SOCIAL TIES AND EARNINGS MANAGEMENT

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February 6, 2012

Abstract

We detect a significant presence of social ties between the CEO and audit committee members and our results suggest that these informal ties play a material role in audit-committee oversight. In particular, we find a substantially stronger, positive relation between abnormal (i.e., discretionary) accruals and the extent of an audit committee's connection to the CEO when we consider social ties in addition to the conventional ties. Moreover, we find that an audit committee's social affiliation is associated with an increased discontinuity in the earnings distribution surrounding earnings targets. Together, our findings suggest that informal ties play a material role in facilitating creative accounting practices.

JEL Classification: M4, G3
Keywords: Audit Committee, Social Ties, Earnings Management

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1 Introduction

Audit committees play a crucial role in overseeing the integrity of a firm's financial statements (Levitt (2000)). At the heart of its execution is whether the committee is composed of directors who are independent-minded with respect to the CEO. The 1999 amendments to the NYSE and NASDAQ listing standards specify that audit committees be composed entirely of independent directors, and the Sarbanes-Oxley Act of 2002 solidifies this mandate.[1] Moreover, empirical evidence supports the regulatory changes' underlying assertion that independent directors enhance the financial reporting system (e.g., Carcello and Neal (2000); Klein (2002); Carcello and Neal (2003); Krishnan (2005)). However, the question remains as to what constitutes an independent-minded director.

The Investor Responsibility Research Center (IRRC) classifies board members as independent if they have neither financial nor familial ties to the firm/CEO, and current listing standards specify similar restrictions for what constitutes (or disallows) director independence. Absent from these guidelines, however, are social ties (i.e., the non-familial, informal ties), which play a significant role in setting the normative expectations governing group dynamics (Mills and Clark (1982); Uzzi (1996)). Our purpose is to examine the role of social ties in audit committees' execution of oversight responsibilities and in the practice of earnings management, in particular.

Using hand-collected data, we focus on a sample of 954 firm-years consisting of publicly traded Fortune 100 firms from 1996 to 2005, and drawing from the economics and sociology literatures, we employ mutual alma mater, military service, regional origin, academic discipline, and industry (as well as third-party connections based on these ties) as indications of an informal tie between a director and the CEO. Whether it is conscious or not, these shared characteristics and experiences ease communication and facilitate mutual understanding, thereby fostering personal connections (Marsden (1987); McPherson et al. (2001); Reed (2003); Crosse et al. (2004); Friedman (2005)). The popular press has broached this issue, saying that shared characteristics and experiences with the CEO have the potential to sway a director's judgment (New York Times, 2005).

We observe a significant presence of these shared qualities between audit-committee members and the CEO. On average, each committee member has roughly 0.6 social ties to the CEO compared to 0.1 conventional ties, and our results suggest that these informal ties play a material role in facilitating creative accounting practices. We find a substantially stronger, positive relation between abnormal (i.e., discretionary) accruals and the extent of an audit committee's connection to the CEO when we consider social ties in addition to the conventional ties. Moreover, we find that an audit committee's social affiliation is associated with an increased discontinuity in the earnings distribution surrounding earnings targets, lending support to the earnings-management interpretation of the greater abnormal accruals attributed to social ties.

We also examine instances with specific upward or downward managing incentives, such as

[1] The 1999 amendments allowed each firm some discretion in ultimately determining the independence of a potential committee member. Sarbanes Oxley dampened this loophole by granting the SEC (and not the firm's board) the discretion to overrule independence criteria on a case-by-case basis. See Klein (2003) for details.

when the CEO sells a large quantity of shares or when a new CEO enters office, and we find that social ties between the audit committee and CEO contribute to even more positive (or even more negative) abnormal accruals in these cases. Moreover, when extending our analysis to earnings restatements, we observe that firms with socially affiliated audit committees are less likely to self-prompt a correction (i.e., less likely to turn themselves in).

Our final analysis considers some of the economic byproducts of regulation. The Sarbanes-Oxley Act of 2002 imposed stricter independence criteria on audit committees, resulting in a general decrease in audit committees' conventional affiliation to the CEO. However, of the firms whose audit committees lost conventionally affiliated members, 24% appointed socially affiliated replacements, raising questions about the increasing significance of these informal connections as an alternate unregulated method by which CEOs capture the financial reporting process. Consistent with this supposition, we observe that while firms generally manage earnings less in the post Sarbanes-Oxley period (Cohen et al. (2008a)), these particular firms do not.

Overall, the evidence we present is consistent with the idea that mutual qualities foster relationship building and that social ties affect the audit committee's execution of oversight responsibilities. As such, our paper pertains to the discussion surrounding the economic consequences of regulation (e.g., Cohen et al. (2008a); Li et al. (2008)) as well as to the vast academic literature studying the link between corporate governance and accounting (e.g., Carcello and Neal (2000); Klein (2002); Carcello and Neal (2003)). This paper also adds to the growing literature exploring the economic implications of social ties between executives and directors (e.g., Hwang and Kim (2009); Schmidt (2009)), and to studies exploring the effects of social ties on interpersonal actions, including: Cohen et al. (2008b, 2010) who provide evidence that mutual-fund managers and sell-side equity analysts enjoy an informational advantage via their social-network connections with executives and directors; Kuhnen (2009), who finds that mutual fund directors and managers hire each other preferentially based on the intensity of their past network connections; and Butler and Gurun (2011), who find that executives enjoy higher compensation when their firms are traded by portfolio managers to whom they (the firm's executives) are socially connected. We contribute to this literature by providing evidence on how social ties affect the financial reporting process and how they may be used to circumvent explicit independence requirements.

This paper is organized as follows. In Section 2, we discuss the significance and measurement of social ties. In Section 3, we describe our data sources, variables, and summary statistics. In Section 4, we examine the role of social ties in the level of earnings management. In Section 5, we conclude.

2 Motivation, Identification, and Hypotheses

2.1 Social Ties and Earnings Management

Amid self-serving managers and conflicting financial incentives, audit committees are charged with overseeing the integrity of the financial-reporting process. Given the crucial role they play, a large body of work has examined factors affecting an audit committee's ability to effectively perform its

duties. In particular, studies have focused on the premise that independent directors are better-suited for this role, providing empirical support for the assertion that affiliated audit committees reduce the quality of the financial reporting system.

For instance, firms experiencing financial distress are less likely to receive a going-concern report (Carcello and Neal (2000)) when audit-committee members are financially affiliated with the firm, and likewise, auditors who issue going-concern reports are afforded less protection from dismissal (Carcello and Neal (2003)). Studies also suggest that earnings-management activity is greater (Klein (2002)) and internal control problems are worse (Krishnan (2005)) when audit committees are financially affiliated. Although these studies provide support for the desirability of an independent audit committee, the question remains as to how to capture the broad notion of independent-mindedness, since many factors likely affect a committee member's objectivity in overseeing the financial-reporting process.

Traditionally, a director's independent-mindedness, or lack thereof, has been defined by the presence of financial or familial ties between the director and CEO. However, a growing body of work has argued the importance of social ties to the normative expectations guiding interpersonal actions. Specifically, social ties foster favorable interpretations of one another (Uzzi (1996)) and effect a shift from dispassionate reciprocation to mutual caring and trust (Mills and Clark (1982); Silver (1990)). For example, Uzzi (1996) observes that when buyers and manufacturers share social ties, buyers are more likely to accept fabric mistakes rather than refuse the material at the manufacturer's cost; Uzzi (1999) finds that social ties between middle market firms and their lenders affect "both who gets credit and what that credit costs"; Ingram and Roberts (2000) find that there is greater collaboration, greater information exchange, and less "aggressive competitive behavior" among competing hotel managers who share social ties; and Westphal et al. (2006) provide evidence that management form social ties with managers of other firms "in order to manage uncertainty arising from resource dependence".

Extending this framework to corporate-board functions, studies have begun to explore how social-ties affect director-CEO dyamics.[2] Ex ante, it is unclear whether social ties should facilitate or impede monitoring effectiveness. On one hand, greater access to information could allow directors to better monitor the financial-reporting process, and studies have provided both theoretical and empirical support for the idea that social ties between directors and CEOs lead to greater information sharing. For instance, Westphal (1999) provides evidence that social ties between directors and CEOs increases the number of interactions and discussions concerning strategic issues, Adams and Ferreira (2007) present a model in which friendlier boards are more effective in advisory functions, and Schmidt (2009) provides evidence that social ties between directors and CEOs contribute to better acquisition decisions when advisory needs are high.

On the other hand, although socially-affiliated directors enjoy greater access to information, their personal attachment may cause them to use this information only to help the CEO but not to

[2]In contrast to the studies exploring the implications of social ties between CEOs and their directors, there are also studies examining how a firm is affected by the extent of its executives' network connections with others outside of the firm in question (e.g., Engelberg et al. (2009); Ishii and Xuan (2010)).

hurt him (which may be exactly why they enjoy greater access to information in the first place). For instance, Westphal (1999) finds that social ties between directors and CEOs negatively associate with the board's willingness to monitor and discipline the CEO. Other studies providing evidence that social ties contribute to a decline in monitoring effectiveness include: Schmidt (2009), who finds that socially affiliated directors are associated with poorer acquisition decisions when monitoring needs are high; Hwang and Kim (2009), who provide evidence that socially affiliated directors lead to higher levels of total compensation, lower pay-performance sensitivity, and lower turnover-performance sensitivity for CEOs; and Fracassi and Tate (2011), who argue that firms with more CEO-director ties engage in more value-destroying acquisitions.

Together, we project that it is not only the conventional (i.e., financial and familial) ties but also the social ties that affect an audit committee's ability to remain at arm's length, thereby providing the CEO more latitude in managing earnings.

