

Geography and the Incidence of Financial Misreporting

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Abstract

Though the benefits from misreporting of financial statements are well documented, the *ex ante* cost of misreporting has largely been ignored in the literature. *Ex ante* costs of misreporting are likely to vary with the information sets available to firms. We characterize the managers' *ex ante* information set in terms of the distance between the firms' headquarters and the SEC office, accounting practices of neighboring firms, and characteristics of the local auditor's office. We measure misreporting as the concentration of income-decreasing restatements announced between 1997-2002 in counties across the country. The posited proxies for differences in *ex ante* costs of misreporting significantly explain cross-county variation in the concentration of restatements. In particular, counties that are farther from the SEC and have a lax local auditor office are associated with a greater rate of income-decreasing restatements.

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1.0 Introduction

The decision to engage in illegitimate activities is a function of the expected costs and benefits of these activities (see Becker 1968). Though the benefits from illegal activities are well explored in the academic and practitioner literature, the costs of such activities are not studied as extensively, possibly because such costs are unlikely to be objective, exogenous, widely known, or agreed upon. Sah (1991) models the *ex ante* cost of engaging in illegal activity as subjective and argues that the perceived cost of committing a crime varies as a function of the information available to agents. This information set is characterized both by the agent's past experiences as well as the experiences of those in his vicinity. Consistent with this hypothesis, Glaeser, Sacerdote and Scheinkman (1996) find that the incidence of individual criminal activity is related to interactions with neighboring agents.

In this paper, we draw on this literature and focus on the role of neighboring agents and institutions to characterize the *ex ante* costs facing firms that adopt aggressive accounting practices that lead to restating of financial reports.¹ We characterize a firm's *ex ante* costs of misreporting by its information set as influenced by its distance to the SEC office, characteristics of local auditors, and the accounting practices of neighboring firms. We document that these proxies for differences in the *ex ante* costs of misreporting significantly explain cross-sectional variation in the concentration of income-decreasing restatements announced during 1997-2002.

Our sample consists of 331 firms that announced income-decreasing financial restatements due to accounting irregularities from January 1997 to June 2002 and 11,393 public firms that did not restate over this period. Although finding a defensible empirical proxy of

¹ We hasten to add that we do not necessarily view restatements as criminal activity. The path to a restatement perhaps begins with a manager choosing an aggressive accounting position when faced with a new reporting dilemma concerning transactions without explicit authoritative guidance from the FASB or SEC. On one end of the continuum, managers deliberately misreport while, on the other end, restatements arise due to mistakes and errors.

financial misreporting is non-trivial, we assume that income-decreasing restatements capture the key aspects of misreporting. The geographic unit of analysis is the county, and firms are assumed to be located in the county where they are headquartered. Of the 985 counties in the U.S. that have at least one corporate headquarters, only 144 (14.62%) had a firm that misreported. However, counties with a large number of restating firms are also likely to have a large number of corporate headquarters.

To control for the distribution of corporate headquarters, we measure the distribution of restating firms relative to the distribution of all public firms. In particular, we measure the deviation between a county's share of restatements relative to the county's share of public firms. A positive deviation, implying a higher share of restating firms relative to all firms, suggests a concentration of misreporting in the county. As misreporting could be concentrated in a few industries, geographic concentration in misreporting could simply reflect geographic concentration of industries. Hence, we adjust the misreporting deviation by taking into account the expected rate of misreporting based on the geographic clustering of industries in a county.

We then examine whether such an industry-adjusted deviation of misreporting depends on *ex ante* costs of misreporting as characterized by firms' information sets. We develop three proxies to capture firms' information sets. The first component is the difference in information about the intensity of regulatory oversight. The primary regulatory body overseeing the integrity of financial disclosures by public firms is the Securities and Exchange Commission (SEC). Firms that are found to have violated Generally Accepted Accounting Principles (GAAP) are subject to enforcement actions by the SEC. Differences among the firms in the awareness of the SEC activities will likely lead to differences in beliefs about both the probability and the cost of an SEC investigation.

Motivated by recent findings that geographic proximity is associated with informational advantages, we posit that the physical distance to SEC offices proxies for differences in awareness of the SEC's regulatory activities. Informational advantages arising from geographic proximity have been documented in portfolio decisions (see Coval and Moskowitz 1999, Ivkovich and Weisbenner 2005), in the forecasting accuracy of analysts (see Malloy 2005), in transfer of knowledge (see Audretsch and Stephan 1996 and Audretsch and Feldman 1996), and in the investment decisions of firms (see Kedia, Panchapagesan and Uysal 2005). If geographic proximity facilitates information transfer, then firms in a county closer to SEC offices will have greater awareness of the SEC activities and hence have higher *ex ante* costs of misreporting.

In particular, transmission of information about regulatory reach and oversight is likely to be facilitated by social, civic, or business interactions between managers and geographically proximate SEC enforcement officials. Furthermore, firms located close to the SEC might also share intermediaries such as lawyers and accountants who have interacted before with SEC enforcement officials and hence are aware of the SEC's proclivity to investigate reporting discretion in a gray area of financial reporting. Moreover, the SEC also likely knows more about the firm's misreporting if the firm is located closer to the SEC office. Consistent with the hypothesis that information about regulatory oversight decreases with distance from the SEC office, we find that the concentration of misreporting in a county is negatively associated with SEC distance.

Second, we examine the role of auditors in influencing firms' awareness of aggressive accounting practices and the associated costs of adopting such practices. An auditor's endorsement increases the ability of firms to justify their accounting choices (perhaps as "best practices" in an gray area of financial reporting) and reduces the probability of a regulatory probe. If a particular auditor office is associated with condoning aggressive accounting

practices, then we expect to observe a concentration of restatements in the region it services. Pointing to the lax local auditor hypothesis, Chaney and Phillipich (2002) document that on the three days following Andersen's admission that a significant number of documents had been shredded, firms whose audits were performed by Andersen's Houston office suffered a more severe decline in abnormal returns relative to Andersen's other clients. Consistent with our lax local auditor hypothesis, we find that the concentration of misreporting in a county is positively associated with the concentration of misreporting among a few auditors in the region.

Finally, we examine the practices of firms in neighboring counties and their potential influence on the firms' beliefs about the cost of misreporting. The more widespread the use of aggressive accounting practices in the neighboring region, the smaller a firm's sense of wrongdoing from adopting these practices. The presence of many misreporting firms reduces the probability of any one firm being investigated by regulators, given steady regulatory activity. Further, in the event that a firm is questioned by the SEC, the firm may perceive the use of similar practices by other firms as a valid justification for its actions ("best practices in the region"). We find significant evidence that the concentration of misreporting in a county is positively related to the fraction of misreporting firms within a 250km radius on a univariate basis although statistical significance of this factor disappears when control variables are added. In sum, the evidence suggests that the concentration of misreporting in counties is negatively associated with proxies for the *ex ante* costs of adopting these practices in such counties. In particular, counties that are farther from the SEC and have a lax local auditor office are more likely to be associated with higher misreporting.

We also examine the role of other monitors in influencing firms' *ex ante* costs of misreporting and therefore the misreporting intensity in a county. In particular, we studied the impact of analyst coverage, institutional ownership, oversight by creditors as captured by debt

ratios, and discipline via takeovers as captured by merger and acquisition activity in the county. We find no evidence that monitoring through these channels reduces misreporting intensity.

A county, not the firm, is a natural unit of analysis in our context because our proxies for *ex ante* costs such as distance from the SEC office, restating firms in the neighborhood, and auditor concentration do not exhibit much cross-sectional variation for firms located in a given county. Therefore, firm-level tests that correlate the probability of a restatement with proxies for *ex ante* costs are likely to suffer from lower statistical power. Nonetheless, supplementary analyses conducted at the firm-level, as opposed to the county-level, confirm most of the key results of the paper.

