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OWNERSHIP STRUCTURE AND BANKRUPTCY
AN EXPLANATION FOR DEVIATIONS FROM ABSOLUTE PRIORITY

by

DINA NAPLES LAYISH

A dissertation submitted to the Graduate Faculty in Business
in partial fulfillment of the requirements for the degree of
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Abstract

OWNERSHIP STRUCTURE AND BANKRUPTCY
AN EXPLANATION FOR DEVIATIONS FROM ABSOLUTE PRIORITY

by

Dina Naples Layish

Advisor: Professor Linda Allen

Financial distress alters the incentives of managers, who may be more interested in saving their careers than in maximizing firm value and, thus, may take actions for their own benefit, not for the benefit of the firm. The current bankruptcy code gives managers exclusive control of a firm during the first four months after filing for bankruptcy, thereby exacerbating the agency problems within a financially distressed firm. One way to alleviate the agency costs of financial distress may be to offer management a financial interest in the reorganized firm through deviations from absolute priority.

This paper develops a theoretical model that explains the existence of deviations from absolute priority as a means to resolve the agency problems in bankrupt firms. Bondholders utilize deviations from absolute priority in order to induce managers, who are also shareholders, to take actions that will maximize the value of the firm. Empirical tests of the model indicate that deviations from absolute priority are positively related to ownership structure. Specifically, the reorganization plans of firms in which insiders hold more of the outstanding common stock more often include distributions to equity holders. The reorganization is also affected by shareholder concentration. Firms in which managers and outside shareholders are disperse have a higher probability of deviations from absolute

priority. These firms must provide managers with a strong incentive to preserve firm value during the bankruptcy proceedings. A switching regressions model is used to define "high" and "low" equity holdings for both insiders and outside block holders. Deviations from absolute priority are also directly related to the level of free cash flow within the firm and the solvency level of the firm. The results of this study show that deviations from absolute priority can be explained as a method of ensuring that managers do not destroy value during reorganization.

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1. Introduction

It is commonly asserted that there is a given priority structure among the claims on a firm. Senior creditors rank above junior creditors who rank above stockholders. The claims of an insolvent firm should be distributed according to this hierarchy and financial theory assumes that a strict adherence to the priority structure of claims is inherent in the corporate form of organization. The issuance of debt occurs with the understanding that the debtholders are first to be repaid if the firm becomes insolvent, before stockholders are entitled to any funds. Unfortunately a debt contract cannot be created that will enumerate every possible future state of the world. Most often contracts are created with the assumption that payments will be made in a timely manner. If default occurs, debtholders can resort to the bankruptcy court in order to attempt to recover funds.

Current bankruptcy laws do not enforce the strict adherence to the absolute priority rule. It is extremely common for debtholders to receive less than the full value of their claims and for shareholders to retain some ownership in the firm, albeit diluted. If the firm is insolvent, we would expect all existing common stock to be extinguished and new stock issued to the creditors of the firm, but many bankruptcy cases do not follow this rule. Instead, all outside claimants, including shareholders, are allowed to share in the new claims issued on the reorganized firm.

When shareholders of an insolvent firm are allowed to retain at least some portion of the newly reorganized firm, a deviation from absolute priority is said to have occurred. Eberhart and Weiss (1998) note how important it is to examine deviations from absolute priority. They explain that seminal finance models (e.g. Black and Scholes (1972), Merton

(1974) and Myers (1977)) are developed with the basic assumption that the absolute priority rule is followed. The occurrence of deviations from absolute priority in approximately 75% of Chapter 11 bankruptcy proceedings (Weiss (1990) and Hotchkiss (1995)) and the magnitude of these deviations (Betker (1995)) may have implications for the conclusions of financial models.

It has been argued that deviations from absolute priority lead to an inefficient bankruptcy process. Jensen (1991) criticizes the reorganization process because it lengthens the time spent in bankruptcy due to the fact that all impaired claimants, including shareholders are entitled to vote on the reorganization plan, giving shareholders negotiating leverage in demanding some payment. Jensen also argues that the current bankruptcy code drives up both bankruptcy costs and the cost of capital to firms. Longhofer (1997) argues that deviations from absolute priority reduce the amount received by lenders due to default, thereby increasing the probability of default and increasing the cost of debt financing. Clearly, when senior creditors accept a reorganization plan that does not fully satisfy their claims they are willingly reducing the value of their original loans.

In spite of the theoretical arguments against them, deviations from absolute priority are a common occurrence in Chapter 11 reorganizations. Studies by Betker (1995), Weiss (1990) and Eberhart, Moore and Roenfeldt (1990) show that, in approximately 75% of their sample, stockholders are included in the reorganization plan even though the claims of the secured and unsecured creditors are not fully satisfied. Deviations from absolute priority occur in 70% of the firms in our sample.

If deviations from absolute priority lead to an inefficient bankruptcy process and

should be avoided, why are they common in Chapter 11 reorganizations? One explanation is that deviations from absolute priority may in fact be necessary in order to prevent shareholders from imposing further costs on the creditors[1]. All impaired creditors, including shareholders, are entitled to vote on the reorganization plan. This voting right allows shareholders to extend the time spent in bankruptcy in order to negotiate for a portion of the claims on the reorganized firm. This explanation assumes that shareholders can influence managers for their own benefit, ignoring the obvious agency conflicts between shareholders and managers that are even more severe during financial distress. Managers have incentives to preserve their jobs, which causes them to take actions that are not necessarily consistent with shareholders' goals. LoPucki and Whitford (1993) conclude that the stance of management in the reorganization process is determined by the solvency of the firm; managers of solvent firms align themselves with equity holders and managers of insolvent firms align themselves with creditors.

