

**ACCOUNTING SCANDALS AND STIGMA BY ASSOCIATION VIA
DIRECTOR INTERLOCKS**

A Dissertation

by

SOON LEE EUGENE KANG

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2005

Major Subject: Management

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ABSTRACT

Accounting Scandals and Stigma by Association via Director Interlocks. (August 2005)

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This dissertation examines the phenomenon of stigma by association between firms in the context of corporate accounting scandals. I draw from the social psychology literature to develop a theoretical framework that supports the notion of director interlocks as a channel in which associated firms may experience stigma. I argue that allegations of corporate accounting scandal generate attributional search by investors to determine the cause(s) of the alleged scandal. Attribution theory suggests that investors are likely to attribute responsibility to corporate boards for failing to detect and prevent these scandals. Investors' perceptions of incompetent and/or unwilling directors in firms accused of accounting scandals may then spill over to directorship positions in associated firms, resulting in the stigmatization of these associated firms. The results strongly support the above arguments.

I further adopted an information-based approach to argue that firms associated with stigmatized firms will experience different amounts of stigma, and some firms may experience no stigma at all. I applied social inference theories and agency theory to develop four categories of variables that may influence the amount of stigma experienced by associated firms. The results of the dissertation present strong evidence

in support of most of the hypotheses. The characteristics of the interlocking director, the characteristics of the board, the strength of the director interlock, and the quality of corporate governance in an associated firm appear to influence the amount of stigma experienced by the associated firm.

This dissertation highlights the possible (1) negative consequences of director interlocks, (2) understatement of the social costs of corporate accounting scandals, and (3) need for response strategies to mitigate the negative consequences of stigma by association.

To my family members and my wife Mei-Ling who have supported and encouraged all of my dreams and endeavors, my son Samuel who has given me such joy in life, and my daughter Lauren who keeps me in anticipation of good things to come.

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CHAPTER I

INTRODUCTION

The recent surge in accounting scandals in the United States has been a cause of concern for public policy makers, investors, employees, and the society as a whole. According to the Securities and Exchange Commission's (SEC) 2003 Annual Report, enforcement actions increased by approximately 42% from 477 cases in 1998 to 679 cases in 2003. This is equivalent to an average of one enforcement action for every 32 publicly-traded firms in the NYSE, AMEX, and NASDAQ stock exchanges in 1998 compared with two enforcement actions for the same number of publicly-traded firms in 2003. Significant enforcement actions listed in the SEC's 2003 Annual Report include widely publicized corporate accounting scandals originating from Enron, Xerox, Qwest, HealthSouth, and AIG. Corporate scandals (whether accounting or non-accounting in nature) have also captured the interests of researchers in business, economics, sociology and psychology. Not surprisingly, various terminologies, such as corporate illegal act, corporate crime, corporate wrongdoing, and white-collar crime, have all been used in this stream of research.

One way to categorize this eclectic stream of literature is to examine the research questions studied. Three broad research questions have dominated this literature: (1) what are the antecedents of corporate scandals, (2) how effective are deterrents of corporate scandals, and (3) what are the consequences of corporate scandals?

This dissertation follows the style and format of the *Academy of Management Journal*.

The predominant focus has been on the first question. Various antecedents have been associated with the number or incidence of corporate scandals, such as firm profitability (Staw & Szwajkowski, 1975), board of director composition (Beasley, 1996), type of control system (Hill, Kelley, Agle, Hitt, & Hoskisson, 1992), ownership structure (Alexander & Cohen, 1999), level of executive compensation (Bilimoria, 1995), environmental dynamism (Baucus & Near, 1991), and other environmental and organizational characteristics (McKendall & Wagner, 1997). An important finding is that the significance of antecedents is dependent on the type of scandal, hence precluding any generalizations across studies.

The second and third research questions have received lesser attention when compared with the first question. Researchers studying the second question have examined the effectiveness of market and regulatory penalties as deterrents of corporate scandals (Alexander, Arlen, & Cohen, 1999; Bromiley & Marcus, 1989). Although the question of deterrence is an interesting one, it should be secondary to the third question on the consequences of corporate scandals. This is because deterrence is important only if the consequence of a scandal is negative and significant. Therefore, my dissertation shall address the third research question on the consequences of corporate scandals. Prior studies have largely examined the consequences of corporate scandals on the firms that committed the scandal (Alexander, 1999; Baucus & Baucus, 1997; Karpoff & Lott, 1993; Reichert, Lockett, & Rao, 1996). The possibility of the consequences of corporate scandals extending to other firms has been neglected. This is an important oversight that needs to be addressed.

One consequence of corporate scandals is a reputational penalty borne by firms. Several studies have measured reputational penalty using the estimated abnormal stock returns for the firms about which reports of corporate scandal appeared in public news sources (Alexander, 1999; Karpoff & Lott, 1993). In general, these studies find that initial press reports of alleged or actual scandal correspond with statistically significant and economically meaningful losses in equity value. These losses also vary according to the type of scandal. The reputational penalty from a scandal is indicative of a firm's "spoiled image," a term used by Sutton and Callahan (1987) in reference to stigma. Since firms do not exist in isolation but are embedded in networks of relationships with other firms, it is plausible that a stigmatized firm may "infect" other firms through associations in the corporate networks. This phenomenon of stigma by association has been studied in the context of interpersonal relationships (Goldstein & Johnson, 1997; Mehta & Farina, 1988; Neuberg, Smith, Hoffman, & Russell, 1994; Swim, Ferguson, & Hyers, 1999), but has been neglected in the context of inter-organizational relationships.

I seek to address the following research questions in this dissertation:

1. Do publicly listed firms associated by director interlock(s) with other firms stigmatized from alleged corporate accounting scandals also experience stigma?
2. What factors will influence the amount of stigma experienced by the associated firms?

I focus my dissertation on alleged corporate accounting scandals within the purview of the SEC given that reputational penalties vary according to the type of scandals (Alexander, 1999; Karpoff & Lott, 1993). Research in this area has a higher

likelihood of generating interest because accounting scandals have captured the attention of the public. Although researchers have found that firms experience a reputational penalty, or stigma, as a result of alleged corporate accounting scandals (Karpoff & Lott, 1993), no studies to my knowledge have examined the plausibility that reputational penalty, or stigma, may also be experienced by associated firms through the network of interlocking directors. In other words, the phenomenon of stigma by association has not been examined in the context of corporate accounting scandals.

I assert that the network of interlocking directors is one channel in which stigma may be experienced by firms associated with other firms stigmatized by an alleged accounting scandal. Two firms are said to be connected by a director interlock when a person affiliated with one firm sits on the corporate board of the other firm (Mizruchi, 1996). Although firms may also be associated through common industry membership, parent-subsidary relations, or strategic alliances, just to name a few, I focus on director interlocks because prior studies on director interlocks have not examined the role of interlocks in facilitating the incidence of stigma by association (Gulati & Westphal, 1999; Haunschild & Beckman, 1998; Stearns & Mizruchi, 1986). Furthermore, the recent accounting scandals have cast some doubts on the effectiveness of directors in preventing such scandals. As a result, the market may perceive common directorships as a channel through which misleading accounting practices may diffuse from one firm to another.

I draw from the social psychology literature to develop a theoretical framework that supports the notion of director interlocks as a channel in which associated firms may

experience stigma. My primary argument is that allegations of corporate accounting scandal generate attributional search by investors to determine the cause(s) of the alleged scandal because these allegations are unexpected and likely to have severe consequences. Attribution theory suggests that investors are likely to attribute responsibility to corporate boards for failing to detect and prevent these scandals, rather than to external circumstances beyond the control of the directors. These attributions of responsibility may be accompanied by investors' perceptions of incompetent and/or unwilling directors to monitor top executives. Investors' perceptions of incompetent and/or unwilling directors in firms accused of accounting scandals may then spill over to these individuals' directorship positions in associated firms. As a result, investors may anticipate a greater likelihood of associated firms adopting misleading accounting practices or deviating from other normative expectations because of the perceived ineffective board vigilance. Hence, the primary mechanism for associated firms experiencing stigma is the spillover effects of investors' attributions on the interlocking director(s) that connect the stigmatized and associated firms. Evidence for the presence of stigma by association may be gathered by examining the stock price movements of the associated firms when allegations of accounting scandals are announced for the stigmatized firms. A significant decline in the market value of the associated firms suggests that these firms have been stigmatized.

In the following chapters, I provide a brief literature review on the concepts of stigma and stigma by association. Next, I develop a theoretical framework on how associated firms may experience stigma because of their interlocks with other firms

stigmatized by an alleged accounting scandal. Furthermore, I discuss the various factors that may mitigate or intensify the amount of stigma experienced by an associated firm. Testable hypotheses will be presented along with the methodology on sample/data collection and statistical analyses. Finally, I discuss the results and end with the contributions of the dissertation as well as avenues for future research.

CHAPTER II

LITERATURE REVIEW

Stigma is an attribute that is deeply discrediting (Goffman, 1963). Despite the multitude of research since Goffman's (1963) seminal work, there is still no single accepted definition of stigma. The lack of consensus may be attributed to the multi-disciplinary nature of this research stream and the enormous array of circumstances to which the stigma concept has been applied (Link & Phelan, 2001). Hence, it is imperative that the concept of stigma be clearly defined in the context of the research topic.

What Is Stigma?

Stigma is a social phenomenon that exists in networks of relationships. In this dissertation, I draw on the definition of stigma from the book "Social Stigma: The Psychology of Marked Relationships" by Jones et al. (1984). According to Jones et al. (1984), stigma occurs when an individual with a perceived or inferred condition of deviation from norms is linked to dispositions that discredit the individual through an attributional process.¹ Hence, there are three main conditions for stigma to occur. First, there must be a deviation from norms. An individual does not have to actually deviate from norms, since it is sufficient that a deviation be perceived or inferred from the

¹ Jones et al. (1984) adopted a broad definition of norms, which may be physical or behavioral. This is consistent with Goffman's (1963) notion that stigma may be from abominations of the body or blemishes of individual character. Extant studies also recognize that an individual may perceive himself or herself to have been stigmatized even though external parties have not stigmatized the individual (see Link and Phelan (2001) for a review). However, this dissertation is concerned with the actual stigmatization of others, i.e., stigma conferred by one actor on another actor.

circumstances. Second, the deviation from norms causes another individual to attribute certain dispositions to the deviant. Third, stigma has a negative consequence, specifically a spoiled identity (or image) that discredits the deviant. A spoiled identity may induce negative attitudes toward and lower levels of comfort with the stigmatized individual (Goldstein & Johnson, 1997).

Although Jones et al. (1984) examined stigma in the context of social interactions between individuals, their definition of stigma may be applied to the organizational level. This is because organizations are also embedded in structures of social relations (Granovetter, 1985) and experience normative pressures to conform (DiMaggio & Powell, 1983; Scott, 1995). Organizations that deviate from normative expectations may result in the attribution of dispositions that discredit the organizations (Lievens & Highhouse, 2003; Slaughter, Zickar, Highhouse, & Mohr, 2004) and the subsequent loss of legitimacy conferred by important stakeholders (Edelman, 1990; Palmer, Jennings, & Zhou, 1993).

What Is Stigma by Association?

Stigma by association refers to a situation when a social actor is stigmatized because of the actor's association with a stigmatized actor. Goffman (1963) refers to this as "courtesy stigma." According to Goffman (1963), one form of courtesy stigma is when an individual is related through the social structure to a stigmatized individual, such as the wife, husband, or children of an ex-convict or the loyal spouse of a mental patient. In such situations, the associated individual(s) share some of the discredit of the stigmatized individual. The negative consequence of stigma by association has received

legislative acknowledgments in the United States. For instance, section 102(b)(4) of the Americans with Disabilities Act (1990) protects qualified individuals from being denied equal jobs or benefits as a result of a known relationship or association with a disabled individual.

Since Goffman's (1963) work, there has been some discussion on how individuals experience stigma as a result of their association with stigmatized individuals. According to Neuberg et al. (1994), there are two possible mechanisms for stigma by association to occur. One mechanism is that individuals associated with stigmatized individuals are perceived to have also deviated from norms and linked to dispositions that discredit the associated individual. Another mechanism is that individuals are stigmatized simply because of their association with stigmatized individuals, and not because the former is perceived to have deviated from any norms. In this instance, associated individuals are stigmatized because of the negative reactions directed at the associated individuals' apparent tolerance toward the stigmatized individuals as evidenced by the company the associated individuals willfully keep (Gaines, 2001; Snyder, Omoto, & Crain, 1999). Alternatively, stigma by association may be affect-driven, where associated individuals are stigmatized because negative affect toward stigmatized individuals is also directed toward associated individuals (Griffitt, 1970; Kenworthy, Canales, Weaver, & Miller, 2003).

Despite the extensive research in the topic of stigma by association (Goldstein & Johnson, 1997; Mehta & Farina, 1988; Neuberg et al., 1994; Swim et al., 1999), further inquiry into the mechanisms and content of stigma by association appears necessary

(Goldstein & Johnson, 1997; Hebl & Mannix, 2003; Jones et al., 1984). For instance, Jones et al. (1984: 71) commented that the reasons why stigma by association occurs are strange and not at all easy to understand. More than a decade later, Goldstein and Johnson noted that “further inquiry into the mechanism...of stigma by association seems necessary...for a more complete understanding of impression formation processes” (1997: 503).

Why Is the Study of Stigma Important?

While social psychologists have applied the stigma concept to individuals in a wide variety of circumstances such as exotic dancing, mental illness, unemployment, sexual preferences, and stereotypes, just to name a few (see Link and Phelan (2001) for a comprehensive review), management scholars have largely failed to examine stigma in an organizational context. A search in the social sciences citation index identified a total of 5,930 articles from 1966 to 2004 with the term “stigma” (or related terms such as stigmatizing, stigmatized etc.) in the article title, keywords, or abstract. However, a restricted search of the social sciences citation index on key management journals² identified only three articles (i.e., Ashforth and Kreiner (1999), Heilman, Block, and Stathatos (1997), Sutton and Callahan (1987)) within the same period. Research interest by management scholars does appear to be increasing in light of a recent call for papers by the Academy of Management Review journal on the topic of stigma and stigmatization.

² Academy of Management Executive, Academy of Management Journal, Academy of Management Review, Administrative Science Quarterly, Journal of Management, Journal of Management Studies, Management Science, Organization Science, and Strategic Management Journal.

The lack of interest by management scholars is somewhat disconcerting given that stigma is a widely studied phenomenon by scholars in other fields. Even more surprising is that the application of stigma to organizations has been given cursory attention. To my knowledge, in the management literature the term stigma has been directly applied only to describe corporate bankruptcy (Sutton & Callahan, 1987). Yet, the concept of stigma plausibly embraces more than corporate bankruptcy. For instance, the public press has used the term stigma to describe the recent accounting scandals in the United States (Beauprez, 2003).

Stigma is an important topic in organizational research because it has negative consequences not only for firms, but also for the upper echelons³ who manage these firms.⁴ An important consequence is that the market value of a firm may decline as a result of a stigmatizing event (Alexander, 1999; Karpoff & Lott, 1993). One reason for the decline in market value may be the loss of legitimacy for the stigmatized firm. Suchman defines legitimacy as “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (1995: 597). In support of Suchman’s definition, Deephouse (1996) found that conformity with a socially constructed system of norms and values is positively associated with organizational legitimacy. Since stigmatized firms have deviated from norms, it follows that their legitimacy may be challenged by external constituents. A loss of legitimacy may decrease firm survival and

³ Upper echelons are defined as the top executives and outside directors that sit on the corporate board of a firm.

⁴ Stigma also has consequences for employees other than the upper echelons (Heilman et al., 1997). However, these consequences are not within the scope of this dissertation.

performance (Ruef & Scott, 1998; Singh, Tucker, & House, 1986; Zimmerman & Zeitz, 2002). For instance, the market value of stigmatized firms may decline because existing customers and suppliers have terminated or reduced the value of their transactions with these firms.

Another reason for the decline in market value may be that the market discounts the higher expected costs of hiring able and prestigious top executives and directors to manage the stigmatized firm. There is some evidence that a firm's image is positively associated with its attractiveness as an employer (Belt & Paolillo, 1982; Gatewood, Gowan, & Lautenschlager, 1993; Lievens & Highhouse, 2003; Turban & Cable, 2003). Hence, potential top executives and directors may be less willing to associate themselves with a stigmatized firm, perhaps for fear of damaging their own reputations. For instance, Dutton and Dukerich (1991) found that individuals' self concepts and personal identities are shaped by how they believe others view the organization for which they work. Furthermore, stigmatized firms are riskier to manage or harder to turnaround because they are naturally at a disadvantage when compared with their non-stigmatized counterparts. A pay premium to attract competent top executives and directors may be required given the increased risk of managing a stigmatized firm and the potential damage to managerial reputation.

Other than a decline in firm value, stigma also has potential consequences for the incumbent upper echelons of a firm. Top executives and directors of stigmatized firms may be blamed for failing to prevent the stigmatizing event (Boeker, 1992; Meindl, 1990), or worse, they may be viewed as being responsible for the stigmatizing event

(Farrell & O'Donnell, 2002; Frank, 2004). For instance, Sutton and Callahan (1987) found that an organizational image is closely intertwined with the image of its corporate leaders. If an organization is a reflection of its upper echelons (Hambrick & Mason, 1984), then upper echelons blamed for the negative consequences of stigmatizing events may suffer from potential settling up consequences such as reduced compensation or a damaged reputation.

Although stigma has negative consequences, the adverse impact of stigma may be mitigated through the actions of corporate leaders (Karpovich, 2002; King, 1991). Hence, the study of stigma is also important because researchers may shed light on the effectiveness of various organizational strategies used proactively to avoid stigmatization or to reduce the negative consequences when stigmatized. Several researchers have discussed and examined the strategies that organizations adopt to regain lost legitimacy as a result of stigmatizing events (Elsbach & Sutton, 1992; Neu & Wright, 1992; Suchman, 1995). For example, Neu and Wright (1992) described how the Canadian Institute of Chartered Accountants (CICA) was stigmatized due to the failure of the Canadian Commercial Bank in 1985 and how the CICA responded as a group to mitigate the damage from the stigma and to re-establish legitimacy. Similarly, Elsbach and Sutton (1992) examined how organizations may use impression management techniques to gain organizational legitimacy after illegitimate events were attributed to members of these organizations.