Our paper makes several contributions to the extant literature. First, we are among the first to highlight the *ex ante* costs to firms of misreporting. Consistent with Becker (1968), *ex ante* costs are likely to be a key consideration in the firm's decision to misreport. However, extant literature on financial misreporting has focused thus far only (i) on the benefits from misreporting for the manager (e.g., Burns and Kedia 2006, Bergstresser and Phillipon 2006, Cheng and Warfield 2005, Graham, Harvey and Rajgopal 2005) or for the firm (e.g., Dechow, Sloan, and Sweeney 1996, Richardson, Tuna and Wu 2003); or (ii) on the governance mechanisms that deter misreporting (e.g., Agrawal and Chadha 2005); or (iii) on the *ex post* costs of misreporting to the manager or the auditor (e.g., Desai, Hogan and Wilkins 2006; Karpoff, Lee, Maharajan, and Martin 2004; Srinivasan 2005; Agrawal and Cooper 2006, 2007). It is worth pointing out that *ex ante* and *ex post* costs are likely to differ substantially, especially in recent times, as the costs imposed by Sarbanes Oxley (SOX), such as imprisoning executives found guilty of fraud, could hardly have been anticipated before SOX was proposed.

Second, we are among the first to extend the notion of crime associated with a spatial unit such a county or a state from the economics literature (e.g., Audretsch and Stephan 1996,

Glaeser et al. 1996) to the accounting domain of financial misreporting. Most of the extant evidence on misreporting tends to rely on the firm or the firm-year as the unit of analysis. Third, our paper underscores the importance of geographically proximate regulators and better dissemination of information regarding costs of undertaking potentially illegal activities. This finding runs counter to the trend of centralized regulation seen across the world. Finally, our evidence has implications for the role of inter-firm information flows in the adoption of corporate policy — a mechanism that has received little attention in the literature.

The remainder of the paper is organized as follows. Section 2 discusses data and methodology. Sections 3, 4 and 5 examine impact of information differences with respect to regulatory oversight from the SEC, the role of the local auditor, and the impact of the neighboring region, respectively. Section 6 reports additional analyses, and Section 7 concludes.

2.0 Data, Methodology and Geographical Clustering

2.1 Sample

Our sample consists of firms that announce their financial restatements due to accounting irregularities. This list of restating firms was compiled by the General Accounting Office (GAO) and discussed in the report titled “Financial Statement Restatements: Trends, Market Impacts, Regulatory Response, and Remaining Challenges.” The GAO report was commissioned by the Chairman of the Committee on Banking, Housing and Urban Affairs of the U.S. Senate. The GAO identified 919 announcements of accounting restatements by 845 firms over this period through a Lexis-Nexis search with variations of the word ‘restate.’ These announced restatements were due to alleged accounting irregularities resulting in material misstatements of financial reports. We use this list as the basis of this study. Note that the list specifically excludes routine restatements due to mergers and acquisitions, discontinued operations, stock

splits, issuance of stock dividends, currency-related issues, changes in business segment definitions, changes due to transfers of management, changes made for presentation purposes, general accounting changes under GAAP, litigation settlements and arithmetic and general bookkeeping errors. The list also excludes restatements resulting from accounting policy changes because they did not necessarily reveal previously undisclosed, economically meaningful data to market participants. The GAO (2002) reports an average stock market reaction of -9.5% over day -1 to +1 surrounding the restatement announcement. The distribution of restatements sorted on initiating parties is as follows: company (40%), source unknown (34%), auditor (7%), the SEC (13%) and other external parties (6%). Several academic studies have relied on this restatement dataset. Examples include Agrawal and Chadha (2005), Agrawal and Cooper (2006, 2007), Burns and Kedia (2006), Desai, Hogan and Wilkins (2006), Hribar and Jenkins (2004), and Srinivasan (2005).

We considered using two versions of the GAO sample for our analyses: (i) a full sample of all restatements in the GAO report that survive filters for missing data related to other independent variables in the paper; and (ii) a conservative sample that attempts to retain only serious and non-trivial restatements. There are sound arguments to pick the full sample. Managers in a firm and in a neighborhood learn about the reporting latitude that regulators and local auditors are willing to give them by observing their response to even trivial restatements. Stated differently, the “zero tolerance” or the “broken window” policy of policing crime, as advocated by NY City Mayor Rudy Guiliani in the early 1990s, relies on cracking down hard on petty crime (“the broken window”) in an effort to deter further petty crime, low-level anti-social behavior and thus prevent major crime in the future. In our context, managers might infer the *ex ante* costs of deliberate misreporting from regulators and auditors’ response to petty restatements. Hence, unlike other papers that can posit a clear link between non-trivial

restatements and some managerial incentive such as option exercises (Burns and Kedia 2006), insider trading (e.g., Agrawal and Cooper 2006), or managerial job security (e.g., Agrawal and Cooper 2007), eliminating trivial restatements is not such a clear-cut design choice in our setting.

However, the need for the conservative sample arises because there is no consensus on whether certain restatements in the GAO report are attributable to honest accounting mistakes as opposed to aggressive accounting or deliberate misreporting, the key focus of this paper. To present results comparable with the prior literature, we decided to tabulate analyses using the conservative sample. To construct such a sample, we follow Agrawal and Cooper (2007, page 8) and exclude restatements with (i) positive impact on net income (as well as those for which we do not have any information on magnitude); and (ii) restatements with no effect on net income. Agrawal and Cooper (2007) argue that auditors view restatements that do not decrease net income as less severe.² However, we confirm that all the reported results replicate when the full sample is used.

Our sample begins with restating firms with at least one year of sales in the period 1997 to 2001 and with data on company headquarters in COMPUSTAT. All non-restating firms with at least one year of sales over the period 1997 to 2001 and with data on the location of headquarters in COMPUSTAT are also included. We exclude firms whose headquarters are

² There are other potential ways to measure misreporting. For instance, we could have eliminated all restatements made to comply with SAB 101 and EITF guidelines. Whereas Palmrose and Scholz (2004) and Agrawal and Cooper (2007) argue that such restatements are likely to be less serious and technical in nature, Rountree (2003) finds that the average stock price reaction to SAB 101 restatements is negative. Our approach of retaining only income-decreasing restatements is a compromise between these two extreme positions. Including only income decreasing restatements eliminates most of the SAB101 and EITF restatements. Only 37 SAB 101 income-decreasing restatements remain in our sample and the average overstatement of income for these cases is a non-trivial 11.21% of sales. Our proxy based on the income-effect of restatement is likely to capture misreporting better than other proxies like number of quarters restated and initiator of restatements that have been proposed in the literature. Another possibility was to use a sample of SEC enforcement actions (Accounting and Auditing Enforcement Releases or AAERs) to capture misreporting. However, because these firms have already been targeted by the SEC, AAERs do not allow us to convincingly capture the role of the SEC in affecting the firms' *ex ante* perceived costs of misreporting.

located outside the U.S. because census data on counties are not easily available for such firms. We hand-collected data on the impact of the restatement on net income. We were able to get data on the magnitude of restatement for 473 restatements.³ We do not include restatements with a positive impact on net income (about 13%) or those with a zero impact on net income (about 14.6%). Our final sample of income decreasing restatements consists of 331 income-decreasing restating firms with a average annual impact on net income that is about -20.57% of sales. Approximately 11,393 non-restating firms are included in our sample. The spatial unit of analysis over which we measure the concentration of misreporting is the county. Of the total 3,141 counties reported in the U. S. Census Bureau Gazetteer, 985 or 31% of counties are home to at least one corporate headquarters.

2.1 Geographical concentration of restatements

To capture the degree of geographical concentration of restatements, we rely on a misreporting deviation defined as

$$\text{misreporting_deviation} = x_i - y_i \quad (1)$$

where $x_i = \text{County's share of restating firms} = \frac{\text{Number of firms in county}_i \text{ that restated}}{\text{Total restating firms}}$ and

$$y_i = \text{County's share of public firms} = \frac{\text{Number of firms head quartered in county}_i}{\text{Total firms in Compustat}}$$

A positive (negative) misreporting deviation suggests that the county's share of misreporting firms is higher (lower) than the county's share of all public firms. Positive

³ The data is collected from the restatement announcement when available. For firms that do not announce the impact of the restatement on income, the data is obtained from the amended 10-Ks filed with the SEC. Data on the size of the restatement could not be obtained for some firms due to several reasons. First, some firms did not report the impact of the restatement on income. Second, some firms include events (such as restructuring charges and other one-time charges) other than restatements in the amended earnings number, and this confound makes it difficult to isolate the impact of the restatement on income. Third, some firms did not file an amended 10-K. We also exclude outlier observations for which the size of the restatement was more than 200% of restated net income.

deviations indicate greater geographic concentration in misreporting. The assumption underlying the deviation measure is that misreporting should be randomly distributed. In other words, a county that accounts for 10% of all public firms should also account for 10% of restatements on average. Table 1 reports the distribution of misreporting at the state level (rather than county level) for brevity. California, Massachusetts and Washington are the states with the greatest positive deviations. In particular, California accounts for 17.56% of all public firms, but 19.78% of all restating firms. On the other hand, Connecticut, New York, and New Jersey have the lowest deviations among states that report at least five or more restatements. That is, the share of restatements in these states is less than their share of public firms. For example, New York accounts for 9.27% of all public firms, but only 7.52% of restating firms.