2.2 Measurement/Identification of Social Ties

In this study, we operationalize social ties through shared qualities and experiences.[3] Directors and audit committee members naturally interact and establish contact with the CEO. However, we anticipate the level of interaction and the resulting relationship strength with the CEO to be particularly strong for directors and audit committee members who share background similarities with the CEO. Actors enjoy comfort and mutual understanding with similar others, making communication both more likely and more effective (e.g, Rogers and Bhowmik (1970); Marsden (1987); Kalmijn and Flap (2001); McPherson et al. (2001)). Put bluntly, if five random people are placed in a group, those with more similar backgrounds will develop stronger ties (with each other) than those that do not share similar backgrounds/experiences. The homophily principle has been detected in many different settings and has been found to apply to similarities in even very broad categories, supporting its generality as a description of human nature (Wexley and Nemeroff (1973); Rand and Wexley (1975); Porac et al. (1989, 1999); Westphal and Milton (2000); Reed (2003)).

We follow Hwang and Kim (2009) in employing the following specific measures:

Alma Mater. University alumni enjoy enhanced interaction via shared traditions and in-jokes, and the college sports events, alumni networks, donations, and newsletters solidify their sense of group belonging. In our classification scheme, we require that the director and CEO be no more than three years apart in age, since an overlapping period of attendance starkly increases similarities in experiences.

Military Service. Connections forged between veterans are facilitated through unique shared experiences and a pronounced sense of group identity. Military service is marked by an environment

[3] An alternative approach is to directly survey CEOs and directors about their relationships. In comparison, our approach has the advantage of allowing for the conscious as well as the subconscious personal connections between directors and their CEOs; it also accounts for the higher regard that actors have for similar others, which goes hand in hand with the increased kinship with those sharing similar characteristics. Moreover, mutual qualities and experiences, such as alma mater and past military experience, have the appealing feature of being systematically available and relatively easy to identify.

"that depends on a highly structured, organized force" and there is "a demand not paralleled in any other work environment", contributing to a steadfast bond among veterans (Crosse et al. (2004); Friedman (2005)).

Academic Discipline and Industry. Mutual industry and academic discipline provide further basis for social contact. There is considerable evidence that industry characteristics influence organizational culture (Chatman and Jehn (1994); Gordon (1991)), thereby providing a basis for identifying with others from the same industry (Porac et al. (1989, 1999); Westphal and Milton (2000)). Likewise, academic discipline denotes similar outlooks and experiences that provide a natural categorization along which to relate to others (Hambrick and Mason (1984); Tsui et al. (1992)). To determine mutual industry and discipline, we partition industries of primary employment using the Fama and French (1997) 49-industry classification, and we partition academic majors into 26 categories using the US News Rankings report.[4]

Regional Origin. Empirically, there is a regional clustering of dialect, beliefs, culture, and lifestyle that typify regions within the US (Marsden et al. (1982); Clack (2003)) and contribute to an affinity for others from the same locale. For example, the regional homogeneity in the social choices of college students exceeds what is expected if social circles are formed randomly with respect to regional origin (Reed (2003)). We define regional origin as the US region (or non-US country) of birth, because unlike the more abstract concept of home, birthplace is clearly defined and systematically available. Moreover, from 1995 to 2000, only 4.6% of nationals changed their region of residency (U.S. Census Bureau, 2003), indicating that birthplace is strongly associated with this vaguer notion of home. In accordance with the theoretical and empirical groundwork on regional identity and homophily, we focus on broader regional categories, and we cluster US states and territories into the following regions: South, Northeast, Midwest, Mountain, Pacific, and Territories. Nonetheless, in additional analyses, we explore the implications of using finer regional classifications.

Third Party. A mutual third-party connection enhances a bond by strengthening shared normative expectations (Granovetter (2005)) and facilitating further contact. In determining third-party connections, we follow Hwang and Kim (2009) and allow a director and CEO to be connected via a third party to whom each shares at least two, direct ties (i.e., friend of a friend). For example, suppose that the CEO is a military veteran born in the Midwest, and director A is a 55-year-old, Berkeley-educated, electrical-engineering major born in the South. Although director A is not (directly) connected to the CEO, if there is a third-party director B who is 57 years old, graduated from UC Berkeley (where he studied electrical engineering), served in the military, and was born in the Midwest, then director A shares a third-party tie with the CEO.

[4]The 26 categories are: Business, Law, Medicine, Engineering, Education, Biological Sciences, Chemistry, Computer Science, Earth Sciences, Mathematics, Physics, Library & Information Studies, Criminology, Economics, English, History, Political Science, Psychology, Sociology, Health, Public Affairs, Fine Arts, Theology*, Agriculture*, Foreign Languages*, Journalism*. Areas denoted by * are not part of the US News Rankings and were added by Hwang and Kim (2009).

3 Data Description

In this section, we describe our data sources, we define and discuss our regression variables, and we present summary statistics.

3.1 Sources

Our sample consists of the publicly traded Fortune 100 firms as declared in 1996 and 2005,[5] and spans the period from 1996 to 2005. To be included in our analysis, firms must have data to compute our earnings management measure, which we introduce in Section 3.2.1. This requirement yields 1,049 firm-year observations. We obtain data on our sample firms' CEOs and directors/audit committee members from the Compustat Executive Compensation database and the RiskMetrics (ISS) Directors database, respectively. Although the RiskMetrics Directors database begins in 1996, information on audit-committee memberships is not available until 1998. Thus, we collect audit-committee memberships from annual proxy statements for the years 1996 and 1997. Imposing the additional requirement that the firm be covered by the Compustat Executive Compensation and RiskMetrics Directors databases decreases the sample to 956 firm-year observations. We obtain financial-statement, stock-price, analyst-forecast and antitakeover-provision data from the Compustat, CRSP, IBES, and RiskMetrics Governance databases, respectively. The antitakeover-provision data requirement brings our final sample to 954 firm-years (covering 122 firms, 225 CEOs and 1896 directors, of which 974 serve as audit-committee members at some point during our sample period).

We hand-collect data on each CEO's and director's alma mater, academic discipline, military service, and regional origin from the Marquis Who's Who database. To determine each director's industry of employment, we first exploit the 'Primary Employment' field provided by the RiskMetrics (ISS) Directors database. For the remaining director-years with a blank 'Primary Employment' field, we collect this information from the Marquis Who's Who and NNDB databases. Next, we match each of these firms to an SIC code (we create a separate category for retired directors), and we use the Fama and French (1997) 49-industry classification to define industry ties. For publicly-traded firms, we obtain the corresponding SIC code through CRSP, and for the remaining firms, we determine SIC codes using a combination of the Manta, Websters Online, Goliath, Alacra Store, American Hospital Directory, Law Firm Directory, Martindale-Hubbell, and HG.org databases. Furthermore, we collect CEO-award information from the Business Week archives, and we collect information on family-run firms from a combination of Family Business, proxy disclosures, the Compustat Executive Compensation database, the RiskMetrics (ISS) Directors database, and the Blockholders database.

[5] Our results are robust in the subsample of Fortune 100 firms as declared in 1996 as well as in the subsample of Fortune 100 firms as declared in 2005.

3.2 Regression Variables

3.2.1 Earnings Management

To test for earnings management, we begin by examining firms' discretionary accruals, which we estimate using a cross-sectional variant of the Jones (1991) model (other studies following this approach include Xie (2001); Klein (2002); Kothari et al. (2005); Yu (2008)). We begin with total accruals, calculated as the difference between net income and net cash flow,[6] and we truncate at the 99th percentile of absolute total accruals to remove outliers which have the leverage to re-fit our discretionary accruals model below. Under accrual accounting, earnings naturally deviate from actual cash flows even in absence of any active earnings management attempts (e.g., revenue is recorded when it is earned as opposed to when cash is received). Thus, to remove accrual components that are not subject to accounting discretion (i.e., non-discretionary accruals), we form industry-year clusters of all COMPUSTAT firms using two-digit SIC codes. Then, for each industry-year cluster (j, t) with at least eight firms, we estimate the following firm-level regression for all firms i in industry j in year t:[7]

$$\begin{aligned}\frac{ACCR_{i,j,t}}{TA_{i,j,t-1}} = \quad & \alpha_{0,j,t} + \alpha_{1,j,t}\left(\frac{1}{TA_{i,j,t-1}}\right) + \beta_{j,t}\left(\frac{\Delta REV_{i,j,t}}{TA_{i,j,t-1}}\right) \\ & + \gamma_{j,t}\left(\frac{PPE_{i,j,t}}{TA_{i,j,t-1}}\right) + \epsilon_{i,j,t}\end{aligned}, \tag{1}$$

in which $ACCR$ represents total accruals (i.e., net income minus net cash flow), TA represents total assets, ΔREV is the change in net sales, and PPE is gross property, plant and equipment. Using the coefficient estimates from equation (1) and adjusting changes in revenues by changes in accounts receivables to account for the discretion allowed in realizing sales on credit (e.g., Dechow et al. (1995)), we calculate the non-discretionary accrual component:

$$\begin{aligned}NAC_{i,j,t} = \quad & \widehat{\alpha}_{0,j,t} + \widehat{\alpha}_{1,j,t}\left(\frac{1}{TA_{i,j,t-1}}\right) + \widehat{\beta}_{j,t}\left(\frac{\Delta REV_{i,j,t} - \Delta AR_{i,j,t}}{TA_{i,j,t-1}}\right) \\ & + \widehat{\gamma}_{j,t}\left(\frac{PPE_{i,j,t}}{TA_{i,j,t-1}}\right)\end{aligned}. \tag{2}$$

Our estimator, then, for the abnormal (i.e., discretionary) accrual component is the difference between total accruals and non-discretionary accruals:

$$AAC_{i,j,t} = \frac{ACCR_{i,j,t}}{TA_{i,j,t-1}} - NAC_{i,j,t}. \tag{3}$$

In our main analyses, we use the absolute value of abnormal accruals, because we are interested in the extent of earnings-management activity itself, without regard to the direction in which earnings

[6] Specifically, we calculate total accruals as the difference between net income (before extraordinary items and discontinued operations) and net cash flow from operating activities, which we obtain from the Statement of Cash Flows. We follow Hribar and Collins (2002) in calculating total accruals as the difference between earnings and net cash flow to avoid increased noise and potential biases that could arise when backing out accruals indirectly through the balance-sheet approach, which uses changes in working capital accounts to imply the accrual component of earnings.