CHAPTER III

STIGMATIZATION OF THE ASSOCIATED FIRM

In this chapter, I draw upon the social psychology literature to explain the phenomenon of stigma by association at the inter-organizational level. In particular, I apply social inference theories (i.e., theories of attributions, member-to-group inferences and social exchange reciprocity) that examine how individuals draw inferences about others in a social setting. In general, social inference occurs when an individual arrives at a conclusion from a set of premises by connecting these premises to the conclusion through the application of rules, principles, templates, or procedures (Hastie, 1983). Social inference theories are relevant because investors' impression formation process requires them to draw inferences about other firms associated with stigmatized firms. Furthermore, these inferences need not be accurate, but may be colored by biases stemming from cognitive efficiencies or motivational reasons, biases that are explicitly recognized by social inference scholars.

First, I establish that publicly listed firms accused of accounting scandals can be considered to be stigmatized by investors. Thereafter, I examine the importance of director interlocks as a channel by which associated firms experience stigma. Finally, I apply theories concerning attributions, member-to-group inferences, and social exchange reciprocity to explain why associated firms experience stigma through the director interlocks.

Stigma from Corporate Accounting Scandals

I assert that investors stigmatize publicly listed firms alleged to have adopted misleading accounting practices. This dissertation focuses on investors as the stakeholder of interest because stigma, like reputation, is conferred by stakeholders, and hence may vary by stakeholders (Fombrun & Shanley, 1990; Thompson, 1967). There are at least two reasons why investors are important stakeholders in the context of accounting scandals. First, accounting scandals are first and foremost crimes against investors. The primary purpose of these scandals is to mislead current and/or potential investors by promulgating a false representation of the financial well-being of a firm. In addition, some accounting practices are designed to conceal the misappropriations of investor wealth by top executives for personal gain. Second, the ownership structure of public firms has changed radically over the years. Institutional investors, such as mutual funds and pension funds, in the United States have increased their ownership holdings of U.S. firms from about 14% in 1965 to about 53% in 2003 (Federal Reserve Statistical Release, 2004). This increase in institutional ownership has been cited as one of the reasons for the rise in investor activism, which is the use of power by an investor to influence organizational processes or outcomes (Davis & Thompson, 1994; Ryan & Schneider, 2002). Hence, focusing on investors may be justified on the premise that their significance as a stakeholder group appears to be increasing.

The three conditions for stigma highlighted by Jones et al. (1984) must be satisfied for accounting scandals to result in stigmatization. First, there must be an actual or perceived deviation from a norm. Publicly listed firms are expected to present their

financial positions to investors in conformity with the Generally Accepted Accounting Principles (GAAP) developed by the Financial Accounting Standards Board, the American Institute of Certified Public Accountants, and the Securities and Exchange Commission in the United States. Conformity with the U.S. GAAP is not only a normative expectation by the investing public, but also a regulatory requirement with legal sanctions for noncompliance. Publicly listed firms have deviated from investors' normative expectations when they are alleged to have adopted misleading accounting practices. Although these allegations may eventually be refuted, the first condition for stigma is satisfied at the time of these allegations as long as a deviation from normative expectations has been perceived.

Second, the actual or perceived deviation from a norm must cause investors to attribute certain dispositions to the firm. Although researchers tend to focus on human dispositions (House, Shane, & Herold, 1996; Mischel & Shoda, 1998), parallels have been drawn in other areas of research. For instance, management researchers have discussed organizational dispositions (Staw, 1991), and have applied the concept to organizations, especially to person-organization fit in recruitment studies. For instance, Lievens and Highhouse (2003) found that job applicants are attracted to an organization on the basis of the symbolic meanings (such as sincerity, innovativeness, and competence) that they associate with the organization. Furthermore, Slaughter et al. (2004) recently developed an instrument that measures perceived organizational personality (i.e., the set of human personality characteristics perceived to be associated with an organization). Hence, when a publicly listed firm's financial statements are seen

as potentially misleading (a deviation from a norm), investors may attribute certain dispositions, such as dishonesty, to the firm.

Third, stigma must be accompanied by a negative consequence. If a publicly listed firm with potentially misleading accounting practices has a spoiled identity that discredits the firm, then one response is for investors to sell their stake in the firm and invest their capital elsewhere. Hence, the market value of a firm should experience a significant decline as a result of the spoiled identity. Empirical evidence supports this assertion. For instance, Karpoff and Lott (1993) found that firms experience a statistically significant 4.66% decline in market value over a two-day event window in response to announcements of financial reporting fraud. The authors also found that the potential or actual legal penalties imposed on firms accused or found guilty of fraud account for less than 7% of the loss in the market value, with most of the loss attributable to these firms' lost reputation.

Director Interlocks as a Form of Network Association

Although researchers have examined firms stigmatized by actual or alleged corporate scandals, the impact of alleged corporate scandals on other firms associated with the stigmatized firms has been overlooked. Given that the phenomenon of stigma by association is well established by social psychologists at the individual level of analysis, it is plausible that stigma by association also exists at the inter-organizational level of analysis. However, there is no theoretical framework to explain how associated firms may experience stigma. A theory of stigma by association at the inter-

organizational level of analysis must begin by identifying how firms are associated with other firms.

Network studies provide an excellent source to examine the types of associations between firms. For instance, firms may be associated through a director interlock (Mizruchi, 1996), parent-subidiary network (Ghoshal & Bartlett, 1990; Rugman & Verbeke, 2001), strategic alliance (Powell, Koput, & Smith-Doerr, 1996), supplier-customer network (Uzzi & Gillespie, 2002), common geographic location (Davis & Greve, 1997; Rice & Aydin, 1991), common industry (Huff, 1982; Li & Berta, 2002), or common professional association (Newell & Swan, 1995; Swan & Newell, 1995).

In this dissertation, I focus on interlocking directorates as an important conduit by which associated firms experience stigma. An interlocking directorate occurs when a person affiliated with one organization sits on the corporate board of another organization (Mizruchi, 1996). Director interlocks establish a form of social ties between firms, hence creating a social network in which firms are embedded. Network research on interlocking directorates has identified three types of interlocks (Beckman & Haunschild, 2002; Palmer, Barber, Zhou, & Soysal, 1995). First, direct incoming interlocks (or received interlocks) occur when an executive employee of another firm is a director in a focal firm. Second, direct outgoing interlocks (or sent interlocks) occur when an executive employee of a focal firm is a director of another firm. Third, indirect interlocks (or neutral interlocks) occur when a third-party director sits on the boards of two or more firms, but is not an executive employee in any of these firms. In this dissertation, received and neutral interlocks represent outside directors in stigmatized

firms, while sent interlock represents top executives of a stigmatized firm acting as outside directors in an associated firm.

I chose to study interlocking directorates instead of other types of associations between firms for the following reasons. First, director interlocks are important channels by which associated firms experience stigma because corporate boards have the responsibility to monitor the top executives on behalf of investors. The perceived failure of directors to discharge this responsibility may extend to directorships in other firms. Hence, there is reason to believe that stigma from alleged accounting scandals may be experienced by associated firms through the interlocking directorates.

Second, although the significance of director interlocks has been established by many studies, researchers have not examined the role of director interlocks in the context of stigma by association. There is empirical evidence that director interlocks influence firm behavior. Interlocking directors serve as information conduits that facilitate learning between firms, resulting in the spread of poison pills (Davis, 1991), isomorphism in corporate strategies and corporate political behavior (Mizruchi, 1993; Westphal & Fredrickson, 2001), and premiums paid on corporate acquisitions (Beckman & Haunschild, 2002). Extant studies mainly focus on the intended consequences of these interlocks, such as to co-opt elements of the environment, to serve as a social infrastructure for elite cohesion, and to provide for information flow that transmit social norms, values, and strategies (Mizruchi, 1996). Unfortunately, the unintended consequences of director interlocks have been ignored. This dissertation examines one

such unintended consequence of director interlocks: director interlocks facilitating the experience of stigma by associated firms.

Stigmatization Through Director Interlocks

Research in social psychology has found that stigma by association occurs because an individual associated with a stigmatized individual is perceived also to have deviated from norms and is linked to dispositions that discredit the associated individual (Neuberg et al., 1994). This reason may also be applied to stigma by association between firms linked by director interlocks. Specifically, investors may perceive that firms associated with stigmatized firms may have deviated from some norms. I argue that the foundation for these perceptions derives from the investors' expectations of corporate boards.

One important normative role for corporate boards is the monitoring of top executives in publicly listed firms (Johnson, Daily, & Ellstrand, 1996). Agency theorists contend that board monitoring is crucial given that the separation of ownership and control has led to the divergence of interests between the top executives that run the firm and the owners of the firm (Fama & Jensen, 1983). This misalignment of interests between top executives and investors in public firms has spurred much research on how agency costs may be mitigated through the adoption of governance mechanisms (Dalton, Daily, Certo, & Roengpitya, 2003; Dalton, Daily, Ellstrand, & Johnson, 1998; Dalton, Daily, Johnson, & Ellstrand, 1999). A firm's corporate board is one such mechanism.

The normative expectations of the general public are consistent with the assertions of agency theorists. Corporate boards remain an important governance

mechanism to combat possible opportunistic behavior of top executives. For instance, the recent accounting scandals were accompanied by a blitz of media coverage on the alleged failings of corporate boards (Farrell & O'Donnell, 2002). Furthermore, public pressure has resulted in several legislative and regulatory actions to improve the quality of corporate boards. The Sarbanes-Oxley Act of 2002 requires all board audit committee directors to be independent. In addition, the major stock exchanges in the United States require a majority of independent directors in listed firms. Hence, the effectiveness of corporate boards is likely to feature prominently in investors' impression formation process because of the boards' normative obligation to monitor top executives.

The normative obligation of corporate boards to monitor top executives provides the basis to explain why associated firms experience stigma. Top executives have been charged with and found responsible for the recent accounting scandals (Forelle, 2004; Frank, 2004). Public attention has turned to the alleged failings of corporate boards to prevent these scandals. Not only has the corporate board, as a whole, been blamed for failing to monitor top executives, individual directors have also been accused of oversight by the mass media (Farrell & O'Donnell, 2002). Since mass media contents have been shown to influence readers' perceptions (Bateman, Sakano, & Fujita, 1992; Gunther, 1998; Zillmann, Gibson, Sundar, & Perkins, 1996), the increased scrutiny on individual directors may be accompanied by attributions of incompetence or unwillingness of individual directors to monitor top executives in firms accused of accounting scandals. Given that some individual directors also hold directorship positions in other firms, investors' attribution of incompetence or unwillingness may

spill over to these associated firms. In other words, investors' attributions may lead them to expect each interlocking director to exhibit similar behavior and attitude in the associated firms. The perceived ineffectiveness of each interlocking director contributes to an impression of weak board vigilance in the associated firms. As a result, investors are more likely to perceive the associated firms as having deviated from some norms because the corporate boards are viewed as less able to discharge their normative obligations to monitor top executives. Attribution theory, a class of social inference theories, may be used to provide theoretical support for the above assertions.

Attribution theory. Attribution theory attempts to explain the factors involved in perceived causation in order to understand the perceived causes of one's own or others' behaviors (Harvey & Weary, 1984). Attributional analyses begin with an outcome that is followed by a search to determine the cause(s) of the outcome. According to Kelly and Michela (1980), the perceived causality (either internal or external causes) is influenced by the information available to, as well as the beliefs and motivation of, the perceiver. Furthermore, the perceived causality generates affective responses in the perceiver and influences perceiver expectations, eventually leading to behavioral responses by the perceiver (Graham & Weiner, 1991; Schmidt & Weiner, 1988; Weiner, Nierenberg, & Goldstein, 1976; Weiner, Perry, & Magnusson, 1988).

Attribution theory may be used to explain investors' impression formation process since the theory examines the perception of causation and the consequences of such perception (Kelly & Michela, 1980). Attribution theory is also relevant since unexpected negative outcomes (such as alleged accounting scandals) are likely to initiate

attributional search (Pyszczynski & Greenberg, 1981; Weiner, 1986). Since this dissertation focuses on investors' perceptions of associated firms, I refer to theories of social attributions⁵ instead of self attributions.

Attribution theory may be used to explain the process of attributing responsibility for alleged accounting scandals. Investors may attribute responsibility to a director for failing to monitor the top executives who may have orchestrated these alleged accounting scandals. Alternatively, investors may direct their attributions to external circumstances that are outside of a director's control. If investors' attributions for alleged accounting scandals focus on external circumstances outside of a director's control instead of internal causes specific to the director, then stigma by association between firms will not occur through director interlocks. However, several researchers in social psychology have established a bias in the attribution process, henceforth referred to as the fundamental attribution bias, where observers tend to overestimate internal causes and underestimate external causes when explaining an outcome, especially negative outcomes for others (Jones, Kanouse, Kelley, Nisbett, & Valms, 1972; Ross, 1977). Some researchers suggest that the fundamental attribution bias exists because of a social norm that favors internal attributions (Jellison & Green, 1981). Other researchers suggest that observers tend to underestimate situational causes in attributional analyses because unlike individuals, situations have little or no physical manifestations and are more likely to be passed over (Gilbert & Malone, 1995; Synder & Jones, 1974). Cognitive efficiencies also appear to contribute to the occurrence of the fundamental attribution

⁵ Social attributions are attributions of others instead of the self.

bias (Gilbert & Malone, 1995). An individual and the individual's actions form a more natural categorical unit that is automatically perceived with the least amount of cognitive effort (Heider & Simmel, 1944) when compared with the individual's actions and the circumstances as a categorical unit, which requires greater effort and a more systematic approach (Heider, 1958; Jones, 1979). Hence, attributions may be viewed as an anchor and adjustment inferential process (Tversky & Kahneman, 1974), where observers first assume that actions are the result of an individual's disposition (i.e., the anchor), and then subsequently adjust for situational pressures, if at all (Gilbert, 1991; Gilbert, Pelham, & Krull, 1988; Jones, 1979; Quattrone, 1982). In short, fundamental attribution bias suggests that investors will attribute responsibility to a director regardless of whether the prevention of accounting scandal is or is not within the control of the director.

Research on defensive attribution of responsibility also supports the assertion that investors are likely to hold a director responsible for alleged accounting scandals. Defensive attribution of responsibility refers to the notion that as the severity of the outcome of an action increases, the responsibility attributed to an individual increases (Robbennolt, 2000). Researchers also found that defensive attributions are more likely to be triggered when the situation is highly relevant and salient to the observer (Shaver, 1970). According to Fiske and Taylor (1991), defensive attribution is motivated by self-protection, where attributing responsibility to an individual makes the outcome seem somehow controllable, and accordingly, avoidable by the observer. Investors may exhibit defensive attribution and attribute more responsibility to a director because

accounting scandals are highly relevant due to the negative consequences on investor wealth. Defensive attribution also gives investors some degree of control by providing the impetus for investor activism to avoid future scandals. There is anecdotal evidence that investor activism has increased in response to corporate scandals (Browning, 2002; Plitch & Cowan, 2003).

Another reason why investors are likely to attribute responsibility for alleged accounting scandals to a director may be found in the “romance of leadership” literature (Meindl, Ehrlich, & Dukerich, 1985). The “romance of leadership” views leadership as an explanatory category to which attributions are made to account for a variety of organizational events and occurrences (Meindl, 1990). In brief, because organizations are highly complex systems, observers’ attributions of the causes of organizational outcomes are likely to reflect a process of simplification. In particular, Meindl et al. (1985) found that leadership is a highly valued concept in the thought systems that observers use to explain organizational outcomes. Specifically, corporate leaders stand a good chance of being blamed when things turn out badly, even if they are not directly responsible for the outcome. Although the “romance of leadership” studies have focused on the top executives of a firm, there is reason to believe that observer bias in attributions of organizational outcomes also applies to corporate boards. This is because directors, like top executives, are not only responsible for organizational outcomes, but also make decisions that affect these outcomes (Finkelstein & Hambrick, 1996). In the context of alleged accounting scandals, although a director is not directly responsible for these scandals, the director is responsible for monitoring the top executives who may

have orchestrated these scandals. Hence, the “romance of leadership” literature suggests that investors are likely to attribute responsibility to a director for alleged accounting scandals.

In short, attribution theory supports the assertion that investors are likely to attribute responsibility for alleged accounting scandals to a director. In other words, investors perceive each director in a firm accused of an accounting scandal as responsible for not monitoring top executives effectively. The perception of a director as an ineffective monitor may extend to other firms where the director holds directorship positions. As a result, investors are more likely to expect an associated firm as having deviated from some norms because the perceived ineffectiveness of the interlocking director contributes to a less vigilant board in the associated firm. However, the interlocking director is only one board member in an associated firm. The amount of stigma experienced by an associated firm may not be significant if there are other directors, who are independent, able, and willing to monitor top executives in the associated firm. But social inference theories have established shortcomings in social judgments (Hastie, 1983; Nisbett & Ross, 1980). There is theoretical and empirical support for the phenomenon of making generalizations from one individual in a group (i.e. the interlocking director) to the entire group (i.e. the corporate board). If investors’ perception of an ineffective interlocking director spill over to the entire board of an associated firm, then the amount of stigma experienced by an associated firm is likely to be more significant. Below, I delineate the theoretical perspectives that support this assertion.

Member-to-group inferences. Researchers are cognizant of a judgment bias now known as the “law of small numbers”. As early as the 1950s, Allport stated that “given a thimbleful of facts we rush to make generalizations as large as a tub” (1954: 8).

The “law of small numbers” suggests that observers are likely to generalize from an individual’s behavior and inferred dispositions to other members of the individual’s group. Empirical support for this assertion was found in the social psychology literature (Henderson-King & Nisbett, 1996; Nisbett & Borgida, 1975; Quattrone & Jones, 1980). Inappropriate or biased inductive generalizations from a sample to a population occur even when the observer is trained in scientific inquiry (Tversky & Kahneman, 1971) and when it is clear to the observer that the sample is highly biased (Hamill, Wilson, & Nisbett, 1980). Generally, empirical studies have found that member-to-group inferences are more likely to occur when (1) the group is perceived to be homogeneous (Folkes & Patrick, 2003; Nisbett, Krantz, Jepson, & Kunda, 1983; Quattrone & Jones, 1980; Rothbart & Lewis, 1988; Wilder, 1984), and (2) the observer has vivid information about the member from which generalizations to the group are drawn (Hamill et al., 1980).

