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Does the market dole out collective punishment? An empirical analysis of industry, geography, and Arthur Andersen's reputation

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ABSTRACT

Arthur Andersen's reputation was tarnished following news that its Houston office had shredded documents related to the auditing of energy giant Enron. Earlier studies documented widespread spillover of the reputation effect, suggesting a strong commonality in Big 5 audit practices. We examine whether the market is more discriminating in its assessments. We focus on the roles industry specialization of auditors and the geography of clients' audit offices play in accounting for the contagion. Our results are supportive of investors who differentiate audit practices by industry and who account for the location of the specific office where the audit work is done. We find that losses suffered by energy firms or firms located close to Houston are equivalent to approximately 90% of the aggregate abnormal losses suffered by Big 5 clients. Our evidence suggests the possibility of more localized impact of accounting scandals and supports accounting regulations targeted at individual industries.

1. Introduction

Document shredding by Arthur Andersen and the subsequent Justice Department indictment were unprecedented watershed events for the business world. The year before it filed for bankruptcy on December 2, 2001, Enron was an energy giant with sales that exceeded $100 billion. Its external auditor was Arthur Andersen, a member of the Big 5 accounting firms.[1] After allegations of accounting violations in Enron surfaced, Andersen came under suspicion concerning its independence from Enron and its audit quality. Following Andersen's announcement that it had shredded Enron-related documents on January 10, 2002, it was indicted and convicted on a single count of obstruction of justice by US federal prosecutors and ceased operations on August 31, 2002.

The purpose of our paper is to examine explanations for the spread in the reputation effect following news that Andersen's Houston office has shredded Enron-related documents. Earlier studies have documented significant negative abnormal valuation impacts on Andersen clients and clients of other Big 5 accounting firms. Since those clients were located nationwide, this raises the possibility of a widespread reputation effect. Did investors penalize all Big 5 clients collectively? Meting out punishment across the board suggests a strong commonality in audit practices conducted by all Big 5 auditors. We examine the possibility that the market is more discriminating by considering industry and geographic explanations for the spillover.

Our focus acknowledges the fact that audit practices differ by industry or by location of specific audit offices. We are motivated by the fact that auditors are industry specialists and auditing work is primarily accomplished at an individual office level. Our results show that energy firms or firms located close to Houston experienced losses equal to around 90% of the aggregate loss suffered by Big 5 clients over a 3-day period following the shredding news. Energy firms experienced most of the losses. The picture that emerges is one of a market that is discriminating in penalizing firms rather than one that doles out collective punishment. It also suggests the possibility of more localized impact of accounting scandals and supports regulations aimed at individual industries.

The Andersen–Enron event provides a unique opportunity for academicians to assess the significance of an audit firm's reputation. Although professional reputation is of utmost importance to

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[1] The Big 5 accounting firms are Arthur Andersen, Deloitte & Touche, Ernst &Young, KPMG, and Price Waterhouse Coopers.

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financial services firms in general, it is especially true for financial auditors. An auditor's primary role is to give credence to its clients' financial statements. A prerequisite for this role is the presumption by the market that the integrity of the audit firm itself is of the highest standing. The credibility of the audited financial statements rests on the reputation of the auditor. In addition to the assurance role, auditors also play an insurance role whereby they insure audit-related litigation claims against their clients with their "deep pockets" or ability to cover the claims (see Watts and Zimmerman, 1983). When an auditor's reputation is sullied, its ability both to assure its clients' financial statements and to insure their litigation risks is diminished. The collapse of Andersen permits researchers to measure the effect of a weakened reputation by its impact on stock prices.

Regulatory authorities have long been concerned about impairment of auditor credibility due to pervasive material misstatements or misrepresentations of financial statements (SEC, 2000, 2001). They are particularly apprehensive about spillover effects arising from damage to an auditor's reputation. If spillover effects are widespread and severe, more regulations may be called for in order to protect the integrity and stability of financial markets. At the other extreme, increased market-wide accounting regulations may be unwarranted if repercussions from an auditor's loss of reputation capital is highly localized or industry specific. Specifically, one could argue that the comprehensiveness of Sarbanes–Oxley Act of 2002 or parts of it may be misguided to the extent that Andersen effect was localized.