The above deviation measure does not correct for the geographic concentration of industries. There is significant evidence in the prior literature that industries tend to be geographically concentrated due to the natural cost advantage of regions, industry-specific spillovers (Ellison and Glaeser 1997), or knowledge spillovers in R&D intensive industries (Audretsch and Feldman 1996, and Audretsch and Stephan 1996). Hence, the geographic concentration of misreporting, as reported by the deviation measure, could merely reflect the concentration in certain counties of industries with a higher propensity to restate.

To estimate clustering at the industry level, we calculate the deviation of misreporting across two-digit SIC levels. Table 2 displays the distribution of restating firms and all public firms for the 72 unique two-digit SICs in our sample. Not surprisingly, misreporting is concentrated in certain industries. Business services (SIC 73) and the computer equipment industries (SIC code 35) report the highest positive deviations among industries where we observe at least five restatements. That is, SIC code 73 accounts for 14.04% of all COMPUSTAT firms and 18.43% of misreporting firms. On the other hand, SIC code 60

(depository institutions) and 49 (electric, gas and sanitation services) have the lowest deviations. For example, the two-digit SIC code 60 accounts for 9.37% of public firms, but only 4.53% of restating firms.

A higher incidence of restating firms in California may be due to the state's large share of firms in SIC 35 (computer equipment), an industry with a high incidence of misreporting. To control for concentration of misreporting in industries, we construct an industry-adjusted deviation measure. Instead of assuming that misreporting should be proportional to the fraction of firms located in the county, our proposed measure assumes that misreporting should be proportional to the industry composition of the county. The industry-adjusted misreporting deviation measure is defined as

*ind adjusted misreporting _ concentration*_i = *x*_i - *indavg*_i, where:

$$\text{indavg}_i = \text{weighted average industry restating share for county } i = \sum_j \frac{w_{ij} * \text{Number of restating firms in ind } j}{\text{Total restating firms}}$$

$$w_{ij} = \frac{\text{Number of firms in industry } j \text{ and county } i}{\text{Total firms in industry } j}, \text{ and } x_i \text{ is as defined in equation 1 above.}$$

The industry adjusted deviation measure controls for differences in the incidence of misreporting across industries. Consider the case of a county in California with a positive deviation. If this county consists of predominantly computer equipment firms, then its weighted average industry-misreporting share will be high. Consequently, its industry-adjusted misreporting deviation will be lower than its geographical misreporting deviation represented in equation (1). Table 1, (last column) displays industry-adjusted misreporting deviation for states. With industry adjustment, California's misreporting deviation decreases from 0.118% to 0.079%. However, industry adjustments do not make a major difference to the misreporting deviations for the state of New York. New York's deviation changes marginally from -0.099% to -0.088% but New York continues to be the state with one of the smallest deviations (among states that report

at least five restatements). We will use industry-adjusted misreporting deviation to capture the concentration of misreporting in the remainder of the paper. In the following sections of the paper, we seek to explain cross-county variation in the industry-adjusted misreporting deviations in terms of three components of the *ex ante* information set facing managers: (i) regulatory oversight of the SEC in section 3; (ii) local auditor office in section 4; and (iii) neighboring firms' misreporting in section 5.

3.0 Regulatory Oversight

In this section, we examine whether differences in information about regulatory oversight by the SEC have a bearing on the perceived *ex ante* costs of adopting aggressive accounting practices and consequently on the misreporting intensity in counties. Crucial to the SEC's effectiveness is its enforcement program that brings enforcement actions against individuals and firms that violate securities law. The SEC obtains its leads for potential violations of GAAP from several sources like its internal review of filings, the market surveillance programs of NASD and NYSE, public complaints and tips among others. To gather further information on a case, the SEC may initiate an informal investigation of a firm. Firms that are found to have violated GAAP requirements are then subject to a formal investigation, which is disclosed through the SEC's Accounting and Auditing Enforcement Releases (AAERs). If firms differ in their knowledge of SEC activities and ongoing investigations, they are likely to have different beliefs about both the probability of being investigated by the SEC and the penalties associated with such an investigation.

We use physical distance to an SEC office as a proxy for information available about regulatory activities. The use of physical distance to proxy for regulatory information is motivated by evidence in prior work that shows information advantages associated with geographic proximity. Coval and Moskowitz (1999, 2001) find that mutual fund investments in

geographic proximate securities earn positive abnormal returns. Audretsch and Stephan (1996) document the importance of geographical proximity of scientists and their firms for innovative activity. With regard to individual illegitimate activities, Sah (1991) and Glaeser et al. (1996) discuss how geographic proximity affects the perceived cost of criminal activity.⁴

Firms geographically closer to an SEC office are likely to be better informed about regulatory reach and oversight and are therefore likely to face higher *ex ante* costs of misreporting, and hence counties closer to the SEC will have a lower misreporting concentration. Transmission of information about regulatory reach and oversight is likely to be facilitated by social, civic, or business interactions between managers and geographically proximate SEC enforcement officials. Being geographically close probably helps with information acquisition if (i) the information is sensitive and will hence be disclosed only to close business contacts; or (ii) if the nature of the inquiry is ambiguous so that useful information might leak out from casual conversations. Gray areas of financial reporting most likely satisfy both these conditions.

Furthermore, firms located close to the SEC might also share intermediaries such as lawyers and accountants who have interacted before with SEC enforcement officials and hence are aware of the SEC's proclivity to investigate the exercise of reporting discretion in a gray area of financial reporting. Moreover, the SEC also likely knows more about the firm's misreporting if the firm is located closer to SEC offices. More interactions between the SEC and the executives of the firm can also give the SEC an advantage in finding out potential misconduct in the firm. Finally, note that the SEC relies on tips about financial reporting irregularities to detect

⁴ A natural follow up question in response to the cited research is why should geographical proximity affect the information set of agents in the current age of information technology and electronic communication? Audretsch (2003) argues that the answer lies in recognizing that there are two types of information: (i) information, such as the price of gold on the New York Stock Exchange, that can be easily codified and has a singular meaning and interpretation; and (ii) information that is vague, difficult to codify and often serendipitously recognized. With electronic communication the marginal cost of transmitting easily codified information does not depend on geographic distance. However, the marginal cost of transmitting tacit knowledge or difficult to codify information increases with distance. We believe that information about accounting policies to account for a transaction and / or circumstances specific to a firm or set of firms is of the latter kind.

misreporters. Employees of proximate firms are more likely to be aware of the SEC and this detection policy, and are therefore more likely to blow the whistle about problems than employees of distant firms.

We estimate the distance between every county and the SEC headquarters located in Washington D.C. The latitude and longitude of counties and SEC headquarters, obtained from the U. S. Census Bureau Gazetteer, are used to compute distances between counties and SEC headquarters.⁵ We also compute the distance between every county and its regional SEC headquarters. The distance to SEC offices is then the lower of the two distances, i.e., the lower of the distance to the SEC headquarters and the distance to regional headquarters located in New York City, NY; Miami, FL; Chicago, IL; Denver, CO; and Los Angeles, CA.⁶ Table 3 reports the average distance from the SEC for firms located in groups of counties ranked by their misreporting intensity. That is, we sort counties into four equal groups based on industry-adjusted misreporting deviations. Row 1 reports the mean industry-adjusted deviation for each of these four groups. Note that the mean deviation, corresponding to group 1 (4) and lowest (highest) concentration of misreporting, is -0.083 (0.07). Next, we calculate the average distance between a firm's headquarters and the SEC office for each of these quartiles. The group with the smallest industry-adjusted deviations has a mean distance of 322.68 km from SEC offices (See Row 2, Table 3). This is 22% less than the mean distance of 394.82 km for the group with the largest industry-adjusted deviations, and the difference is statistically significant at the 5% level (t-statistic = 2.18). A similar picture emerges when we consider un-tabulated median distances.