There are at least two possible explanations for the “law of small numbers.” Hamill et al. (1980) suggest that member-to-group inferences may be a result of unconscious, memory-mediated generalizations, where vivid information about a group member is first stored in the memory and then disproportionately available for use when judgments are later made about the group. Another reason why observers make member-to-group inferences is the concept of homophily, the principle that a contact between

similar people occurs at a higher rate than among dissimilar people (McPherson, Smith-Lovin, & Cook, 2001). This reason is succinctly stated by the ancient adage “birds of a feather flock together” (Lazarsfeld & Merton, 1954). Social categorization theory suggests that individuals outside of a group are likely to perceive members in the group as homogenous (Judd, Ryan, & Park, 1991; Linville, Fischer, & Salovey, 1989; Quattrone & Jones, 1980). Furthermore, the perception of group homogeneity increases when one of the group members is perceived unfavorably (Doosje, Spears, & Koomen, 1995). Indirect support for member-to-group inferences may also be found in the intra-group behavior literature. Research has found that in-group members tend to devalue deviant members so as to reestablish the positivity and subjective uniformity of the in-group as a whole (Marques & Paez, 1994). This finding, known as the black sheep effect, suggests that a deviant member of a group may pass on the appearance of deviance to those who share group membership. Furthermore, Eidelman and Biernat (2003) found that interpersonal similarity on one dimension (such as a common group membership) may imply similarity on other dimensions, including those dimensions perceived as unfavorable.

The above-cited empirical studies support the assertion that investors’ perception of an ineffective interlocking director might spill over to the entire board of an associated firm regardless of the other board members’ actual dispositions. These spillover effects are symptomatic of biases in investors’ impression formation, and are consistent with recent findings that investors frequently make large errors that are influenced by psychological biases (Daniel, Hirshleifer, & Subrahmanyam, 1998;

Daniel, Hirshleifer, & Teoh, 2002; Odean, 1998). These spillover effects are especially likely to occur because the interlocking director has been perceived unfavorably by investors (Doosje et al., 1995). Furthermore, research on corporate boards found that board members' demographic similarities (a proxy for attitudinal and behavioral similarity) in a firm tend to increase over time (Westphal & Zajac, 1995). In other words, corporate board members become more homogenous over time. The more homogenous the corporate board, the more likely investors will make member-to-group inferences.

Sent and received interlocks. While the above discourse applies to director interlocks in general, slight modifications are required to explain stigma by association through sent and received interlocks. Sent interlocks occur when a top executive of a stigmatized firm is an outside director of an associated firm. Attribution theory may be applied to sent interlocks. Because the director forming the sent interlock is a top executive of the stigmatized firm, investors will not attribute responsibility to this director for failing to monitor the executives of the stigmatized firm since that director is a member of the top executive team. However, investors are likely to blame the executive forming the sent interlock for the alleged accounting scandal because top executives have been charged and found responsible for these scandals (Forelle, 2004; Frank, 2004). The attribution of blame to top executives implies a perceived moral wrongdoing on the part of these executives (Fincham & Jaspars, 1980). When these executives have been blamed for orchestrating the alleged scandal, it is unlikely that investors will perceive them as effective monitors of top executives in an associated firm

where they are appointed as outside directors. These executives are not likely to protect the interests of investors in the associated firm when they have exhibited some level of untrustworthiness in the stigmatized firm. Investors' perception that executives forming sent interlocks are ineffective monitors in an associated firm may then spill over to the entire board of the associated firm through biases in member-to-group inferences.

Received interlocks represent situations when a top executive of an associated firm is an outside director of a stigmatized firm. According to attribution theory, investors are likely to attribute responsibility to the director forming the received interlock for potentially failing to monitor the executives of a stigmatized firm. However, the director forming a received interlock is a top executive in an associated firm and therefore, would not have any direct impact on the quality of board vigilance in the associated firm as perceived by investors. I argue that investors may still perceive an ineffective corporate board in an associated firm because corporate leaders have been found to exhibit generalized norms of reciprocity in social interactions (Westphal & Zajac, 1997).

Norms of reciprocity are widely accepted social rules that require us to return favors to those who do something nice for us (Gouldner, 1960). Generalized norms of reciprocity, on the other hand, refer to a situation whereby a beneficiary reciprocates by taking action to benefit a social actor other than the benefactor (Dabos & Rousseau, 2004; Ekeh, 1974). Such generalized norms of reciprocity have been found in corporate boards in the context of board independence (Westphal & Zajac, 1997). According to generalized norms of reciprocity, top executives who are directors in other firms tend to

behave in a manner that is consistent with their experiences in their own firm. Specifically, top executives who experience strong board vigilance in their firm will tend to exercise strong board vigilance when they are acting as outside directors in other firms. Likewise, top executives who experience weak board vigilance in their firm will tend to exercise weak board vigilance when they are acting as outside directors in other firms.

Applying generalized norms of reciprocity to received interlocks, if a top executive of an associated firm is an ineffective director in a stigmatized firm, then one plausible reason for the ineffectiveness is that the corporate board in the associated firm is also ineffective in monitoring top executives. In other words, top executives of an associated firm sitting in the corporate board of a stigmatized firm are ineffective monitors because they themselves experience ineffective monitoring by the corporate board of their own firm. Hence, for received interlocks, the perception of social exchange reciprocity among corporate leaders in the associated and stigmatized firms may account for the amount of stigma experienced by an associated firm.

Diffusion of organizational practices. So far, the application of social inference theories has focused on investor attributions that heighten the anticipation of board failures in associated firms linked to stigmatized firm through director interlocks. In this instance, the perceived deviation of norms by an associated firm is not restricted to deviation from accounting standards, but may include deviation from non-accounting norms as a result of ineffective board monitoring. There is at least one other explanation why investors may perceive a deviation of norms by an associated firm. This explanation

draws upon research in the diffusion of organizational practices through the interlocking directorate network.

Some scholars suggest that director interlocks function as salient conduits of information about organizational practices (Davis, 1991; Useem, 1984). The diffusion of information through interlocking directorates is one plausible reason why interlocked firms adopt similar practices (Haunschild, 1993; Palmer et al., 1993; Westphal, Seidel, & Stewart, 2001). Despite broad research interests on director interlocks as conduits of information flow, research on interlocks and the adoption of accounting practices is in its nascent stage (Chua & Petty, 1999). The exchange of information between corporate leaders linked by director interlocks may be one channel where executives may come to know of creative and manipulative accounting practices used to distort reported profitability and indebtedness. It is clear that creative and manipulative accounting practices played a key role in the Enron debacle (Holt & Eccles, 2003). To the extent that investors perceive the diffusion of misleading accounting practices across director interlocks, these investors may anticipate a forthcoming SEC investigation on the accounting practices of an associated firm. In this instance, the perceived deviation of norms of an associated firm will be similar to that of the stigmatized firm – i.e., a deviation from accounting standards.

Regardless of whether associated firms experience stigma because of investors' perception of ineffective board monitoring in an associated firm or the perception that an associated firm has adopted misleading accounting practices, these perceptions are

driven by the presence of director interlocks between the associated and stigmatized firms. Hence, the above arguments may be summarized in the following hypothesis:

H1: Firms with director interlocks to other firms stigmatized by alleged accounting scandals will, on the average, experience stigma as a result of the association.

CHAPTER IV

THE AMOUNT OF STIGMA EXPERIENCED BY THE ASSOCIATED FIRM

The previous chapter provides theoretical support for director interlocks as a *plausible* channel by which associated firms experience stigma. However, this *does not* imply that associated firms will always experience stigma or experience identical amounts of stigma through the network of director interlock(s). Hence, a question remains as to whether all firms associated with a stigmatized firm will be equally affected. Borrowing from extant studies of contagion effects, there are two alternative processes in which associated firms experience stigma, a pure non-discriminatory process or an information-based process (Brewer, Genay, Hunter, & Kaufman, 2003; Jordan, Peek, & Rosengren, 2000). In the non-discriminatory process (or the pure contagion hypothesis), all associated firms will be equally stigmatized without discrimination. However, in the information-based process, associated firms will be stigmatized to different extents, depending on the availability of information that sheds light on firm characteristics and other factors relevant to the stigmatizing event. I argue that the stigmatization of associated firms is likely to be information-based, taking into account firm-level and individual-level characteristics that discriminate between associated firms embedded in the interlocking directorate network. In other words, firms associated with stigmatized firms will experience different degrees of stigmatization, or may experience no stigma at all. Henceforth, the term “stigma” will refer to the stigma

experienced by a firm associated with a stigmatized firm through director interlocks, unless stated otherwise.

The purpose of this chapter is to develop a model of how the amount of stigma is influenced by various individual and firm-level variables. I group these variables into four categories: the characteristics of the interlocking director, the characteristics of the board in an associated firm, the strength of the director interlock, and the quality of corporate governance in an associated firm. These four categories of variables span multiple levels of analysis, from the individual director, to the corporate board, to corporate governance at the level of a firm.

Characteristics of the Interlocking Director

The amount of stigma may be influenced by the characteristics of an interlocking director. Specifically, I examine the prominence of an interlocking director in the associated and stigmatized firms. Prominence refers to the position of a director in the corporate boards of the stigmatized or associated firms. Prominence matters in a stigmatized firm because it affects the level of responsibility or blame attributed to an interlocking director for the alleged accounting scandal. Prominence also matters in an associated firm because it affects inferences about the effectiveness of the corporate board in detecting corporate scandals or other deviation from norms.

Director prominence in a stigmatized firm. The amount of stigma experienced by an associated firm is partly influenced by the level of responsibility or blame attributed to the interlocking director. If an interlocking director is not attributed any responsibility or blame for the alleged accounting scandal, the amount of stigma is likely

to be low or nonexistent because his or her directorship in an associated firm is of minimal or no consequence from an investor's perspective. However, the greater the attribution of responsibility or blame to the interlocking director in a stigmatized firm, the more likely investors will take into account the potential negative consequences of the directorship position in an associated firm. Hence, I expect the amount of stigma to be influenced by the level of responsibility or blame attributed to the interlocking director in a stigmatized firm.

Investors are more likely to attribute responsibility or blame to an interlocking director for the alleged accounting scandal if the director holds a prominent position in a stigmatized firm. Investors may assess a director's prominence by focusing on the formal title that the director holds in corporate board committees. Board committees have generated research interests due to their increasing importance in effectively discharging board functions (Daily, Johnson, Ellstrand, & Dalton, 1998; Kesner, 1988). Although corporate boards are made up of various committees with different functional roles, the chair of an audit committee is likely to feature most prominently when investors are attributing blame for alleged accounting scandals. This is because the audit committee chair is overall responsible for the performance of the audit committee, whose charter is to provide independent and objective oversight of a firm's accounting functions and internal controls so as to assure the objectivity of the firm's financial statements. Alleged accounting scandals unequivocally point to the possible failure of the audit committee to verify the objectivity of a stigmatized firm's financial statements. Hence, investors may hold the audit committee chair to a higher level of accountability and attribute more

responsibility to the audit committee chair for an alleged accounting scandal when compared with a board member without such a title. These arguments may be summarized in the following hypothesis:

H2: An interlocking director holding the position of audit committee chair in a stigmatized firm is positively correlated with the amount of stigma experienced by the associated firm.

Director prominence in an associated firm. The prominence of an interlocking director in an associated firm is also important for the amount of stigma experienced by the associated firm. As explained earlier, associated firms are stigmatized through an inferential process. Specifically, investors perceive that an associated firm may also have deviated from some norms because the corporate board in the associated firm may be perceived as ineffective monitors of top executives. One reason why investors make such inferences is because the interlocking director is first perceived as an ineffective monitor of top executives, and this initial perception may generalize to the entire board in an associated firm through biases in the social inference process. The willingness of investors to make such generalizations is likely to increase if the interlocking director occupies a prominent position in the corporate board of an associated firm. As I have previously highlighted, the audit committee chair holds a prominent position because the chair is overall responsible for the audit committee's task of verifying the objectivity of a firm's financial statements. Hence, if an interlocking director is the audit committee

chair in an associated firm, investors are more likely to infer that misleading accounting practices used to prepare the financial statements of the firm have been overlooked when compared with an interlocking director who is not the audit committee chair. These arguments may be summarized in the following hypothesis:

H3: An interlocking director holding the position of audit committee chair in an associated firm is positively correlated with the amount of stigma experienced by the firm.

In addition to the audit committee chair, the chair of the corporate governance committee is likely to feature prominently in investors' perception. Generally, corporate governance committees are responsible for developing and recommending to the board a set of corporate governance principles. Since this committee is expected to take a leadership role in improving the effectiveness of corporate governance in a firm, the chair of this committee is likely to shape investors' perception on the overall effectiveness of internal governance mechanisms that protect investors' interests. Investors' perception on the overall effectiveness of internal governance mechanisms is important for the amount of stigma experienced by an associated firm. As I have previously argued, the perceived deviation from norms by an associated firm is not restricted to deviations from accounting standards but includes deviation from non-accounting norms as a result of weak board vigilance. Therefore, if an interlocking director is the corporate governance committee chair in an associated firm, investors are

more likely to infer that deviations from non-accounting norms may have been overlooked due to the perceived ineffective internal governance mechanisms when compared with an interlocking director who is not the chair of the corporate governance committee. These arguments may be summarized in the following hypothesis:

H4: An interlocking director holding the position of corporate governance committee chair in an associated firm is positively correlated with the amount of stigma experienced by the firm.

Characteristics of the Board in an Associated Firm

The amount of stigma may be influenced by the characteristics of the board in an associated firm. Specifically, I focus on how board members' homogeneity to the interlocking director influences the amount of stigma experienced by an associated firm. Board members' homogeneity in an associated firm is important because it affects investors' inferences about the effectiveness of the corporate board in curbing possible corporate scandals. As previously argued, investors are more likely to make member-to-group inferences when the corporate board is perceived to be more homogenous (Folkes & Patrick, 2003; Nisbett et al., 1983; Quattrone & Jones, 1980). Specifically, if other directors in an associated firm are similar to the interlocking director, and if the interlocking director has been perceived as an ineffective monitor of top executives, then other directors in the same board may also be perceived to be ineffective monitors of top executives too. The idea that interpersonal similarity on one dimension (such as a

common board membership) may imply similarity on other dimensions (Eidelman & Biernat, 2003) is consistent with the concept of homophily, which states that contact between similar people occur at a higher rate than among dissimilar people (McPherson et al., 2001).

Attitudinal and behavioral similarities of directors are most relevant when investors form their perceptions on the effectiveness of board monitoring. However, investors are more likely to use demographic attributes in the impression formation process since these attributes are easily accessible. Furthermore, member-to-group inferences are symptomatic of biases in investors' impression formation. Hence, when the perception of an ineffective interlocking director spills over to the entire board of an associated firm, the spillover effect is not likely to result from a detailed analysis of attitudinal and behavioral similarities of directors, but the analysis of easily accessible demographics that represent attitudes and behavior. The use of demographic attributes as proxies for attitudinal and behavioral characteristics have been discussed in Hambrick and Mason's (1984) seminal work on the "upper echelons" perspective. Thereafter, scholars have adopted various demographic attributes of upper echelons (such as gender, age, firm or group tenure, functional or educational background) in studies of firm performance and behavior, executive turnover, innovation, and director selection (Bantel & Jackson, 1989; Hambrick, Cho, & Chen, 1996; Murray, 1989; Wagner, Pfeffer, & O'Reilly, 1984; Westphal & Zajac, 1995). To the extent that investors also use easily accessible demographic attributes of directors to assess the homogeneity of corporate boards, the amount of stigma experienced by an associated firm is likely to be stronger

the more demographically homogenous the corporate board in the associated firm. These arguments may be summarized in the following hypothesis:

H5: Demographic homogeneity of a corporate board in an associated firm is positively correlated with the amount of stigma experienced by the firm.

Strength of the Director Interlock

The amount of stigma may be influenced by the strength of association between firms. Neuberg et al. (1994) found that an individual may be stigmatized simply because of his or her association with a stigmatized individual, and not because the former is perceived to have deviated from any norms. Similarly, firms may be stigmatized simply because of their association with other stigmatized firms, and not because of any perceived deviation of norms. In this case, the amount of stigma experienced by associated firms may reflect the disapproval of investors toward the associated firms for maintaining relationships with stigmatized firms or the negative affect of investors toward stigmatized firms spilling over to associated firms.

To the extent that firms are stigmatized simply because of their associations with stigmatized firms, then an associated firm with strong ties to a stigmatized firm may experience more stigma when compared with an associated firm with weak ties to a stigmatized firm. In the context of interlocking directorates, investors may assess the strength of interlock ties by referring to the number of interlock types and the duration of director interlocks between the stigmatized and associated firms.

Number of interlock types. An associated firm may be linked to a stigmatized firm in one of the following three ways: a single interlock (whether a neutral, sent, or received interlock type), a dual interlock (any two out of the three interlock types), or a triple interlock (all three interlock types). The number of interlock types is likely to influence the amount of stigma for at least two reasons. First, investors are likely to perceive stronger social relations between corporate leaders in two firms with a greater number of interlock types. Furthermore, the greater the number of interlock types, the greater is the expected frequency of social exchange between corporate leaders in the interlocked firms. Stronger social relations and greater frequency of social exchange are likely to facilitate the diffusion of information between corporate leaders. As a result, investors may perceive an increase in the likelihood that firms connected through these interlocks may have adopted misleading accounting practices. Second, investors are more likely to perceive that the corporate board of an associated firm is ineffective in monitoring top executives if the number of interlock types between a stigmatized and an associated firm is higher. For instance, the presence of a triple interlock between an associated firm and a stigmatized firm indicates that a larger number of interlocking directors in the associated firm are ineffective monitors of top executives when compared with a single or dual interlock. Hence, using social inference theories, an investor's member-to-group inference regarding the effectiveness of the corporate board in an associated firm is reinforced by the presence of multiple interlock types. Specifically, the above arguments suggest that an associated firm with a triple interlock to a stigmatized firm may experience the most stigma because investors are more likely

to perceive the adoption of misleading accounting practices or the presence of weak board vigilance. These arguments may be summarized in the following hypothesis:

H6: Associated firms with triple interlocks to stigmatized firms experience more stigma when compared with associated firms with single or dual interlocks to stigmatized firms.

Duration of director interlocks. The duration of director interlocks is likely to influence an investor's perception of the strength of these interlocks. For instance, if a stigmatized firm and an associated firm are connected for only one month through a director interlock, then the amount of stigma is likely to be lower when compared with a stigmatized firm and an associated firm that have been connected for five years. The duration of director interlocks matters to an investor's perception for at least two reasons. First, the longer the duration of an interlock between two firms, the more likely that information on accounting practices from one firm will diffuse to the other firm, and vice versa. As a result, investors may perceive a higher likelihood that firms connected through interlocks with longer durations may have adopted misleading accounting practices. Second, interlocks that last for a longer time expose the interlocking directors to longer periods of socialization in the associated firms. Socialization processes have the effect of producing homogeneity in individual personalities (Chatman, 1991). Furthermore, Schneider, Smith, Taylor, and Fleenor (1998) found that organizations are relatively homogenous with respect to the personality attributes of their managers, and one of the reasons behind this homogeneity effect is the socialization process. Hence, a

longer period of director interlock exposes the interlocking director to longer periods of socialization, and longer periods of socialization lead to greater homogeneity of corporate board members' personality in an associated firm. Homogeneity of corporate boards is an important consideration since member-to-group inferences are more likely to be made when groups are homogenous (Folkes & Patrick, 2003; Rothbart & Lewis, 1988). Therefore, the entire corporate board in an associated firm may be perceived as ineffective monitors of top executives due to biases in member-to-group inferences. These arguments may be summarized in the following hypothesis:

H7: The duration of director interlocks between a stigmatized firm and an associated firm is positively correlated with the amount of stigma experienced by the associated firm.