Reputation spillover effects may arise from various sources following damaging revelations about an auditor's credibility. If investors regard the audit practices in an accounting firm as having a strong common component, the market may question the accuracy and reliability of audited financial statements of all the clients, even when bad publicity arises from the audit work of a single office. It may even be that investors regard the audit practices of different accounting firms as having a strong commonality. If so, the market may extend its suspicion of audited works beyond the impaired auditor to other auditors. A systemic failure of the market for audit services occurs when the mistrust infects many clients of many auditors. The extent of the contagion will depend on the market perception of commonality in audit services across clients and auditing firms. Spillover effects are limited when investors regard audit services to be highly idiosyncratic, so that any perceived accounting fraud is primarily confined to the client where the deception originated.

We consider three hypotheses of market perception of commonality in audit services. The *collective hypothesis* states that the market considers the audit practices across all auditors to be highly comparable. The *industry hypothesis* affirms that the market regards the audit practices of firms belonging to the same industry to be highly comparable. The *geography hypothesis* contends that the audit practices of auditors in the same audit office are highly comparable. The collective hypothesis directly competes with the other two hypotheses. The collective hypothesis predicts market impact on all Big 5 clients. However, this hypothesis permits the impact on the clients to differ by auditor firm. In contrast, the other two hypotheses predict differential market impact on Big 5 clients that follows industry and geography patterns. These hypotheses imply that equity investors are much more discriminating and do not simply penalize firms that are Big 5 clients.

Our focus is motivated by the organizational structure of audit firms. It is well-known that auditors specialize in certain industries, and numerous papers have studied the implications of this specialization for the audit industry.[2] Industry specialization suggests that the market demands specific industry expertise and knowledge, presumably because audit practices differ across industries. Enron was an energy firm. Therefore, it is reasonable to examine whether any Andersen-induced spillover effect would be related to energy industry concentrations. A finding of the existence of a large energy industry effect would suggest that the market is skeptical of audit practices in the energy industry. Such a finding would be in sharp contrast to one where the reputation effect spillover occurs across different industries. It would also suggest that regulations to prevent spillovers may need to be tailor-made for specific industries.

Audit firms also tend to have a decentralized organizational structure whereby contracting for and administration and delivery of audit reports are conducted at the city-based office level (Francis et al., 1999; Reynolds and Francis, 2001).[3,4] This suggests the possibility that stock price reputation effects are largely confined to clients of individual practicing offices; the market would primarily penalize the audit office where the fraud occurs. In effect, the spillover of reputation effect is influenced by the location of individual offices.

Our geography hypothesis is related to the literature on local bias of investors. This literature reveals, for example, that domestic investors overweight home securities and underweight foreign securities in their portfolios.[5] Recent studies show that the home bias documented in the earlier literature is present even within the confines of one country. Several studies have found that the behavior of asset prices depends on geographic location (Coval and Moskowitz, 2001; Loughran and Schultz, 2005; Barker and Loughran, 2007).[6] This local bias of investors has been attributed to local informational advantages, asset liquidity, familiarity, and other behavioral characteristics.

Enron was headquartered in Houston and the shredding event that ultimately led to the demise of Andersen originated in its Houston office. Therefore, we consider whether the price effects are most pronounced for Big 5 clients located in Houston and whether they become less pronounced with increasing distance from Houston. Since reasons for the presence of a local bias are less applicable to big firms and because we examine the biggest auditors and their biggest clients, evidence of a ripple effect emanating from Houston would provide strong evidence in favor of a Houston effect. Such evidence also has implications for regulators. A finding of only a local spillover effect would stand in sharp contrast to a contagion that broadly contaminates the entire market. It may signal the need for a market-wide regulation aimed at preventing a systemic effect. More generally, evidence of a local office bias would suggest that any reputation effect may be tempered by local equity investors' preferences.

By separately examining the industry and geography hypotheses, we investigate alternative avenues through which reputation spillover effect may occur. However, industry specialization and office-level analysis may interact with one another. For example, a study by Ferguson et al. (2003) investigated the effect of industry specialization on audit fees in Australia and found that the effect was apparent at the office level in city-specific audit markets and not at the audit firm level. Moreover, firms in some industries tend to cluster in the same location (Krugman, 1991; Ellison and Glaeser, 1997). This is true of energy firms, and nearly half of Andersen's Houston clients were in the energy industry. By simultaneously examining the energy industry and Houston

[2] Gramling and Stone (2001) provide a review of this literature.

[3] Partner compensation schemes are also weighted disproportionately toward office-level profits and not firm-wide profits.

[4] Although audits are primarily conducted at the office level, some large multi-site audits are performed by several offices.

[5] See Kalev et al. (2008) and Karlsson and Nordén (2007) for recent examples.

[6] Jiménez et al. (2009) relate distance to the use of collateral for business loans.