Portfolio Restructuring and Organizational Failure: Does Business Relatedness Matters?

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This study examines how portfolio restructuring strategies affect firm survival in the presence of the threat of failure. Using business relatedness as a criterion, we categorize firm acquisition and divestiture into four generic strategic options: escalation (unrelated acquisition), augmentation (related acquisition), downscoping (unrelated divestiture), and abandonment (related divestiture). Dawning on the resource-based view of the firm and agency theory, we predict that organizational failure is positively associated with the escalation and abandonment options. Conversely, we predict that organizational failure is negatively associated with the augmentation and downscoping options. A sample of firms engaging in acquisitions and divestitures five years preceding their Chapter 11 bankruptcy filings is collected to test the four hypotheses. The results suggest that organizational failure is avoidable if firms choose proper restructuring strategies, even after the bankruptcy filing.

Keywords: the resource-based view, agency theory, organizational failure, portfolio restructuring, strategic options

In the organization literature on decline and failure, a central question is how "organizations adapt to conditions of organizational decline" (McKinley, 1993: 1). This question has long created theoretical controversies in the literature. One theoretical controversy is associated with the relationship between corporate restructuring and organizational failure. Ecology theorists posit that organizations fail because strong inertial forces resist change (e.g., restructuring or refocusing) in organizational strategy and structure (Hannan & Freeman, 1977). From this theoretical view, firms fail because they are unable to make strategic adaptations under conditions of organizational decline. The "threat-rigidity" model developed by Staw, Sandelands and Dutton (1981) also suggests that organizational decline has an inhibiting effect on adaptation, because decline leads to centralization and resistance to change or the implementation of major strategic initiatives. On the other hand, from a "necessity is the mother of invention" perspective (McKinley, 1993: 4), the opposite conclusion has been reached in the literature: organizational

decline may trigger adaptation and some corporate restructuring strategies may prevent failure under conditions of decline. Miller and Friesen (1978: 926), for example, find that the "adaptive firm" can be successful under moderate and very challenging situations.

In the past two decades, portfolio restructuring has become a common strategy adopted by firms in various situations such as organizational decline (Bowman & Singh, 1990; Bergh & Lawless, 1998; Bigley & Wiersema, 2002). Portfolio restructuring refers to firms engaged in acquisitions, divestitures, or both (Singh, 1993; Markides, 1995; Johnson, 1996; Bergh & Lawless, 1998; Bigley & Wiersema, 2002). Because of their high impact and ubiquity, portfolio restructurings have proven to be of major relevance for firms regardless their scope, size, or industry background (Markides, 1990; Markides, 1990; Talley, 2003). Given that portfolio restructurings are also expensive and risky, scholars (e.g., Bergh, 1995; Bergh and Lawless, 1998) have raised the question: Why do portfolio restructurings frequently occur? In this study, we argue that portfolio restructuring is an adaptation strategy of firms in decline. This raises the question: How do portfolio restructurings of firms in decline affect firm outcomes (i.e., failure or survival)? Answering this question is theoretically and practically important because it sheds light on the controversy of organizational failure.

An obstacle to greater understanding of the impact of restructuring on firm survival is that while different theories address certain aspects of this relationship, no one theoretical perspective adequately addresses each of the primary aspects involved (Singh, 1993). Given the existence of a number of fragmented theoretical views, there is lack of agreement on the role of portfolio restructuring in reducing the probability of firm failure. Singh (1993: 147) pointed out that the controversy over what impact restructuring may have on firm failure results from "a lack of systematic academic theory and evidence on the consequences of restructuring." We seek to

overcome this shortcoming in the literature. In this study, we concentrate on a specific aspect of restructuring: the impact of business relatedness in portfolio restructuring on organizational failure. The impact of business relatedness in portfolio restructuring is an issue that has been relatively unexplored. In an extensive review of the literature, we believe that both agency theory and the resource-based view (RBV) of the firm provide useful and complementary explanations to the relationship between portfolio restructuring and organizational failure.

Firms commonly utilize portfolio restructurings when they are facing the prospect of failure. That is, they make attempts to divest some businesses and acquire others with hopes of averting failure. However, we posit that various portfolio restructuring strategies may have differing impacts on restructuring outcomes, depending on business relatedness, or the degree to which the acquired or divested businesses fit with the primary business(es) of the firm. Hambrick and D'Aveni (1988) suggest that domain initiative plays a major role in bringing about organizational failure. Since portfolio restructurings can potentially change a firm's business domain, it is important to take the business relatedness between acquirer and target in the case of an acquisition and between the parent and subsidiary in the case of a divestiture into account.

Hambrick and D'Aveni's (1988) work suggests that organizational failure starts from a "downward spiral" preceding the failure. Keeping this in mind, our current study contributes to the decline/failure literature by examining whether or not portfolio restructuring is a means by which declining firms can eventually stop the downward spiral. Further, by examining business relatedness, we seek to identify when portfolio restructuring will be successful in preventing failure. Most extant research thus far has primarily focused on the relationship between restructuring and firm performance (Johnson, 1996; Brauer, 2006). Fewer studies have focused on the relationship between restructuring and organizational failure. Moreover, researchers have

traditionally focused on either divestiture or acquisition. In this study, we investigate the effect of acquisitions and divestitures simultaneously. Given that firms may use both strategies simultaneously to develop a new configuration of lines of business, it is important to study both the contraction and expansion sides of portfolio restructuring for theoretical development (Bergh & Lawless, 1998; Singh, 1993). Finally, our study contributes to theory building regarding organizational failure by integrating and extending both the resource-based view of the firm and agency theory.

In this study, we examine firm failure in terms of bankruptcy. Bankruptcy has been widely used as an empirical context in previous studies pertaining to corporate failures under conditions of organizational decline (e.g., Hambrick & D'Aveni, 1988). The portfolio restructurings of firms before Chapter 11 bankruptcy filings offer us the opportunity to study the effectiveness of these restructurings for averting organizational failure. Previous studies have predicted corporate failure, in terms of bankruptcy, from financial ratios (Altman, 1983), strategic leadership (Daily, 1995), industry growth/decline (Moulton, Thomas, & Pruett, 1996), and diversification type (Dawley, Hoffman, & Brockman, 2003). While these studies are clearly important, our knowledge of organizational failure is incomplete without paying equal attention to the consequences associated with portfolio restructuring strategies differentiated by business relatedness in the years preceding bankruptcy. Accordingly, we explore the effect of business relatedness in portfolio restructuring on organizational failure. We believe that examining firms' strategic portfolio restructuring actions of acquiring and divesting businesses in related and unrelated domains may add significant insights into our understanding of how firms can successfully avert organizational failure.

