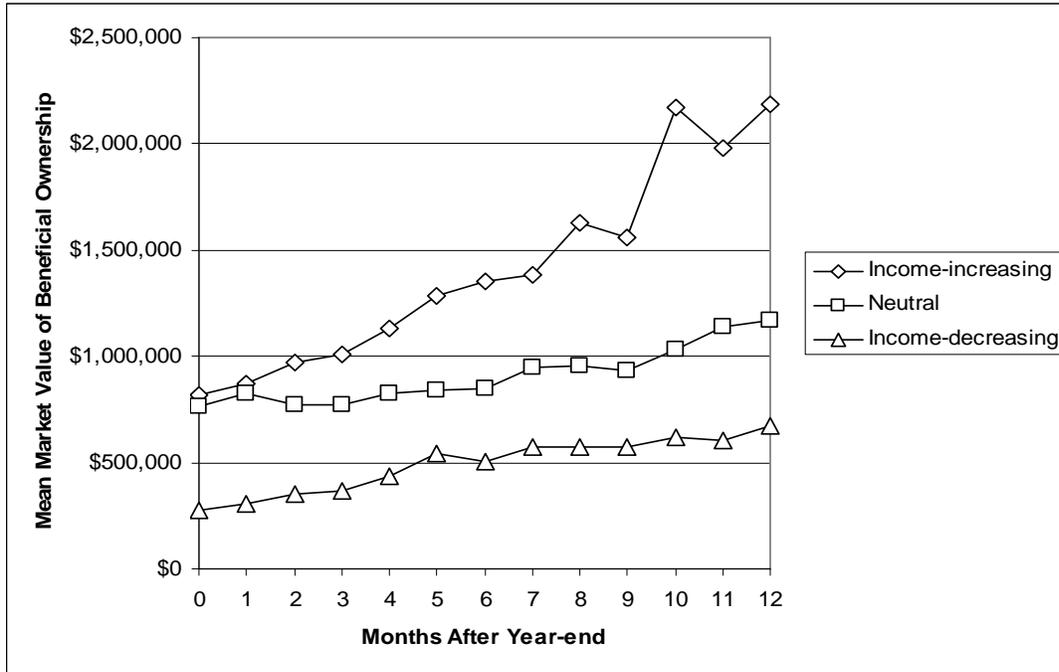
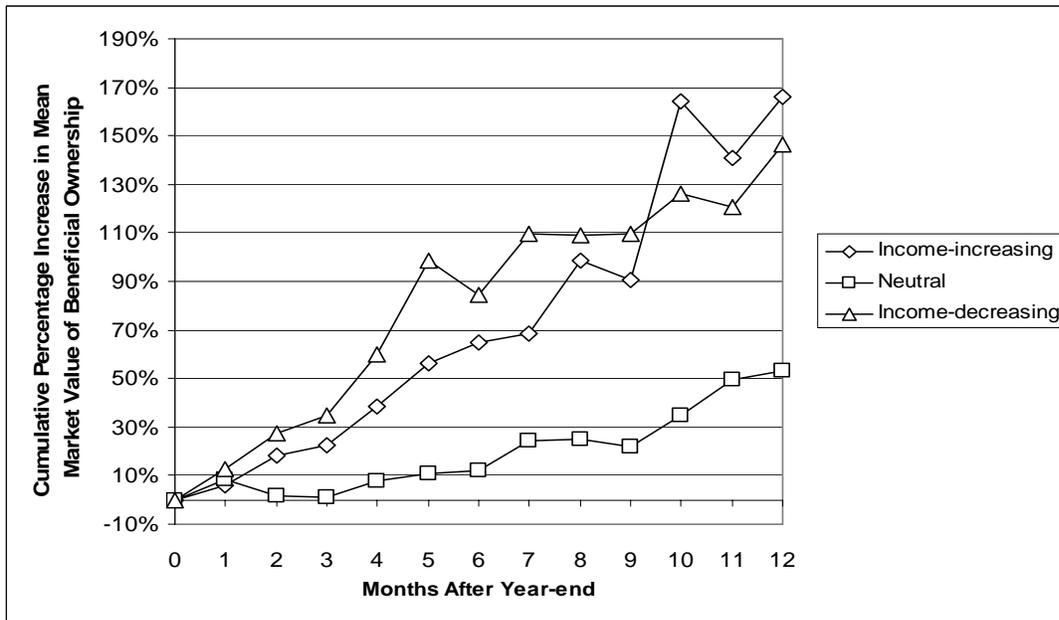