⁵ The Haversine Formula is used to calculate the distance d_{12} between counties 1 and 2. Distance d_{12} is calculated as $d_{12} = R \times 2 \times \arcsin(\min(1, \sqrt{a}))$ where R is the radius of the earth (≈ 6378 kilometers) and $a = (\sin(dlat/2))^2 + \cos(lat1) \times \cos(lat2) \times (\sin(dlon/2))^2$. In the above expression $dlat = lat2 - lat1$ and $dlon = lon2 - lon1$. Lat1 and lon1 are the latitude and longitude of county 1, and lat2 and lon2 are the latitude and longitude of the SEC office.

⁶ These were the regional offices as of 2004 and at the time of drafting the paper.

As information advantages may not be linear in distance, we define counties as being geographically proximate to the SEC if they are within 100km of the SEC. Row 3 of Table 3 reports that about 32.45% of counties in the group with the smallest misreporting deviation are geographically proximate to the SEC, i.e., are located within 100km. Note that several prior papers (e.g., Coval and Moskowitz 2001, Malloy 2005, and Kedia, Panchapagesan and Uysal 2005) consider distances within 100 km as proximate. In comparison, only 21.49% of counties with the largest misreporting deviation are geographically proximate to the SEC, and the difference between these proportions is significant at the 5% level (t-statistic = 2.35).

3.1 Controlling for county characteristics

In this section, we examine whether demographic characteristics of the counties could potentially account for the association between distance from the SEC and the industry-adjusted misreporting deviations of counties. We proxy for county size by (i) land area in square miles obtained from the U.S. Census Bureau and (ii) the number of corporate headquarters in the county. We control for county growth by including (i) the percentage change in population over 1990-2000; (ii) the percentage change in housing over 1990-2000; (iii) the number of new housing starts in 2000; (iv) the percentage change in private non-farm new establishments over 1990-1998; and (v) the percentage change in personal income over 1990-1998.⁷ Misreporting is likely to be higher when investor optimism is high and at the end of a rapid growth phase (see Bolton, Scheinkman, and Xiong 2003, Bebchuk and Bar-Gill 2003, and Povel, Singh and Winton 2007). However, we see little difference in these growth proxies across groups of counties ranked by misreporting deviations (see rows 6-11 in Table 3).

⁷ Note that the different time frames over which county characteristics data is collected is driven by data availability intersected with the restatement sample period that runs from 1997-2001. Further, 1990, the other year for which data on new housing starts are available, was not proximate in time to the restatement announcements sample covering 1997-2001. Further, introducing population levels instead of changes does not affect the reported results.

Several papers (e.g., Bergstresser and Philippon 2006, Burns and Kedia 2006, and Cheng and Warfield 2005) argue that the propensity to misreport at the firm level increases with CEO incentives, though Erickson, Hanlon and Maydew (2006) find no evidence of a link between misreporting and CEO incentives when they use AAERs to capture misreporting and total portfolio sensitivity to capture CEO incentives. Regardless of which stream of research a reader believes, we view stock option usage in a county as a potential confounding variable for our analyses. As we do not have details of compensation for CEOs of firms in each county, we control for potential differences in the use of stock options across counties by including a proxy for stock option usage in the region. In particular, we use the fraction of total state employees working in industries that are characterized by high option usage, referred to as “high incentive” industries. The greater the importance of these industries, the greater will be the use of stock options, if the literature linking option usage and misreporting were to hold. Otherwise, we ought to observe no association between misreporting and option-related incentives.

We use the 1997 Economic Census data to obtain employment in different sectors of the state. Industries are categorized as “high incentive industries” if they belonged to the following four NAICS: 334 (computer and electronic product manufacturing), 514 (information services and data processing services), 5415 (computer system design and related services) and 5417 (scientific research and development services).⁸ The choice of these NAICS codes is based on prior evidence of industry patterns in the grant of incentives (See Core and Guay 2001, and Ittner, Lambert, and Larker 2001).⁹ We find little evidence that our proxy for usage of options is related to industry-adjusted misreporting deviations of the counties (row 12 in Table 3). This

⁸ Note that we have switched from SIC codes earlier to NAICS here because the 1997 Economic Census data reports industry data using NAICS codes. NAICS is the North American Industry Classification System. The data is available on the website www.census.gov.

⁹ Core and Guay (2001) find the maximum usage of options in software, pharmaceuticals and computers. Ittner, Lambert and Larker (2001) find larger option grants in new economy industries, i.e., computers, software, semiconductor manufacturing, telecommunications, networking and internet.

non-result differs from those reported in Bergstresser and Philippon (2006) and Burns and Kedia (2006) probably because our proxy is measured at the state level, and we are unable to capture the substantial firm level variation in the use of stock options. Or, alternatively, our non-result may be consistent with the Erickson et al. (2006) finding that misreporting is unrelated to stock option incentives.

The results from estimating a multivariate model to determine the effect of regulatory oversight on the misreporting intensity of counties are presented in column (1) of Table 4. The dependent variable is the industry-adjusted misreporting deviation for the county. We find that distance to the SEC is positively associated with the concentration of misreporting in counties (coefficient = 0.41, p value = 0.01). Thus, counties that are farther away from the SEC are more likely to have a high misreporting concentration. Consistent with the univariate results in Table 3, proxies for county size and county growth appear to be unrelated to the concentration of misreporting. In untabulated results, we find that the result related to SEC offices is robust to several checks. First, we examine whether regulatory information is linearly decreasing with SEC distance or if only proximate counties appear to have information advantages regarding regulatory oversight. To capture geographic proximity we create a proximity dummy that takes the value of one if the county is within 100km of the nearest SEC office. We find that the coefficient of the proximity dummy is negative and significant. Counties that are close to the SEC have lower misreporting deviations, as expected. Robustness checks using distance other than 100km to define geographic proximity indicate that this impact of being close to the SEC is only significant for distances of 150km or less. Second, we examine the impact of including counties that have no restating firms. By construction, counties with no restating firms have negative misreporting deviations. Excluding these counties does not affect the significance of SEC distance. The significance of the coefficient is, however, lower than that for the full sample.

3.2 State judicial quality

Though firms found to have violated GAAP regulations are subject to federal securities law, the integrity and quality of the state judicial system may potentially dissuade firms from adopting aggressive accounting practices. To examine whether state judicial quality impacts the propensity of firms to misreport, we use the “overall state ranking” for the state reported in the 2001 State Liabilities Ranking Study conducted for the U.S. Chamber of Commerce (see Kahan 2004).¹⁰ State judicial quality does not appear to impact misreporting concentration in counties (see model 2, Table 4). We also fail to find a significant effect for state judicial quality if we use a dummy variable identifying the 10 worst states in judicial quality. Thus, the state judicial environment does not appear to impact a firm’s decision to adopt aggressive accounting practices.

3.3 Impact of geographic proximity on SEC’s choice of firms to investigate

As seen above, firms that are close to the SEC are less likely to adopt aggressive accounting practices. Proximate firms are likely to have higher *ex ante* costs of misreporting arising from better information regarding regulatory oversight. Hence, we examine whether regulatory oversight for proximate firms is merely perceived to be higher or whether actual SEC investigations of restated firms bear out this perception. That is, is the SEC more likely to investigate firms that are located closer on account of information advantages it may possess due to geographic proximity?

¹⁰ This study was conducted by Harris Interactive group and is based on interviews with counsel and senior litigators. The overall rankings summarize states’ rankings on (i) overall treatment of tort and contract litigation, (ii) treatment of class action law suits, (iii) punitive damages, (iv) timeliness of summary judgment, (v) discovery, (vi) scientific and technical evidence, (vii) judge’s impartiality, (viii) judge’s competence, (ix) juries’ predictability, and (x) juries’ fairness.

We can shed some light on this issue as out of 718 firms that announce restatements, the SEC charged 98 firms with GAAP violations.¹¹ In un-tabulated results, we find that firms that are charged with GAAP violations by the SEC are located on average about 380.25 km from SEC offices. This is significantly lower than the average distance of 464.48 km between SEC offices and firms that restated but were not charged by the SEC (t-statistic for the difference = 1.97). Of the 331 firms that announced income-decreasing restatements, the SEC charged 51 firms of GAAP violations. Firms charged by the SEC, in case of income-decreasing restatements, are located closer to SEC offices (an average of 300 km) than restating firms that are not charged by the SEC (an average of 357 km). The data suggest that higher regulatory oversight arising from proximity to SEC offices is not merely a perception. The SEC is indeed more likely to investigate firms that are located closer to its offices.¹² These results should be interpreted with caution as our examination of SEC investigated firms is quite limited. We do not control for other factors that might impact the SEC's choice of targets such as the severity of the crime, available evidence, and the deterrence value of the enforcement action.