THEORETICAL BACKGROUND: BUSINESS RELATEDNESS IN PORTFOLIO RESTRUCTURING

Organizational decline signals the need for change or restructuring. Portfolio restructuring has substantial organizational consequences (Bergh & Lawless, 1998). It is critical to decisions related to strategic refocusing, redirection and reorientation and eventually to firm performance and survival. Organizational failure can be an extreme outcome associated with portfolio restructuring because portfolio restructuring can change a firm's business or product domains. Organizational domain initiatives, defined as "the extent to which [a firm] changes its products and markets", are viewed as one of the major issues of interest in studying organizational failure, given that domain initiatives (i.e., inaction or hyperaction) typify firms in the years prior to their failures (Hambrick & D'Aveni, 1988: 3). Related or unrelated acquisitions and divestitures are likely to change a firm's domains of business or resource profiles. Frequent acquisitions of businesses that are unrelated to existing products will widen the scope of a firm's domain (i.e., unrelated product diversification). In contrast, frequent divestitures of unrelated units will narrow the scope of the firm's domain, a strategy also known as de-diversification or downscoping (Johnson, 1996). Given that domain initiatives affect organizational failure when the downward spiral starts (Hambrick & D'Aveni, 1988), it is natural to ask how the business relatedness of acquisitions and divestitures affect restructuring outcomes.

The resource-based view (RBV) of the firm (Barney, 1991; Rumelt, 1974; Wernerfelt, 1984) provides useful insight for understanding the impact of "resource or asset relatedness" (Markides & Williamson, 1996: page number) on portfolio restructuring outcomes. Rumelt's (1974) pioneering work suggests that firms benefit from related diversification over unrelated diversification because related diversification allows the firm to enhance its core competence and

realize synergistic effects, leading to better financial performance. Rumelt's ideas on the effect of product or asset relatedness have been supported and extended by subsequent studies (e.g., Salter & Weinhold 1979; Markides & Williamson, 1996).

RBV theory suggests that acquisitions that involve product or asset relatedness between acquiring and target firms will produce greater synergistic gains than in acquisitions involving unrelated domains (Singh, 1993). Salter and Weinhold (1979) have demonstrated that related complementary acquisitions augment the skills, while related supplementary acquisitions augment the product markets of an acquiring firm. Chatterjee & Lubatkin (1990: 266) have argued that acquisitions are in general value creating events "because they can reduce systematic risk in a manner which stockholders cannot achieve on their own." According to their reasoning, related acquisitions are more likely to reduce risk because they are more synergistic as a result of market power increases that may not result from unrelated acquisitions.

However, while the RBV has been utilized to examine acquisitions in terms of business relatedness, it has not typically been applied to explain why firms sell subsidiaries (i.e., divest) in terms of business relatedness (Singh, 1993; Brauer, 2006). A divestiture refers to a loss of majority control of the parent through the disposal of its subsidiary assets, which is the opposite of a subsidiary acquisition. In general, selling subsidiaries carries a negative connotation for firm managers (Bergh, 1995), because such a divestiture is like a tacit admission of failure and an evidence of poor management (Mackey & Välikangas, 2004). Compared to acquisitions, divestitures have received much little attention in the portfolio restructuring literature. We view this as an important shortcoming in the literature. Bauer (2006: 754) argues that divestitures should not be treated as a simply mirror image of acquisitions, because they are "an independent, purposeful strategic option for corporate renewal." Accordingly, divestiture can be viewed as a

separate but related strategy available to firms seeking to avoid failure, and warrants attention in its own right, along with research on acquisitions.

Rationales of divestiture have previously received some attention from researchers employing both resource-based and agency theories (e.g., Montgomery, 1994; Bergh, 1995). Agency theory (Jensen & Meckling, 1976; Eisenhardt, 1989) is especially relevant to portfolio restructuring decisions (Singh, 1993; Bergh, 1995) and provides a perspective from which to consider the antecedents and consequences of divestitures (Bergh, 1995). The theory suggests self-interest leads managers to utilize restructuring strategies to preserve their employment security. Therefore, the relatedness of business acquisitions and divestitures is impacted by agency problems between shareholders and mangers. Bergh (1995) argues that whether a unit sold is related or unrelated depends on the relative power between owners and managers. If managers have the most power, they will use divestitures to achieve unrelated diversification (i.e., related divestiture) in order to spread risks and thereby increase their employment security. In contrast, if owners have the most power, they will use divestitures to achieve related diversification (i.e., unrelated divestiture) to spread their systemic risk (Bergh, 1995; Lubatkin & Chatterjee, 1994), as they can diversify through other means, such as acquiring ownership in other, unrelated companies.

Although agency and the resource-based view of the firm are based on different assumptions, both predict similar consequences of a particular portfolio restructuring strategy (Bergh, 1995). The RBV assumes the synergetic gains are the central motive driving portfolio restructuring decisions, while agency theory assumes that the relative power between shareholders and managers is the primary determinant of restructuring strategies. Studies on product or asset relatedness grounded in agency and/or the resource-based theoretical

perspectives have largely focused on the predictions of better financial performance or rent generation. It is not clear whether the strategies adopted during decline can effectively predict the probability of firm failure.

We argue that an integration of the two theoretical perspectives with regard to business, product, or asset relatedness can be extended to further understanding of organizational failure or survival following the portfolio restructuring. The existence or survival of an organization is dependent upon on its resources, assets, competences, knowledge, and skills either singularly or most often in a complex network of interactions (Barney, 1991; Black & Boal, 1994, Dierickx & Cool, 1989). Under conditions of decline, portfolio restructurings may reduce the probability of organizational failure, but a successful outcome is not guaranteed. Acquisitions, for example, are viewed as an important route for adapting and integrating resources or assets in acquired firms. From the RBV perspective, an acquisition allows a firm to regain competitive advantages only when it allows the firm to exploit acquired external resources, assets, or competences efficiently. From the agency theory perspective, a restructuring strategy may result in organizational failure because of agency problems. Taking together, we argue that related or unrelated acquisitions and divestitures affect the organizational survival prospects of firms in decline.

HYPOTHESES: TYPOLOGY OF STRATEGIC OPTIONS AND ORGANIZATIONAL FAILURE

Given the critical role of business relatedness in portfolio restructurings, there are four generic strategic options as shown in Figure 1. Each cell in the matrix represents a strategic adaptation or adjustment available to firms facing the threat of organizational failure. We argue that firm choice of which of these four options to utilize in their efforts to avoid failure will

impact their likelihood of survival. That is, we expect that the four strategic options will have different effects on organizational failure. We suggest that each strategic option has its merits and hazards depending on a firm's conditions. For example, acquisitions are commonly viewed as a strategic option to achieve firm growth and expansion. However, excessive growth and expansion can lead to failure (Altman, 1983). Indeed, it has been noted that "[g]rowth is not perpetual and its continued pursuit can be a death knell, especially for large, mature companies" (Mackey & Välikangas, 2004: 89). In this study, we argue that for firms facing the prospect of failure, these strategic options will have differing impacts on firm survival (see figure 1).