[7] We follow Kothari et al. (2005) in including a constant in regression Eq. (1) to further mitigate heteroskedasticity issues.

are managed. That is, we are interested in realizations of positive abnormal accruals as well as negative abnormal accruals, which may reflect the eventual unwinding of prior upward managing activity or the active downward managing attempts to mask future poor performance. Moreover, our sample consists of a panel spanning a ten-year period, and earnings cannot be consistently managed in a single direction. Other studies using unsigned discretionary accruals include Warfield et al. (1995); Klein (2002); Bergstresser and Philippon (2006); Yu (2008). In additional analyses, we examine signed abnormal accruals surrounding several specific events (e.g., years in which the CEO sells a large quantity of shares) which provide clearer incentives and predictions with regard to either upward or downward managing attempts.

Our use of discretionary-accruals models to measure earnings-management activity is motivated by a significant body of work providing evidence that they are helpful in capturing creative accounting practices (Dechow et al. (1995); Bartov et al. (2000)). At the same time, the literature (also) notes that discretionary-accruals estimates must be interpreted with extreme care. Later in Section 4.5.5, we discuss potential shortcomings surrounding discretionary-accruals as an indicator of earnings management and our attempts to address these shortcomings. In complementary tests of earnings management, we also examine the likelihood of narrowly meeting as opposed to narrowly missing earnings thresholds (Burgstahler and Dichev (1997); Healy and Wahlen (1999); Degeorge et al. (1999); Yu (2008)).[8]

3.2.2 Audit-Committee Affiliation Index

To measure the extent of an audit committee's partiality to the CEO, we calculate an affiliation index, taking the total number of ties between all audit-committee members and the CEO, scaled by the total number of audit-committee members. Thus, the index captures the average number of ties (between the CEO and each committee member) contributing to a director's sympathy for the CEO. For instance, if there are three committee members, each sharing one, two, and three ties, respectively, with the CEO, then the resulting affiliation index is (1+2+3) / 3 = 2. If there are three committee members, each sharing one, zero, and zero ties, respectively, with the CEO, then the resulting affiliation index is (1+0+0) / 3 = 0.33.

We are interested in an index rather than each tie individually because it allows us a sliding scale to measure the extent of a director's affiliation to the CEO, which is presumably greater the more similarities the two parties share (Marsden (1987); McPherson et al. (2001)). That is, having a common regional origin and alma mater provides a stronger basis for connection than having only a common regional origin. Later, we explore the fraction of committee members sharing at least n social ties with the CEO as an alternative measure of an audit committee's social affiliation.

In constructing our index, we assume that all ties contribute equally to a director's partiality to

[8]One disadvantage to this approach is that it does not allow for firm-specific variation in the extent of earnings-management activity. Nonetheless, this method does not require estimating discretionary accruals, and has the added advantage of being able to detect not only earnings management by creative accounting practices, but also earnings management by real decisions (e.g., foregone maintenance or research and development) that may not be reflected in estimated abnormal accruals (Healy and Wahlen (1999)).

the CEO. Although a more sophisticated measure might reflect the relative importance of different ties, our equal-weighted measure has the advantage of being simple, transparent, and independent of subjective judgment.[9]

The audit committee's affiliation is computed with respect to the CEO who is in office for the majority of that fiscal year. We observe similar results when we altogether omit the years of and/or immediately surrounding CEO turnovers (i.e., when we omit the very last year of the predecessor's and the very first year of the successor's terms), as well as when we calcuate the affiliation index based on directors' social connections to the CEO who is in office as of the end of the fiscal year.[10]

In our analyses, we compare two different indices: a conventional index, which considers only the conventional ties (as specified by the IRRC), and a conventional-and-social index, which considers both conventional and social ties.

Conventional Index. The conventional index considers only the conventional ties (with a maximum of eight ties per director), accruing points whenever a committee member is a current employee, a former employee, an employee of a recipient of charitable contributions, a customer of or supplier to the firm (or an employee thereof), a provider of professional services to the firm (or an employee thereof), a relative of an executive officer, part of an interlocking directorate (i.e., an executive at firm X is a director at firm Y at the same time that an executive of firm Y is a director at firm X), or affiliated in some other manner.[11]

Social Index. The social index, an analogue of the conventional index, considers only the social ties (with a maximum of six ties per director), accruing points whenever a committee member and the CEO both served in the military, graduated from the same university, were born in the same U.S. region (or the same non-U.S. country), have the same academic discipline, have the same industry of primary employment, or directly share a conventional tie or at least two of the aforementioned, possible ties with a common third party (this common third party is not limited to members of the audit committee, and can be any member of the board).

Conventional-and-Social Index. The conventional-and-social index considers both conventional and social ties (with a maximum of 14 ties per director).

3.2.3 Other Regression Variables

Motivated by prior research, we include the following control variables to account for various economic and governance factors that enhance (or temper) earnings-management tendencies: *ln(Total Assets)*, *Long-Term Debt*, *ln(MB)*, *Cash Flow Volatility*, *Analyst Coverage*, *ln(Audit Committee Size)*, *Busy Audit Committee*, *Audit Committee Members' Equity Holdings*, *CEO from Other Company on Audit Committee*, *CEO Equity Holdings*, *CEO Award*, *CEO=Chairman*, *CEO Tenure*,

[9] In untabulated analyses, we assess whether the direct ties and the indirect (i.e., third-party) connections contribute equally to a director's ability to remain objective. We observe that our main findings become moderately stronger when we omit third-party ties from our affiliation index, suggesting that, within our setting, third-party ties introduce more noise than meaningful variation.

[10] Results are available upon request.

[11] The scope of this final catchall is limited to (voluntary) proxy disclosures.

Classified Board, and *Family Firm*. As in Klein (2002), we use lagged values of the market-to-book ratio, and we use contemporaneous values of the remaining economic determinants. Likewise, we use contemporaneous values of all governance variables and indicators of the CEO's value or power, since a CEO's margin of freedom and his incentives to manage earnings are determined by the concurrent governance structure and perceptions of the CEO's value. We also include a time trend, $Time_t$, as well as a post-SOX dummy, $PostSOX_t$, to account for the upward trend in the use of discretionary accruals prior to the enactment of Sarbanes-Oxley, and decline thereafter (Cohen et al. (2008a)). Please refer to the Appendix for a description of each variable and its predicted relation with our earnings management measures.

3.3 CEO, Firm, and Audit-Committee Characteristics

In Table I, we present summary statistics on the various conventional and social ties between audit-committee members and the CEO. In terms of our social-ties measures, 2.6% of committee members share a military tie with the CEO, 2.1% share a university tie, 15.7% share a regional-origin tie, 18.0% share a discipline tie, 2.6% share an industry tie, and 19.1% share a third-party tie. In terms of our conventional measures, 0.1% of the committee members are current employees, 2.7% are former employees, 0.1% are employees of an organization receiving charitable contributions, 1.7% are customers of or suppliers to the firm (or employees thereof), 5.2% are providers of professional services to the firm (or employees thereof), 0.3% are relatives of an executive officer, 1.4% are involved in an interlocking directorate, and none share some other form of (voluntarily disclosed) tie with the CEO.

In Table II, we present summary statistics of various audit-committee, board, CEO, and firm characteristics. Social ties to the CEO are much more prevalent among audit-committee members than conventional ties, with an average *Social Index* of 0.601 as opposed to an average *Conventional Index* of 0.115. That is, on average, each committee member has roughly 0.6 social ties and 0.1 conventional ties to the CEO. Moreover, we observe a strong presence of social ties in a considerable portion of the audit committees in our sample; 25.3% have a *Social Index* greater than 1.0, and 2.4% have a *Social Index* greater than 2.0 (untabulated).

4 Empirical Results

4.1 Abnormal Accruals

Our main hypothesis, stated in the null form, is that if the absolute value of abnormal accruals contain zero information about creative accounting practices or if common backgrounds (between the audit committee and the CEO) neither temper nor facilitate earnings-management tendencies, then we expect to observe no association between absolute abnormal accruals and common backgrounds. To test this hypothesis, we estimate the following pooled OLS regression:

$$|AAC_{i,t}| = \alpha + \beta AffiliationIndex_{i,t} + X\gamma + \phi_1 Time_t + \phi_2 PostSOX_t + \epsilon_{i,t}. \quad (4)$$

$|AAC_{i,t}|$, the dependent variable, is the absolute value of abnormal accruals for firm i in year t. *AffiliationIndex*$_{i,t}$ is the audit committee's average number of ties (per director) to the CEO. We compare two affiliation indices within our full sample: the *Conventional Index*, and the *Conventional-and-Social Index*, and we also examine the incremental impact of the *Social Index* in the full sample as well as within the subsample of audit committees with no conventional ties to the firm or CEO (i.e., *Conventional Index* = 0). *X, Time,* and *PostSOX* represent our set of control variables (as described in Section 3.2.3). All t-statistics are calculated using White standard errors adjusted for clustering (by firm), which accounts for heterskedasticity and serial correlation.

The results, which we present in Table III, show a substantially stronger relation, both economically and statistically, between abnormal accruals and the *Affiliation Index* when we consider social ties in addition to the conventional ties. When we regress abnormal accruals on the *Conventional Index* (Column 1), we obtain a coefficient estimate of 0.001 (t-statistic = 0.08). However, when we regress abnormal accruals on the *Conventional-and-Social Index* (Column 2), we obtain a coefficient estimate of 0.011 (t-statistic = 2.12), implying that a two standard-deviation increase promotes the median firm (in terms of $|AAC|$) to the 59th percentile. Consistent with these differences, when we estimate a joint regression on the *Conventional Index* and the *Social Index* (Column 3), we observe that the *Social Index* is a significant determinant of earnings management (coefficient estimate = 0.012, t-statistic = 2.32), and within the subsample of audit committees with no conventional ties to the CEO (Column 4), the *Social Index* remains both statistically and economically meaningful, with a coefficient estimate of 0.015 (t-statistic = 2.20).