4.0 Auditor Characteristics

Next, we examine information about aggressive accounting practices obtained from auditor characteristics. Auditors attest to the financial statements of firms. Obtaining the validation of the auditor allows the firm to justify its aggressive accounting practices and hence reduces the *ex ante* cost of any potential investigation into misreporting. Gibbins, Salterio and Webb (2001) document that negotiations between the auditor and client firms are routinely

¹¹The data on SEC accounting enforcements is based on the Accounting and Auditing Enforcement Releases (AAERs). Since the sample includes firms that announced a restatement as late as June 25th 2002, this list of firms that were the subject of SEC investigation is conservative as the SEC could still decide to investigate firms that are not currently under investigation.

¹² Such a surveillance strategy might be a rational response in light of tight budgets for surveillance and thinly spread staff. For example, between 1991 and 2001, the number of cases opened by the SEC's Enforcement Division increased by 65% while the staff grew by 27%. Richard Sauer, ex-employee at the Enforcement Division, says "because resources were so stretched, nobody had time to go around prospecting for new matters. You had a pile of stuff you knew were violations." (*Wall Street Journal*, 2003)

observed and arise mostly due to unclear GAAP. They further state that solutions to these negotiations are not unique and are typically based on what the auditor has agreed to before (“precedents”). Such a strategy enables the auditor to justify a proposition as an acceptable best practice. These arguments suggest that an auditor office with clients that use aggressive accounting is more likely to agree to similar practices in its negotiations with other firms. Such precedents may cause an auditor office to be an explicit or an inadvertent channel of the spread of aggressive accounting practices in the region. Further, a regional auditor office, either through its lack of independence or incompetence, could be directly responsible for a number of restatements, which consequently could lead to clustering of restatements in the region.¹³ Consistent with this hypothesis, Chaney and Phillipich (2002) find that on the three days following Andersen's admission that a significant number of documents had been shredded, firms whose audits were performed by Andersen's Houston office suffered a more severe decline in abnormal returns relative to Andersen's other clients.

If auditors did not significantly influence the adoption of aggressive accounting practices, misreporting firms should be randomly distributed across auditing firms. In other words, an auditor's share of misreporting firms should be no different from its market share in the region. In the extreme, if a single auditor office accounted for the bulk of all misreporting firms, then the region should have a high concentration of misreporting across auditors. Consequently, we estimate the extent of concentration of misreporting across auditors to examine the role played by auditors in the adoption of aggressive accounting practices.

¹³ David Duncan of Andersen's Houston office overruled objections from Andersen's head office about Enron's controversial accounting policies on as many as four occasions. Further, Duncan was instrumental in getting Carl Bass, one of the chief skeptics of Enron's accounting at Andersen's head office, fired (*Business Week* 2002).

The data for the firm's external auditor is obtained from COMPUSTAT (data 149).¹⁴ Unfortunately, we do not have data on which regional office of the auditing firm serviced the firm. We therefore assume that an auditor office servicing a county is likely to service firms in the neighboring region. Measures of concentration across auditors are calculated for the neighboring region (excluding the county in question) and are given as follows:

$$\text{auditor_coefficient of concentration} = \frac{1}{2} * \sum |deviation_i| = \frac{1}{2} * \sum |x_k - y_k| \quad (2)$$

where $x_k = \text{Auditor's share of restatements in region} = \frac{\text{Number of restating firms with auditor}_k}{\text{Total restating firms in region}}$

$y_k = \text{Auditor's share of public firms in region} = \frac{\text{Number of firms with auditor}_k}{\text{Total firms in Region}}$

We report results using a 250km radius to define the neighboring region over which auditor concentration is estimated. Note we do not use the 100km radius to construct the concentration of coefficient across auditors because a 100km based neighboring region results in missing value for many counties. This arises because information on auditors is missing for several firms and in many instances a 100km radius does not have firms with auditor data. As seen in row 5 of Table 3, the univariate evidence suggests that group 1 (the lowest concentration of misreporting) is associated with a smaller coefficient of concentration among auditors relative to group 4 (the highest concentration of misreporting) (t-statistic for difference = 1.63). Column 3 of Table 4 shows that this result gets stronger when controls for county characteristics are introduced (p-value = 0.01).

5. Impact of the Neighboring Region

An important factor that might influence a firm's subjective costs of misreporting is the beliefs and choices of other firms, especially those that are geographically proximate. Proximity

¹⁴ The data on auditors is for the year 2001. When the data is unavailable for 2001, we take the last reported year over the period 1997 to 2000. For firms with no data on auditors on COMPUSTAT from 1997 to 2001, we collect this data from their 10-Ks. COMPUSTAT reports the data for 29 auditors.

to other firms that misreport is likely to reduce the perceived cost of adopting aggressive accounting practices. The presence of many misreporting firms reduces the probability of any one firm being investigated by regulators, given steady regulatory activity. Further, in the event that a firm is questioned by the SEC, the firm may perceive the use of similar practices by other firms as a justification for its actions (“best practices in the region”). This may be especially true when there is ambiguity regarding gray areas in financial reporting rules for which there is no authoritative guidance from the FASB or the SEC. In general, the intuition is that CFOs likely mimic the behavior of other CFOs, under the assumption that others’ behavior reflects their judgment of the costs and benefits of misreporting.

We use the fraction of firms that misreport in the neighboring region to proxy for the degree of exposure to misreporting firms and their practices. Consistent with the 250km radius definition of the auditor concentration coefficient, we define the fraction of misreporting firms as the ratio of the number of misreporting firms to total firms headquartered in the neighboring counties within 250km. There is some evidence that the restatement rate of nearby regions positively impacts the misreporting intensity of the county both in the univariate data (t-statistic for difference in restatement rate of nearby regions in group 1 and 4 is 6.18 as per row 4 of Table 3) and in the multivariate setting with county controls (see model 4 of Table 4).

Finally, in model 5 of Table 4, we estimate the model including all sources of information differences that influence the perceived *ex ante* costs of adopting aggressive accounting practices. In this full model, SEC distance and concentration of misreporting across auditors continue to have a significant effect on the misreporting concentration of the county, but statistical support for neighboring regions’ misreporting disappears.

6.0 Additional Analyses

6.1 Other monitors

Thus far, we have examined the role played by two monitors: regulators and auditors. A natural question arises about the role of other monitors such as analysts, institutional investors, the disciplining role of debt, and the takeover market. Are the results related to the proximity of regulators and auditors robust to the geographical proximity of these other monitors? To examine potential monitoring by other actors, we construct the following variables:

- (i) Average number of analysts following firms in the county: We obtain the number the analysts providing annual earnings forecasts for firms from I/B/E/S tapes. We compute the average number of analysts following the firms in a county over the period 1997-2001 to proxy for the level of analyst monitoring in the geographic area.
- (ii) Average institutional ownership of firms in the county: We obtain the fraction of the firm owned by institutions from SPECTRUM database to calculate the average institutional ownership of firms in a county over the years 1997-2001.
- (iii) Average debt ratio of firms in the county: We use the ratio of long-term debt to total assets to capture firm leverage. We then estimate the average leverage of all firms in the county over the period 1997-2001. The data to compute leverage comes from COMPUSTAT.
- (iv) Average exit rate of firms in the county due to mergers and acquisitions: To examine the disciplining role of the takeover market, we identify all firms that exit due to mergers and acquisitions over the five years prior to the restatement. We then calculate the fraction of firms exiting at the county level.¹⁵

The *a priori* expectation is that the industry-adjusted concentration of misreporting in a county is inversely related to outside monitoring as captured by the average number of analysts, institutional ownership, average debt ratio in the county, and the average exit rate of firms in the county. As seen in Table 3 (rows 13-16), misreporting intensity is indeed higher when institutional ownership of firms in the county is low. However, there is no systematic relationship between misreporting concentration and the geographic concentration of other monitors. Table 5 reports the results of introducing proxies for these other monitors into the model reported in Table 4. Column (1) relies on only those counties that have analyst coverage,

¹⁵ Several restating firms become takeover targets after announcing the restatement. Note that we focus on takeovers prior to the restatement to capture the disciplining role of the takeover market because we want to avoid confounding our proxy of takeover intensity with the outcome of the restatements.

and the sample thus reduces to 683 counties. Column (2) sets missing analyst coverage to zero values, and that procedure leaves us with 874 usable counties.¹⁶ Columns (1) and (2) confirm that SEC distance and auditor concentration continue to be significantly associated with the concentration of misreporting. Unlike the univariate results in row 14 of Table 3, the average institutional ownership in model 1 is not significant (p-value = 0.68). Column (3) introduces the fraction of neighbors that misreport. Consistent with the results of Table 4, the coefficient on fraction of neighbors who misreport is not statistically significant. However, SEC distance and auditor concentration continue to be significant at conventional levels in model 3. In sum, the other corporate monitors do not impact the misreporting deviations of the county, and their introduction does not affect the statistical significance of the three proxies for *ex ante* information about misreporting.