Insert Figure 1 about here

Drawing on the resource-based review and agency theory, we develop hypotheses predicting the effects of the four strategic options on firm survival. It is important to note that our hypotheses are based the assumption that the portfolio restructuring may substantially affect firm survival. Whether firms decline and die slowly or they suffer rapid collapses is an important but an inconclusive issue in the decline and failure literature (Moulton et al., 1996). Hambrick and D'Aveni (1988) have shown that organizational decline is a protracted process following the dynamics of downward spirals. They also find that the bankrupted firms showed signs of relative weakness as early as ten years before failing. Donaldson (1990) also finds that organizational restructuring may take up to ten years to pass with the firm in turmoil. However, the strategic actions of firms five years preceding bankruptcy are the most important factors determining firm failure (Hambrick & D'Aveni, 1988; Moulton et al., 1996). Accordingly, in this study, we examine a firm's strategic adaptations in the five years prior to its bankruptcy filing.

Escalation: Acquisitions in unrelated domains

Growth through unrelated acquisitions is a common practice of the firms, because, among other reasons, organizational growth lowers managerial employment risks (e.g., Fama & Jensen, 1983). Although acquisitions in unrelated domains are risky, organizational decline may motivate mangers to intensify adaptations through acquiring external resources to integrate new practices and skills in new domains (Vermeulen & Barkema, 2001). According to the RBV and agency theory, unrelated and related acquisitions may have different effects on firm survival prospects. Research suggests a curvilinear diversification-performance relationship. Performance increases as firms move from a single business strategy to a related business strategy, but decline as firms move from a related business strategy to an unrelated diversification business strategy (Palich, Cardinal, & Miller, 2000)..

Previous studies have demonstrated that unrelated acquisitions can provide some transferable general management expertise and knowledge across business domains (Singh, 1993). Unrelated acquisitions may also lead to an increase in market share as a result of quick access into new markets. Top managers prefer unrelated acquisitions to related ones, because unrelated acquisitions provide job security and other personal benefits, making managers willing to experiment by entering into new lines of business (Ueng & Wells, 2001). However, frequent acquisitions in unrelated business domains are likely to lead to over-diversification, a symptom of agency problems (Jensen, 1986), increasing the probability of inefficiencies and poor performance (e.g., Markides, 1995; Johnson, 1996). Moreover, acquired resources in unrelated domains are less likely to be integrated by the acquiring firm, because firms in different domains have different knowledge, skills, routines, markets, and technologies (Vermeulen & Barkema,

2001). As a consequence, the acquiring firm is less likely to realize a net synergistic gain from the unrelated acquisitions.

We argue that, especially for firms that are performing poorly, repeated acquisitions in unrelated domains are likely to lead to organizational failure. Miller and Friesen (1978) suggest that organizational failure is typically associated with bold and blind strategic actions (e.g., frequent acquisitions in unrelated domains in our case). According to Miller and Friesen's (1978: 930) failure typology, "impulsive firms" fail because they tend to seek the most prominent expansion strategies that "entail boldly entering new markets by acquiring subsidiaries…." Moreover, although unrelated acquisitions are risky and less profitable as documented in the organization and strategic management literatures, firms may repeatedly escalate resource commitment in unrelated domains during organizational decline. This phenomenon can be explained by Staw's (1976) theory of escalating commitment to a failing course of action. In our case, decisions of unrelated acquisitions can be repeatedly (rather than one time only) made by managers in a firm that is facing negative consequences about prior resource investments. Moreover, unrelated acquisitions extend a firm's domain in new businesses that entail risk and uncertainty. As a consequence, the downward spiral may become unstoppable. We thus predict that:

Hypothesis 1: Escalation during organizational decline is positively associated with organizational failure.

Augmentation: Acquisitions in related domains

Related acquisition of subsidiaries is a core business-based expansion or asset building strategy. A firm normally has more competences in its primacy or core business because of accumulated experience and knowledge. According to the RBV, core competences may become

a driver of new asset building, because firms may lower costs by transferring core competences (Markides & Williamson, 1996; Prahalad & Hamel, 1990). Related acquisitions replenish or increase a firm's assets that strengthen a firm's core business operations by creating synergy. The well known "relatedness hypothesis" suggests that acquiring strategically related firms can generate announcement-based abnormal returns for shareholders of bidding firms (Barney, 1988). However, it is important to note that the empirical findings of this hypothesis are inconclusive (Chatterjee, 1986; Barney, 1988; Singh, 1993). For example, Chatterjee (1986) found that unrelated acquisitions generated higher market return. Seth (1990: 106) suggests that "different types of acquisitions are associated with different sources of value creation" and finds that related acquisitions do not create more value than unrelated ones, but both create value. On the other hand, Morck, Shleifer, & Vishny (1990) find a negative link between unrelated acquisition and value creation.

Nevertheless, researchers generally agree that acquisitions in related domains lead to better organizational performance (Singh, 1993). Studies based on the resource-based view of the firm have documented that related acquisitions perform better than unrelated acquisitions for several reasons: (1) acquired resources (both tangible and intangible) in a related domain can be more easily integrated into firms' existing operations to strengthen the core business (Bettis, 1981); (2) knowledge assimilations are more likely to take place in related domains to create synergy (Vermeulen & Barkema, 2001); and (3) synergetic gain from relatedness can be obtained through better allocation of acquired resources across the related businesses (Singh, 1993). Because benefits from market power stem from a tangible strength in a business that can be extended to another business in a related market, Singh and Montgomery (1987) have explicitly argued that

the sources of synergic gains from relatedness are the benefits from market power transferable in contiguous markets.

Although previous studies derived from the resource-based view of the firm have usually focused on firm financial or market performance, we suggest that these arguments can be extended to understand the impact of restructuring strategies on firm failure. Acquisitions in related domains may create synergic gains by strengthening a firm's core business or existing operations, which may eventually help the firm to stop the downward spiral and avoid failure. Vermeulen and Barkema (2001) found that the survival of acquired subsidiaries is positively associated with the number of a firm's prior related acquisitions rather than unrelated acquisitions, because knowledge assimilation and resource integration from autonomous subsidiaries is less likely, given that the acquired firms in unrelated domains are less integrated. Given the arguments based on the RBV, we further propose that the number of a firm's prior related acquisitions may also increase the survival probability of the acquiring firms themselves, because related acquisitions allow a firm to extend its existing assets or core business and transfer competences from newly acquired assets. Therefore, we predict that:

Hypothesis 2: Augmentation during organizational decline is negatively associated with organizational failure.