Quality of Corporate Governance in an Associated Firm

Social inference theories have been applied to explain how investors may attribute responsibility or blame to an interlocking director, and how the perception of an interlocking director as an ineffective monitor of top executives may generalize to the entire board in an associated firm. Generalizing from one director to an entire board is a result of cognitive biases in the impression formation process. However, in efficient markets, investors are likely to scrutinize the governance mechanisms of an associated firm, and then make an informed judgment on how effective these mechanisms are in monitoring top executives. To the extent that investors perceive the presence of effective

governance mechanisms in an associated firm, these governance mechanisms will act as barriers to the amount of stigma experienced by the associated firm. This is because the effective functioning of alternative governance mechanisms in an associated firm mitigates the potential negative consequences of an ineffective interlocking director.

Agency theorists have examined a variety of governance mechanisms that protect investors if top executives have interests that diverge from those of investors. These governance mechanisms may be categorized according to their purported functions. Monitoring mechanisms, such as the board structure and outside ownership structure, seek to oversee or police managerial behaviors. Alignment mechanisms, such as the ownership holdings of CEOs and inside directors, seek to harmonize top executive behaviors with investors' interests. These monitoring and alignment governance mechanisms are the building blocks that an investor may use to assess the quality of corporate governance in an associated firm. I shall discuss each of these mechanisms below.

Board size. According to agency theorists, large boards tend to exercise weaker governance for at least three reasons. First, according to Jensen (1993), corporate boards beyond the size of seven or eight directors are less likely to function effectively and are easier for the CEO to control. One explanation is that large boards may be more contentious and fragmented when compared with small boards because of a decrease in group cohesiveness (Evans & Dion, 1991). As a result, CEOs may selectively channel information among board members or adopt coalition building tactics to gain an advantage in power relations vis-à-vis board members (Alexander, Fennell, & Halpern,

1993). Hence, board members' assessments of top executives may be easily manipulated when boards are large and diverse (Mintzberg, 1983). Second, individual directors may exert less effort to monitor top executives when board size increases because social loafing is more likely to occur in larger groups (Sheppard, 1993). This free-rider problem occurs because the benefits of increased vigilance exerted by one director accrue to the entire board while its cost is solely borne by the director exerting the effort. As a result, large boards may become less effective as individual directors shirk responsibility and increase their reliance on other directors to monitor the top executives. Finally, other researchers argue that large boards may be less focused, less participative, and less able to arrive at a consensus in decision-making when compared with small boards (Firstenberg & Malkiel, 1994; Goodstein, Gautam, & Boeker, 1994). Investors will have less assurance that the potential negative consequences of an ineffective interlocking director have been mitigated to the extent that a large board in an associated firm indicates ineffective governance. As a result, the amount of stigma experienced by an associated firm is expected to be stronger when the associated firm has a larger number of directors in its corporate board. These arguments may be summarized in the following hypothesis:

H8: Board size in an associated firm is positively correlated with the amount of stigma experienced by the firm.

Independent board chair. The appropriate leadership structure of a firm's corporate board has generated much debate among scholars, managers, activist shareholders, board reformers, and other policy-making groups (Brickley, Coles, & Jarrell, 1997; Dalton et al., 1998). When the CEO is also the board chair, board vigilance is weakened (Mace, 1971; Mizuchi, 1983) because there is less independence between the board and top executives to prevent CEO entrenchment (Mallette & Fowler, 1992). Although Dalton et al. (1998) concluded that there is no evidence of a substantive negative relationship between board leadership structure and firm performance, there is anecdotal evidence that the public's normative expectations are consistent with the assertions of agency theorists (McKinnon, 2004; Orwall, Steinberg, & Lublin, 2004). For instance, investor activism has pressured the board of Walt Disney to separate the roles of the CEO and board chair (Orwall et al., 2004). While the preference is for different individuals to occupy the CEO and board chair positions, Coles and Hesterly (2000) found that it is more important that the board chair be an independent director. This is because a board chair that is a former CEO of a firm will not be as independent as a non-affiliated chairman. If an independent board chair is able to reinforce the desired system of checks and balances that decreases opportunism by top executives, then investors will have more assurance that the potential negative consequences of an ineffective interlocking director have been mitigated. As a result, the amount of stigma experienced by an associated firm is expected to be weaker when the board chair is an independent director. These arguments may be summarized in the following hypothesis:

H9: The presence of an independent board chair in an associated firm is negatively correlated with the amount of stigma experienced by the firm.

Proportion of independent directors. Outside directors have been viewed as an important counterweight to the diverging interests between investors and top executives (Fama, 1980; Mizruchi, 1983). However, not all outside directors in a firm are independent of top executives because some directors, referred to as affiliated directors, may have existing personal and/or professional relationships with the firm or its top executives (Daily, Johnson, & Dalton, 1999). To the extent that outside directors are independent and do not experience conflicts of interest, they would be better suited to act in ways that enhance shareholder interests (Hermalin & Weisbach, 1988; Mizruchi & Stearns, 1988; Rechner, Sundaramurthy, & Dalton, 1993). Unlike independent directors, inside and affiliated directors are expected to be more subservient to the interests of the CEO and more likely to endorse the CEO's decision as well as entrench the CEO's power. The presence of a greater number of inside directors has been associated with retaining the CEO during periods of poor performance (Weisbach, 1988) and payments of greenmail (Kosnik, 1987). Although Dalton et al. (1998) did not find support for the assertion that a higher proportion of independent directors will significantly reduce agency costs and hence improve firm performance, there is evidence that the public's normative expectations are consistent with the assertions of agency theorists. For instance, the Sarbanes-Oxley Act of 2002 requires all board audit committee directors to be independent and major stock exchanges in the United States require a majority of

independent directors in listed firms. Investors will have greater assurance that the potential negative consequences of an ineffective interlocking director have been mitigated if the quality of corporate governance in an associated firm is improved by appointing a higher proportion of independent directors. As a result, the amount of stigma experienced by an associated firm is expected to be weaker when the associated firm has a higher proportion of independent directors. These arguments may be summarized in the following hypothesis:

H10: The proportion of independent directors in an associated firm is negatively correlated with the amount of stigma experienced by the firm.

Ownership of independent directors. In order for corporate boards to be effective monitors of top executives, directors must not only be independent of the top executives, but also be willing to discharge their monitoring role (Hillman & Dalziel, 2003). Independent directors holding an equity stake in a firm are expected to be more willing to promote investors' interests and not allow the CEO to make decisions that reduce investors' wealth. This is because the personal wealth of a director who holds an equity stake in a firm is now linked to investors' wealth. There is empirical support for these assertions. For instance, board vigilance over the CEO is found to be weakened when independent directors have little financial stake in the firm or when they have small stockholdings (Kosnik, 1990). Furthermore, board reformers often advocate that directors hold equity stakes and that their compensation be partially in the form of equity

(Jensen, 1993). To the extent that independent directors holding higher equity stakes in an associated firm is indicative of better quality governance, investors will have greater assurance that the potential negative consequences of an ineffective interlocking director have been mitigated. As a result, the amount of stigma experienced by an associated firm is expected to be weaker when independent directors in the associated firm have a higher proportion of equity ownership. These arguments may be summarized in the following hypothesis:

H11: The ownership of independent directors in an associated firm is negatively correlated with the amount of stigma experienced by the firm.

Institutional ownership. Monitoring mechanisms are not limited to corporate boards. Large investors have the incentive to collect information and monitor top executives to promote a firm's long-term performance (Shleifer & Vishny, 1986). In particular, Chung, Firth, and Kim (2002) found that large institutional investors inhibit managers from increasing or decreasing reported profits through the use of discretionary accounting accruals. Institutional investors can monitor top executives at a lower cost than can small atomistic investors, because they have greater expertise and can better coordinate their efforts to exert control over top executives (Pound, 1988; Wade, O'Reilly III, & Chandratat, 1990). Furthermore, ownership concentration of institutional investors leads to greater monitoring by reducing the disincentive created by a free-rider problem when investors monitor the top executives – i.e., the cost of monitoring top

executives are solely borne by the investors doing the monitoring while the benefits accrue to all investors (Demsetz & Lehn, 1985; Shleifer & Vishny, 1986). However, not all institutional investors are alike. For instance, several researchers have discriminated between pressure-sensitive and pressure-resistant institutional investors (Brickley, Lease, & Smith, 1988; Kochhar & David, 1996). Pressure-sensitive institutional investors, such as banks and insurance companies, have existing or potential business relationships with firms and are viewed as less effective monitors of top executives. Pressure-resistant institutional investors, such as pension funds and professional investment funds, do not seek business relationships with the firms in which they invest and are more likely to closely monitor and impose controls on top executives. Prior empirical studies suggest that pressure-resistant institutional investors exhibit high levels of activism to influence the outcome of corporate decisions (Brickley et al., 1988; David, Kochhar, & Levitas, 1998; Hoskisson, Hitt, Johnson, & Grossman, 2002; Kochhar & David, 1996; Tihanyi, Johnson, Hoskisson, & Hitt, 2003). To the extent that the presence of pressure-resistant institutional investors is indicative of more effective governance, the potential negative consequences of an ineffective interlocking director have been mitigated. As a result, the amount of stigma experienced by an associated firm is expected to be weaker when there is a higher concentration of pressure-resistant institutional investors in the associated firm. The above argument may be summarized in the following hypothesis:

H12: The ownership of pressure-resistant institutional investors in an associated firm is negatively correlated with the amount of stigma experienced by the firm.

Ownership of inside directors. Thus far, I have discussed the mitigating effects of monitoring mechanisms on the potential negative consequences of an ineffective interlocking director. Other than monitoring mechanisms, governance mechanisms that align the interests of CEOs and inside directors with those of investors are also important. The adoption of contingent, long-term incentive contracts for top executives is one such mechanism (Shleifer & Vishny, 1997). One form of incentive contract is to compensate top executives with equity ownership. Top executives with contingent compensation tied to investors' wealth through equity-based pay are more likely to align their interests with those of investors. Researchers have pointed out the potential conflict of interest between top executives and investors when top executives do not have an ownership interest in the firm (Berle & Means, 1932). Furthermore, agency theory suggests that due to the separation of ownership and control, the degree to which top executives use their abilities to maximize investors' wealth is dependent on the percentage of equity ownership these executives have in the firm (Eisenhardt, 1989; Jensen & Meckling, 1976; Walkling & Long, 1984). There is also empirical evidence that an increase in the equity holdings of top executives results in a decrease in the likelihood of adopting decisions that sub-optimize investor wealth (Dalton & Rechner, 1989; Oswald & Jahera, 1991). For instance, Hoskisson et al. (2002) found that inside directors with higher ownership stakes behave more like owners by promoting long-term firm performance through an emphasis on internal innovations. To the extent that a higher proportion of top executives' equity ownership indicates effective corporate

governance, the potential negative consequences of an ineffective interlocking director have been mitigated. This is because less monitoring of top executives is required when these top executives' have aligned their interests with those of investors. As a result, the amount of stigma experienced by an associated firm is expected to be weaker when top executives' share of equity ownership is higher in the associated firm. The above argument may be summarized in the following hypothesis:

H13: The ownership of inside directors in an associated firm is negatively correlated with the amount of stigma experienced by the firm.

CHAPTER V

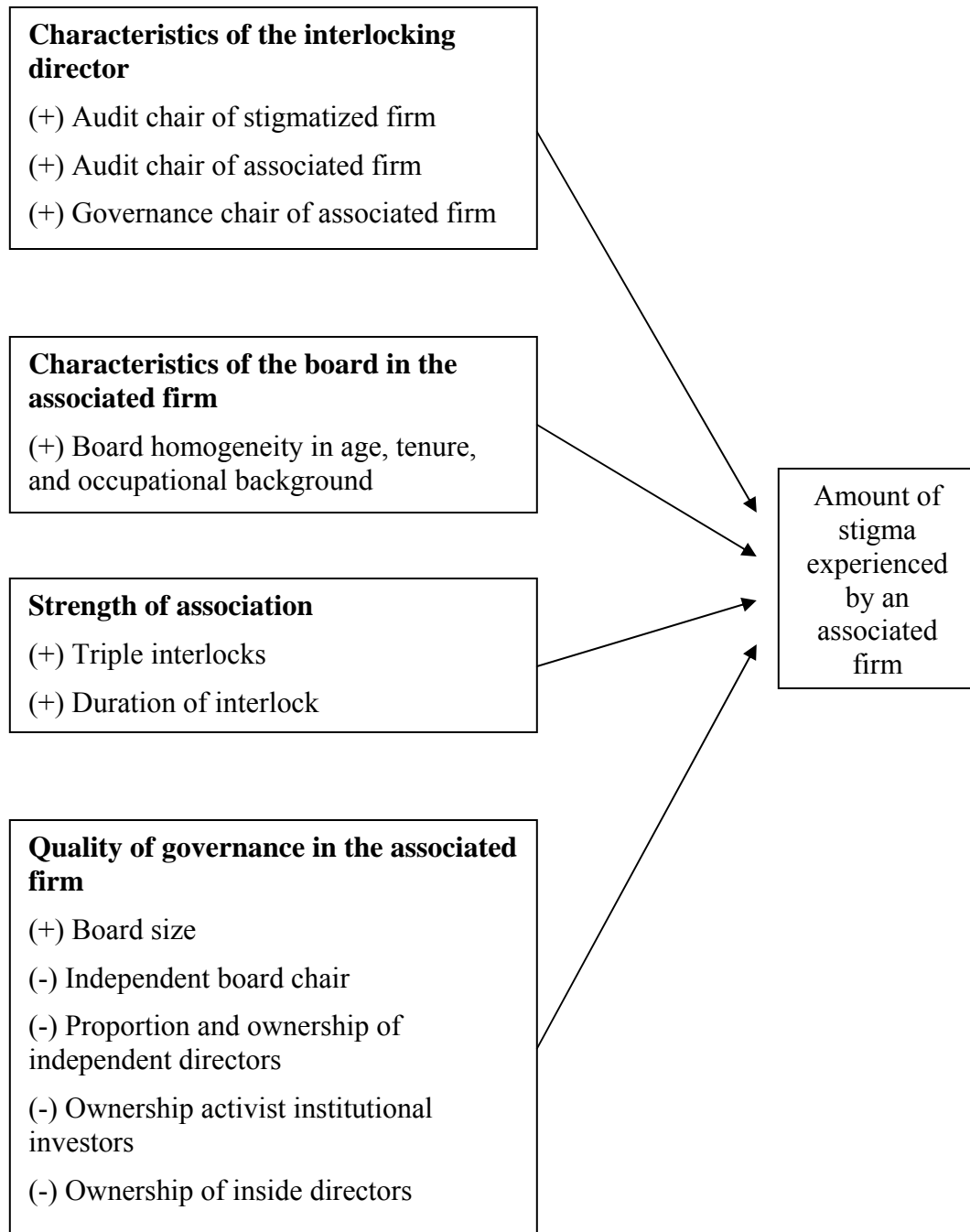
METHODOLOGY

This chapter presents the research methodology for testing the empirical model shown in Figure 1. I shall first discuss the sampling methodology of the study. Next, I highlight how stigma from alleged accounting scandals and stigma experienced by associated firms are measured. Thereafter, I explain how the four categories of independent variables are measured. Finally, I highlight the control variables that are included in the statistical analysis.

Sampling Methodology

The unit of analysis is the firm. There are two groups of firms for which data have to be collected. The first group is a list of publicly traded firms alleged to have adopted misleading accounting practices, and the second group is a list of publicly traded firms associated with the firms in the first list through director interlocks. I searched the Lexis-Nexis database for announcements of firms that were investigated by the SEC from 1998 to 2002 to generate the first list of firms alleged to have adopted misleading accounting practices. The SEC is an enforcement agency whose primary mission is to protect investors and maintain the integrity of the securities market. Public announcements that the SEC is investigating a firm's accounting practices are likely to trigger public interest and generate a response by investors.

FIGURE 1
Empirical Model



I chose a five-year period from 1998 through 2002 so that the more current alleged accounting scandals after the Enron debacle may be included with those alleged accounting scandals that occurred in the late 1990s. During the sample period, there are 143 reported incidences of publicly traded firms investigated by the SEC for potential accounting irregularities, such as disclosure violations as well as revenue, expense, and/or earnings manipulation. It is important to note that this population of firms investigated by the SEC may or may not subsequently be found guilty of adopting misleading accounting practices.

A random sample of 30 publicly traded firms was drawn from the population of 143 firms. The main criterion for including a firm into the sample of 30 is that each of these firms must have experienced stigma from the alleged accounting scandal. This is because the concept of stigma by association requires a firm accused of adopting misleading accounting practices to first experience stigma followed by the stigmatization of associated firms. The other criterion is that these 30 firms must have data in the CRSP database. After finalizing the sample of 30 firms, I searched the proxy statements of these firms to generate a second list of publicly traded firms that are associated with these firms through director interlocks. Specifically, an interlocking director must be on the board of the stigmatized and associated firms on the day that the firm accused of adopting misleading accounting practices is stigmatized. In total, there were 251 associated firms in the second list. Of the 251 associated firms, seven firms were subjected to prior investigations by the SEC for misleading accounting practices during the period of study. These seven firms were dropped from the sample because any

stigma experienced by these firms may be the direct consequence of an SEC investigation as opposed to stigmatization resulting from an association with firms accused of an accounting scandal. The remaining sample of 244 associated firms was used to test the hypotheses in this dissertation.

The Measurement of Stigma

The measurement of stigma at the firm level is important not only for hypotheses testing, but also for generating the random sample of 30 stigmatized firms. I used the negative cumulative abnormal returns (CARs) from financial-event study analysis as a proxy for stigma from alleged accounting scandals and the amount of stigma experienced by associated firms.

Past studies have used financial-event techniques to examine the reputational penalties of corporate crime (Alexander, 1999; Karpoff & Lott, 1993). A financial-event technique is an appropriate methodology to measure stigma from alleged accounting scandals for at least two reasons. First, stigma is conferred by various stakeholders, and hence may vary by stakeholders. I have focused this dissertation on one key stakeholder, the investor. Since financial-event studies examine investors' reaction to public announcements, this methodology is appropriate for the measurement of stigma from alleged accounting scandals. Second, alleged accounting scandals are unexpected and generate a lot of public interest when they occur. Because these alleged scandals have been extensively reported in the public presses, it is possible to identify the dates in which news of these alleged scandals are initially released to the public and the subsequent reports as the details of the allegations unfold.