6.2 Firm level analyses

The unit of analysis used thus far is the county not the firm. We emphasize county-level analysis of misreporting in the paper for two reasons. First, the county, as opposed to the firm, is a natural unit of analysis in our context because our proxies for *ex ante* costs such as distance from the SEC office, misreporting in the neighboring region, and auditor concentration do not display much cross-firm variation for firms located in any given county. Second, our design is consistent with the economics literature that demonstrates clustering of crime or other economic activity for a spatial unit such a precinct, county or a state (e.g., Audretsch and Stephan 1996, Glaeser et al. 1996). We recognize, however, that aggressive accounting is a firm-level decision and an analysis of the effect of the information set and experience of neighboring agents on firms' incentives to misreport can potentially complement the county-level results. Hence, in this section, we assess whether our proxies for *ex ante* costs of reporting such as SEC distance,

¹⁶ We lose counties because firms in these counties are not covered in the SPECTRUM database.

misreporting in neighboring regions and auditor concentration explain misreporting intensity at the firm-level. Because proxies for *ex ante* costs might not display much cross-sectional variation for firms in a county, our firm-level tests are likely to suffer from lower statistical power.

Table 6 presents results from a cross sectional probit analysis of factors that discriminate between restating and non-restating firms for which complete data are available. The sample consists of all firms on COMPUSTAT over the period 1997 to 2001, and firm level controls have been averaged over the time period. Industry dummies, based on two-digit SIC codes, are introduced as independent variables to account for factors that affect misreporting and vary with industry membership (such as executive compensation).¹⁷ The introduction of the number of firms in the county as an independent variable serves as a control for the tendency of restatements to increase with the size of economy of the county.

There is a positive relation between the probability of restating and (i) the distance to the SEC and (ii) the restating rate associated with the firm's auditor in all specifications. Model 1 also demonstrates that large firms are more likely to misreport, consistent with Burns and Kedia (2006). In particular, the coefficient on the small size dummy (dummy is set to one if the firm is below \$200 million in market capitalization and zero otherwise) is negative (coefficient = -0.116, p-value = 0.03). Moreover, large, influential firms, proxied as firms that were part of a major S&P index, also have a significantly higher probability of misreporting. Consistent with prior results, other corporate monitors do not appear to be associated with a higher probability of

¹⁷ We did not consider the effect of executive compensation such as stock options on the firm's propensity to restate because focus on executive compensation would require intersection of our sample with Execucomp that only covers S&P 1500 firms and would thus severely cut our sample size. As a compromise designed to preserve sample size, we have included two key instrumental variables for stock option plans (size and market to book) in the Probit analysis, consistent with Smith and Watts (1992).

restatement. The effect of the neighboring region on a firm's decision to restate is not statistically significant (model 3 of Table 6).

In sum, the tenor of the results reported in Table 6 is very similar to that documented in earlier tables when the unit of analysis is the county. This is reassuring because observations at the county level are weighted differently from those at the firm level.

7.0. Conclusions

In this paper, we characterize the information set of firms to proxy for differences in perceived *ex ante* cost of adopting aggressive accounting practices. We find that these proxies for differences in *ex ante* costs significantly affect the misreporting concentration in counties. In particular, regulatory oversight appears to be more effective when the county is located closer to SEC offices. Counties closer to the SEC are associated with significantly lower misreporting deviations. Moreover, a potentially lax local auditor office also appears to influence the information set of firms and resulting beliefs about the costs of misreporting.

The literature on the recent wave of earnings restatements has emphasized the role of the benefits and *ex post* costs of misreporting to the executives and firms as well as the failure of governance mechanisms in deterring misreporting. The evidence in this paper suggests differences in firms' *ex ante* information sets are potentially also important in explaining why firms adopt aggressive accounting practices in the first place. Mitigating these information differences either through establishing local SEC offices or better disbursement of information might lower the probability of misreporting in the future. Our results may also be interpreted as justification for an increase in the SEC's enforcement budget and for regulatory overhaul to enhance the SEC's geographical reach.

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Table 1
Misreporting Patterns Across States

This table reports the number of firms and restating firms for states in the U.S. Number of counties refers to the number of counties in that state that had at least one corporate headquarters. Number of firms refers to all active COMPUSTAT firms over the period 1997 to 2001. Restating firms are those that announced an income-decreasing restatement over the period 1997 to June 2002. Share of restatements is the percentage of restating firms that are located in the state. Deviation refers to the difference between a county's share of restatement and that county's share of COMPUSTAT firms, averaged at the state level. Industry-adjusted deviations refer to the difference between a county's share of restatement and its industry adjusted expected share of restatement, averaged at the state level.

State	Number of counties	Number of firms	Share of COMPUSTAT (%)	Number of restatements	Share of restatements (%)	Deviation (%)	Industry adjusted deviations (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
AL	19	74	0.63	2	0.60	-0.001	0.003
AK	1	6	0.05	0	0.00	-0.051	-0.038
AZ	3	150	1.28	4	1.21	-0.024	-0.068
AR	15	43	0.37	3	0.91	0.036	0.037
CA	38	2059	17.56	142	19.78	0.118	0.079
CO	21	347	2.96	17	2.37	0.003	0.000
CT	8	290	2.47	17	2.37	-0.083	-0.076
DE	2	41	0.35	1	0.14	-0.175	-0.136
DC	1	49	0.42	1	0.14	-0.418	-0.310
FL	31	552	4.71	36	5.01	-0.015	-0.017
GA	40	315	2.69	21	2.92	0.008	0.012
HI	3	21	0.18	1	0.14	0.041	0.056
ID	9	24	0.20	1	0.14	-0.023	-0.017
IL	31	476	4.06	33	4.60	0.044	0.049
IN	41	165	1.41	11	1.53	-0.005	0.003
IA	24	64	0.55	2	0.28	-0.023	-0.019
KS	17	60	0.51	6	0.84	0.041	0.042
KY	19	73	0.62	2	0.28	-0.001	0.004
LA	19	79	0.67	2	0.28	-0.004	-0.001
ME	11	28	0.24	1	0.14	-0.022	-0.016
MD	13	223	1.90	11	1.53	-0.053	-0.046
MA	12	588	5.02	46	6.41	0.136	0.104
MI	33	212	1.81	15	2.09	0.009	0.012
MN	28	307	2.62	19	2.65	0.004	-0.007
MS	18	48	0.41	1	0.14	-0.006	0.000
MO	23	171	1.46	5	0.70	-0.024	-0.022
MT	10	15	0.13	2	0.28	0.048	0.050
NE	8	40	0.34	4	0.56	-0.005	-0.003
NV	5	126	1.07	9	1.25	-0.034	-0.020
NH	9	48	0.41	3	0.42	-0.012	-0.012
NJ	20	537	4.58	25	3.48	-0.063	-0.068
NM	5	23	0.20	0	0.00	-0.039	-0.040
NY	51	1087	9.27	54	7.52	-0.099	-0.088
NC	46	204	1.74	9	1.25	-0.005	-0.002
ND	4	9	0.08	0	0.00	-0.019	-0.022
OH	52	371	3.16	22	3.06	-0.020	-0.017
OK	8	95	0.81	7	0.97	0.050	0.045
OR	14	115	0.98	8	1.11	0.059	0.057
PA	41	488	4.16	25	3.48	0.002	0.008
RI	5	39	0.33	1	0.14	-0.067	-0.057
SC	19	75	0.64	3	0.42	0.014	0.021
SD	5	13	0.11	1	0.14	0.038	0.041
TN	20	148	1.26	18	2.51	0.028	0.030
TX	55	1027	8.76	73	10.17	0.000	-0.011