Downscoping: Divestitures in unrelated domains

The threat of failure may prompt firms to adopt strategic actions such as divestitures to improve survival chances. Divestiture of lines of business has provoked considerable debate about the question of what factors distinguish businesses sold from those retained, but answers to this question are scarce (Singh, 1993). Most studies have focused on the divestiture of poorly-performing businesses, but fewer studies have focused specifically on the divestiture of unrelated

or peripheral businesses. Poor performance is viewed as the primary antecedent of divestiture (Johnson, 1996). Ravenscraft and Scherer (1991) find that the divestiture of a business unit is strongly associated with its poor performance. Montgomery and Thomas (1988) find that the poor performance (e.g., lower levels of ROA) of the parent itself is also a motivator to divest its subsidiaries. Another rationale for divestiture is related to failed acquisitions. Acquisitions are risky because they often fail, and accordingly they often result in subsequent divestitures (Sanders, 2001; Porter, 1987). In addition, firms may also utilize divestitures when they face the prospect of bankruptcy. For example, Lovejoy (1971) has suggested that divestitures can be an option to avoid bankruptcy. D'Aveni (1989) demonstrated that a firm may avoid bankruptcy by divesting its assets. Therefore, such a strategic option can be a portfolio restructuring tool for declining firms. However, these studies have not explicitly examined how business relatedness impacts divestiture outcomes.

Agency theory provides insight into why firms tend to divest businesses in unrelated domains. Agency theorists argue that unrelated divestitures are associated with the problem of over-diversification (Jensen, 1986), leading to downscoping, a process to reduce diversified scope (Johnson, 1996). Some research has shown that firms are more likely to divest an unrelated business than a related business. According to Porter (1987), 33 of the largest 100 firms in the United States divested the majority of their acquired businesses in the 1970s, including about 50 percent of related and 74 percent of unrelated businesses. In a review of the portfolio restructuring literature, Johnson (1996) finds that most divestitures in the 1980s were subsidiaries that were unrelated to the parent's core business. Vijh (2002) found that market returns are higher when firms divest subsidiary businesses unrelated to the parent business.

These empirical observations and evidences largely support the arguments based on agency theory.

We further argue that a firm with a desire to survive may divest its unrelated subsidiary assets, allowing it to restructure operations in order to better focus on its core business. In terms of business relatedness, divestiture represents a departure from previous strategies "because it entails the unequivocal negation of previous strategic decisions" through the "acts of judging a business unit or activity to be peripheral or low in value relative to the firm's core assets" and then divesting it (Bigley & Wiersema, 2002: 708; see also Bowman & Singh, 1990; Johnson, 1996). Unrelated divestitures occur when the parent and subsidiary business domains are different. When firms attempt to refocus on their core business by utilizing divestitures of unrelated business units, they are engaging in downscoping. Divestitures of unrelated businesses, as part of the remedy to over-diversification, are expected to have positive effects for reducing organizational failure.

Hypothesis 3: Downscoping during organizational decline is negatively associated with organizational failure.

Abandonment: Divestitures in related domains

For some firms, portfolio restructuring results in divesting core businesses in related domains. According to Porter's (1987) empirical observations, related divestiture is also an important strategic option of firms in restructuring. However, the rationale of divestitures in related domains is relatively unknown in the portfolio restructuring literature. Related divestiture may have a variety of reasons. For example, when organizational decline or a downward spiral is unstoppable, the strategy to abandon related subsidiaries can become unavoidable, as divesting can reduce operating costs. However, in this case, it signals a firm's eventual failure because it

weakens a firm's core competency. For example, Pan American Airline slowly bled to death by selling off its landing rights (its core competency).

Agency theory provides insights that explain managers' rationale for related divestitures. According to the theory, managerial self-interests are the main motivator of related divestitures. Since managers prefer diversified business units, as diversification minimizes their employment risk (Bergh, 1995), during times of decreased performance they would be expected to divest related businesses as opposed to unrelated businesses. Also, administrating related subsidiaries require higher levels of managerial involvement in resource coordination and more costly than unrelated ones (Jones & Hill, 1988), which may trigger related divestitures. Bergh (1995: 224) further argues that related divestitures "reduce managers' internal monitoring activities, enabling them to concentrate on the diversification strategies that maximize their employment security."

From a resource-based perspective, related divestitures (even selling only redundant subsidiary assets as a whole) may weaken a firm's core business operations and enhance a competitors' advantage. Meanwhile, divestitures in related domains do not benefit the owners, threaten a firm's sources of profit maximization, and reduce synergies (Bergh, 1995). Thus far, only a few studies have empirically examined the effect of related divestiture on firm performance. Notably, using a combination of both accounting and marketing measures, Woo, Willard, and Daellenbach (1992) did not find that related divestitures (spin-offs in their case) improve the firm performance. However, Bergh (1995) finds that the divestiture in related domains worsens the post-sell-off performance of the parent. We predict that primacy or core asset erosion may result in organizational failure.

Hypothesis 4: Abandonment during organizational decline is positively associated with organizational failure.

METHOD

Research Design and Sample Selection

Filings for Chapter 11 bankruptcy provide us an appropriate initial condition to examine the potential influence of firms' portfolio restructuring strategies under conditions of organizational decline on the post-bankruptcy outcomes. The incidence of bankruptcy filings can be under both "Chapter 7 Liquidation" and "Chapter 11 Reorganization." Under Chapter 7, the firm stops all business operations completely and its assets are liquidated to pay off the debt. Under Chapter 11, however, a firm is allowed to continue to operate and control the post-bankruptcy reorganization process. Firms prefer a Chapter 11 filing as compared to a Chapter 7 filing because the firm's assets are typically more valuable as an operating entity than when liquidated (Daily, 1995).

Since a Chapter 7 filing signifies the immediate dissolution of the firm, we limited our scope of "bankruptcy" in the context of Chapter 11 reorganization filing, unless otherwise specified. This is consistent with Weitzel and Jonsson's model of organizational decline in which they state, "the consequences of decline are reversible in all stages except the dissolution stage in which severely diminished resources prevent recovery" (1989: 97). Our focus on bankruptcy is important, as scholars have suggested that factors that affect post-bankruptcy outcomes require further investigations in the decline/failure literature (Hotchkiss, 1995; Daily, 1995; Dawley et al., 2003).