Figure 3: Mean Market Value of Beneficial Ownership and Cumulative Percentage Increase in Mean Market Value of Beneficial Ownership—Audit Committee Independent Chairs

Panel A: Mean Market Value of Beneficial Ownership—Audit Committee Independent Chairs



Panel B: Cumulative Percentage Increase in Mean Market Value of Beneficial Ownership—Audit Committee Independent Chairs



increases (Tukey's HSD, $p < 0.05$) than does the Neutral group and a significantly greater difference continues for the remainder of the 2003 fiscal year. Thus, hypothesis H2 is supported for three of the four 2003 fiscal quarters.

Although the mean market value for the Income-decreasing group was substantially less than that for the other two groups (Figure 3 Panel B), the cumulative percentage increase was similar to that for the Income-increasing group, and as seen in Table 4, actually was significantly greater than that for the Neutral group for all four 2003 fiscal quarters (Tukey's HSD, $p < 0.05$). Thus, hypothesis H4 is supported for all four 2003 fiscal quarters. There were no significant differences between market value means for any quarter between the Income-increasing and Income-decreasing groups.

Additional Test

Changes in the market value of stock may result from influences other than earnings management. As prior research has identified many such influences, it is appropriate to investigate if such influences are correlated with cumulative percentage increases in stock value. To accomplish this, the following model is estimated:

$$\begin{aligned} \Delta\text{MktVal} = & \beta_1 + \beta_2 \text{ SIZE} + \beta_3 \text{ GROWTH} + \beta_4 \text{ CASHFLOW} \\ & + \beta_5 \text{ LEVERAGE} + \beta_6 \text{ ROA} + \omega \end{aligned} \quad (2)$$

Where ΔMktVal = Cumulative percentage change in total market value of beneficial ownership for 3, 6, 9 or 12 months after fiscal year-end
SIZE = Natural logarithm of total assets in year t
GROWTH = Change in total assets in year t divided by total assets in year t-1
CASHFLOW = Cash flow from operations in year t divided by total assets in year t-1
LEVERAGE = Total liabilities in year t divided by total assets in year t-1
ROA = Net income in year t divided by total assets in year t-1
 ω = An error term

The variables SIZE, GROWTH, CASHFLOW, and LEVERAGE are drawn from Nagy (2005). Kothari et al. (2005) suggest that misspecification problems are attenuated when ROA is included in a regression model.

Estimation of the model finds that Size is significantly negative and Leverage is significantly positive at the 3-month period. However, none of the variables is significant at 6, 9 or 12 months. This indicates that other influences are driving the differences in cumulative percentage changes in stock value. As the results discussed above find a significant correlation between evidence of earnings management and cumulative percentage changes in the market value of holdings by independent directors, additional support for the hypotheses is provided.

DISCUSSION AND CONCLUSIONS

Independent members of boards of directors are thought to be an important element in overall corporate governance as they are believed to serve as a control over possible self-interest actions by company management and thereby reduce agency costs. Their perceived importance in the U.S. is seen in the requirement that the audit committees of publicly traded companies consist solely of independent directors.