The use of a financial-event study requires the identification of specific dates on which allegations of accounting scandals were made. I searched the Lexis-Nexis database for the first news article that alleges an accounting scandal for each of the 30 firms. Thereafter, I searched for other news articles that discuss the alleged accounting scandal for each of the 30 firms *up to 3 months from the date of the first article*. Extending the search to all relevant news articles for a period of 3 months takes into account that allegations of accounting scandal may evolve over time. Specifically, the first article that alleges an accounting scandal may be based on hearsay that merely indicates suspicion that the SEC has initiated an inquiry into the accounting practices of a firm. Hence, articles that report the possibility of a SEC investigation may precede the actual SEC's announcement that it has commenced an inquiry into a firm's accounting practices. Furthermore, the SEC enforcement process may begin with an informal inquiry that may or may not subsequently progress to a formal inquiry. Investors' reaction to these different types of SEC inquiries is likely to differ. Finally, earlier reports on alleged accounting scandals are often sketchy, with little details on how executives may have manipulated the accounting records. With the passage of time, these sketchy accounts are replaced by more detailed reports on how accounting records have been manipulated, the estimated amounts misstated, and the identity of the potential perpetrators. Investors are expected to react to this additional information that unfolds over time. All the above reasons point to allegations of accounting scandals as a process of social construction that occurs over time as opposed to simply relying on the initial article that alleges the scandal or the initial article that announces the SEC's

investigation. Hence, there is a need to search for other relevant articles to more adequately capture investors' stigmatization of the firm over time. The above steps generated a list of 30 firms, each firm with a set of specific dates on which reports of alleged accounting scandals had been published in news articles. The next step is to conduct a financial-event study analysis.

Central to a financial-event study is the measurement of an abnormal stock return (MacKinlay, 1997). The abnormal return (AR) is the actual ex post return on the share price of a firm minus the normal return on day t :

$$AR_{it} = R_{it} - E(R_{it})$$

where AR_{it} = abnormal return on the share price for firm i on event date t

R_{it} = actual ex post return on the share price for firm i on event date t

$E(R_{it})$ = normal return on the share price for firm i on event date t

The normal return, $E(R_{it})$, is defined as the expected return if the event had not taken place. The computation of the normal return requires an estimation window that is typically prior to and does not overlap with the event window (MacKinlay, 1997). I set the estimation window at 300 to 100 trading days prior to the event window. The normal return is computed using a market model of the normal share price behavior. The market model is a statistical model that relates the return of any given share to the return of a specified market portfolio:

$$E(R_{it}) = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

where α_i = the intercept term

β_i = the systematic risk of firm i

R_{mt} = the rate of return on a market portfolio of shares on event date t

ε_{it} = the error term, with $E(\varepsilon_{it}) = 0$ and $\text{var}(\varepsilon_{it}) = \sigma_\varepsilon^2$

Since the 30 firms alleged to have adopted misleading accounting practices are of varying sizes and may or may not be S&P500 firms, I used the value-weighted CRSP index (instead of the S&P500 index) as the market portfolio to derive α_i and β_i of the market model. The abnormal stock return (AR_{it}) is computed after determining the normal return, $E(R_{it})$, from the market model. The abnormal stock returns for each day in the event window is then summed up to arrive at the cumulative abnormal return (CAR) over the event window:

$$CAR_{i(t1, t2)} = \sum_{t=t1}^{t2} AR_{it}$$

where $CAR_{i(t1, t2)}$ is the cumulative abnormal return for firm i over the specified event window, day -1 to day 0 . A short two-day event window of $(-1, 0)$ is used because a financial-event study assumes that markets are efficient and that “any financially relevant information that is newly released to investors will be quickly (instantaneously) incorporated into stock prices” (McWilliams & Siegel, 1997: 630). The cumulative abnormal return for each firm over the two-day event window measures the extent to which a firm has been stigmatized. A positive (or negative but not statistically significant) cumulative abnormal return suggests that a firm did not experience stigma as

a result of the alleged accounting scandal, while a statistically significant negative cumulative abnormal return suggests otherwise.

The financial-event study as described above was conducted for each of the 30 firms, for *each* of the dates on which reports on alleged accounting scandals were published. Hence, each date for each firm is the event date for the analysis. A cumulative abnormal return was computed for *each* event date for *each* firm and the significance as well as the sign of the cumulative abnormal return is noted. To ensure that the cumulative abnormal return measures investors' reactions to alleged accounting scandals on an event date, confounding announcements one day before, on, and one day after the event date resulted in the removal of that date from further analysis (McWilliams & Siegel, 1997).

An event date was removed from further analysis if the cumulative abnormal return for the date was positive (or negative but not statistically significant). This is because a positive (or negative but not statistically significant) cumulative abnormal return on an event date suggests that a firm accused of an accounting scandal did not experience any stigma on that date. Since this dissertation examines the phenomenon of stigma by association, a firm accused of an accounting scandal must first experience stigma before other firms are stigmatized by association. Hence these dates were removed to prevent biases that may obscure that evidence of stigma by association between firms when the phenomenon indeed exists in networks of director interlocks. If the cumulative abnormal return for an event date was negative and statistically significant, that date was retained for further analysis. If none of the event dates for a

firm had a statistically significant negative cumulative abnormal return, then the firm was dropped and replaced by another firm randomly drawn from the remaining population and the financial-event study repeated.

The end result of the above analysis is a list of 30 stigmatized firms, each firm with at least one event date for which a statistically significant negative cumulative abnormal return was observed as a result of an alleged accounting scandal. The event date(s) for each of the 30 stigmatized firms provides the evidence that the firm has been stigmatized on the date(s) as a result of the alleged accounting scandal, and other firms may then experience stigma because of an association through the network of director interlock(s).

Financial-event studies have also been used to examine contagion effects between firms (Brewer et al., 2003; Jordan et al., 2000; Slovin, Sushka, & Polonchek, 1999). Hence, financial-event studies may also be used to examine the amount of stigma experienced by associated firms. The 30 stigmatized firms are linked to 244 associated firms through director interlocks. Each of these 30 stigmatized firms has a set of event date(s) over the 3-month period on which these firms have been stigmatized as a result of the alleged accounting scandal. To determine whether an associated firm is also stigmatized, a financial-event study was conducted on the associated firm using the event date(s) of the stigmatized firm connected to the firm through a director interlock. The presence of confounding announcements about an associated firm one day before, on, and one day after the event date(s) resulted in the removal of that date from further analysis for the same reasons as above. The *overall* cumulative abnormal return for *each*

associated firm over the two-day event window measures the extent to which the firm has been stigmatized. Hence, there will be one cumulative abnormal return computed for each associated firm that captures the market reaction for the associated firm across all event date(s) over the 3-month period. A positive (or negative but insignificant) cumulative abnormal return suggests that a firm did not experience stigma as a result of the association, while a significant negative cumulative abnormal return suggests otherwise. *A negative and statistically significant average cumulative abnormal return for the 244 associated firms provides support for hypothesis 1.*

Independent Variables

The magnitude of the cumulative abnormal returns for each associated firm also measures the amount of stigma experienced by the firm. Hypotheses 2 to 13 highlight four categories of variables that may influence the amount of stigma experienced by the associated firms. These hypotheses are tested in this study using fourteen independent variables. I discuss the data source of these independent variables and how each variable is measured in the order of the hypothesis number.

Hypothesis 2: Director prominence. Whether an interlocking director holds the position of audit committee chair in a stigmatized firm was measured using a dichotomous variable as follows:

A value of 1 indicates that the interlocking director is the audit committee chair in the stigmatized firm, and

A value of 0 indicates otherwise.

The value of this variable was obtained from the proxy statement of the stigmatized firm.

Hypothesis 3: Director prominence. Whether an interlocking director holds the position of audit committee chair in an associated firm was measured using a dichotomous variable as follows:

A value of 1 indicates that the interlocking director is the audit committee chair in the associated firm, and

A value of 0 indicates otherwise.

The value of this variable was obtained from the proxy statement of the associated firm.

Hypothesis 4: Director prominence. Whether an interlocking director holds the position of corporate governance committee chair in an associated firm was measured using a dichotomous variable as follows:

A value of 1 indicates that the interlocking director is the corporate governance committee chair in the associated firm, and

A value of 0 indicates otherwise.

The value of this variable was obtained from the proxy statement of the associated firm.

Hypothesis 5: Board homogeneity. Demographic homogeneity of an interlocking director with other board members in an associated firm was measured using three demographic attributes, namely, age, board tenure, and occupation background. Director's age and board tenure in an associated firm are continuous

variables. Occupation background is a dichotomous variable, coded as one if a director in an associated firm is concurrently an employed executive of a publicly listed firm, and zero otherwise.

Based on these three demographic attributes, three measures of demographic homogeneity were created for each associated firm. Since the unit of analysis is the associated firm, the demographic homogeneity of an interlocking director with each board member in an associated firm was aggregated across all board members to arrive at a measure for each firm. Two different formulas were used to compute the three measures of demographic homogeneity. For both age and board tenure, each interlocking director's demographic homogeneity with other board members was computed using a Euclidean distance measure adopted by prior researchers (O'Reilly, Caldwell, & Barnett, 1989; Westphal & Zajac, 1995):

$$\left[\frac{\sum_{j=1}^N (S_i - S_j)^2}{N} \right]^{1/2}$$

where S_i is the age or board tenure for interlocking director i , and S_j represents the age or board tenure of the j^{th} board member in an associated firm, and N represents the board size of the associated firm less the interlocking director.

The above formula measures the square root of the mean squared distance in age or board tenure of interlocking director i from all other board members in an associated firm. The squaring and square root operations make this measure less sensitive to the direction of an interlocking director's distance from the other board members, without

giving disproportionate weight to greater distances (O'Reilly et al., 1989). The larger the value, the greater the demographic difference between the interlocking director and other board members in an associated firm. I converted this measure into an indicator of demographic homogeneity by using the reciprocal of the computed value, where larger values now indicate greater demographic homogeneity in age or board tenure between the interlocking director and other board members in an associated firm.

For occupation background, I applied a variant of Blau's (1977) heterogeneity index, defined as $(P_i)^2$, where P_i is the proportion of board members (excluding the interlocking director) in an associated firm sharing the same demographic attribute i as the interlocking director. Hence, in an associated firm with a total of seven directors, if the interlocking director is an employed executive of a publicly traded firm, and five out of the remaining six board members in the associated firm are also employed executives, then P_i is $5/6$. Hence, the values of $(P_i)^2$ for occupation background homogeneity range from zero to one, with values closer to one indicating greater demographic homogeneity.

All three demographic attributes were obtained from an associated firm's proxy statements.

Hypothesis 6: Number of interlock types. The number of interlock types between a stigmatized and associated firm was measured using a dichotomous variable as follows:

A value of 1 indicates the presence of a triple interlock (i.e., neutral, sent, and received interlocks) between the associated and stigmatized firms, and

A value of 0 indicates otherwise.

The value of this variable was obtained from the proxy statements of the stigmatized and associated firms.

Hypothesis 7: Duration of director interlock. The duration of director interlock is a continuous variable. It was measured by counting the number of years that a director interlock present on the date(s) of the stigmatizing event has linked the stigmatized and associated firms. In the event that there is more than one director interlock type between the stigmatized and associated firms, the director interlock with the longest duration will be selected. The value of this variable was obtained from the proxy statements of the associated and stigmatized firms.

Hypothesis 8: Board size. Board size in an associated firm is a continuous variable. It was measured by counting the number of directors in the corporate board of an associated firm. The value of this variable was obtained from the proxy statement of the associated firm.

Hypothesis 9: Independent board chair. Whether the board chair is an independent director was measured using a dichotomous variable as follows:

A value of 1 indicates that the board chair in the associated firm is an independent director (see below for the definition of an independent director), and

A value of 0 indicates otherwise.

The value of this variable was obtained from the proxy statement of the associated firm.

Hypothesis 10: Proportion of independent directors. The proportion of independent directors was computed using the number of independent directors divided

by the total number of directors in the corporate board of an associated firm. I adopted the following classification of directors in a corporate board. Independent directors are representatives from other firms that do not have business relations with the company. Inside directors include those who work for the firm (active or retired) and their immediate family members. Affiliated directors include those who are closely associated with the firm but are not full-time employees, such as representatives from other firms that do business with the focal firm. The SEC requires public firms to disclose the identity of affiliated directors in their proxy statements (Daily et al., 1999). The required information to classify each director into one of the three categories was found in the proxy statement of the associated firm.

Hypothesis 11: Ownership of independent directors. The ownership of independent directors is the total percentage of shares held by all the independent directors of an associated firm. This information was obtained from the proxy statement of the associated firm.

Hypothesis 12: Ownership of activist institutional investors. The ownership of activist (or pressure-resistant) institutional investors is the total percentage of shares held by pension funds and professional investment funds of an associated firm. This information was obtained from the proxy statement of the associated firm.

Hypothesis 13: Ownership of inside directors. The ownership of inside directors is the total percentage of shares held by all inside directors (including the CEO) of an associated firm. This information was obtained from the proxy statement of the associated firm.

Control Variables

Other than the independent variables described above, I included the following control variables in the analysis.

Strength of the stigmatizing event. The strength of the stigmatizing event may also influence the amount of stigma experienced by an associated firm. Specifically, the stigma experienced by an associated firm may be higher when the firm is associated with another firm highly stigmatized by an alleged accounting scandal when compared with a firm that is less stigmatized by an alleged accounting scandal. To account for this possibility, I included the cumulative abnormal returns of the stigmatized firm as a control variable.

Relative size of the stigmatized and associated firms. The relative size of the stigmatized and associated firms may also influence the amount of stigma experienced by the associated firm. Larger firms are more visible and attract more attention than smaller-sized firms. As a result, large firms may generate more interests and feature more prominently in investors' impression formation process. Relative firm size was defined as the annual sales of the stigmatized firm less the annual sales of the associated firm. The annual sales figures (in billions) for the stigmatized and associated firms were extracted from COMPUSTAT.

Prior firm performance of associated firms. Firm performance of an associated firm was included as a control variable to take into account its potential impact on the amount of stigma experienced by the associated firm. Specifically, higher performing firms may be less stigmatized when compared with lower performing firms.

I measured firm performance using return on assets and extracted the data from COMPUSTAT.

Business relationships. An interlocking directorate between a stigmatized firm and an associated firm may represent some form of interdependence between the two firms. From a resource dependence perspective, director interlocks are one form of co-optation mechanism where interdependent firms seek to influence one another through representations on the board (Mizruchi, 1996). To account for the possibility that business relationships between a stigmatized firm and an associated firm may influence the amount of stigma experienced by the associated firm, I created a dummy variable with a value of one to represent the existence of business relations between the two firms, and zero otherwise. For instance, the dummy variable will have a value of one if an associated firm is a supplier to and/or customer of a stigmatized firm. The information for this dummy was obtained from the proxy statements of the stigmatized and associated firms.

Year of the stigmatizing event. Media interests in accounting scandals have varied during the period of the study from 1998 to 2002. A search in the Lexis-Nexis database using the key words “SEC” and “investigate or inquiry” revealed the following number of news articles during the following periods: 166 articles in 1998, 224 articles in 1999, 346 articles in 2000, 370 articles in 2001, and 1,483 articles in 2002. Hence, media reports of accounting scandals have been more extensive after the Enron debacle was made public in year 2000 when compared with earlier years. The media blitz may have changed investors’ expectations of and reactions to news of alleged accounting

scandals during the period of study. Changes in investors' expectations and reactions will influence the value of the cumulative abnormal returns for both the stigmatized and associated firms. To account for this possibility, I included the year of the stigmatizing event as a control variable.

Industry of the associated firms. Investors' reaction to the news of alleged accounting scandals may also differ according to the industry of the associated firms. For instance, associated firms in industries that sell services or finished goods directly to end-consumers are more visible to the public and may attract more attention when an alleged accounting scandal is announced. Therefore, associated firms in the airlines or beverage industries may experience more stigma when compared with associated firms in industries that largely provide business services or intermediate products, such as firms in the paper mill or metal forging industries. Furthermore, associated firms located in industries where firms are currently under SEC investigation may experience more stigma as a result of common industry membership. To account for these possibilities, I created dummy variables to capture the primary industry of the associated firms. All firms are classified into one of the following five industries using these firms' primary SIC codes: (1) Minerals and Construction, (2) Transportation, Communications, and Utilities, (3) Wholesale and Retail Trade, (4) Finance, Insurance, Real Estate, and Service, and (5) Manufacturing. Four dummy variables were included in the analysis with firms in the manufacturing industry assigned as the reference group.

CHAPTER VI

RESULTS

Table 1 presents the means, standard deviations, and zero-order correlations for the variables used in the study.

Financial-Event Study

I used financial-event study methodology to test hypothesis 1. Hypothesis 1 states that firms with director interlocks to other firms stigmatized by alleged accounting scandals will, on the average, experience stigma as a result of the association. This hypothesis is strongly supported. Table 2 presents two significance tests of the cumulative abnormal return as suggested by McWilliams and Siegel (1997). The first is a standard parametric significance test, wherein a test statistic is computed to test the null hypothesis that the cumulative abnormal return is equal to zero. The second reported significance test is the generalized sign test, wherein the null hypothesis for the test is that the fraction of positive (or negative) returns is the same as in the estimation period. The generalized sign test is more robust to outliers than the standard parametric test (Cowan, 1992). Both test statistics should be significant to support hypothesis 1 (McWilliams & Siegel, 1997).