The sizable increase in statistical significance suggests that the consideration of social ties (in addition to the conventional ties) substantially reduces noise in gauging the extent to which an audit committee is captured by the CEO. The legal restrictions in place throughout our sample period greatly reduce the level and variation in an audit committee's *Conventional Index*, lowering the likelihood of detecting a reliable association between the *Conventional Index* and measures of earnings management. However, social ties were never included in these independence rules, thereby allowing greater and more meaningful cross-sectional variation in measuring an audit committee's true independent-mindedness, and increasing the power of our tests when we use the *Conventional-and-Social Index*, as opposed to the *Conventional Index*. As such, the evidence presented in this study should not be construed to imply that the *true* effect of a social tie is stronger than that of a conventional tie. Relatedly, we suspect that the coefficient estimate on the *Conventional-and-Social Index* of 0.011 likely overstates the true partial effect of social ties on abnormal accruals. The lower end of the 95% confidence interval (which ranges from 0.001 to 0.021) provides values that are economically more plausible, and the same qualification applies to the coefficient estimate on the *Social Index*.

The signs of the coefficient estimates on the control variables are broadly consistent with prior literature and expectations. For instance, Bergstresser and Philippon (2006) suggest that higher effective ownership arising from equity enhances earnings-management tendencies. Consistent with this argument, we detect a strong positive partial correlation between our earnings management

measure and the CEO equity ownership variable. Similarly, Skinner and Sloan (2002) document that growth stocks experience stronger price responses to negative earnings surprises, pointing to greater incentives for growth firms to manage earnings. Bartov et al. (1999) provide evidence that the earnings-response coefficient increases with analyst coverage, suggesting that firms with high analyst coverage are under greater pressure to perform and, as such, more likely to manage earnings. Consistent with these conjectures, we observe strong positive associations between our measures of earnings management and market-to-book ratio and analyst coverage.[12]

4.2 Propensity to Meet or Beat Earnings Targets

The positive association we find between social ties and abnormal accruals is consistent with the hypothesis that social ties facilitate earnings management. Nonetheless, an alternative explanation could be that socially affiliated audit committee members are more likely to trust the CEO and, hence, allow him to make greater use of accruals in a way that (better) reflects the true economic condition of the firm. We now attempt to distinguish this interpretation from the earnings management interpretation.

Following Burgstahler and Dichev (1997); Healy and Wahlen (1999); Degeorge et al. (1999); Yu (2008), among others, we examine the distribution of reported earnings around earnings targets. A disproportionately large fraction of reported earnings either exactly meet or narrowly beat earnings targets, suggesting a propensity to manage earnings to avoid missing targets. Here, we test whether a firm's propensity to exactly meet or narrowly beat earnings targets increases in the extent of the audit committee's social affiliation. If social ties do not facilitate earnings management, then we should not observe an increased structural break in the distribution of reported earnings around earnings targets (which we measure using quarterly earnings consensus forecasts) when we consider an audit committee's social affiliation in addition to its conventional affiliation to the CEO.

Thus, our hypothesis, stated in the null form, is that if narrowly meeting/beating analysts' forecasts is not indicative of earnings management or if common backgrounds (between the audit committee and the CEO) do not temper/facilitate earnings management, then we expect to observe no association between common backgrounds and the likelihood of narrowly meeting/beating analysts' forecasts. To control for other determinants of narrowly meeting (versus narrowly missing) earnings targets, we estimate the following binary response model using the logistic function:

$$D_{i,t} = \alpha + \beta AffiliationIndex_{i,t} + X\gamma + \phi_1 Time_t + \phi_2 PostSOX_t + \epsilon_{i,t}. \quad (5)$$

[12]Rather than control for the individual determinants of the earnings response coefficient (ERC), such as market-to-book ratio and analyst coverage, we could attempt to estimate a firm's ERC and include the ERC estimate itself as a right-hand variable. One advantage of including the individual determinants is that it allows us to assess which of the individual determinants of the ERC associate with abnormal accruals in a manner that is consistent (or inconsistent) with earnings management incentives. A second advantage is that the individual determinants more accurately capture a firm's ERC than an ERC estimate based on the firm's own past time-series (much like how firm size is a more precise estimator of a firm's true beta than its own past sample beta (Fama and French (1992))). Consistent with this conjecture, we observe that the ERCs estimated from rolling 5-year time-series regressions are erratically distributed. And while our measure of earnings management is positively correlated with the ERC estimates, the association is not statistically significant.

$D_{i,t}$, the dependent variable, equals one if the quarterly earnings-per-share for firm i in year/quarter t either exactly meets or narrowly beats the consensus forecast by one cent, and zero otherwise. For a consistent comparison, we focus on the sample of firm-year/quarters for which earnings-per-share falls within four cents below or one cent above the consensus forecast. Our lower-bound cutoff was guided by the relative scarcity of firms missing targets by one cent, and we obtain very similar results whether we redefine our narrowly-miss outcome by a three-, four-, or five-cent cutoff. We also observe very similar results whether we redefine our narrowly-beat outcome by a two-, three-, or four-cent cutoff. As before, we compare the *Conventional Index* and the *Conventional-and-Social Index* (in the full sample), and we also examine the incremental impact of the *Social Index* in the full sample as well as within the subsample of audit committees with no conventional ties. *X*, *Time*, and *PostSOX* are the same set of control variables as in regression equation (4). All *p*-values are adjusted for clustering (by firm).

The results, which we present in Table IV, show positive relations between the affiliation indices and the propensity to meet or narrowly beat forecasts. All else equal, a one standard deviation increase in the *Conventional Index* (Column 1) is associated with a 13.85% increase in the likelihood of narrowly beating forecasts (coefficient estimate = 1.238, *p*-value = 0.00), and a one standard deviation increase in the *Conventional-and-Social Index* (Column 2) is associated with a 23.30% increase (coefficient estimate = 0.667, *p*-value = 0.00). For reference, within our beat-versus-miss sample, 65% of observations barely meet targets and 35% barely miss.

The probability increase associated with the *Conventional-and-Social Index* is not entirely due to the conventional ties between audit committee members and the CEO. When we estimate a joint regression on the *Conventional Index* and the *Social Index* (Column 3), the *Social Index* remains both statistically and economically meaningful (coefficient estimate = 0.608, *p*-value = 0.00), and even within the subsample of audit committees with a *Conventional Index* of zero (Column 4), the *Social Index* is associated with a substantial increase in the propensity to narrowly beat as opposed to narrowly miss earnings forecasts (coefficient estimate = 0.723, *p*-value = 0.00).

Overall, the results indicate a substantially larger gap between the likelihood of narrowly beating targets and the likelihood of narrowly missing targets when we consider social ties in addition to the conventional ties.[13] Consistent with our interpretation of Table III, this increased discontinuity further suggests that social ties (between audit-committee members and the CEO) facilitate earnings management.

4.3 Directional Tests of Earnings Management

To further explore the validity of the earnings-management interpretation, we conduct directional tests around specific corporate events, which provide an interesting additional setting to explore the effect of social ties on earnings management activity.

[13]Empirical evidence suggests that managers engage in expectations management, influencing analysts to "walk down their estimates to a level that firms can beat at the official earnings announcement" (Richardson et al. (2004)). Our results are robust to including the average change in analysts' forecasts (untabulated), suggesting that our findings are not driven by increased expectations management.

We condition our tests on four events: (1) when the CEO sells a large quantity of shares, (2) when the firm raises external capital, (3) when the firm has had a negative earnings streak, and (4) when a new CEO enters office. CEOs selling large quantities of shares have upward-managing incentives, as do CEOs raising large amounts of external capital and CEOs following a negative earnings streak. On the other hand, newly appointed CEOs have "big-bath incentives," since initial earnings disappointments can be attributed to the departing CEO. If social ties do not facilitate earnings management, then we should not observe greater upward (or greater downward) management of earnings in these scenarios when we compare the high *Social Index* subsample to the low *Social Index* subsample.

To test this hypothesis, we plot the average (signed) discretionary accruals of sample firms who are above versus below the median in terms of their audit committees' *Social Index* (i.e., high versus low *Social Index* firms), and to ensure that social ties per se matter, we continue to focus on firms whose audit committees have no conventional ties to the CEO. With regard to CEO trades, we examine firm-years in which the CEO sells more than $1 million in shares through open-market trades, and with regard to raising external capital, we examine firm-years in which the firm raises more than 5% of total assets in external capital. Regarding negative earnings streaks, we examine firm-years which follow two consecutive years of negative earnings. With respect to incoming CEOs, we examine new appointments occurring three to nine months prior to the fiscal-year end in which the outgoing CEO is no longer involved in the management of the firm (i.e., as an employee or board member).[14] The first filter serves to distinguish new appointments who not only have the incentive but also the opportunity to declare large losses (CEOs who arrive early in the fiscal year can still be blamed for poor performance, and those who arrive too late may no longer have ample opportunity); the second filter further weeds out CEOs who lack incentives or opportunity, since it may be difficult to blame poor performance on a predecessor who remains active in the firm's management.

The results, plotted in Figure I, show an accrual differential in the high versus low *Social Index* subsamples for each of our scenarios. We observe that when CEOs sell large quantities of shares (Panel A), raise large amounts of external capital (Panel B), or follow a negative earnings streak (Panel C), average abnormal accruals are positive in general, reflecting the income-increasing incentives in these scenarios. However, consistent with the notion that social ties facilitate earnings management, abnormal accruals are even more positive in the high *Social Index* subsample than in the low *Social Index* subsample. Similarly, when a new CEO enters office, we observe that new CEOs have negative abnormal accruals in both the low and high *Social Index* subsamples, but average abnormal accruals are even more negative in the high *Social Index* subsample (Panel D). The accrual differential between the low and high *Social Index* subsamples is statistically significant at the 5% level in the 'Insider Trades' scenario (N = 397) as well as in the 'External Capital Raised' scenario (N = 240), and is statistically significant at the 10% level in the 'New CEO Arrivals'

[14] We observe very similar results whether we alter the appointment window for incoming CEOs or the minimum sales requirement for CEO trades.

scenario (N = 7); the accrual differential is not statistically significant at any conventional level in the 'Negative Earnings Streak' scenario (N = 16).