Table 1 (Cont'd)
Misreporting Patterns Across States

State	Num of counties	Num of firms	Share of COMPUSTAT	Number of restatement	Share of restatements (%)	Deviation (%)	Industry Adj. deviations (%)
UT	8	131	1.12	6	0.84	-0.026	-0.026
VT	7	19	0.16	0	0.00	-0.023	-0.018
VA	57	285	2.43	16	2.23	0.005	0.003
WA	14	208	1.77	16	2.23	0.067	0.066
WV	11	24	0.20	0	0.00	-0.019	-0.012
WI	24	123	1.05	9	1.25	0.007	0.009
WY	7	9	0.08	0	0.00	-0.011	-0.008

Table 2
Misreporting Patterns Across Two-Digit SIC Codes

This table reports number of firms and income-decreasing restating firms for two-digit SIC codes. COMPUSTAT firms refer to all active COMPUSTAT firms over the period 1997 to 2001. Restating firms are those that announced an income-decreasing restatement over the period 1997 to June 2002. Share of restatements is the percentage of restating firms in the two digit SIC. Deviation refers to the difference between the industry's share of restatements and the expected share of restatements based on the industry's share of COMPUSTAT firms.

Two-Digit SIC	Number of Firms	Share of COMPUSTAT (%)	Number of Restatements	Share of restatements (%)	Deviation (%)
1	19	0.16	0	0.00	-0.16
2	5	0.04	0	0.00	-0.04
7	6	0.05	0	0.00	-0.05
8	5	0.04	0	0.00	-0.04
9	1	0.01	0	0.00	-0.01
10	54	0.46	1	0.30	-0.16
12	12	0.10	0	0.00	-0.10
13	305	2.60	11	3.32	0.72
14	16	0.14	1	0.30	0.17
15	64	0.55	1	0.30	-0.24
16	27	0.23	2	0.60	0.37
17	35	0.30	0	0.00	-0.30
20	210	1.79	6	1.81	0.02
21	11	0.09	0	0.00	-0.09
22	57	0.49	1	0.30	-0.18
23	91	0.78	3	0.91	0.13
24	44	0.38	0	0.00	-0.38
25	49	0.42	3	0.91	0.49
26	85	0.73	3	0.91	0.18
27	130	1.11	1	0.30	-0.81
28	723	6.17	21	6.34	0.18
29	53	0.45	1	0.30	-0.15
30	122	1.04	3	0.91	-0.13
31	24	0.20	0	0.00	-0.20
32	68	0.58	2	0.60	0.02
33	116	0.99	2	0.60	-0.39
34	138	1.18	3	0.91	-0.27
35	601	5.13	27	8.16	3.03
36	728	6.21	19	5.74	-0.47
37	187	1.60	5	1.51	-0.08
38	618	5.27	22	6.65	1.38
39	108	0.92	1	0.30	-0.62
40	18	0.15	0	0.00	-0.15
41	8	0.07	0	0.00	-0.07
42	71	0.61	1	0.30	-0.30
44	22	0.19	0	0.00	-0.19
45	56	0.48	1	0.30	-0.18
46	13	0.11	0	0.00	-0.11
47	42	0.36	3	0.91	0.55
48	426	3.63	10	3.02	-0.61
49	432	3.68	8	2.42	-1.27
50	241	2.06	9	2.72	0.66
51	158	1.35	5	1.51	0.16
52	20	0.17	1	0.30	0.13
53	51	0.44	4	1.21	0.77
54	54	0.46	2	0.60	0.14

Table 2 (Cont'd)
Misreporting Patterns Across Two-Digit SIC Codes

Two-Digit SIC	Num of Firms	Share of COMPUSTAT Firms (%)	Number of Restatements	Share of restatements (%)	Deviation (%)
55	45	0.38	4	1.21	0.82
56	74	0.63	5	1.51	0.88
57	49	0.42	6	1.81	1.39
58	165	1.41	2	0.60	-0.80
59	218	1.86	5	1.51	-0.35
60	1098	9.37	15	4.53	-4.83
61	184	1.57	3	0.91	-0.66
62	130	1.11	4	1.21	0.10
63	263	2.24	6	1.81	-0.43
64	55	0.47	1	0.30	-0.17
65	107	0.91	1	0.30	-0.61
67	389	3.32	4	1.21	-2.11
70	57	0.49	0	0.00	-0.49
72	29	0.25	2	0.60	0.36
73	1646	14.04	61	18.43	4.39
75	21	0.18	0	0.00	-0.18
76	8	0.07	1	0.30	0.23
78	88	0.75	4	1.21	0.46
79	139	1.19	5	1.51	0.32
80	183	1.56	5	1.51	-0.05
81	3	0.03	0	0.00	-0.03
82	38	0.32	3	0.91	0.58
83	31	0.26	3	0.91	0.64
86	1	0.01	0	0.00	-0.01
87	259	2.21	8	2.42	0.21
99	120	1.02	0	0.00	-1.02

Table 3: Descriptive Statistics for County Groups Sorted on Misreporting Intensity

This table displays the distribution of regulatory oversight across groups of counties formed on the basis of their misreporting deviations. Misreporting deviation is the difference between the county's share of restatement and its industry-adjusted expected restatement share. Distance from the SEC is the distance from the county to the closest SEC national or regional headquarters. Coefficient of concentration across auditors summarizes the differences between an auditor's market share and share of restatements in a radius of 250 km around the county and is defined in the text. For each of the groups of counties formed on the basis of misreporting deviations, we report the following county characteristics: (i) land area is the average land area in square miles of the counties; (ii) population change is the average percentage change in population over 1990 to 2000 in the county; (iii) housing change is the average percentage change in housing over the period 1990 to 2000 in the county; (iv) housing starts are the number of new housing starts in 2000 in the county; (v) change in private, non-farm establishments is the average percentage change in such establishments in the county over the period 1990 to 1998; (vi) change in personal income is the percentage change in personal income in the county over the period 1990 to 1998; (vii) employment in high incentive industries is the fraction of the state employees that are employed in industries with high stock options usage. The value of average analyst following, institutional ownership, and leverage are calculated as the average value of these for all firms in the county over 1997-2001. Leverage is defined as the ratio of long-term debt to total assets. Exit rate is the fraction of firms that were acquired in the county during 1991-1996. The t-statistics captures differences in means of Group 1 and 4. *, **, *** represent significance at the 10, 5, and 1 level respectively.

Row #	Variable	Group 1	Group 2	Group 3	Group 4	t-statistic (1)-(4)
<i>Dependent variable</i>						
1	Mean deviation (%)	-0.083	-0.014	-0.007	0.07	-1.96**
<i>Test variables</i>						
2	Average distance from the SEC (in km)	322.68	421.72	414.36	394.82	-2.18**
3	Percentage of counties within 100km of SEC	32.45	19.07	11.29	21.49	2.35**
4	Percentage of restating firms within 250km	2.89	3.10	3.11	3.07	-6.18*
5	Auditor concentration coefficient	0.37	0.38	0.38	0.40	-1.63*
<i>County variables</i>						
6	Land Area (square miles)	888.89	687.28	735.37	788.99	0.29
7	Population change (%)	15.81	14.52	13.50	14.15	0.83
8	Housing change (%)	16.82	17.64	14.70	15.93	1.02
9	Housing starts (million)	2149.20	629.28	430.62	1736.41	0.66
10	Change in private non-farm establishments (%)	17.11	18.72	17.43	16.28	1.69*
11	Change in personal income (%)	54.79	54.90	51.42	54.28	0.45
12	Employment in high incentive industries	2.96	2.49	2.75	2.76	0.25
<i>Other monitors</i>						
13	Average analyst following in county	4.16	2.55	3.69	0.21	1.47
14	Average institutional ownership (%)	26.56	24.69	5.93	6.80	4.48***
15	Average leverage in county	0.25	0.21	0.08	0.11	0.41
16	Exit Rate due to M&A	2.38	0.43	0.20	2.62	-0.17