TABLE 1
Descriptive Statistics and Correlation Among Study Variables

Variable ^a	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11
1 Stigma (Associated Firm)	1.09	2.81											
2 Audit Chair (Stigmatized Firm)	.16	.37	.17										
3 Audit Chair (Associated Firm)	.21	.41	.12	.26									
4 Governance Chair (Associated Firm)	.33	.47	.07	-.14	-.09								
5 Age Homogeneity	.12	.14	.05	.13	-.03	-.05							
6 Tenure Homogeneity	.28	.44	.09	.05	.07	.03	.00						
7 Occupation Homogeneity	.33	.20	.09	.19	.02	.00	.05	.11					
8 Triple Interlocks	.01	.11	.09	.05	.12	.00	.02	-.04	-.05				
9 Duration of Interlocks	4.94	4.72	-.17	.03	.03	-.03	-.07	-.20	-.04	.04			
10 Board Size	10.24	2.94	.10	-.08	-.15	-.10	-.08	-.13	-.16	.08	.05		
11 Independent Board Chair	.06	.23	.00	-.01	.04	.02	-.06	.15	.09	-.03	-.15	-.09	
12 Proportion of Independent Directors	.61	.21	-.10	-.14	-.08	-.01	.13	-.05	.03	.03	-.22	.17	.07
13 Ownership of Activist Institutional Investors	3.13	8.55	.03	.00	.05	.05	-.06	.05	-.03	-.04	-.07	-.08	.22
14 Ownership of Inside Directors	8.73	13.48	-.05	-.04	.06	.05	.01	.09	-.05	.20	-.04	-.11	-.03
15 Ownership of Independent Directors	8.85	14.25	-.05	.10	.08	-.08	-.10	.07	.07	-.04	.11	-.29	-.05
16 Stigma (Stigmatized Firm)	15.99	11.78	.08	.03	.13	.03	-.03	.11	.06	-.10	-.28	-.13	.00
17 Relative Firm Size	15.03	29.27	.01	-.10	-.12	.19	-.06	.08	.08	-.07	-.01	-.08	-.03
18 Firm Performance	-.02	.37	-.08	-.01	.00	-.11	.05	-.10	-.03	.01	.08	.11	-.32
19 Business Relationship	.24	.70	-.03	.07	.06	.00	-.01	.12	-.09	.07	.16	-.05	.12
20 Year	2000.89	1.66	-.06	-.14	-.06	.00	.08	-.06	-.11	-.11	-.08	.08	-.03
21 Minerals and Construction Industry	.05	.22	-.03	.10	.02	.00	.25	-.02	.16	-.03	-.05	-.09	-.06
22 Transportation, Communications, and Utilities Industry	.11	.31	.04	.06	.10	-.02	.00	.12	.07	-.04	-.03	.09	.03
23 Wholesale and Retail Trade Industry	.08	.27	.10	.07	.03	-.05	-.06	.02	-.06	-.03	.05	-.01	-.01
24 Finance, Insurance, Real Estate, and Service Industry	.33	.47	-.01	-.01	-.09	.01	-.07	.10	.01	-.08	-.08	.04	-.06

TABLE 1 (Continued)

Variable ^a	Mean	s.d.	12	13	14	15	16	17	18	19	20	21	22	23
13 Ownership of Activist Institutional Investors	3.13	8.55	.11											
14 Ownership of Inside Directors	8.73	13.48	-.15	-.04										
15 Ownership of Independent Directors	8.85	14.25	-.52	-.04	-.05									
16 Stigma (Stigmatized Firm)	15.99	11.78	.10	.09	.00	-.07								
17 Relative Firm Size	15.03	29.27	-.01	.16	-.01	-.04	.00							
18 Firm Performance	-.02	.37	-.02	-.20	.05	.03	-.02	-.02						
19 Business Relationship	.24	.70	-.31	-.05	.04	.01	-.19	-.01	-.26					
20 Year	2000.89	1.66	.18	.04	-.03	-.15	.00	.23	-.12	-.18				
21 Minerals and Construction Industry	.05	.22	-.06	-.04	.04	.07	.07	-.02	.05	-.02	-.07			
22 Transportation, Communications, and Utilities Industry	.11	.31	.12	.01	.02	-.17	.05	-.03	.01	.05	.05	-.08		
23 Wholesale and Retail Trade Industry	.08	.27	-.09	.21	-.01	.01	-.04	.05	-.03	.02	.01	-.07	-.11	
24 Finance, Insurance, Real Estate, and Service Industry	.33	.47	-.17	.04	-.05	.09	.07	-.02	-.04	.09	-.08	-.16	-.25	-.21

^a n = 244 firms. Correlations greater than .12 are significant at $p < .05$; correlations greater than .16 are significant at $p < .01$.

TABLE 2
Results of Financial-Event Study for the Associated Firms

Event window	Cumulative abnormal return (CAR) ^a	Negative:Positive ^b	Standard parametric t-test	Generalized sign test
-1, 0	-1.03%	399:214	-4.633***	-6.529***
-1	-0.36%	357:256	-2.310*	-3.133***
0	-0.67%	376:237	-4.241***	-4.669***
+1	-0.16%	369:244	-0.994	-4.104***
+2	-0.16%	330:283	-1.012	-0.951

^a The data are for announcement dates without confounding events. n = 613 event dates for 244 associated firms.

^b This column highlights the ratio of negative over positive abnormal returns for the 613 event dates.

* $p < .05$ and *** $p < .001$ for a one-tailed test.

The results indicate that when the 30 firms were stigmatized due to an alleged accounting scandal, the 244 associated firms concurrently experienced an average decline of 1.03% in cumulative abnormal returns over a 2-day event window. This decline is highly statistically significant as indicated by the results of the standard parametric t-test and the generalized sign test ($p < 0.001$). Table 2 shows that the average decline of 1.03% over the 2-day event window was due to a statistically significant decline of 0.36% one day prior to the event date and a statistically significant decline of 0.67% on the event date. Although the 244 associated firms also experienced an average decline of 0.16% one day after the event date, only the generalized sign test registered a significant change ($p < 0.001$) while the standard parametric t-test was insignificant ($p > 0.1$). In addition, the generalized sign test and the standard parametric t-test were not significant ($p > 0.1$) for the average decline of 0.16% two days after the event date. These findings provided some support for the initial decision to use the (-1, 0) 2-day event window for the analysis. This two-day window is also consistent with the recommendation of McWilliams and Siegel (1997) for studies that use the financial event methodology. Other than the results of the significance tests, Table 2 also indicates that out of the 613 event dates used for the 244 associated firms, 399 event dates (65%) registered a negative cumulative abnormal return while only 214 event dates (35%) had a positive cumulative abnormal return.

Further analysis (not reported in Table 2) revealed that 164 (67.2%) out of the 244 associated firms experienced a negative cumulative abnormal return over the 2-day event window. Forty-five (27.4%) out of these 164 associated firms registered

significant negative cumulative abnormal returns over the 2-day event window. These forty-five associated firms were interlocked with eighteen firms stigmatized due to an alleged accounting scandal. In other words, eighteen (60%) out of the thirty firms stigmatized due to an alleged accounting scandal were interlocked with at least one associated firm that experienced a significant negative cumulative abnormal return over the 2-day event window. Of the thirty stigmatized firms, eleven (37%) firms were interlocked with at least one associated firm that experienced a negative (but insignificant) cumulative abnormal return over the 2-day event window. Only one firm stigmatized due to an alleged accounting scandal was interlocked with an associated firm that experienced a positive (but insignificant) cumulative abnormal return over the 2-day event window.

Multiple Regression

The financial event study results indicate that associated firms experience different amounts of stigma through the network of director interlock(s). The analysis in this section attempts to explain the variation in the stigma experienced by the associated firms. I used ordinary least square (OLS) regression to test hypotheses 2 to 13. The regression model has fourteen independent variables, nine control variables, and a sample size of 244 observations. The cumulative abnormal returns for the 244 associated firms were reversed coded (i.e., multiplied by -1) and used as the dependent variable in the regression model. Hence, a more positive reverse-coded cumulative abnormal return is indicative of a higher stigma experienced by an associated firm.

A sample size of 244 firms achieves 86% statistical power to detect a small effect size of 0.10 when the potential for Type I error is set at 0.05. This is higher than the minimum of 80% recommended by Cohen (1987). In addition, Green (1991) suggests that the minimum sample size required to test for multiple correlations and individual predictors are “ $50 + 8m$ ” and “ $104 + m$ ” respectively, where m is the number of variables. Since there are twenty-three variables in the regression model, the minimum sample size required for testing multiple correlations and individual predictors are 234 and 127 respectively. The current sample size of 244 observations is above the minimum sample size suggested by Green (1991).

Multicollinearity did not pose a problem as the variance inflation factors for the OLS regression model ranged from 1.11 to 1.99, with a mean of 1.30 (Chatterjee, Hadi, & Price, 2000). All continuous variables in the model were centered prior to running the regression analysis. The reported t-tests results use one-tailed p-values for the independent variables and two-tailed p-values otherwise. Table 3 presents the results of the analysis.

TABLE 3
Results of Multiple Regression Tests on Stigma of the Associated Firms

Variable	Ordinary Least Squares		
	(1)	(2)	(3)
	β	s.e.	Robust s.e.
Intercept	-.10	.12	.11
Audit Chair (Stigmatized Firm)	.25	.18 †	.20
Audit Chair (Associated Firm)	.29	.16 *	.16 *
Governance Chair (Associated Firm)	.24	.13 *	.13 *
Age Homogeneity	.75	.45 *	.21 ***
Tenure Homogeneity	.16	.15	.12 †
Occupation Homogeneity	.38	.32	.31
Triple Interlocks	1.03	.56 *	.40 **
Duration of Interlocks	-.04	.01	.01
Board Size	.05	.02 *	.02 *
Independent Board Chair	-.21	.28	.31
Proportion of Independent Directors	-1.71	.40 ***	.49 ***
Ownership of Independent Directors	.01	.07	.08
Ownership of Activist Investors	-.16	.05 ***	.05 ***
Ownership of Inside Directors	-.12	.04 **	.04 **
<u>Control Variables:</u>			
Stigma (Stigmatized Firm)	.00	.01	.01
Relative Firm Size	.00	.00	.00
Firm Performance	-.31	.19	.38
Business Relationship	-.18	.10 †	.10 †
Year	-.04	.04	.04
Minerals and Construction Industry	-.42	.30	.28
Transportation, Communications, and Utilities Industry	.01	.21	.23
Wholesale and Retail Trade Industry	.38	.23	.26
Finance, Insurance, Real Estate, and Service Industry	-.16	.15	.15
Model F (df)	2.97 (23, 220) ***		3.97 (23, 220) ***
Overall R ²		.24	.24
Adjusted R ²		.16	

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

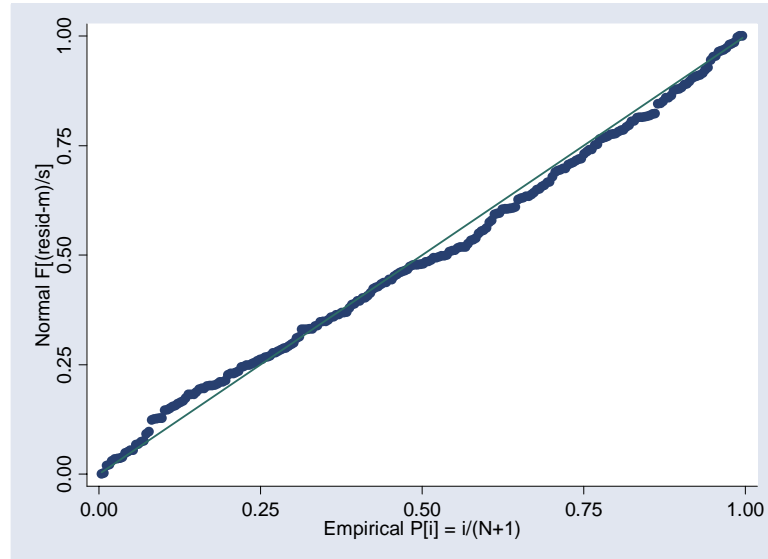
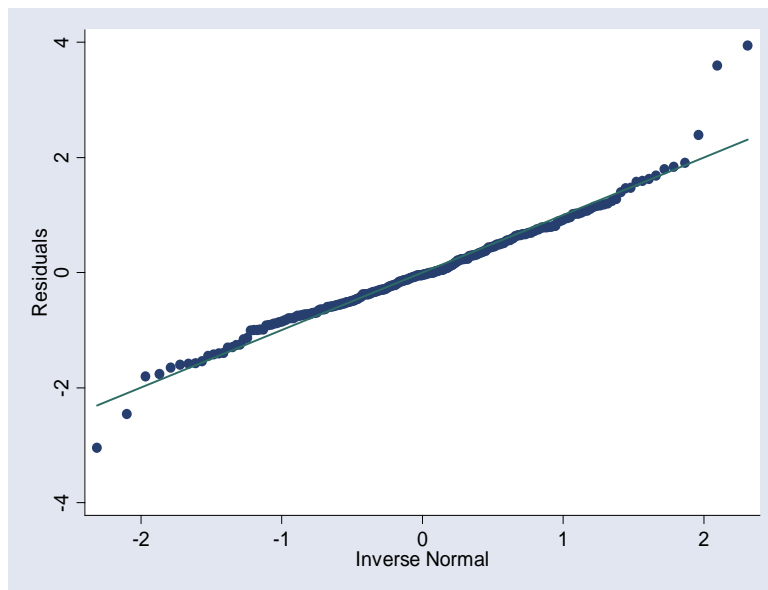
t-tests are one-tailed for the independent variables and two-tailed otherwise.

Column 1 presents the beta coefficients of the OLS regression model, with the corresponding standard errors listed in column 2. The overall model was highly significant ($F = 2.97, p < 0.001$) with a R^2 value of 0.24 and an adjusted R^2 value of 0.16. Prior to interpreting the results of the regression analysis, I performed two statistical tests to verify that the normality and variance of the residuals are consistent with the assumptions of the OLS model. First, I applied the Shapiro-Wilk test on the residuals to check for normality. When a distribution is normal, the values of skewness and kurtosis are zero. The test statistic rejected the null hypothesis of normal distribution ($W = 0.97, p < 0.001$). Further analysis revealed that the null hypothesis was rejected largely because of the kurtosis (kurtosis statistic = 5.51) rather than the skewness (skewness statistic = 0.50) of the residual's distribution. The problem with a positive kurtosis is that it produces an underestimate of the variance of a variable. Although the Shapiro-Wilk test rejected the null hypothesis of normal distribution, Tabachnick and Fidell (2001) suggest that looking at the shape of a distribution instead of using formal inference tests may be better for large samples. According to Tabachnick and Fidell, the standard errors for both skewness and kurtosis decrease with larger sample sizes, hence "the null hypothesis is likely to be rejected with large samples when there are only minor deviations from normality" (2001: 74). Miller (1997) also highlighted the importance of viewing the shape of a distribution instead of simply relying on formal inference tests on normality.

Figure 2 shows the normal p-p plot and Figure 3 shows the quantile-normal plot of the residuals. While the normal p-p plot puts the focus on the center of the

distribution, the quantile-normal plot emphasizes the tails of the distribution. Hence, simultaneously observing both plots provides a better picture of the residual's distribution. Both plots reveal that the deviation from normality is minimal. Furthermore, underestimates of the variance of a variable associated with the positive kurtosis of the residuals tend to disappear with samples of 100 or more cases (Waternaux, 1976). Since 244 observations were used in the regression model, the potential problem of positive kurtosis is mitigated and should not create any serious problems for statistical inferences. Figure 3 also reveals the presence of potential influential observations or outliers. I shall address the problem of influential observations later in this chapter.

Second, I carried out a Breusch-Pagan test on the residuals to verify that the OLS assumption of homoskedasticity was not violated. The test statistic rejected the null hypothesis of constant variance ($\chi^2 = 52.29, p < 0.001$), which suggests the presence of heteroskedasticity. To correct for the heteroskedasticity of the residuals, the standard errors in the regression model were replaced with the Huber-White robust standard errors (White, 1980, 1982). These robust standard errors are reported in column 3 (with the estimated beta coefficients unchanged as listed in column 1). The overall model remains highly significant ($F = 3.97, p < 0.001$) with a R^2 value of 0.24. I shall interpret the results using the robust standard errors in column 3.

FIGURE 2**Normal P-P Plot of Residuals****FIGURE 3****Quantile-Normal Plot of Residuals**

Hypotheses 2 to 4 suggest that the characteristics of an interlocking director have an impact on the amount of stigma. Hypothesis 2 predicted that an interlocking director holding the position of audit chair in a stigmatized firm is positively associated with the amount of stigma experienced by an associated firm. This hypothesis is not supported. The coefficient for audit chair of the stigmatized firm ($b = 0.25, p > 0.1$) is insignificant, hence not distinguished from zero. Hypothesis 3 predicted that an interlocking director holding the position of audit chair in an associated firm is positively associated with the amount of stigma experienced by the associated firm. This hypothesis is supported. The coefficient for audit chair of the associated firm is significant ($b = 0.29, p < 0.05$). Hypothesis 4 predicted that an interlocking director holding the position of corporate governance chair in an associated firm is positively associated with the amount of stigma experienced by the associated firm. This hypothesis is also supported. The coefficient for corporate governance chair of the associated firm is significant ($b = 0.24, p < 0.05$).

Hypothesis 5 suggests that the characteristics of the board in an associated firm have an impact on the amount of stigma experienced by the associated firm. Specifically, age, tenure, and occupation background homogeneity of an interlocking director with other corporate board members in an associated firm are positively associated with the amount of stigma experienced by the associated firm. The results provide some support for this hypothesis. The coefficients for age homogeneity ($b = 0.75, p < 0.001$) and tenure homogeneity ($b = 0.16, p < 0.1$) are significant. However, the coefficient for occupation background homogeneity ($b = 0.38, p > 0.1$) is insignificant, hence not distinguished from zero.

Hypotheses 6 and 7 suggest that the amount of stigma experienced by an associated firm will be higher when the firm has a stronger connection to a stigmatized firm through the network of director interlock(s). Hypothesis 6 predicted that associated firms with triple interlocks to stigmatized firms experience more stigma when compared with associated firms with single or dual interlocks to stigmatized firms. The results support this hypothesis. The coefficient for an associated firm with triple interlocks to a stigmatized firm is significant ($b = 1.03, p < 0.01$), suggesting that associated firms with triple interlocks (i.e., the presence of sent, received, and neutral interlocks) to stigmatized firms experienced the strongest stigma. Contrary to expectations, hypothesis 7 is not supported. Hypothesis 7 predicted that the duration of director interlocks between a stigmatized firm and an associated firm is positively associated with the amount of stigma experienced by the associated firm. However, the coefficient for duration of interlocks ($b = -0.04, p > 0.9$) is not significantly different from zero.

Hypotheses 8 to 13 suggest that corporate governance mechanisms in an associated firm have an impact on the amount of stigma experienced by the associated firm. Hypothesis 8 predicted that board size in an associated firm is positively associated with the amount of stigma experienced by the associated firm. The results support this hypothesis. The coefficient for board size in an associated firm is positive and significant ($b = 0.05, p < 0.05$). Hypotheses 10, 12, and 13 predicted that the proportion of independent directors (H10), the ownership of activist institutional investors (H12), and inside directors' ownership (H13) in an associated firm are negatively associated with the amount of stigma experienced by the associated firm. These hypotheses are

supported. The coefficients for the proportion of independent directors ($b = -1.71, p < 0.001$), ownership of activist institutional investors ($b = -0.16, p < 0.001$), and ownership of inside directors ($b = -0.12, p < 0.01$) are significant. Hypotheses 9 and 11 predicted that the presence of an independent board chair (H9) and the ownership of independent directors (H11) in an associated firm are negatively associated with the amount of stigma experienced by the associated firm. These hypotheses are not supported. The coefficient for independent board chair is insignificant ($b = -0.21, p > 0.1$). The coefficient for the ownership of independent directors is also insignificant ($b = 0.01, p > 0.9$).