4.4 Earnings Restatements

In our analyses thus far, we have examined the effect of social ties on two measures of earnings management: discretionary accruals and the propensity to narrowly meet/beat analyst forecasts. A third setting used in the literature is earnings restatements. On one hand, earnings restatements are generally characterized as an indication that a firm has knowingly and intentionally engaged in earnings manipulation. On the other hand, earnings restatements likely contain "only the most egregious misstatements and excludes many firms that are likely to be managing earnings" (Dechow et al. (2010)). In addition, earnings restatements still represent noisy estimates of earnings manipulation since restatements also occur for other, more benign reasons, as in the case of immaterial misstatements, corrections of unintentional errors, and applications of some new pronouncements (Hennes et al. (2008); Dechow et al. (2010)). As we discuss below, perhaps the most important feature of earnings restatements in the context of this study is that the occurrence of restatements "could be affected by manager and auditor incentives to discover and disclose the weaknesses" (Dechow et al. (2010)).

We collect data on earnings restatements from reports prepared by the U.S. General Accounting Office (GAO). These reports identify firms, between January 1997 to June 2006, that have restated their earnings specifically due to "financial reporting fraud and/or accounting errors." The GAO data contain both *irregularities,* i.e., intentional misreporting as defined by SAS #53, and *errors,* i.e., unintentional misapplications of GAAP (Hennes et al. (2008)). To parse out restatements due to irregularities, we augment our GAO dataset with data provided by Hennes et al. (2008), who classify GAO restatements as irregularities versus errors. According to Hennes et al. (2008), only 26% of restatements in the GAO report reflect irregularities.

We then re-estimate regression equation (5), with the modification that our dependent variable now equals one for reported earnings restatements due to an irregularity, and zero otherwise:

$$R_{i,t} = \alpha + \beta Affiliation Index_{i,t} + X\gamma + \phi_1 Time_t + \phi_2 PostSOX_t + \epsilon_{i,t}. \quad (6)$$

We compare three different affiliation indices: the $ConventionalIndex_{i,t}$, the $SocialIndex_{i,t}$, and the $Conventional-and-SocialIndex_{i,t}$. We also examine the $SocialIndex_{i,t}$ within the subsample of audit committees with no conventional ties to the CEO.

Overall, we detect no strong relation between social ties and reported earnings restatements. For instance, when estimating regression equation (5) within the subsample of audit committees with no conventional ties to the CEO, the coefficient estimate on the $SocialIndex_{i,t}$ equals 0.273 (p-value = 0.59) (untabulated).

We do observe, however, that within the subsample of audit committees with no conventional ties to the CEO, the restatements are far more frequently triggered by the company itself (rather

than by the SEC, external auditors, or the media) for low *Affiliation Index* firms than for high *Affiliation Index* firms. As depicted in Figure II, for firms below the median with regard to their *Social Index*, 67% of all restatements were prompted by the company itself; for firms above the median, only 40% of restatements were prompted by the company itself.[15]

One interpretation of these results (together with our results based on discretionary accruals and the propensity to narrowly meet/beat analysts' forecasts) is that social ties, first and foremost, facilitate *subtle cases* of earnings management. In other words, as socially affiliated members on the compensation committee may allow the CEO to be paid a little more, socially affiliated members on the audit committee may allow the CEO to manage earnings a little more.

These more subtle cases of earnings management may accumulate over time and potentially warrant an earnings restatement due to financial fraud. But, if firms with socially affiliated audit committees are less likely to self-prompt a correction (i.e., if they are less likely to turn themselves in), it is unclear whether high *Affiliation Index* firms should experience more uncovered instances of these more spectacular forms of earnings management, even if they have a higher propensity to engage in more subtle cases of earnings management.

4.5 Alternative Interpretations and Sensitivity Analyses

The results thus far show that social ties (between the CEO and members of the audit committee) are associated with greater use of abnormal accruals, increased propensity to barely meet as opposed to barely miss earnings targets, and greater use of discretionary accruals to meet specific income-increasing or income-decreasing objectives for the CEO. Although these findings are jointly consistent with the hypothesis that social ties impede objective monitoring and facilitate earnings management activity, alternative interpretations of the data remain. We now proceed to explore these possbilities.

4.5.1 Accounting for CEO-/Director-Characteristics

Certain characteristics appear more frequently in the data and thus are more likely to be shared qualities between audit-committee members and the CEO. An alternative interpretation of our findings is that some of these more frequently occurring characteristics are, in and of themselves, conducive to creative accounting practices (e.g., some schools may have a greater focus on business ethics than others), causing the presence of shared qualities to correlate with our measures of earnings management, though not in a way that is due to social connections. Supporting this notion, studies have provided evidence of the importance of managerial characteristics in and of themselves, examining how certain manager-specific characteristics affect firm-/manager- choices (e.g., Bamber et al. (2010); Dyreng et al. (2010); Ge et al. (2011); Yang (2011)).[16]

[15] There are a total of eleven earnings restatements due to irregularities in this subsample; six for firms below the median with regard to their *Social Index* and five for firms above the median with regard to their *Social Index*.

[16] In contrast to these studies concerning managerial fixed effects, we examine whether there is an *overlap* in backgrounds and experiences between CEOs and audit-committee members, and we test whether these background similarities relate to the monitoring effectiveness and true independent-mindedness of the audit committee.

To explore this alternative, we include *Alma-Mater*, *Academic-Discipline*, *Industry*, and *Regional-Origin* fixed effects. With the inclusion of these indicator variables in the accruals-based regressions, the coefficient estimate on the *Conventional Index* becomes 0.022 (t-statistic = 1.28), and the coefficient estimate on the *Conventional-and-Social Index* becomes 0.014 (t-statistic = 2.36); both of which are similar to the original coefficient estimates reported in columns (1) and (2) of Table III. Similarly, when we control for these fixed effects in the meet-or-beat regressions, the coefficient estimate on the *Conventional Index* becomes 1.768 (p-value = 0.00), and the coefficient estimate on the *Conventional-and-Social Index* becomes 0.649 (p-value = 0.00). Together, these findings do not support the idea that these characteristics themselves are driving the relation we observe; rather, it is the presence of *overlaps* in backgrounds and experiences between CEOs and audit committee members, which generates the associations detected in this study.

4.5.2 Fraction of Audit-Committee Members with Affiliation to CEO

In additional analyses, we explore an alternative affiliation measure, whereby we redefine our variable of interest as the fraction of audit-committee members who are affiliated to the CEO (i.e., we categorize each director in dichotomous terms: affiliated or not). Following Hwang and Kim (2009), we deem a director socially affiliated if he/she shares at least two social ties with the CEO, and conventionally affiliated if he/she shares at least one conventional tie with the CEO.

We observe very similar results using this affiliation fraction in place of the affiliation index. In the accruals-based regressions (equation 4), we observe a coefficient estimate of 0.005 (t-statistic = 0.27) on the fraction of members who are conventionally affiliated, whereas we observe a coefficient estimate of 0.027 (t-statistic = 2.20) on the fraction of members who are conventionally or socially affiliated. Within the subsample of firms with conventionally independent audit committees, we observe a coefficient estimate of 0.035 (t-statistic = 1.78) on the fraction of members who are socially affiliated (untabulated).

In the meet-or-beat regressions (equation 5), the coefficient estimate on the fraction of conventionally affiliated committee members equals 1.465 (p-value = 0.00); the coefficient estimate on the fraction of conventionally-or-socially affiliated committee members equals 1.674 (p-value = 0.00); and within the subsample of firms with conventionally independent audit committees, the coefficient estimate on the fraction of socially affiliated committee members equals 2.019 (p-value = 0.00) (untabulated).

We use an affiliation *index* in our main analysis since, in capturing the average number of ties per director (to the CEO), it allows us a finer (and perhaps more objective) metric to define the extent of a director's affiliation, which is presumably greater the more similarities he shares with the CEO (Marsden (1987); McPherson et al. (2001)).[17] Put differently, the fraction-affiliated measure requires a subjective cutoff point to categorize directors as affiliated or not. Moreover, the fraction-affiliated measure does not differentiate between directors that fall on the same side of the cutoff

[17] Other studies using an equal-weighted index to aggregate information include Gompers et al. (2003); Bebchuk et al. (2009), who create an index to capture the extent of managerial entrenchment.

point (i.e., if the cutoff point were two ties, then a director with two ties would be treated the same as a director with four ties), which is counter to the empirical and theoretical work suggesting that the extent of a director's affiliation with the CEO increases with the shared similarities.

Focusing on the subsample of firms with conventionally independent audit committees, we explore this idea by re-estimating our regressions on the fraction of members with exactly one social tie in addition to the fraction of members with two or more social ties. With regard to the accruals-based regression, we observe coefficient estimates of 0.031 (t-statistic = 1.99) and 0.043 (t-statistic = 2.15), respectively. With regard to the meet-or-beat regression, we observe coefficient estimates of 0.479 (p-value = 0.20) and 2.132 (p-value = 0.00), respectively (untabulated). Consistent with our conjecture, these results suggest that the audit-committee members sharing just a single social tie with the CEO have incremental explanatory power, though they are economically (and statistically) less important than the audit-committee members sharing two or more social ties with the CEO.

4.5.3 Discretionary Accruals

Many of our results are based on discretionary-accruals estimates as a measure of earnings management. While the use of discretionary accruals is motivated by a significant body of work, the literature also points to shortcomings surrounding discretionary accruals as an indicator of earnings management.