Following the data collection procedure described by Moulton and Thomas (1993) who identified 72 firms filing for Chapter 11 reorganization in multiple years (1980-1986), we collected a population of 612 public firms that filed for Chapter 11 between 1991 and 2000 from

the Security Data Corporation (SDC) Bankruptcy database and Lexis-Nexis Bankruptcy Reports database. All cases were governed by the Bankruptcy Reform Act of 1978. Our concentration on public firms was to obtain sufficient financial data. Our time frame of interest was determined by several factors. Since our arguments are built on five years before and after Chapter 11 filings (11 year time window for each firm), the starting year, 1991, was based on the earliest acquisition and divestiture data available since 1985 in the SDC database. Consistent with earlier studies (e.g., Hotchkiss, 1995; Dawley et al., 2003), we examined the post-bankruptcy outcomes five years after firms' Chapter 11 bankruptcy filings. The ending year of 2000 in our study was selected to ensure the five-year observation period after the initial bankruptcy filing.

For each selected firm, financial data were collected from the Compustat database and 10-K filings; acquisition and divestiture data were collected from the SDC Mergers and Acquisitions database. Data availability from SEC filings resulted in 291 firms. Since our study focus is on post-bankruptcy strategies and outcomes, 175 firms that were out of the business or were acquired by other firms immediately after their bankruptcy filings were excluded from further analysis. Consistent with prior studies (e.g., Moulton & Thomas, 1993; Dawley et al., 2003), among the remaining 116 firms, 7 firms in financial industries were excluded because their bankruptcies were subject to FDIC regulations. For the remaining 109 firms, we identified the Chapter 11 bankruptcy outcomes primarily based on Compustat and CRSP databases. Finally, we extensively searched SDC and Lexis-Nexis databases to confirm each outcome and excluded 10 "liquidated" firms that still exist but no longer file SEC reports. This reduced the sample size to 99 firms of which 40 survived, 27 were acquired, and 32 liquidated. We further constructed the data in an event history format in which the 99 firms resulted in 343 firm-year observations.

Method of Analysis and Dependent Variable

We used discrete-time event history methodology to model the dynamics of post-bankruptcy outcomes. The basic reason is that failure is also a dynamic process of firms continuously changing from a Chapter 11 filing to organizational death or survival. Most research on organizational failure is limited to five years before Chapter 11 filings so the dynamics of post-bankruptcy outcomes are relatively unknown. Although, under some circumstances, cases under Chapter 11 are converted to liquidations under Chapter 7, Chapter 11 bankruptcy itself is not liquidation. In many cases, it provides time and opportunities for firms to reorganize. Dawley and colleagues (2003: 414) define this period of time (i.e., the number of years after the Chapter 11 bankruptcy filing) as the "recovery time" of bankrupt firms. In general, filing for Chapter 11 bankruptcy protection may lead to a variety of outcomes (Moulton & Thomas, 1993): a firm may (1) survive bankruptcy and emerge as an independent entity; (2) be merged with or acquired by another organization; and (3) fail to maintain the existence or liquidate, including converted cases to a liquidation under Chapter 7. Among these outcomes, emerging from bankruptcy is viewed as the most favorable option and liquidation the least favorable option (Daily, 1995).

Advantages of event history methods are to capture the effect of time elapsed since a Chapter 11 filing, given that some organizations may not suffer immediate death. This methodology has been widely used for understanding organizational failure and bankruptcy in previous studies (e.g., Fischer & Pollock, 2004; Hill et al., 1996) and especially in the population ecology literature on organizational death. Event history techniques allow us to test both time-varying explanatory variables such as financial performance (Hill, Perry, & Andes, 1996) and time-invariant variables such as initial conditions (Dawley et al., 2003; Fischer & Pollock, 2004) simultaneously, keep those acquired firms in the sample until they are acquired (Fischer &

Pollock, 2004), and cope with censored observations (Allison, 1995). These characteristics are particularly important when studying post-bankruptcy as a dynamic process.

Following the standard event history approach, the annual spells for each firm started one year after its Chapter 11 filing until its was censored. Right censoring occurred at the cut-off year (1) when a firm survived after five years, (2) when a firm was acquired by another firm, and (3) when a firm liquidated. The dependent variable, organizational failure, was coded 1 in the year of liquidation or being completely out of business, otherwise it was coded 0. Thereafter, we updated covariates at the beginning of each year for each firm.

We estimated the dichotomous outcomes for the pooled time series data using logit models (Allison, 1999). Since the observations of the same firm were not independent across firm-year spells, we accounted for the longitudinally clustered nature of the data using a generalized estimating equation (GEE) approach. The GEE method accounts for correlation within the same cluster (Liang & Zeger, 1986; Allison, 1999), thus providing conservative tests of our hypotheses. The model was estimated by using the SAS GENMOD procedure with "repeated measures" command.

Independent Variables

We coded our first two independent variables, *escalation and augmentation,* in two steps. First, we differentiated acquisitions between unrelated and related domains. Consistent with previous studies using the primary SIC code to capture a firm's core business (e.g., Ueng & Wells, 2001; Vijh, 2002), an acquisition was considered as related if the acquirer and the target shared the same four-digit SIC code in their primary business, and otherwise it was considered as unrelated. To be included in the sample, the transaction must be completed with the acquirer acquiring controlling interest in the target firm. Second, we aggregated the numbers of related

and unrelated acquisitions five years before a firm's Chapter 11 filing, respectively. Thus, escalation and augmentation were measured as frequencies of related and unrelated acquisition activities preceding a firm's bankruptcy, respectively. The same coding method has been used in previous studies. For example, Palmer and Barber (2001) used a count variable constructed by the number of acquisitions each firm completed in the previous three years. Accordingly, they ignored acquisitions completed before the period began. We use a five-year window for each firm before bankruptcy because it is a common time frame for failure studies (e.g., Altman, 1983; Hambrick & D'Aveni, 1988).

The other two independent variables, *downscoping and abandonment,* were identified in the same manner as those of acquisition activities. A divestiture was considered as related if the parent and the divested subsidiary shared the same four-digit SIC code, and otherwise it was considered as unrelated. To be included in the sample, the parent must lose a majority interest in the subsidiary when the deal was completed. Consistent with previous studies, we focus on the selling of subsidiaries, not the parent firm, because we argue that the divestiture of subsidiaries may be a strategy to avoid failure of the parent. Powell and Yawson (2005), for example, define a divestiture as the sale of a subsidiary by the parent to a third party. Finally, we aggregated the number of related divestitures five years before a firm's Chapter 11 filing as a proxy of the abandonment option. Meanwhile, we used the frequency of unrelated divestiture activities as a proxy of the downscoping option.