The associations of the control variables with the dependent variable are also reported. The coefficient for the presence of a business relationship between a stigmatized firm and an associated firm is negative and significant ($b = -0.18, p < 0.1$), suggesting that an associated firm with existing business ties to a stigmatized firm experience lower amounts of stigma. The remaining four control variables are not significant ($p > 0.1$).

Robust Regression

Figure 3 suggests that the presence of potential influential observations or outliers may account for the results highlighted above. I used iteratively reweighted least squares (IRLS) robust regression to verify the plausibility that some of the reported relationships may be driven by influential observations in the sample (Byrd & Hickman, 1992; Neter, Wasserman, & Kutner, 1989). IRLS robust regression involves both robust estimation of the regression coefficients and the standard errors. This approach is useful in situations where there are large outliers and observations with large leverage values.

According to Neter et al. (1989), leverage values greater than $2p/n$ are considered influential observations, where p is the number of regression parameters in the model including the intercept term and n is the sample size. Since p is twenty-four and n is 244 in this study, observations with leverage values greater than 0.197 are considered influential. Twelve observations have leverage values exceeding 0.197. Hence, IRLS robust regression was used to determine if the reported results from the OLS regression were an artifact of influential observations in the sample.

IRLS robust regression uses weighted least squares to reduce the influence of outlying cases by employing weights that vary inversely with the size of the residual. The procedure uses two kinds of weighting, Huber weights and Biweights originated by Tukey (Beaton & Tukey, 1974; Huber, 1964). Table 4 reports the beta coefficients and the corresponding standard errors for the IRLS robust regression.

TABLE 4
Results of Robust Regression Tests on Stigma of the Associated Firms

Variable	IRLS Robust Regression	
	β	s.e.
Intercept	-.22	.11 *
Audit Chair (Stigmatized Firm)	.06	.16
Audit Chair (Associated Firm)	.39	.14 **
Governance Chair (Associated Firm)	.29	.12 **
Age Homogeneity	.82	.40 *
Tenure Homogeneity	.12	.13
Occupation Homogeneity	.20	.29
Triple Interlocks	.96	.51 *
Duration of Interlocks	-.03	.01
Board Size	.03	.02 †
Independent Board Chair	.13	.26
Proportion of Independent Directors	-.96	.36 **
Ownership of Independent Directors	-.08	.07
Ownership of Activist Investors	-.14	.04 ***
Ownership of Inside Directors	-.08	.04 *
<u>Control Variables:</u>		
Stigma (Stigmatized Firm)	.00	.00
Relative Firm Size	.00	.00
Firm Performance	-.33	.29
Business Relationship	-.07	.09
Year	-.05	.04
Minerals and Construction Industry	-.39	.27
Transportation, Communications, and Utilities Industry	-.12	.19
Wholesale and Retail Trade Industry	.33	.21
Finance, Insurance, Real Estate, and Service Industry	.01	.14
Model F (df)	2.53 (23, 219) ***	

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

t-tests are one-tailed for the independent variables and two-tailed otherwise.

Overall, the results of the IRLS robust regression provided some assurance that the earlier reported results are not attributed to the presence of influential observations. Hypotheses 3, 4, 6, 8, 10, 12, and 13 continue to be supported without any appreciable difference. Hypothesis 5 still receives some support. The coefficients for age homogeneity ($b = 0.82, p < 0.05$) and occupation background homogeneity ($b = 0.20, p > 0.1$) remain significant and insignificant respectively, as per the multiple regression analysis. However, the coefficient for tenure homogeneity ($b = 0.12, p > 0.1$), which is significant under the multiple regression analysis, is now insignificant. The remaining hypotheses (i.e., hypotheses 2, 7, 9, and 11) remain unsupported under the IRLS robust regression.

Logistic Regression

I performed a logistic regression to determine if the results are sensitive to how the dependent variable is measured. In the earlier analyses, I used the cumulative abnormal returns of the associated firms over the 2-day event window as a measure of the amount of stigma. I used a continuous dependent variable in the previous analyses because I wish to explain the effect size of the stigma. However, as noted in the previous section, only forty-five (18.4%) out of the 244 associated firms experienced significant stigma, i.e., registered a significant negative cumulative abnormal return over the 2-day event window. In this analysis, I used a dummy dependent variable (coded as 1 if an associated firm has a significant negative cumulative abnormal return over the 2-day event window; 0 otherwise) to check if the independent variables also explain whether

an associated firm experienced a statistically significant stigma or not. Table 5 presents the results of the logistic regression analysis.

Columns 1 and 2 of Table 5 present the beta coefficients and the corresponding odds ratio for each independent variable. Similar to Table 3, two types of standard errors are reported. Column 3 lists the standard errors without adjusting for heteroskedasticity, while column 4 lists the robust standard errors. There are no appreciable differences in the results between columns 3 and 4. Hence, I shall interpret the results using the robust standard errors in column 4.

The overall model is significant ($\chi^2 = 46.03, p < 0.001$) with a pseudo R^2 value of 0.24. The results are similar to those of the IRLS robust regression, with the following exceptions. Hypothesis 5 suggests that the age, tenure, and occupation background homogeneity of an interlocking director with other corporate board members in an associated firm are positively associated with the amount of stigma experienced by the associated firm. When the demographic homogeneity of board members in an associated firm is used to predict the likelihood that the associated firm is stigmatized, the coefficients for age homogeneity ($b = 0.03, p > 0.1$) and occupation homogeneity ($b = -0.74, p > 0.9$) are not significant. However, the coefficient for tenure homogeneity, which is not significant under the multiple regression and IRLS robust regression analyses, is now significant ($b = 0.79, p < 0.05$) when predicting the likelihood that an associated firm is stigmatized.

TABLE 5
Results of Logistics Regression Tests on Stigma of the Associated Firms

Variable	Logistic Regression			
	(1) β	(2) Odds Ratio	(3) s.e.	(4) Robust s.e.
Intercept	-2.73		.45 ***	.47 ***
Audit Chair (Stigmatized Firm)	.71	2.03	1.06 †	1.24
Audit Chair (Associated Firm)	1.16	3.20	1.56 **	1.47 **
Governance Chair (Associated Firm)	1.32	3.76	1.61 **	1.57 **
Age Homogeneity	.03	1.03	1.86	.89
Tenure Homogeneity	.79	2.21	.92 *	.80 *
Occupation Homogeneity	-.74	.48	.51	.48
Triple Interlocks	2.73	15.35	22.45 *	27.39 †
Duration of Interlocks	-.01	.99	.05	.05
Board Size	.11	1.12	.08 †	.08 †
Independent Board Chair	.03	1.03	1.01	1.02
Proportion of Independent Directors	-2.59	.08	.10 *	.09 *
Ownership of Independent Directors	-.38	.69	.19 †	.18 †
Ownership of Activist Investors	-.34	.71	.11 *	.11 *
Ownership of Inside Directors	-.49	.61	.09 ***	.09 ***
<u>Control Variables:</u>				
Stigma (Stigmatized Firm)	.01	1.01	.02	.02
Relative Firm Size	.01	1.01	.01	.01
Firm Performance	-.45	.64	.42	.27
Business Relationship	-.68	.51	.19 †	.16 *
Year	-.24	.78	.10 †	.11 †
Minerals and Construction Industry	.17	1.19	1.18	.97
Transportation, Communications, and Utilities Industry	-.43	.65	.50	.49
Wholesale and Retail Trade Industry	1.28	3.61	2.55 †	2.36 †
Finance, Insurance, Real Estate, and Service Industry	-.06	.94	.46	.48
Log-Likelihood			-88.97	-88.97
χ^2 (df)			55.35 (23) ***	46.03 (23) ***
Pseudo R ²			.24	.24

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

t-tests are one-tailed for the independent variables and two-tailed otherwise.

Hypothesis 11 predicted that the ownership of independent directors in an associated firm is negatively associated with the amount of stigma experienced by the associated firm. Although this hypothesis is not supported under the previous regression analyses, the coefficient for ownership of independent directors is now significant ($b = -0.38, p < 0.1$) when predicting the likelihood that an associated firm is stigmatized.

Overall, the results of the logistic regression provided some assurance that the earlier reported results are robust to an alternative measure of the dependent variable, and that the theoretical framework developed in this paper may also be used to explain whether an associated firm experienced a statistically significant stigma or not.

CHAPTER VII

DISCUSSION AND CONCLUSION

The primary objective of this dissertation is to examine whether firms associated by director interlock(s) with other firms stigmatized by an alleged accounting scandal also experience stigma. Specifically, firms stigmatized as a result of an alleged accounting scandal may, on the average, induce investors to stigmatize other firms connected by director interlocks. I drew from the social psychology literature to provide the theoretical thrust for examining the stigma construct at the inter-organizational level. In particular, I used theories on attribution, member-to-group inferences, and social exchange reciprocity to argue for the phenomenon of stigma by association between organizational entities. The results of the dissertation present strong evidence in support of the concept of stigma by association between organizations in the context of corporate accounting scandals.

I further adopted an information-based approach to argue that firms associated with stigmatized firms will experience different amounts of stigma, and some firms may experience no stigma at all. I applied social inference theories and agency theory to develop four categories of variables that may influence the amount of stigma experienced by associated firms. The results of the dissertation present strong evidence in support of most of the hypotheses. The characteristics of the interlocking director, the characteristics of the board, the strength of the director interlock, and the quality of

corporate governance in an associated firm appear to influence the amount of stigma experienced by the firm.

Discussion of Results

The results suggest that the formal position of an interlocking director influences the amount of stigma experienced by an associated firm. However, investors appear to only consider the position of the interlocking director in the associated firm. Specifically, the amount of stigma experienced by an associated firm increases when the interlocking director is the audit committee chair or the corporate governance committee chair in the associated firm. Whether the interlocking director is the audit committee chair of the firm accused of an accounting scandal did not have any impact on the amount of stigma experienced by an associated firm. One reason for this result is that investors are making inferences on the likelihood that associated firms have also deviated from some norms, whether accounting or non-accounting in nature. As a result, the formal positions of the interlocking director in the associated firm are more relevant for investors when making such inferences when compared with the interlocking director's formal positions in the stigmatized firm. For instance, even if the interlocking director is an audit committee chair of a firm accused of an accounting scandal, the ability of this director to influence investors' perceptions of an associated firm is limited if this director does not hold any position of power or influence in the associated firm. Since detecting deviations from accounting or non-accounting norms is within the purview of the audit and corporate governance committees respectively, investors are likely to focus their attention on the chair positions of these committees when forming

impressions about the associated firm. This explanation is consistent with the notion that “an individual attributes effects to those causal factors with which they covary, rather than to those from which they are relatively independent” (Harvey & Weary, 1984: 435).

The significant findings for the position of an interlocking director in an associated firm underscore the importance of the director for stigma by association to occur between firms. While holding directorship positions may engender an increase in a director’s reputation (Deutsch & Ross, 2003; Yermack, 2004), this study suggests that investors are likely to attribute blame and responsibility to the director in the context of unexpected negative outcomes, such as an alleged accounting scandal. Although a directorship position in publicly listed firms is unlike some occupations that are instinctively stigmatized (Ashforth & Kreiner, 1999), directors should be aware that organizational outcomes, good or bad, are largely attributed to them regardless of their ability to control these outcomes (Meindl, 1990; Meindl et al., 1985). When outcomes are bad, such as an alleged accounting scandal, investors may stigmatize the directors in the firm. The stigma may accompany the director to other organizations that he or she is associated with, and subsequently “infect” these other organizations. This phenomenon of stigma by association through the interlocking director is likely to expose the director to expost settling up consequences that may reduce the employability or reputation of the director in other settings.

The characteristics of the board in an associated firm also appear to influence the amount of stigma experienced by the associated firm. However, the results are mixed and less conclusive. For instance, the amount of stigma experienced by an associated

firm increases when the directors in the associated firm have higher age homogeneity. However, age homogeneity of corporate boards in associated firms does not predict the likelihood that associated firms are stigmatized. Instead, the tenure homogeneity of corporate boards in associated firms is positively correlated with the likelihood that firms are stigmatized by association with firms accused of an accounting scandal. Occupation background homogeneity did not influence the amount of stigma experienced by an associated firm or the likelihood that associated firms are stigmatized. One reason for the mixed results is that the use of demographic variables as proxies for investors' perceptions of directors' attitudes and dispositions is flawed. For instance, Priem, Lyon, and Dess (1999) highlighted the inadequacies of using demographic variables as proxies for psychographic variables because the use of demographic variables sacrifice construct validity for measurement reliability. Unfortunately, data on investors' perceptions of attitudinal and behavioral similarities of directors in associated firms are not available for analyses. I dropped these variables in subsequent analyses to verify if the results for the other hypotheses remain the same. Table 6 presents the beta coefficients for the OLS, IRLS robust, and logistic regressions.

TABLE 6
Results of Regression Analyses Without Homogeneity Variables

Variable	OLS with Robust s.e.	IRLS Robust	Logistic
	β	β	β
Intercept	-.13	-.24 **	-2.77 ***
Audit Chair (Stigmatized Firm)	.33 †	.11	.70
Audit Chair (Associated Firm)	.27 †	.38 **	1.17 **
Governance Chair (Associated Firm)	.23 *	.28 **	1.27 **
Triple Interlocks	1.00 *	.95 *	2.59 †
Duration of Interlocks	-.05	-.04	-.03
Board Size	.04 *	.02	.12 †
Independent Board Chair	-.16	.15	.01
Proportion of Independent Directors	-1.59 ***	-.88 **	-2.18 *
Ownership of Independent Directors	-.01	-.09 †	-.40 †
Ownership of Activist Investors	-.15 **	-.13 **	-.30 *
Ownership of Inside Directors	-.12 **	-.09 *	-.44 **
<u>Control Variables:</u>			
Stigma (Stigmatized Firm)	.00	.00	.01
Relative Firm Size	.00	.00	.01
Firm Performance	-.30	-.35	-.47
Business Relationship	-.18 †	-.06	-.51
Year	-.04	-.05	-.24 †
Minerals and Construction Industry	-.25	-.26	.02
Transportation, Communications, and Utilities Industry	.07	-.10	-.04
Wholesale and Retail Trade Industry	.37	.32	1.40 **
Finance, Insurance, Real Estate, and Service Industry	-.12	.04	.01
Model F (df)	2.61(20,223)***	2.69(20,222)***	
Overall R ²	.22		
Log-Likelihood			-90.83
χ^2 (df)			44.9(20)**
Pseudo R ²			.22

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

t-tests are one-tailed for the independent variables and two-tailed otherwise.

Overall, Table 6 reveals that the results reported in the previous chapter are not significantly different when the three board homogeneity variables are removed from the analyses. Hypotheses 3, 4, 6, 10, 12 and 13 continue to receive support. Hypothesis 8 predicted that board size in an associated firm is positively associated with the amount of stigma experienced by the associated firm. Although this hypothesis receives support under OLS regression using robust standard errors ($b = 0.04, p < 0.05$), the hypothesis is not supported under the IRLS robust regression ($b = 0.02, p > 0.1$). In addition, board size in associated firms significantly predicts the likelihood that associated firms are stigmatized under the logistic regression ($b = 0.12, p < 0.1$). Hypothesis 11 predicted that the ownership of independent directors in an associated firm is negatively associated with the amount of stigma experienced by the associated firm. Although this hypothesis is not supported under OLS regression using robust standard errors ($b = -0.01, p > 0.1$), this hypothesis receives support under the IRLS robust regression ($b = -0.09, p < 0.1$). Furthermore, the ownership of independent directors in associated firms also significantly predicts the likelihood that associated firms are stigmatized under the logistic regression ($b = 0.40, p < 0.1$).

The strength of the director interlock also influences the amount of stigma experienced by an associated firm. As expected, associated firms with triple interlocks to firms accused of accounting scandals experience more stigma when compared with associations based on single or dual interlocks. However, contrary to expectations, the duration of interlocks between firms has no impact on the amount of stigma experienced by an associated firm. One possible explanation for this result is that an interlocking

director with long tenure indicates high quality performance and good reputation. The blame of the alleged scandal appears to be placed on the relatively unknown, untested directors whose tenure has been relatively short. Another possible explanation is that the duration of interlocks between firms does not feature prominently in investors' perceptions because it is not vivid or readily available. Harvey and Weary (1984) highlighted that the salience of stimuli influences the attribution of causality, an assertion that is consistent with the findings of Taylor and Fiske (1975). Since the duration of interlocks between two firms is not directly reported by publicly listed firms, investors may be less willing to expend effort to determine the duration, but instead rely on other information cues that are relatively easy to recall, such as the number of interlock types between firms (Smith & Miller, 1979; Taylor & Thompson, 1982).

Finally, the quality of corporate governance in an associated firm appears to influence the amount of stigma experienced by the associated firm. As predicted, board size, the proportion of independent directors, the ownership of activist institutional investors, and the ownership of inside directors in an associated firm influence on the amount of stigma experienced by the firm. Although the ownership of independent directors does not influence the amount of stigma experienced by associated firms, it does predict the likelihood that associated firms are stigmatized. The independence of the board chair in an associated firm does not have any impact on the amount of stigma experienced by or the likelihood of stigmatization of the association firm. One possible reason for the insignificance of the independent board chair variable is that governance mechanisms can act as substitutes for one another (Coles, McWilliams, & Sen, 2001;

Rediker & Seth, 1995). In other words, when investors formulate impressions on the likelihood that associated firms have deviated from some norms, they may pay more attention to the overall quality of governance in the associated firms. The independence of a board chair may have little bearing on the overall quality of a firm's governance mechanisms because having a CEO as the board chair may be beneficial to a firm under certain circumstances (Kang & Zardkoohi, 2005). When the CEO is allowed to concurrently hold the board chair position, other governance mechanisms, such as a higher ownership of inside directors or a higher proportion of independent directors, may be enhanced to substitute for the lack of independence in the board chair.