In particular, discretionary-accrual models only imperfectly remove accrual components that do not necessarily reflect creative accounting practices. For instance, firms with high cash-flow volatility naturally have a greater level of accruals (Hribar and Nichols (2007)), as do highly profitable firms (Dechow et al. (1995)). As a result, such firms may exhibit higher levels of "abnormal accruals" for reasons that are unrelated to earnings manipulation. At the same time, these firms may have economically plausible motivations for bringing in socially affiliated directors, causing our *Affiliation Index* and $|AAC|$ measures to be spuriously correlated. For instance, high cash-flow volatility firms may have greater advisory needs and, as such, a greater need for socially-affiliated directors; similarly, high profitability firms may benefit from better advice provided by socially-affiliated directors. Because these simultaneous relations may be determined nonlinearly, they are not fully acounted for by including the corresponding firm characteristic as a right-hand side variable in the regression equation.

Following prior studies, we attempt to address this concern by employing a matching specification based on some firm characteristic that could cause our left- and right-hand side variable to be spuriously correlated. Specifically, we match each of our sample firms with a control firm in the same two-digit SIC code, having the closest value along the firm characteristic in question (i.e., total assets, cash-flow volatility, earnings volatility, or ROA). We then subtract the discretionary accruals of the control firm from the discretionary accruals of the sample firm in an attempt to remove accrual components that are not indicative of earnings-management activity.

Re-estimating regression equation (4) with these new matched discretionary-accruals estimates produces similar results as before. For instance, when re-estimating our regression within the

subsample of audit committees with no conventional ties to the CEO, we observe a coefficient estimate on the *Social Affiliation Index* of 0.010 (t-statistic = 1.43) when we match by total assets, 0.025 (t-statistic = 2.76) when we match by cash-flow volatility, 0.037 (t-statistic = 2.07) when we match by earnings volatility, and 0.028 (t-statistic = 2.41) when we match by ROA (untabulated)

The tenor of our results remains when we employ a propensity-score matching design. Specifically, we calculate a social-ties propensity score for each observation by estimating a binary-response model of whether there is a socially affiliated director on the audit committee. Except for the *Affiliation Index*, the set of independent variables is the same as in regression equation (4). Based on this social-ties propensity score, we then match each firm-year observation from the subset of socially affiliated audit committees with another observation from the subset of socially *independent* audit committees. Consistent with the idea that social ties facilitate earnings-management tendencies, we observe a substantial difference in |AAC| between the socially-affiliated observations and their socially-independent matches (difference = 0.016, t-statistic = 2.82) (untabulated).[18]

4.6 Sarbanes Oxley

Our final investigation explores how the role of social ties in audit committees may have changed surrounding the enactment of the Sarbanes-Oxley Act of 2002 (SOX). The passage of SOX marks a period of increased regulatory scrutiny, charging audit committees with greater responsibility in their financial oversight duties and requiring chief executives to certify the integrity of their financial statements. Furthermore, SOX solidified the audit-committee independence requirements imposed by the 1999 amendments to NYSE and NASDAQ listing standards, which were lax compared to current standards.

At its core, SOX was intended to limit the use of creative accounting practices. In accordance with its design, Cohen et al. (2008a) observe that firms generally decrease their (accrual-based) earnings-management activity following the enactment of SOX. However, amidst the heightened scrutiny, social ties were not included in the independence criteria, pointing to the possibility that social ties provide an alternate opportunity for CEOs to continue capturing the audit committee.

Consistent with this premise, we observe a high incidence of firms replacing their financially and familially affiliated audit-committee members with socially affiliated members during the post-SOX period. Although the enactment of SOX effected an overall decrease in audit committees' conventional affiliation to the CEO, 24% of the firms whose audit committees lost conventionally affiliated members appointed socially affiliated replacements.

To explore whether these socially affiliated replacements simply coincide with the passage of SOX or whether these firms are opportunistically forming superficially compliant audit committees, we use a difference-in-difference approach to compare the pre- and post-SOX abnormal accruals of audit committees that replace their conventionally affiliated members (with socially affiliated members) versus the pre- and post-SOX abnormal accruals of those that do not. By examining differences in differences, we subtract out not only the unobservable firm-specific factors that may

[18]The corresponding average propensity scores are 0.455 and 0.454, respectively.

affect abnormal accruals, but also the other general changes accompanying this regulatory shock. If the socially affiliated replacements are not a calculated response to tighter regulatory constraints on audit-committee composition, then we should not observe a significant coefficient estimate on the interaction term capturing this difference-in-difference in accrual-based earnings management.

Focusing on the subsample of firms that lose at least one conventionally affiliated audit-committee member in the post-SOX period, we estimate a pooled OLS regression of abnormal accruals on a *PostSOX* indicator, an *Affiliation Shift* indicator, an *Affiliation Shift* * *PostSOX* interaction term, and the same set of controls, X, as in regression equation (4):

$$\begin{aligned} |AAC_{i,t}| = \quad & \alpha + \beta_1 AffiliationShift_i * PostSOX_t + \beta_2 AffiliationShift_i \\ & + \beta_3 PostSOX_t + \delta Time_t + X\gamma + \varepsilon_{i,t}. \end{aligned} \tag{7}$$

PostSOX is an indicator variable that equals one in years greater than or equal to 2002, and zero otherwise.[19] *Affiliation Shift* is an indicator variable that equals one for firms in which a post-SOX decrease in the number of conventionally affiliated members is accompanied by an increase in the number of socially affiliated members, and zero otherwise. As before, all t-statistics are calculated using White standard errors adjusted for clustering by firm.

The results, presented in Table V, show a significantly positive coefficient estimate of 0.052 (t-statistic = 2.17) on the *Affiliation Shift* * *PostSOX* interaction term, suggesting a substantial difference in how shifters versus non-shifters respond to the regulatory changes enacted by SOX. These observations indicate that, although firms generally decrease their earnings-management activity following the enactment of Sarbanes Oxley, our affiliation shifters do not.

Our difference-in-difference specification is not free of omitted-variable concerns, since affiliation shifting is a discretionary choice made by firms, and SOX may have affected the unobserved factor in question differently for affiliation shifters than for non-shifters. Further examining this potentially important, yet overlooked economic byproduct of recent regulation to draw more detailed conclusions should prove to be interesting avenues for future research.

5 Conclusion

In this paper, we provide evidence that social ties (in addition to financial and familial ties) are an important channel through which CEOs capture the financial reporting process. We also provide suggestive evidence on an economic byproduct of recent regulatory changes requiring that all audit-committee members have neither financial nor familial ties to the CEO: the heightened regulation is accompanied by a replacement of conventionally affiliated audit-committee members with socially affiliated ones. Moreover, while firms generally manage earnings less in the aftermath of SOX, these affiliation shifters do not, pointing to the importance of social ties as an alternate source of continued dependence amidst heightened scrutiny of audit committees' financial and familial affiliations with the CEO.

[19] We obtain similar results when we redefine the post-SOX cutoff using the year 2003.

Our analysis has potential policy implications. Recent regulations require that audit committees be composed entirely of independent directors, whereby independence is defined exclusively in terms of financial or familial ties to the CEO or the firm. The evidence presented in this study suggests that while these requirements might increase the monitoring effectiveness of the board, they are unlikely to ensure full independent-mindedness.

Our findings also caution from interpreting any inconsistent linkage between nominal independence and firm outcome variables as an indication that independence matters little in the current climate. The legal restrictions in place greatly reduce the level and variation in a board's/audit committee's nominal independence, which should render our inability to detect a reliable association between conventional independence and firm outcome unsurprising. In this study, we provide evidence that as more stringent definitions of independence are applied (that are not included in the current independence rules), a clearer relation emerges. As such, our findings suggest that while the source of dependence may have shifted, many directors remain beholden to the CEO and that the topic of independence should continue to be an interesting avenue for future thought and potential reform.

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Appendix: Description of Variables

Firm Size: To measure firm size, we use the book value of total assets in millions. Managers of large, visible firms incur higher political costs and thus have incentives to reduce reported income. There is evidence that managers of large firms not only lobby for income-reducing accounting standards (Watts and Zimmerman, 1978) but also exploit discretionary accounting choices to reduce reported income (e.g., Zmijewski and Hagerman, 1981; Lilien and Pastena, 1982). With respect to discretionary-accruals models, however, studies have found a negative relation between firm size and earnings management (e.g., Warfield, Wild, and Wild, 1995; Klein, 2002).

Leverage: To measure leverage, we divide long-term debt (which includes both public and private debt) by total assets. High leverage is associated with greater bankruptcy risk (Ohlson, 1980) and a greater propensity to manage earnings through discretionary accruals when approaching accounting-based covenant violations (Sweeney, 1994; Daniel, Denis, and Naveen, 2008). Thus, we expect a positive association between leverage and the extent of earnings management.

Market-to-Book Ratio: We calculate the market-to-book ratio as the market value of equity divided by the sum of the book value of equity and deferred taxes. Growth stocks "exhibit an asymmetrically large negative price response to negative earnings surprises" (Skinner and Sloan, 2002). Thus, we expect a positive association between market-to-book ratio and the extent of earnings management.

Cash-Flow-Volatility: Cash flow volatility is the standard deviation of net cash flow from operating activities scaled by book value of assets over the previous three fiscal years. Greater cash-flow volatility naturally leads to higher volatility in accruals (Hribar and Collins, 2007). Thus, we expect a positive association between cash-flow volatility and our unsigned abnormal accruals measure.

Analyst Coverage: This is the number of analysts providing one-year earnings forecasts for the firm in question. Analysts may exert undue pressure on firms, which could increase earnings management tendencies (Yu, 2008).

Audit Committee Size: Audit Committee size is the number of directors on the audit committee. Lipton and Lorsch (1992) argue that larger boards are more susceptible to managerial control and have increased coordination and free-rider problems, and similar arguments may apply to audit committees. On the other hand, due to greater outside scrutiny, audit-committee members may be less afflicted by coordination and free-rider problems, in which case larger audit committees may be more effective monitors.