In our sample, 67 out of 99 firms engaged in acquisitions, divestitures, or both five years before their Chapter 11 bankruptcy filings. We identified 138 acquisitions, of which 80 were in related domains and 58 in unrelated domains, by 43 firms; we also identified 108 divestitures, of which 36 were in related domains and 72 in unrelated domains, by 43 firms. Our sample

indicated that most firms, preceding their bankruptcy, had undergone some type of restructuring. Similarly, Markides (1990) found that about 50 percent of his sample of Fortune 500 firms had adopted different portfolio restructuring strategies. We kept the 32 firms that engaged in neither acquisition nor divestiture in the sample for comparisons, because sluggish firms fail because they do not give sufficient attention to reformulate product-market strategies (Miller & Friesen, 1978) or to refocus their business portfolios.

Control Variables

In keeping with existing research in the strategy literature on bankruptcy, acquisition, and divestiture, we controlled for the following factors that might jointly affect post-bankruptcy outcomes.

Financial indicators. Organizational failure results from performance or financial deficiencies. Controlling for financial considerations may be "particularly relevant" for both bankruptcy and post-bankruptcy research, which allows for a close examination of the effects of how organizational and strategic variables contribute to bankruptcy outcomes beyond financial explanations (Daily, 1995: 1047; Dawley et al., 2003). Scholars in this area have traditionally controlled for three categories of financial variables in bankruptcy research: ***liquidity*** (current assets/current liability), ***profitability*** (net income/total assets), and ***leverage*** (long-term debt/equity) (e.g., D'Aveni, 1990; Daily and Dalton, 1994, 1995; Daily, 1995; Dawley et al., 2003). Accordingly, we controlled for these three variables.

Firm size. Smaller firms may suffer from liabilities of smallness, resulting in organizational failure (Aldrich & Auster, 1986). Larger organizations may possess more organizational slack that can be drawn upon during difficult times (Flynn & Farid, 1991; Moulton & Thomas, 1993; Dawley et al., 2003). Among three commonly used measures of organizational

size: net sales, total assets, and the number of employees, Moulton and Thomas (1993) found that the natural log of assets had the greatest predictive power of a Chapter 11 outcome. Therefore, we controlled for the natural log of assets.

Free cash flow. The work of Jensen (1986) has shown the relationship between unused free cash flow and portfolio restructuring (mainly acquisitions). We thus incorporated the percentage of free cash flow, defined as Operating Income - Taxes - Interest Expense - Preferred Dividend - Common Dividend/Equity. This variable is also a direct measure of organizational slack. Haleblian and Finkelstein (1999) have used it in their study of acquisition performance.

Product diversification. Researchers suggest that product diversification may affect post-bankruptcy outcomes (e.g., Dawley et al., 2003). Diversification can be measured using both the Herfindahl index approach and the entropy approach. However, both measures were highly correlated in our sample ($\geq$-0.98). We therefore adopted an entropy approach (Palepu, 1985) over the relevant period for each firm:

Entropy measure of Diversification = Σ [Pit*In(1/Pit)],

where Pt(> 0) is the share of sales in segment i, defined by 4-digit SIC codes, and t is the year. In consistent with earlier studies (Daily, 1995; Haleblian & Finkelstein, 1999) to avoid reverse causality, all annual time-varying firm-level variables (financial indicators, product diversification, firm size and slack) were lagged by one year.

Post-bankruptcy divestiture. While the likelihood of acquisition activities was quiet low after a Chapter 11 filing, firms continued to divest their subsidiaries. These divestiture activities might also affect a firm's failure. We first identified the numbers of unrelated and related divestitures after the Chapter 11 filing for each firm in each year, respectively. We then

controlled for the accumulated numbers of the two types of divestiture activities assigned to each firm in the respective years.

Industry dummies. Industry membership may have an effect on post-bankruptcy outcomes because growth rates may vary across industries during our observation period. Moulton and colleagues (1996) suggest that industry growth/decline may affect bankruptcy outcomes. We included two dummies to control for the fixed effects of manufacturing and service industries in terms of firms' first two-SIC codes.

Years since bankruptcy filing. To capture the time-varying effect of post-bankruptcy, we included a variable for the number of years since bankruptcy, together with a squared term to control for its nonmonotonic effect.

Economic growth. Dawley and colleagues (2003) suggest that economic growth or recession is likely to affect post-bankruptcy outcomes because macroeconomic changes affect the cost of capital of all firms. Especially, economic recession is likely to be associated with organizational failure. During our observation period, organizations experienced one period of recognized recession (1989-1991) and one period of extraordinary growth (1994-1999). We used annual GDP growth rate for each firm-year to control for general economic conditions. The data were collected from the World Bank database.

RESULTS

Means, standard deviations, and correlation coefficients are presented in Table 1. Low correlations indicate that multicollinearity was not a problem of regression analyses. Table 2 presents results of the logistic regression analysis. The baseline model (i.e., model 1) in Table 2 includes control variables only. Among all controls, profitability, measured by ROA, had a very

strong and negative effect on post-bankruptcy failure. Other control variables, however, were not statistical significant. These results suggest that profitability is critical to maintain the existence of the firm after its Chapter 11 bankruptcy filing. Using a hierarchical regression approach, we first added the two acquisition variables (escalation and augmentation) in model 2 and then the divestiture variables (downscoping and abandonment) in model 3. In a theory-guided order, this approach allowed us to partial out acquisition effects versus divestiture effects.

Insert Table 1 and Table 2 about here

Regarding the unrelated and related acquisition strategic activities, Hypothesis 1 predicts that escalation (unrelated acquisition) will have a positive effect on the post-bankruptcy failure of a declining firm. Both models 2 and 3 indicate that utilizing this strategic option during organizational decline had a significant, positive ($p < .01$) association with a firm's failure after Chapter 11 bankruptcy filing, suggesting that escalation is not be a good strategy for firms seeking to improve chances of survival. Hypothesis 2 predicts that augmentation (related acquisition) will have a negative effect on the post-bankruptcy failure of a declining firm. Model 3 indicates that this strategic option had a significant, negative ($p < .01$) association with a firm's failure after Chapter 11 bankruptcy filing. This finding suggests that acquiring related businesses is beneficial for firm survival. Thus, both hypotheses 1 and 2 were supported.