While both the legal definition and the various stock exchange rules focus on a director not having a “material relationship” with the company, a director may have a substantial ownership position directly or beneficially through stock and stock options and still be considered independent. Such ownership interests can accumulate to such substantial amounts that it can be questioned whether the self-interests of independent directors might become more aligned with that of management than with the long-term interests of outside shareholders. Such shifting of interests may result in independent directors being inappropriately lax when

reviewing and approving management actions involving earnings management or actively participating with management in earnings management schemes.

While the “backdating” of stock option grants became a major issue beginning in 2006 (Bebchuk et al. 2006; Lublin and Bulkeley 2006), backdating to obtain a reduced strike price generally would not offer the potential magnitude of reward offered by managing reporting earnings as backdating impacts only current year option grants (e.g., see Chauvin and Shenoy 2001). Earnings management has the ability to increase the market value of not only stock options currently granted, but that of beneficially owned stock and exercisable stock options received or purchased previously.

Results show that independent audit committee members of companies exhibiting evidence of earnings management benefited from significantly greater increases in the market value of stock and stock options than did independent audit committee members of companies presenting no evidence of earnings management. The results hold regardless of whether the earnings management was income increasing or income decreasing. Similar results hold for audit committee independent chairs. A summary of the results is as follows:

Hypothesis	Outcome
H1: The cumulative percentage change in value for independent members of the audit committees of companies reporting income-increasing discretionary accruals will be significantly greater than the cumulative percentage change in value for independent members of the audit committees of companies not reporting discretionary accruals.	H1 supported for second, third and fourth 2003 fiscal quarters.
H2: The cumulative percentage change in value for independent chairs of the audit committees of companies reporting income-increasing discretionary accruals will be significantly greater than the cumulative percentage change in the value for independent chairs of the audit committees of companies not reporting discretionary accruals.	H2 supported for second, third and fourth 2003 fiscal quarters.

<p>H3: The cumulative percentage change in value for independent members of the audit committees of companies reporting income-decreasing discretionary accruals will be significantly greater than the cumulative percentage change in value for independent members of the audit committees of companies not reporting discretionary accruals.</p>	<p>H3 supported for all 2003 fiscal quarters.</p>
<p>H4: The cumulative percentage change in value for independent chairs of the audit committees of companies reporting income-decreasing discretionary accruals will be significantly greater than the cumulative percentage change in value for independent chairs of the audit committees of companies not reporting discretionary accruals.</p>	<p>H4 supported for all 2003 fiscal quarters.</p>

While these results should not be interpreted as clear evidence that independent directors act in their own self-interest in concert with management, the question of impaired independence certainly can be raised. To avoid the appearance of impropriety, some companies have eliminated granting of stock options to directors (Lublin and Bulkeley 2006). IBM directors, for example, now are paid an annual \$200,000 retainer, which they can take either in IBM shares or partly in cash, while Campbell Soup Company directors receive an equal mixture of actual shares and cash. Coca-Cola now pays directors solely through annually allocated "equity-share units" that can't be cashed until three years have passed, and then only if Coca-Cola posts compounded annual growth of 8 percent in earnings per share.

Although such measures may eliminate increased agency costs resulting from stock option grants, directors can benefit from the shares of stock actually owned. This may result in an increased, rather than decreased, risk of independent directors allowing inappropriate earnings management to be reported to the detriment of long-term shareholders. Accordingly, many companies such as Sears Holdings, Alcoa, and Berkshire Hathaway have decided to pay directors only in cash (Lublin and Bulkeley 2006).

Still, cash payments do not prevent directors from using cash received to purchase stock on the open market. As a result, the problem still exists of directors possibly acting in their own self-interest to allow management to engage in earnings management. To prevent this, one option would follow the restrictions in effect for independent auditors. That is, independent directors should be precluded from owning stock or holding stock options of any company for which they serve. This restriction for auditors is a major element in communicating actual independence to the public and independent auditors do not find it to be particularly onerous.