Busy Audit Committee: This is a dummy that equals one if the audit committee is busy, and zero otherwise. Following Fich and Shivdasani (2006), we designate an audit committee as 'busy' if a majority of the independent directors concurrently serve on three or more boards. Some argue that directors who serve on too many boards do not have sufficient time to provide adequate monitoring (NACD, 1996), and Core et al. (1999) and Fich and Shivdasani (2006) present evidence that busy boards indicate weak corporate governance. If busy directors are less effective monitors, then busy audit committees should be positively associated with the level of earnings management.

CEO Equity Holdings/Audit Committee Members' Equity Holdings: We calculate CEO Equity Holdings as the effective number of shares held by the CEO divided by the total number of shares outstanding (winsorized at the 99th percentile)[1], and we calculate Audit Committee Members' Equity Holdings as the average percentage of the company's shares held by the committee members. Greater equity ownership may induce CEOs and audit committee members to manage earnings more in order to increase the value of their vested equity holdings (e.g., Bergstresser and Philippon, 2006).

CEO from Other Company on Audit Committee: This is a dummy that equals one if at least one of the directors on the audit committee is the CEO of another firm, and zero otherwise. We expect that CEOs are inclined to allow their fellow CEOs greater leeway in managing earnings, regardless of whether or not they are interlocked.

CEO Award: This is a dummy that equals one if the CEO has ever won the "Business Week Best Manager Award", and zero otherwise. The idea is that recipients of this award are under more pressure to continue exhibiting signals of high quality, and thus may be more likely to manipulate earnings (Malmendier and Tate, 2009).

CEO is Chairman of the Board: This is a dummy that equals one if the CEO also serves as the chairman of the board, and zero otherwise. If the CEO doubles as chairman of the board, the board may be easier for the CEO to control, a hypothesis that is empirically supported by Yermack (1996) and Core et al. (1999), among others. Thus, we expect chairman CEOs to have more freedom to manage earnings than their non-chairman counterparts.

CEO Tenure: CEO tenure is the number of years the CEO has been in office. Greater tenure contributes to greater clout with the board (Hermalin and Weisbach, 1998). Thus, we expect CEOs with greater tenure to have more freedom to manage earnings.

Classified Board: This is a dummy that equals one if the firm has a classified-board provision (i.e., the directors have a staggered election-term structure), and zero otherwise. Bebchuk and Cohen (2005) and Faleye (2007) argue that classified boards entrench management. On one hand, if board-staggering empowers managers, then we expect these managers to have greater freedom to manage earnings. On the other hand, if board-staggering sufficiently entrenches managers, then these managers may not feel the pressure to manage earnings.

Family Firm: This is a dummy that equals one if at least one relative of the founder is an officer, a director, or a 5%-minimum blockholder (either individually or as a group) of the firm, and zero otherwise (we do not consider family firms in which the founder is still a chairman or CEO of the firm). Descendent-run firms have agency issues such that minority shareholders in these firms are "worse off than they would be in nonfamily firms" (Villalonga and Amit, 2006). Thus, we expect a positive association between *Family Firm* and the level of earnings management.

[1] The effective ownership arising from equity is computed as the sum of (a) the number of shares held by the CEO divided by the total number of shares outstanding; and (b) the number of CEO options divided by the total number of shares outstanding multiplied by a measure of the option delta from the Black-Scholes model.

Table I
Conventional and Social Ties between CEOs and Audit Committee Members

This table presents summary statistics on the fraction of audit-committee members with various ties to the CEO. Our sample includes all Fortune 100 firms as of 1996 and 2005 for which we could obtain the necessary data. Overall, our data consists of 954 firm-years over the period 1996 to 2005. We present the pooled means and standard deviations, across all firm-years, of the fraction of audit-committee members having the specified tie to the CEO. In terms of the social ties: the *military tie* signifies that the member and the CEO both served in the military; the *alma-mater tie* signifies that both graduated from the same university and have no greater than a three-year age difference; the *regional origin tie* signifies that both were born in the same US region or in the same non-US country; the *discipline tie* signifies that both obtained a degree in the same academic discipline; the *industry tie* signifies that both are primarily employed in the same industry (based on the Fama-French (1997) 49-industry classification); and the *third party tie* signifies that there is a common third party with whom each shares at least two direct social ties. In terms of the conventional ties: the *current employee (former employee) tie* signifies that the audit-committee member is a current (former) employee of the company; the *charitable contributions tie* signifies that the member is an employee of an organization that receives charitable gifts from the company; the *business relation tie* signifies that the member or the member's employer is a customer of or supplier to the company; the *professional services tie* signifies that the member or the member's employer provides legal, consulting, or financial services to the company; the *relative tie* signifies that the member is a relative of an executive officer; the *interlocked tie* signifies that the member is interlocked with an executive of the firm; and the *other tie* signifies that the member is affiliated with the company in some manner other than current/former employee, charity, business transaction, family relation, or interlocking directorship).

Tie	Proportion of Audit-Committee Members with Tie	
	Mean	Standard Deviation
Military	0.026	0.090
Alma Mater	0.021	0.072
Regional Origin	0.157	0.189
Discipline	0.180	0.228
Industry	0.026	0.097
Third Party	0.191	0.230
Current Employee	0.001	0.015
Former Employee	0.027	0.079
Charitable Contributions	0.001	0.018
Business Relation	0.017	0.067
Professional Services	0.052	0.119
Relative	0.003	0.027
Interlocked	0.014	0.058
Other	0.000	0.000
Number of Observations	954	---

Table II
Audit Committee, CEO, and Firm Characteristics

This table presents summary statistics of various audit-committee, CEO, and firm characteristics. *Conventional Index* is the audit committee's average number of conventional ties (per committee member) to the CEO. *Social Index* is the average number of social ties to the CEO. *Conventional–and-Social Index* is the average number of conventional and social ties to the CEO. An audit-committee member has a *conventional tie* to the CEO if he is a current or former employee, a recipient of charitable funds, a customer of or a supplier to the firm, a provider of professional services, a relative of an executive officer, interlocked with an executive of the firm, or if he shares any other affiliations with the company. An audit-committee member has a *social tie* to the CEO if they both served in the military, graduated from the same university, were born in the same US region or in the same non-US country, share a degree in the same academic discipline, are primarily employed in the same industry (based on the Fama-French (1997) 49-industry classification); or share a common third-party tie with whom each shares at least two direct social ties. All other audit committee, CEO, and firm characteristics are as defined in the Appendix.

Variables	Mean	Standard Deviation
Panel A: Audit-Committee Affiliation Index		
Conventional Index	0.115	0.183
Social Index	0.601	0.536
Conventional–and-Social Index	0.716	0.575
Panel B: Other Audit-Committee Characteristics		
Audit Committee Size	4.639	1.412
Busy Audit Committee	0.406	0.491
Audit Committee Members' Equity Holdings (%)	0.038	0.198
CEO from Other Company on Audit Committee	0.533	0.499
Panel C: CEO and Other Governance/Anti-Takeover Characteristics		
CEO Equity Holdings (%)	0.779	2.911
CEO Award	0.178	0.383
CEO = Chairman	0.812	0.391
CEO Tenure	5.784	6.707
Classified Board	0.538	0.499
Family Firm	0.083	0.276
Panel D: Firm Characteristics		
AAC	0.030	0.104
|AAC|[1]	0.071	0.082
Total Assets	65,893	128,397
Long-Term Debt	0.261	0.170
MB	3.250	3.449
Cash Flow Volatility	0.026	0.026
Analyst Coverage	20.121	7.792
Number of Observations	954	---

[1] This variable has 954 observations, with medians of 0.015 and 0.042 for the signed and unsigned values, respectively.

Table III

Audit Committee Affiliation and Earnings Management: Abnormal Accruals

This table presents estimates from the following pooled OLS regression:

$$|AAC_{i,t}| = \alpha + \beta AffiliationIndex_{i,t} + X\gamma + \delta_1 Time_t + \delta_2 PostSOX_t + \epsilon_{i,t}.$$

$|AAC_{i,t}|$, the dependent variable, is the absolute value of abnormal accruals as defined in the text (Section 3.2.1) for firm i in year t. In Columns (1)-(3), we compare three different affiliation indices: the *Conventional Index*$_{i,t}$, the *Social Index*$_{i,t}$, and the *Conventional-and-Social Index*$_{i,t}$. In Column (4), we examine the *Social Index*$_{i,t}$ within the subsample of audit committees with no conventional ties to the CEO. X is a set of control variables. All variables are as defined in the Appendix. $Time_t$ is a trending variable equal to the difference between the year in question and 1995. $PostSOX_t$ is a dummy variable equal to one in years greater than or equal to 2002, and zero otherwise. All t-statistics are calculated using White standard errors adjusted for clustering (by firm).

Variables	Expected Sign	Coefficient Estimate (t-statistic)			
		(1)	(2)	(3)	(4)
Affiliation Index					
Conventional Index$_{i,t}$	+	0.001		-0.000	
		(0.08)		(-0.02)	
Social Index$_{i,t}$	+			0.012	0.015
				(2.32)	(2.20)
Conventional-and-Social Index$_{i,t}$	+		0.011		
			(2.12)		
Firm Characteristics					
ln(TotalAssets$_{i,t}$)	?	0.004	0.004	0.003	-0.001
		(1.34)	(1.33)	(1.27)	(-0.41)
Long-Term Debt$_{i,t}$	+	0.029	0.024	0.024	0.024
		(1.64)	(1.37)	(1.39)	(1.21)
ln(MB$_{i,t-1}$)	+	0.005	0.005	0.005	0.004
		(3.04)	(2.93)	(2.94)	(1.56)
Cash Flow Volatility$_{i,t}$	+	0.399	0.403	0.398	0.291
		(3.29)	(3.38)	(3.33)	(1.86)
Analyst Coverage$_{i,t}$	+	0.001	0.001	0.001	0.001
		(1.93)	(1.77)	(1.78)	(3.18)
Other Audit Committee Characteristics					
ln(Audit Committee Size$_{i,t}$)	?	-0.020	-0.020	-0.020	-0.016
		(-2.40)	(-2.41)	(-2.40)	(-1.37)
Busy Audit Committee$_{i,t}$	+	0.001	0.001	0.001	0.005
		(0.15)	(0.22)	(0.10)	(0.72)
Audit Committee Members' Equity Holdings$_{i,t}$	+	-0.812	-0.789	-0.623	-1.703
		(-0.76)	(-0.76)	(-0.58)	(-1.07)
CEO from Other Company on Audit Committee$_{i,t}$	+	-0.004	-0.005	-0.005	-0.008
		(-0.61)	(-0.83)	(-0.89)	(-1.13)

Table III. Continued.