The Mechanism of Stigma by Association

Several researchers have lamented the need for further inquiry into the mechanism for stigma by association (Goldstein & Johnson, 1997; Jones et al., 1984). According to Neuberg et al. (1994), stigma by association may occur when individuals associated with stigmatized individuals are perceived to have also deviated from norms, or alternatively, individuals are stigmatized simply because of their association with stigmatized individuals and not because the former is perceived to have deviated from any norms. The results of this dissertation offer empirical evidence in support of the former mechanism for stigma by association between organizations in the context of corporate accounting scandals. If firms are simply stigmatized because of their association with other stigmatized firms, then we would expect the duration of interlocks, a proxy for the strength of association, to have a significant positive influence on the amount of stigma experienced by the associated firm. The results of this study

failed to support the hypothesis. Instead, associated firms experienced more stigma when the interlocking directors hold the audit or governance committee chair positions in the associated firm, or when the governance mechanism of the associated firm is weak. These findings are consistent with the assertion that investors stigmatize associated firms because of their perception that these firms may have deviated from some norms, whether accounting or non-accounting in nature.

However, this study also found that associations based on triple interlocks result in more stigma experienced by associated firms when compared with associations based on single or dual interlocks. Since the number of interlock types is also a proxy for the strength of association, this result may be interpreted as firms experiencing stigma simply because of their association with firms accused of accounting scandals. However, the finding for the number of interlock types may also be interpreted as investors stigmatizing associated firms because of their perception that these firms may have deviated from some norms. This is because the greater the number of interlock types between firms, the more likely associated firms may have come to know of and adopt misleading accounting practices. Furthermore, investors are more likely to perceive ineffective board vigilance in an associated firm if three interlocking directors sit on the board of the firm when compared with the case of one or two interlocking directors on the board of the associated firm.

Overall, the results of this dissertation suggest that associated firms are stigmatized because investors perceive the likelihood that these firms may have deviated from some norms, rather than simply because of an association with a firm accused of an

accounting scandal. In other words, the presence of an association with a firm accused of an accounting scandal is a necessary but insufficient condition for associated firms to experience stigma.

I have focused this dissertation on the network of interlocking directors as a channel in which associated firms experience stigma. As highlighted earlier, director interlocks is only one way in which firms are associated with each other. While it is possible that other channels of association, such as common industry membership or strategic alliances, may facilitate the phenomenon of stigma by association between firms, the relevance of the different channels of association hinges upon the mechanism by which stigma by association occurs. If associated firms are stigmatized because investors perceive these firms as having deviated from some norms, then the appropriate channel for associated firms to experience stigma must be conducive for investors to form such perceptions. For instance, the network of interlocking directors is a relevant channel of association because investors' attribution of blame or responsibility on the interlocking director(s) for the alleged accounting scandal is likely to lead to the perception that associated firms may have deviated from some norms. Likewise, common industry membership may be another relevant channel of association to the extent that the alleged misleading accounting practice may be perceived as an industry practice which was not formerly challenged by the regulatory agencies. However, associations based on strategic alliances may be less likely to result in stigma by association in the context of accounting scandals since alliances are largely formed for purposes of creating or sustaining a firm's competitive advantage (Hoskisson, Hitt, &

Ireland, 2004). Clearly, future work on the link between the channels of association between firms and the phenomenon of stigma by association is warranted.

Implications for Theory and Practice

The findings have several implications for research and practice. First, although researchers have examined firm stigma from corporate scandals or bankruptcy (Alexander, 1999; Karpoff & Lott, 1993; Sutton & Callahan, 1987), no study has considered the plausibility of stigma by association between organizations. To my knowledge, this is the first study that applied theories in social psychology to explain the phenomenon of stigma by association at the inter-organizational level.

Second, director interlocks between firms may have the unintended consequence of facilitating the process of stigma by association between firms. Extant studies have primarily focused on the positive or intended consequences of director interlocks, such as co-opting elements of the environment or as conduits of information flow (Mizruchi, 1996). This study adopted a different approach by raising awareness that director interlocks may have unintended consequences. Specifically, a focal firm's market value is influenced by the characteristics of other firms to which the focal firm has a connection with via director interlocks. If a focal firm has a director interlock with another firm that has experienced a stigmatizing event, then the focal firm may also experience a loss in market value as a result of associations through the network of director interlock(s). Furthermore, while extant studies found evidence that an organizational image is closely intertwined with the image of its corporate leaders (Sutton & Callahan, 1987), this study further suggests that an executive's image at the

place of employment may spill over to other firms that appoint the executive as a director. Hence, while Sutton and Callahan (1987) found that a discrediting predicament, such as corporate bankruptcy, may spoil the image of a bankrupt firm's top executives, this study provides evidence that an executive with a spoiled image may cause a decline in the market value of a firm that is associated with the executive. Such spillover effects arising from the image of corporate leaders has received little research attention.

Third, the results of this dissertation have several implications for public policy makers and practitioners. Public policy makers should be aware that the social cost of accounting scandals may have been previously underestimated given that stigma from alleged scandals may also be experienced by associated firms. In other words, investors' losses from alleged accounting scandals are not limited to the firms accused of having adopted misleading accounting practices. Rather, investors in associated firms also experience a loss in wealth as a result of these firms' associations with firms accused of an accounting scandal. The findings of this dissertation provide an important insight on the consequences of accounting scandals given that the social costs of these scandals should be a salient factor in public policy decisions regarding the extent of regulation or the intensity of regulatory enforcement.

Finally, the phenomenon of stigma by association through the network of director interlock(s) has two implications for the upper echelons of publicly traded firms. First, upper echelons of publicly traded firms may benefit from this dissertation by increasing their awareness of passive factors that influence the value of a firm. Although it is widely understood that effective strategic actions and responses create value for

investors, the possibility that existing director interlocks to stigmatized firms can decrease investor wealth is not obvious. An increase in awareness facilitates the implementation of effective responses that mitigate the negative consequences of stigmatization. For instance, increasing the quality of corporate governance may lessen the impact of stigma. Investors also appear to consider the formal positions of interlocking directors in board committees when making judgments on stigma by association. Hence, instituting the practice of rotating board members with formal positions in board committees may also help firms decrease the incidence or amount of stigma experienced by an associated firm.

Second, the nominating committees of publicly traded firms must carefully review the composition of corporate boards. Not only should current and potential directors be evaluated based on their ability and willingness to maximize investors' wealth, the evaluation should also include a list of firms that each director is associated with through the director interlock channel. Current or potential directors linked to firms that are experiencing discrediting predicaments, such as alleged corporate scandals, may lead to a decline in investors' wealth. Hence, terminating or not establishing director interlocks with firms stigmatized by alleged accounting scandals may decrease the incidence or amount of stigma experienced by a firm. Furthermore, appointing directors that increase board diversity in demographic attributes, such as age and tenure, may also lessen the impact of stigma.

Limitations and Future Research

The present study has its limitations. First, although event study methodology has been extensively used in previous research in multiple disciplines such as economics, management, and finance, the usefulness of this technique is heavily dependent on a set of strong assumptions, such as efficient markets and the absence of confounding effects during the event window (McWilliams & Siegel, 1997). To address this limitation, I chose a short event window in keeping with the assumption of market efficiency. Furthermore, I reduced the possibility of alternative explanations by excluding announcements with confounding events. Second, although I examined stigma from alleged accounting scandals over a five year period, the data remains cross-sectional and precludes statements of causality between the dependent and independent variables. Third, I only focused on stigmatization of a firm by one stakeholder group, the investors. To the extent that other stakeholder groups also stigmatize associated firms, the results of this dissertation understate the extent of stigmatization that occurs for these firms. For instance, it is plausible that suppliers, customers, joint venture partners, or employees of an associated firm may subsequently disassociate themselves from the firm due to the stigma. The subsequent loss in human capital and business partners as well as the resulting decline in the market value of the associated firm would not have been fully captured if these other reactions did not take place on the same event dates used in this study.

Future research may extend the current work in one of the following ways. First, I have restricted the scope of this dissertation to associations based on director

interlocks. Since firms may be associated through alternative channels such as strategic alliances, supplier-customer relations, or common industry membership, future research may broaden the scope of inquiry by examining stigmatization through other channels of association. For instance, when Enron was stigmatized as a result of adopting misleading account practices, other firms such as Dynegy or El Paso may also experience stigma as a result of common membership in the energy trading industry. An interesting research endeavor may be to examine whether different channels of association have a different impact on the amount of stigma experienced by an associated firm. Just as silver is a better conductor of electricity than copper, it is conceivable that some channels of association may result in greater stigmatization of an associated firm when compared with other channels. Second, future research may also examine whether the attribution of blame to the interlocking directors for the alleged accounting scandal may lead to potential settling up consequences such as reduced compensation, damaged reputation, or reduced employability of these directors in the future. Third, while this study has examined stigma by association in the context of accounting scandals, future research may examine stigma by association from other discrediting predicaments, such as corporate bankruptcy.

Finally, although there is an abundance of research that examines a firm's response strategy to a stigmatizing event, there is little research on response strategies to stigma by association. The public press has reported that firms do take actions to avoid the negative consequences of guilt by association because of their relationships with stigmatized firms (Karpovich, 2002; King, 1991). One possible response peculiar to the

management of stigma by associated firms is the act of terminating the association to stigmatized firms. For instance, Suchman states that “legitimation crises tend to become self reinforcing feedback loops, as social networks recoil to avoid guilt by association...the risk of negative contagion may drive even long-standing allies to disassociate themselves from a troubled counterpart and to engage in ritualistic sniping and ostracism” (1995: 597). Future research may examine the effectiveness of various strategies in mitigating the impact of stigma by association. Furthermore, given that stigma by association is a passive event which may be overlooked by top executives, another interesting research avenue will be to study the factors that determine the speed with which firms implement a response strategy to mitigate the negative consequences of such stigma.

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APPENDIX

List of Companies in the Sample

Number	Stigmatized firms	Associated firms
1	AMERICAN INTERNATIONAL GROUP INC	21ST CENTURY INSURANCE GROUP BAXTER INTERNATIONAL INC CONSOLIDATED EDISON INC J P MORGAN CHASE & CO T R W INC TRANSATLANTIC HOLDINGS INC
2	ANDRX CORP	CHESAPEAKE BIOLOGICAL LABS INC CYTOCLONAL PHARMACEUTICS INC
3	AON CORP	A A R CORP BANDAG INC CLICK COMMERCE INC EXELON CORP G A T X CORP HELMERICH & PAYNE INC INFORTE CORPORATION MOLEX INC NISOURCE INC SKYLINE CORP TRIBUNE COMPANY
4	BREED TECHNOLOGIES INC	EDGE PETROLEUM CORP HIGHLANDS INSURANCE GROUP INC MOHAWK INDUSTRIES INC NUEVO ENERGY CO

Number	Stigmatized firms	Associated firms
5	C M S ENERGY	APOGENT TECHNOLOGIES INC ARIAD PHARMACEUTICALS INC CITIGROUP INC COMERICA INC CUMMINS ENGINE INC PAREXEL INTERNATIONAL CORP REPTRON ELECTRONICS INC ROCKWELL AUTOMATION INC SCHULMAN A INC STEELCASE INC STRYKER CORP UNISYS CORP WESCO INTERNATIONAL INC WHITMAN EDUCATION GROUP INC
6	CENDANT CORP	ARCHER DANIELS MIDLAND CO BEAR STEARNS COS INC C S X CORP CAPITAL TRUST INC CORNERSTONE PROPERTIES INC FERROFLUIDICS CORP GENCORP INC INTERCHANGE FINANCIAL SRVCS CORP INTERNATIONAL FLAVORS & FRAG INC MEGO FINANCIAL CORP MEGO MORTGAGE CORP N F O RESEARCH INC NEW JERSEY RESOURCES OMNICOM GROUP INC OPINION RESEARCH CORP QUEBECOR PRINTING INC RIDDELL SPORTS INC T B WOODS CORP WALLACE COMPUTER SERVICES INC
7	COMPUTER ASSOCIATES INTERNATIONAL INC	DELPHI FINANCIAL GROUP INC MORTON INDUSTRIAL GROUP INC RECKSON ASSOCIATES REALTY CORP TOYS R US INC TRANSWORLD HEALTHCARE INC

Number	Stigmatized firms	Associated firms
8	DUKE ENERGY CORP	AAIPHARMA INC ALLIED WASTE INDUSTRIES INC AUTONATION INC DEL BOCA RESORTS INC DANA CORP DELTA APPAREL INC DELTA WOODSIDE INDS INC EXTENDED STAY AMERICA INC EXXON MOBIL CORP GENERAL MILLS INC NEWFIELD EXPLORATION CO PALOMAR MEDICAL TECHNOLOGIES INC PHOENIX COS INC SONOCO PRODUCTS CO SOUTHTRUST CORP WACHOVIA CORP
9	DYNEGY INC	A M X CORP ALLSTATE CORP C V S CORP CAPITAL TRUST INC COOPER INDUSTRIES LTD EQUITY OFFICE PROPERTIES TRUST EQUITY RESIDENTIAL PROP TRUST IDINE REWARDS NETWORK INC LINCOLN NATIONAL CORP MANUFACTURED HOME COMMUNITIES PAC WEST TELECOMM INC VENTAS INC
10	EFUNDS CORP	COX COMMUNICATIONS INC SMARTDISK CORP
11	EL PASO CORP	AMSOUTH BANCORPORATION C K E RESTAURANTS INC DUN & BRADSTREET CORP GALYANS TRADING CO INC HERCULES INC HUBBELL INC INGRAM MICRO INC PENN TRAFFIC CO PRAXAIR INC TRANSOCEAN SEDCO FOREX INC

Number	Stigmatized firms	Associated firms
12	ELECTRONIC DATA SYS CORP	AMERICAN WATER WORKS INC BELO A H CORP J P MORGAN CHASE & CO MARSH & MCLENNAN COS INC PEPSICO INC ROCKWELL AUTOMATION INC
13	ENRON CORP	C C C INFORMATION SVCS GROUP INC CALIFORNIA WATER SERVICE CO GROUP 1 AUTOMOTIVE INC IMCLONE SYSTEMS INC LILLY ELI & CO LOCKHEED MARTIN CORP MOTOROLA INC NATCO GROUP INC NEWPOWER HOLDINGS INC OWENS CORNING QUALCOMM INC
14	ENTERASYS NETWORKS INC	AIRNET SYSTEMS INC ANSWERTHINK INC DANKA BUSINESS SYSTEMS PLC RYDER SYSTEMS INC UNISYS CORP
15	FIFTH THIRD BANCORP	ANDERSONS INC ANTHEM INC CINCINNATI FINANCIAL CORP CINERGY CORP CINTAS CORP LIMITED INC STANDARD REGISTER CO STEELCASE INC TRIBUNE COMPANY

Number	Stigmatized firms	Associated firms
16	INTERPUBLIC GROUP COS INC	AMBAC FINANCIAL GROUP INC EXPRESS SCRIPTS INC INTERNATIONAL FLAVORS & FRAG INC PENNZOIL QUAKER STATE CO PITNEY BOWES INC PRIMEDIA INC
17	LANTRONIX INC	QLOGIC CORP
18	LUCENT TECHNOLOGIES INC	ALCOA INC AMERICAN EXPRESS CO AMERICAN INTERNATIONAL GROUP INC CUMMINS ENGINE INC JOHNSON & JOHNSON NEW YORK TIMES CO NOVELL INC PEPSICO INC SARA LEE CORP
19	MERCK & CO INC	BECKMAN COULTER INC CELL GENESYS INC CHARLES RIVER LABS INTL INC COCA COLA ENTERPRISES INC FORTUNE BRANDS INC FRANKLIN RESOURCES INC GENERAL MILLS INC J P MORGAN CHASE & CO MILLIPORE CORP PUBLIC SERVICE ENTERPRISE GROUP
20	NICOR INC	ANDREW CORP B W A Y CORP BORGWARNER INC CATERPILLAR INC FIRST INDUSTRIAL REALTY TR INC NATIONAL FUEL GAS CO VALMONT INDUSTRIES INC

Number	Stigmatized firms	Associated firms
21	PEREGRINE SYSTEMS	DIAMOND OFFSHORE DRILLING INC DRUGSTORE COM INC INCYTE GENOMICS INC N E O N SYSTEMS INC R C N CORP STERICYCLE INC VALERO ENERGY CORP
22	PNC FINANCIAL SERVICES	ALLEGHENY TECHNOLOGIES AMERADA HESS CORP BLACKROCK INC CLOROX CO DOMINION RESOURCES INC EQUITABLE RESOURCES INC HEINZ H J CO HILB ROGAL & HAMILTON CO INTERNATIONAL PAPER CO MEDTRONIC INC P P G INDUSTRIES INC U S AIRWAYS GROUP INC VERIZON COMMUNICATIONS WATER PIK TECHNOLOGIES
23	QWEST COMMUNICATIONS INTERNATIONAL INC	ALARIS MEDICAL INC CHEMICAL FINANCIAL CORP FOREST OIL CORP JUNIPER NETWORKS INC MAIL WELL INC NORDSON CORP PEPSI BOTTLING GROUP INC PITNEY BOWES INC REDBACK NETWORKS INC SEALED AIR CORP UNITED TECHNOLOGIES CORP
24	RITE AID CORP	C N A FINANCIAL CORP FIREARMS TRAINING SYSTEMS INC LOEWS CORP MEDITRUST CORP SEQUA CORP TRIARC COMPANIES INC UNITED RENTALS INC ZENITH NATIONAL INSURANCE CORP

Number	Stigmatized firms	Associated firms
25	STILLWATER MINING CO	A S A LTD CLEVELAND CLIFFS INC MERIDIAN GOLD INC
26	SUNBEAM CORP	CIRCON CORP NUEVO ENERGY CO VALASSIS COMMUNICATIONS INC
27	SUNTRUST BANKS INC	CHATTEM INC COCA COLA CO COCA COLA ENTERPRISES INC CRAWFORD & CO DAN RIVER INC GA DIMON INC DOVER DOWNS ENTERTAINMENT INC EQUIFAX INC F P L GROUP INC FLOWERS INDUSTRIES INC GENUINE PARTS CO GEORGIA PACIFIC CORP HARLAND JOHN H CO HAVERTY FURNITURE COS INC HUGHES SUPPLY INC POE & BROWN INC PROTECTIVE LIFE CORP PROVIDENT LIFE & ACC INS CO AMER R P C INC ROCK TENN CO ROLLINS INC SEARS ROEBUCK & CO SOUTHERN CO TORCHMARK CORP
28	TAKE TWO INTERACTIVE SOFTWARE INC	ANDERSEN GROUP INC
29	TENET HEALTHCARE	A R V ASSISTED LIVING INC JONES APPAREL GROUP INC NORTHEAST UTILITIES

Number	Stigmatized firms	Associated firms
30	ZIONS BANCORP	MERITAGE CORPORATION QUESTAR CORP RIGHTCHOICE MANAGED CARE INC SKYWEST INC TENNECO AUTOMOTIVE INC

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EDUCATION

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RESEARCH

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