Regarding the unrelated and related divestiture strategic activities, Hypothesis 3 predicts that downscoping (unrelated divestiture) will have a negative effect on the post-bankruptcy failure of a firm in decline. Model 3 indicates that utilizing this strategic option during organizational decline had a significant, negative ($p < .01$) impact on a firm's failure after Chapter 11 bankruptcy filing. Accordingly, hypothesis 3 was supported. Taking together, hypotheses 2

and 3, suggest that selling off unrelated businesses and moving back toward their core businesses increase the probability of survival for the declining firm. Hypothesis 4 predicts that abandonment (related divestiture) will have a positive effect on the post-bankruptcy failure of a declining firm. Model 3 indicates that this strategic option had a negative but not statistically significant impact. Thus, Hypothesis 4 was not supported.

DISCUSSIONS AND CONCLUSIONS

The issue of how to avoid organizational death has long interested both practitioners and scholars (McKinley, 1993; Altman, 1983). In this study, we have examined the relationship between portfolio restructuring strategies in the years preceding Chapter 11 filings in terms of business relatedness and firm failure thereafter. Our results demonstrate that different strategic actions result in different restructuring consequences. We found that organizational failure is positively associated with the escalation option. We also found that organizational failure is negatively associated with both the augmentation and the downscoping options. These findings largely support the predictions based on the agency and resource-based perspectives on business relatedness.

This paper extends agency theory and the resource-based view of the firm into the study on the relationship between portfolio restructuring and firm survival. We have provided evidence supporting the RBV, suggesting that synergic gains depend on whether a strategic option results in a better fit between a firm's core and peripheral activities. A number of studies based on the RBV have shown that unrelated diversification results in poorer financial performance as compared with related diversification (e.g., Palepu, 1985; Singh & Montgomery, 1987; Markides, 1995; Robins & Wiersema, 1995; Hotchkiss, 1995; Palich et al., 2000). Organizational failure, as

an extreme outcome, has been largely overlooked. While financial performance (measured by ROA in our study) is an important indicator of organizational failure, our study also indicates that restructuring strategies are also important factors which should not be ignored in theorizing. For example, Singh (1993) suggests that divestitures are about re-configuring the business portfolio and not just about getting rid of poor performers. Given that portfolio restructuring is related to interrelationships across business domains and commonly shared strategic capabilities (Robins & Wiersema, 1995), our study suggests that the RBV offers important insights into understanding organizational failure.

Our study also extends the RBV by integrating agency theory perspective and showing that the combined perspective can be more fruitful than either approach alone for understanding the various survival consequences of portfolio restructurings. The RBV implicitly assumes that firms will use their resources to maximize organizational profit, and is typically concerned with understanding competitiveness. In our study, the theory has demonstrated strong predictive power regarding restructuring consequences such as failure or survival. However, although the RBV explains augmentation and downscoping strategies, it fails to provide reasons of why firms acquire unrelated business (escalation) and divest related businesses (abandonment) during decline. Our study has partially addressed this concern utilizing agency theory. Agency theory provides rationales to explain the adoption of these strategies that are not explainable using RBV reasoning

Agency theory suggests that corporate diversification is associated with manager's incentives (Ueng & Wells, 2001). It highlights the impact of possible agency conflicts between shareholders and managers on restructuring decision making. It is especially useful for explaining why managers prefer to adopt escalation and abandonment strategies during

organizational decline in terms of agency problems such as empire building and managerial job security, even at a cost to shareholders.

However, agency theory may not adequately explain "those instances where managerial interests do not clearly conflict with those of shareholders" (Lane et al., 1998: 570). In those instances, the RBV has provided an excellent platform for highlighting the importance of resource sharing and synergy for reducing firm failure probabilities. According to Montgomery's (1994) study of the economic rationale for diversification, agency theory provides a negative perspective focusing on managers' abusing their positions, resulting in poor performance, while the RBV firm provides a positive perspective on managerial resources that are inimitable leading to better performance through diversification. Her empirical evidence is consistent with both the agency and the resource-based perspectives. It has been suggested that bridging the theoretical boundaries by utilizing both agency theory and resource-based perspective may provide a more complete picture of portfolio restructuring (Bergh, 1995). Thus far, however, evidence that support this point of view is still rare. Our study contributes to the literature by showing that agency theory and the RBV are complementary and together provide a greater understanding of firm strategies and associated survivals or failures.

Our study suggests that research regarding the failure of declining firms deserves greater attention because of its importance for improving understanding of the consequences of organizational changes or adaptations. Our study sheds light on the theoretical controversy of organizational changes and failure of declining firms (McKinley, 1993). Our empirical observations indicate that declining firms tend to adopt various strategies in their efforts to prevent failure. While the strategies of firms under conditions of decline play an important role in general, we found that different outcomes are associated with different strategic choices, and

this has important implications for decision makers as we will discuss below. In addition, we modeled organizational failure using a panel dataset, given that empirical evidence linking strategies of corporate business portfolio structuring to organizational failure has not been strong. The sample design is less used in previous bankruptcy studies, even though it is widely used in the population ecology literature. This approach allows us to observe the dynamics of organizational failure over time and provide robust findings (Ravenscraft & Scherer, 1991).

Our study has also provided useful implications for business managers. Strategic adaptations are important in declining firms. Our findings suggest that even after the Chapter 11 bankruptcy filings, organizational failure is not inevitable. Using business relatedness as a criterion, we differentiated portfolio restructuring activities into four strategic options (see Figure 1). Although these options are mutually exclusive events, managers can use these strategic options simultaneously. For example, during 1981-1997 General Electric Company made 509 acquisitions totaling $53 billion and 310 divestitures of $16 billion (Weston & Jawien, 1999). Corporate refocusing has been viewed as a combined strategy for firms desiring to shift resources to better uses: the expansion through the acquisition of businesses in related domains and reduction through the divestiture of businesses in unrelated domains (Bigley & Wiersema, 2002; Markides, 1995). Our findings imply that this combination may enhance firms' capabilities to avoid the failure when they face the threat of failure. In other words, firms may expand or consolidate through acquisitions of related businesses (augmentation) and streamline operations through divestitures unrelated businesses (downscoping) at the same time when facing the threat of failure.

Faced with decline, some firms may engage in unrelated diversification in the effort to seek profit in unrelated markets or reduce risk, but restructuring strategies need to be carefully

evaluated before undertaking. Our findings suggest that the acquisition of unrelated businesses (escalation) to reduce systemic risks and thus failure is not effective for averting failure. Perhaps in times of decline the needed resources and managerial attention to integrate unrelated businesses is too great. Even in ideal circumstances acquisitions of unrelated businesses are problematic. Our findings imply that firms can potentially reduce the risk of failure, by divesting unrelated businesses that have been acquired. Finally, our findings show that while downscoping helps, abandonment has no effect. Thus, our managerial advice during times of economic decline would be to refocus the businesses by buying related businesses, avoid buying unrelated businesses, and sell unrelated businesses if the firm hopes to successfully recover from bankruptcy.