Variables	Expected Sign	Coefficient Estimate (t-statistic)			
		(1)	(2)	(3)	(4)
CEO Characteristics					
CEO Equity Holdings$_{i,t}$	+	0.226	0.207	0.210	0.544
		(2.45)	(2.26)	(2.30)	(2.24)
CEO Award$_{i,t}$	+	0.007	0.006	0.006	0.004
		(0.96)	(0.83)	(0.80)	(0.42)
CEO=Chairman$_{i,t}$	+	-0.004	-0.004	-0.004	-0.006
		(-0.50)	(-0.50)	(-0.55)	(-0.61)
CEO Tenure$_{i,t}$	+	-0.001	-0.001	-0.001	-0.002
		(-3.04)	(-3.35)	(-3.26)	(-3.26)
Antitakeover Provisions and Family Firm					
Classified Board$_{i,t}$	?	-0.010	-0.009	-0.009	-0.005
		(-1.73)	(-1.70)	(-1.64)	(-0.63)
Family Firm$_{i,t}$	+	-0.008	-0.008	-0.008	0.002
		(-0.94)	(-0.95)	(-0.93)	(0.16)
PostSOX$_{t}$	-	-0.012	-0.013	-0.014	-0.015
		(-1.03)	(-1.16)	(-1.20)	(-1.13)
Time$_{t}$	+	0.007	0.008	0.008	0.008
		(3.69)	(3.87)	(3.86)	(3.32)
Number of Observations		954	954	954	612
Adj. R-squared		0.07	0.08	0.08	0.08

Table IV

Audit Committee Affiliation and Earnings Management: Narrowly Beating vs. Missing Consensus Forecasts

This table presents estimates from the following pooled logistic regression:

$$D_{i,t}=\alpha+\beta AffiliationIndex_{i,t}+X\gamma+\delta_1 Time_t+\delta_2 PostSOX_t+\epsilon_{i,t}.$$

$D_{i,t}$, the dependent variable, equals one if quarterly earnings-per-share for firm i in year/quarter t either exactly meets or narrowly beats the consensus forecast by one cent, and zero otherwise. This regression is estimated within the sample of firm-year/quarters for which quarterly earnings-per-share falls within four cents below or one cent above the consensus forecast. In Columns (1)-(3), we compare three different affiliation indices: the *Conventional Index*$_{i,t}$, the *Social Index*$_{i,t}$, and the *Conventional-and-Social Index*$_{i,t}$. In Column (4), we examine the *Social Index*$_{i,t}$ within the subsample of audit committees with no conventional ties to the CEO. X, $Time_t$ and $PostSOX_t$ is the same set of control variables as in Table III. All *p-values* account for clustering (by firm).

Variables	Expected Sign	Coefficient Estimate [*p*-value]			
		(1)	(2)	(3)	(4)
Affiliation Index					
Conventional Index$_{i,t}$	+	1.238 [0.00]		1.172 [0.00]	
Social Index$_{i,t}$	+			0.608 [0.00]	0.723 [0.00]
Conventional-and-Social Index$_{i,t}$	+		0.667 [0.00]		
Number of Observations		1,580	1,580	1,580	942
Model's Likelihood Ratio		47.02	79.08	81.87	58.68

Table V
Social Ties and Sarbanes Oxley

This table presents estimates from the following pooled OLS regression:

$$|AAC_{i,t}| = \alpha + \beta_1 AffiliationShift_{i,t} * PostSOX_t + \beta_2 AffiliationShift_{i,t} + \beta_3 PostSOX_t + \delta Time_t + X\gamma + \epsilon_{i,t}.$$

$|AAC_{i,t}|$, the dependent variable, is the absolute value of abnormal accruals as defined in the text (Section 3.2.1) for firm i in year t. $AffiliationShift_{i,t}$ is a dummy that equals one if a post-SOX ($\geq$ 2002) loss of a conventionally tied audit committee member is accompanied by a replacement with an audit committee member with social ties to the CEO, and zero otherwise. $PostSOX_t$ is a dummy variable equal to one in years greater than or equal to 2002, and zero otherwise. The remaining independent variables are the same as in Tables III and IV. All t-statistics are calculated using White standard errors adjusted for clustering (by firm).

Variables	Expected Sign	Coefficient Estimate (t-statistic)
$AffiliationShift_{i,t}$ * $PostSOX_t$	+	0.052 (2.17)
$AffiliationShift_{i,t}$	?	-0.005 (-0.39)
$PostSOX_t$	-	-0.031 (-1.50)
Number of Observations		229
Adj. R-squared		0.25

Figure I.
Situations Involving Upward Versus Downward Managing Incentives

This figure plots the average abnormal accruals (as defined in Section 3.2.1) within the subsample of audit committees with no conventional ties to the CEO. Panel A reports statistics for firm-years in which the CEO sells more than $1 million in shares through open market trades (N = 397). Panel B reports statistics for firm-years in which the firm raises more than 5% of total assets in external capital (N = 240). Panel C reports statistics for firm-years that follow two consecutive years of negative earnings (N = 16). Panel D reports statistics for firm-years in which a new CEO arrives 3 to 9 months prior to fiscal year end and the predecessor does not remain active in the management of the firm (either as an employee or a board member) subsequent to his departure as CEO (N = 7). We report signed average abnormal accruals for two subsamples: *Low Social Index* and *High Social Index*, denoting firms that are below or above the median, respectively, in terms of their *Social Index*.

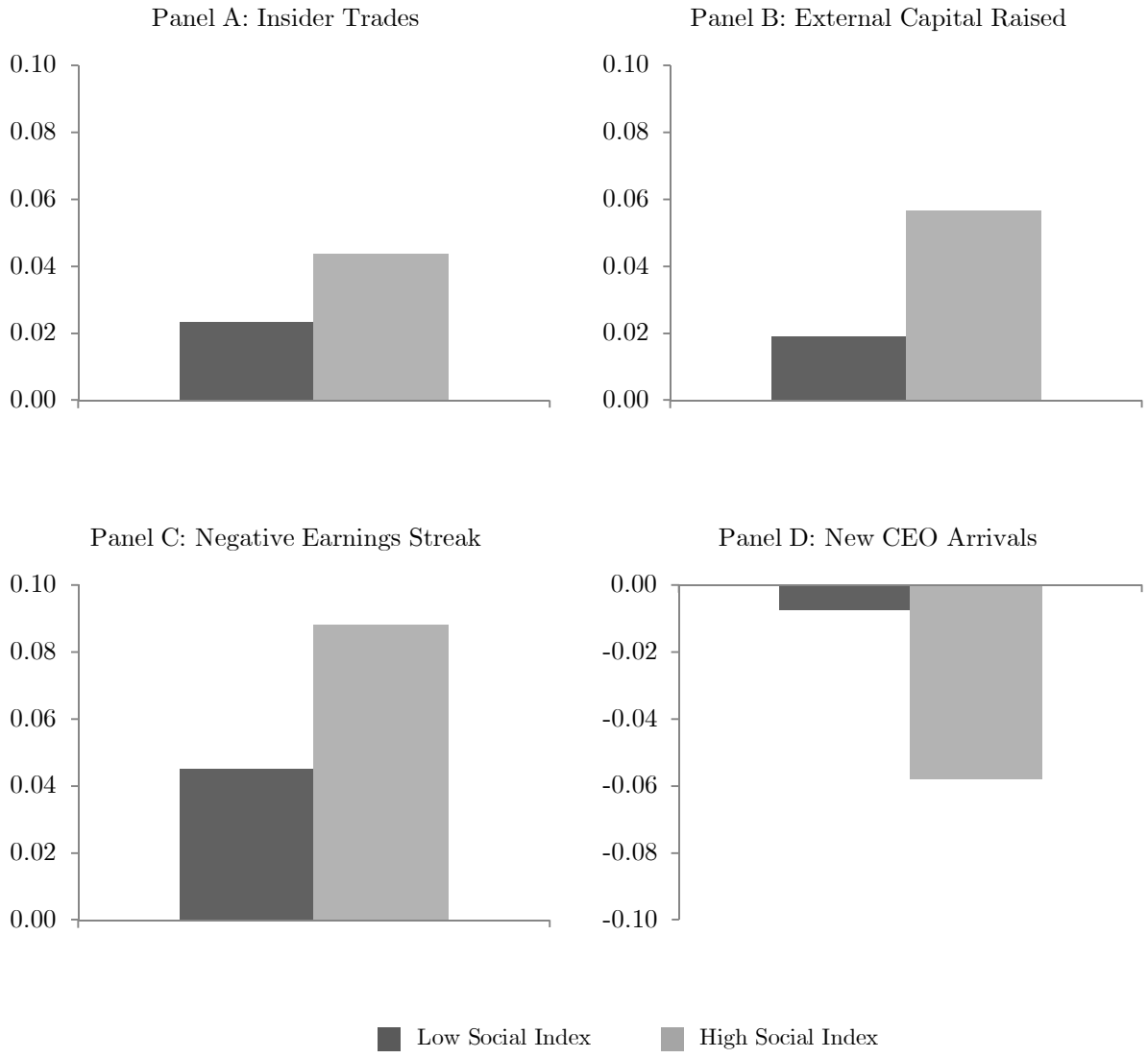

Figure II.
Social Ties and Earnings Restatements

This figure plots the fraction of earnings restatements that were triggered by the firm itself within the subsample of audit committees with no conventional ties to the CEO (N = 11). We report the fraction for two subsamples: *Low Social Index* and *High Social Index*, denoting firms that are below or above the median, respectively, in terms of their *Social Index*.