Such a restriction also would be consistent with the United Kingdom where a more restrictive rule has been adopted. That rule is contained in the United Kingdom *Combined Code on Corporate Governance* (FRC 2003) related to independent directors and stock options:

Remuneration for [independent] directors should not include share options. If, exceptionally, options are granted, shareholder approval should be sought in advance and any shares acquired by exercise of the options should be held until at least one year after the [independent] director leaves the board. Holding of share options could be relevant to the determination of a[n independent] director's independence.

While the results of this study support the stated hypotheses, limitations exist and further research is needed. First, while the Jones (1991) model is widely used to estimate discretionary accruals, a different measure of earnings management may provide different results. Dechow and Dechev (2002), for example, present a measure based on working capital accruals that could be explored. Second, this study includes only examples of extreme estimates of earnings management. Future studies could examine if a threshold of earnings management exists below which the market value of director-owned stock and stock options is not affected significantly. Third, this study focuses only on fiscal year 2003. Future studies could examine a broader time period. Fourth, the paper does not control for grants (options or stock) awarded in the period subsequent to the 2003 fiscal year-end nor does it examine whether options actually were

exercised during that period. Lastly, the period examined in this study was relatively stable in terms of the stock market and the overall economy. Since that period, tax laws and reporting standards have changed, including expensing of stock options for financial reporting. Additionally, beginning in 2007 the overall economy declined, stock market volatility increased substantially, and by 2008 a recession was evident. An extension of this paper should be undertaken to examine if the relationships found during a relatively stable period extend to a period of much greater uncertainty.

APPENDIX A: INDEPENDENT DIRECTORS AND AUDIT COMMITTEES,

Because members of management may be elected to the board of directors, both Congress and the financial markets have determined that independent directors are needed to serve as a check on company management. While the Sarbanes-Oxley Act of 2002 includes a legal definition of an independent board member, the Securities and Exchange Commission (SEC) may impose additional requirements and each of the stock exchanges has its own rules. The New York Stock Exchange (NYSE) *Listed Company Manual* (NYSE 2006, Section 303A) specifies that for companies listed on the NYSE a majority of the board of directors must be independent. A director will qualify as independent only if the board affirmatively determines that such person has "no material relationship" with the company, either directly or indirectly through another. Similar rules apply for companies listed on NASDAQ (NASDAQ 2004, Rule 4350(c)).

The American Stock Exchange Company Guide (AMEX 2006, Section 121(A)), specifies that companies listed on the American Stock Exchange (AMEX) must have a sufficient number of independent directors on the company's board of directors to satisfy the audit committee requirements set forth in Section 121(B) (see below). Section 121(A) states that to be

considered independent, directors cannot be officers of the company and must be "free from any relationship that would interfere with the exercise of independent judgment."

Audit Committees

The purpose of an audit committee includes assisting board oversight of the integrity of the company's financial statements, the company's compliance with legal and regulatory requirements, the independent auditor's qualifications and independence, and the performance of the company's internal audit function and independent auditors. Because the audit committee serves a function generally considered critical, there are rules for who may serve on the audit committee of the board of a public company.

The Sarbanes-Oxley Act of 2002 defines an audit committee as "a committee (or equivalent body) established by and amongst the board of directors of an issuer for the purpose of overseeing the accounting and financial reporting processes of the issuer and audits of the financial statements of the issuer" (SOX 2002). Section 301 of SOX then requires that "each member of the audit committee of the issuer be a member of the board of directors of the issuer, and shall otherwise be independent."

The NYSE requires that an audit committee consist of a minimum of three independent members and each member must be financially literate, as such qualification is interpreted by the company's board in its business judgment, or must become financially literate within a reasonable period after his or her appointment to the audit committee. NASDAQ requires that all audit committee members be independent and must be able to read and understand financial statements at the time of their appointment (NASDAQ 2004, Section 303A.07). For the AMEX, Section 121(B), requires an audit committee of at least three members, comprised solely of independent directors, each of whom is able to read and understand fundamental financial

statements, including a company's balance sheet, income statement, and cash flow statement (AMEX 2006).

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