Table 4
Proxies for Ex Ante Information Sets and County Misreporting Deviations

The dependent variable is misreporting deviation of counties. This is the deviation of a county's share of restatement from its expected industry-adjusted share of restatement. Population change is the percentage change in population over 1990 to 2000. Housing change is the percentage change in housing over the period 1990 to 2000. Housing starts are the number of new housing starts in 2000. Private, non-farm income establishments is the percentage change in the number of new private, non-farm establishments over the period 1990 to 1998. Personal income change is the percentage change in personal income over the period 1990 to 1998. High Incentive is the fraction of state employees that are employed in industries with high stock options usage. Number of firms is the number of active COMPUSTAT firms with headquarters in the county. SEC distance is the distance to the closest SEC national or regional headquarters. Coefficient of concentration across auditors captures the differences between an auditor's share of restating firms and its market share in a radius of 250 km around the county. Percentage misreporting is the percentage of firms that restated in a radius of 250 km around the county. All coefficients for the above variables have been multiplied by 10^6 unless otherwise mentioned. Ranking for state judicial quality is from the overall rankings in the 2001 U.S. Chamber of Commerce State Liabilities. Errors have been corrected for heteroscedasticity. P values are displayed in parenthesis below. *,**,*** represent significance at the 10, 5, and 1 level respectively. Intercepts have not been tabulated below. N=958 counties in all columns.

	Model 1	Model 2	Model 3	Model 4	Model 5
County level controls					
Land area in square miles	-0.07 (0.20)	-0.07 (0.19)	-0.06 (0.31)	-0.05 (0.39)	-0.09 (0.13)
Population change	-11.42 (0.22)	-11.02 (0.23)	-9.23 (0.37)	-11.88 (0.20)	-10.20 (0.33)
Housing change	1.19 (0.91)	1.50 (0.88)	1.58 (0.88)	3.05 (0.76)	1.17 (0.91)
Housing starts	0.06 (0.61)	0.06 (0.61)	0.08 (0.56)	0.05 (0.64)	0.09 (0.53)
Private, non-farm income establishments	-2.74 (0.38)	-3.46 (0.30)	-4.39 (0.21)	-3.53 (0.27)	-4.67 (0.19)
Personal income change	8.93 (0.16)	8.77 (0.16)	9.64 (0.16)	9.75 (0.13)	9.18 (0.18)
High incentive	64.448 (0.28)	57.6 (0.35)	84.96 (0.19)	53.26 (0.36)	99.38 (0.13)
Number of firms	-0.23 (0.99)	-0.14 (0.99)	-1.36 (0.93)	-1.36 (0.98)	-1.39 (0.92)
Ranking for state judicial quality		103.01 (0.40)			
Test variables					
SEC distance	0.41*** (0.01)	0.42*** (0.01)			0.34* (0.07)
Auditor concentration			928.57*** (0.01)		822.04*** (0.01)
% of firms restating in 250km (x 1000)				70.37** (0.03)	48.58 (0.28)
R Square (%)	1.38	1.43	1.66	1.08	2.30

Table 5
County Misreporting Deviations and the Role of Other Corporate Monitors

The dependent variable is misreporting deviation of counties measured as the deviation of a county's share of restatement from its expected industry-adjusted share of restatement. The variables are as defined in Table 4. The value of average analyst following, institutional ownership, and leverage are calculated as the average value of these for all firms in the county over 1997-2001. Leverage is defined as the ratio of long term debt to total assets. Exit rate is the fraction of firms that were acquired in the county during 1991-1996. All coefficients for variables have been multiplied by 10^6 unless otherwise mentioned. Errors have been corrected for heteroscedasticity. P values are displayed in parenthesis below. *,**,*** represent significance at the 10, 5, and 1 level respectively. Intercepts have not been tabulated below.

	Model 1	Model 2	Model 3
<i>County level controls</i>			
Land area in square miles	-0.08 (0.24)	-0.08 (0.19)	-0.09 (0.13)
Population change	-16.91 (0.26)	-9.57 (0.36)	-10.04 (0.36)
Housing change	4.13 (0.79)	0.16 (0.99)	0.70 (0.95)
Housing starts	0.09 (0.54)	0.08 (0.56)	0.08 (0.54)
Private, non-farm income establishments	-5.02 (0.25)	-3.98 (0.26)	-4.46 (0.21)
Personal income change	12.05 (0.18)	9.07 (0.20)	9.42 (0.19)
High incentive	131.21 (0.12)	99.00 (0.14)	100.47 (0.13)
Number of firms	-1.64 (0.91)	-1.31 (0.93)	-1.36 (0.93)
<i>Other monitors</i>			
Average analyst following in county	-68.90 (0.67)	-24.97 (0.83)	-24.69 (0.86)
Average institutional ownership in county (%)	6.57 (0.68)	3.7 (0.79)	2.63 (0.85)
Average leverage in county	1.79 (0.98)	0.02 (0.94)	0.08 (0.77)
Exit rate due to M&A	84.07 (0.50)	115.32 (0.26)	112.84 (0.27)
<i>Test variables</i>			
SEC distance	0.48** (0.03)	0.43** (0.02)	0.35* (0.06)
Auditor concentration	978.47** (0.02)	826.89** (0.02)	835.25** (0.02)
% of firms restating in 250km (x 1000)			47.18 (0.32)
R Square (%)	2.54	2.26	2.35
Number of Observations	683	874	874

Table 6:
Firm Level Analyses of Misreporting

This table displays results from a cross-sectional probit analysis of the probability that a firm will restate its financial reports. The dependent variable is set to one if the firm announced an income decreasing restatement over 1997 to mid 2002. Market Value is the average market value of equity for the firm over the period 1997 to 2001. Dummy for small (big) size takes the value one if the average market value of equity is less (more) than 200 million. Dummy for S&P index takes the value one if the firm was part of the S&P major indices for any year over 1997 to 2001. Leverage is the average ratio of long-term debt to total assets over the period 1997 to 2001. Book to market is the average ratio of the book value of equity to market value over the period 1997 to 2001. Fraction of restating firms in the 250km radius is the ratio of number of restating firms to total firms in the area. Market share of firm's auditor is the percentage of firms with the auditor in the 250km region around the firm. Restating rate is for the firm's auditor in the 250 km region around the firm, excluding the firm itself. SEC distance is the distance to the closest SEC national or regional headquarters. Several coefficients have been multiplied by 10^6 for expositional ease. The regression includes 61 industry dummies for two digit industries with more than 10 firms. 10 two digit industries had less than 10 firms and were collapsed into a constant. T-statistics appear in parentheses. *, **, *** represent significance at the 10, 5, and 1 level respectively. The value of average analyst following, institutional ownership, and leverage are calculated as the average value of these for all firms in the county over 1997-2001. Leverage is defined as the ratio of long-term debt to total assets. Exit rate is the fraction of firms that were acquired in the county during 1991-1996.

Variables	Model 1	Model 2	Model 3
<i>Test variables</i>			
SEC distance (x 10^6)	122.07 (0.05)**	127.03 (0.04)**	120.25 (0.07)*
Market share of auditor	-0.664 (0.15)	-0.662 (0.15)	-0.668 (0.15)
Restating rate of the auditor	7.631*** (0.00)	7.583*** (0.00)	7.501*** (0.00)
Fraction of restating firms in 250km radius			0.709 (0.75)
<i>Control variables</i>			
Market Value (x 10^6)	-2.766 (0.36)	-2.77 (0.36)	-2.767 (0.36)
Small size dummy	-0.116** (0.03)	-0.116** (0.032)	-0.116** (0.033)
Fortune dummy	0.346*** (0.00)	0.346*** (0.000)	0.347*** (0.000)
Leverage	-0.033 (0.65)	-0.034 (0.67)	-0.033 (0.65)
Book to Market (x 10^6)	0.286 (0.86)	0.289 (0.87)	0.29 (0.87)
<i>Other monitors</i>			
Average analyst following		-0.036 (0.62)	-0.037 (0.61)
Average institutional ownership		-0.18 (0.62)	-0.17 (0.62)
Average leverage		-0.015 (0.68)	-0.016 (0.67)
Exit rate due to M&A		-0.001 (0.62)	-0.001 (0.62)
Number of observations	10285	10279	10279
Pseudo r-square (%)	2.44	2.47	2.47