Our study of the impact of restructuring strategies on firm failure has raised a number of unresolved issues that require future studies. Although the antecedents of restructuring strategy adoptions are beyond our research scope, it may be an important to gain a greater understanding of why firms adopt various strategies. Our findings imply that restructuring decision-making process could be a critical factor that affects organizational outcomes. For example, future research might focus on how corporate governance (e.g., board monitoring) affects restructuring decisions and their subsequent outcomes (Singh, 1993). It is also important to note that our study provides no insight regarding whether management-controlled firms are associated with strategically inferior levels of acquisition types (related vs. unrelated) than are firms with large block shareholders and/or firms with vigilant boards (Lane, Cannella, & Lubatkin, 1998). This may be a fruitful avenue for additional future research.

A firm may divest an asset as a separate entity (i.e., a subsidiary) or as a part of the firm. It is necessary to note that divestitures are similar but different from carve-outs and spin-offs (Vijh,

2002). A carve-out is only a partial divestiture in which the parent sells a minority share of a child firm, whereas a spin-off is a complete divestiture in which a new independent firm is formed through the divestiture. Because of the very small number of observations, both cases were not included in our sample. Future studies might also examine how carve-outs and spin-offs affect restructuring outcomes, given their substantial influences on resource deployments. Our abandonment hypothesis (hypothesis 4) was inconclusive. Given a relatively small number of observations, this hypothesis requires further investigation to clarify whether or not related divestiture is a means of avoiding bankruptcy. Finally, post-acquisition turbulence needs more attention as unrelated businesses acquired present substantial integration difficulties, which may, in turn, affect restructuring outcomes. In other words, strategic implementations and resource deployments also depend on whether firms have the ability to implement various diversification strategies to avoid failure.

In conclusion, our study has provided theoretical rationales and empirical evidence regarding the impact of portfolio restructuring on firm survival. We hope that this paper may lead to additional studies that provide insights into how firms can strategically avert failure. Further we hope that by seeing the contributions of our study that were made possible through the use of diverse theoretical perspectives will provide researchers with an additional incentive to utilize multiple theoretical perspectives in order to advance our understanding of complex organizational processes and outcomes.

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Table 1: Descriptive Statistics and Correlations (N=343)

	Variable	Mean	s.d.	1		2		3		4		5		6		7		8	
1	Escalation	.49	1.15																
2	Augmentation	.75	2.16	.38	***														
3	Downscoping	.89	1.79	.09		-.07													
4	Abandonment	.43	.87	-.06		.12	*	.14	**										
5	liquidity	2.16	2.63	-.10		-.09		-.06		.01									
6	profitability	-.01	.97	.00		-.06		.15	**	.09		.00							
7	leverage	.64	11.34	-.01		.04		-.08		.00		.00		.02					
8	Firm size	4.69	1.67	.12	*	.17	**	.18	***	.13	*	.01		-.01		-.03			
9	Free cash flow	-.48	9.04	.05		.03		.01		-.02		-.01		.00		-.01		-.02	
10	Product diversification	.09	.24	-.03		-.10		.25	***	.00		-.03		.01		-.31	***	.17	**
11	Post-bankruptcy divestiture (unrelated)	.12	.39	-.12	*	.20	***	-.11	*	.23	***	.01		.00		.01		.03	
12	Post-bankruptcy divestiture (related)	.35	.84	-.08		-.06		.22	***	.22	***	.00		-.01		.02		.22	***
13	Manufacturing	.29	.45	.11	*	-.18	***	.23	***	-.07		-.07		-.03		-.16	**	-.27	***
14	Service	.12	.33	.06		.03		-.10		-.05		-.12	*	.03		.12	*	.10	
15	Years since bankruptcy filing	2.63	1.39	-.06		-.01		.05		.03		-.02		.06		.01		-.02	
16	Economic growth	3.54	.92	-.06		-.16	**	-.09		.02		.04		-.08		.05		-.08	
		Mean	**s.d.**	9		10		11		12		13		14		15			
10	Product diversification	.09	.24	-.10															
11	Post-bankruptcy divestiture (unrelated)	.12	.39	-.20	***	.03													
12	Post-bankruptcy divestiture (related)	.35	.84	-.12	*	.31	***	.27	***										
13	Manufacturing	.29	.45	.04		.27	***	-.11	*	.11	*								
14	Service	.12	.33	.05		-.14	*	-.11	*	-.08		-.24	***						
15	Years since bankruptcy filing	2.63	1.39	-.01		-.01		.12	*	.28	***	.03		.02					
16	Economic growth	3.54	.92	-.11	*	.00		-.01		.13	*	.02		.03		.21	***		

*p< .05
**p< .01
***p< .001

Table 2: Results from logit Regression (N=343)

	Model 1		Model 2		Model 3	
Escalation			.40**	(.14)	.41**	(.15)
Augmentation			-.48*	(.21)	-.51**	(.20)
Downscoping					-.60*	(.25)
Abandonment					-.61	(.65)
Liquidity	-.05	(.08)	-.05	(.08)	-.03	(.09)
Profitability	-1.28***	(.36)	-1.61**	(.51)	-1.99***	(.55)
Leverage	.02	(.02)	.04	(.03)	.04	(.03)
Firm size	-.29*	(.14)	-.24	(.15)	-.12	(.15)
Free cash flow	-.01	(.02)	-.01	(.01)	-.01	(.02)
Product diversification	-1.13	(1.52)	-1.17	(1.63)	-.86	(1.92)
Post-bankruptcy divestiture (unrelated)	-.35	(.91)	.12	(.62)	.04	(.64)
Post-bankruptcy divestiture (related)	-.25	(.46)	-.50	(.50)	-.19	(.52)
Manufacturing	-.86	(.58)	-1.14*	(.57)	-1.17†	(.62)
Service	-.74	(.83)	-1.33	(.99)	-1.73	(1.20)
Years since bankruptcy filing	-.23	(.74)	-.15	(.78)	-.01	(.79)
Years since bankruptcy filing squared	-.04	(.12)	-.05	(.13)	-.07	(.13)
Economic growth	.06	(.21)	-.05	(.26)	-.22	(.23)
Constant	-.19	(1.39)	-.15	(1.36)	-.08	(1.35)
- 2 Log Likelihood	209.2		216.1		216.3	
Degree of freedom	13		15		17	

Standard errors are in parentheses.
†p< .10
*p< .05
**p< .01
***p< .001

Figure 1: Portfolio restructuring and business relatedness matrix: Strategic options

	Unrelated domain	**Related domain**
Acquisition	Escalation	Augmentation
Divestiture	Downscoping	Abandonment