This paper examines the ownership structure of the firm to show that deviations from absolute priority can also be used to prevent managers from taking advantage of their position with the firm. Under current bankruptcy law[2] the incumbent management is given monopoly control of the firm during the first four months of bankruptcy. Managers remains in control of the firm as debtor-in-possession and have the initial right to propose the first reorganization plan. This level of control exacerbates the agency problems inherent in a

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[1] See Franks and Torous (1989) and Eberhart and Senbet (1993).

[2] The current bankruptcy law in the United States is the Bankruptcy Reform Act of 1978. See Section 2 for more information.

financially distressed firm. The law grants managers a window of opportunity, that they can use to exploit their position with the firm. Managers who are also shareholders will be more inclined to preserve firm value when there is a positive probability that deviations from absolute priority will occur.

The paper is organized as follows, a brief discussion of current bankruptcy laws in the United States will be presented in the next section. The third section provides a literature review on the occurrence of bankruptcy and the resolution of bankruptcy cases. Section four describes the participants in the reorganization process and their goals and presents a theoretical model of the relationship between ownership structure and bankruptcy. The fifth section presents the testable hypotheses and the model is empirically tested using a sample of large, publicly traded corporations in the sixth section. The seventh section will conclude.

2. Current Bankruptcy Laws in the United States

Congress enacts bankruptcy laws under the authority the United States Constitution, Section 8, Article 1, which states that "Congress shall have the power to establish . . . uniform laws on the subject of bankruptcies throughout the United States." Firms that file for bankruptcy must do so in accordance with the Bankruptcy Reform Act of 1978 (the Code). This law was created to accommodate the sometimes complex bankruptcy filings that occurred in the 1970s and to meet the needs of the changing structure of modern day corporations. The complexity of earlier bankruptcy laws had resulted in lengthier bankruptcy proceedings, often increasing the cost of filing for bankruptcy. The Code replaces the Bankruptcy Act of 1898 (the Act), as amended under the Chandler Act of 1938. That

legislation provided three chapters (X, XI and XII) under which a firm could file, chosen at the discretion of the bankrupt firm. Chapter X replaced management with a trustee during the reorganization process. Chapter XI allowed the incumbent management to remain in control of the reorganization efforts throughout the duration of the bankruptcy. Chapter XI was selected most often because of its the more lenient rules, specifically those allowing management to remain in place. Although Chapter XI was created to handle small, privately owned business, many large corporations elected to file under this Chapter. Creditors could challenge such a filing and attempt to move the case to a Chapter X proceeding in which management was immediately replaced by a trustee.

Another problem with the Act was that firms often delayed filing for bankruptcy under the old legislation except as a last resort. These firms were often beyond salvation. In contrast, the purpose of the current Bankruptcy Code is to allow firms to successfully reorganize under protection of the court.[3] Under the previous law, bankruptcy was only accessible to firms that had actually defaulted on their debt. The current law allows firms to file for bankruptcy as long as proof is available that the debtor is "generally not paying such debtor's debts as such debts become due" [11 U.S.C. § 303(h)]. Management need only show that it expects difficulty in meeting its future debt obligations, not that the firm is insolvent. Current bankruptcy law is also more favorable toward debtors, further encouraging firms to file for bankruptcy.[4] The current bankruptcy code is biased as well

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[3]Under current bankruptcy law, the Bankruptcy Reform Act of 1978, a corporation files for reorganization under Chapter 11 and liquidation under Chapter 7. This paper focuses on Chapter 11 cases.

[4]For example, Marsh and Cheng (1985) find that after implementation of the Bankruptcy Reform Act of 1978, the number of business filings increased significantly. They find

toward incumbent management, allowing it to remain in control of the firm during reorganization, and giving it the right to propose the first reorganization plan, and often extending this exclusivity right throughout the entire duration of the bankruptcy proceedings. Current bankruptcy laws are also in favor of reorganization, relying on liquidation only as a last resort. The Bankruptcy Reform Act of 1978 assumes that the need for reorganization results more often from honest mistakes by management or from normal business cycles, and therefore allows management to remain in control of the firm, unless it is otherwise requested.

When a firm files for bankruptcy protection today, it asks for an order of relief, which provides for an automatic stay on the firm's assets. This gives the firm the opportunity to repay its debts or to develop a reorganization plan that describes how the claims on the firm will be satisfied, without being harassed or forced into payment by creditors. Section 1121(b) of the Code gives the incumbent management of the firm the exclusive right to propose a plan of reorganization during the first 120 days after filing for bankruptcy. If a plan is not filed within this period, or if management's plan is not deemed acceptable by all voting claim holders within 180 days of the bankruptcy filing, then any interested party may file a plan.

The new bankruptcy laws considerably increased the power of management during the reorganization process. Management, in all cases, now remains in control of the assets of the debtor firm and possesses the exclusive right to propose a plan of reorganization for

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that 18.6% of the business bankruptcy filings after the implementation of the new bankruptcy laws are due strictly to the changes in the Code.

the firm. The 120-day exclusivity period can also be extended if it is requested by management and approved by the court. Extension of the exclusivity period is a common occurrence in bankruptcy cases, often for the entire duration of the bankruptcy. Hotchkiss (1995) finds only 15 cases (12%) in her sample where management lost this exclusivity right and a nonmanagement plan was proposed and accepted. According to Section 1104(a) of the Code, management can be removed only if a request is made for the appointment of a trustee and the bankruptcy court agrees, after a hearing. A trustee will be appointed only if it can be shown that the debtor committed an act of fraud, dishonesty, incompetence or gross mismanagement, or if the appointment of a trustee is shown to be in the interest of creditors, shareholders and other claim holders of the firm.

A committee of creditors holding unsecured claims is automatically formed by the bankruptcy court once the bankruptcy is filed. A committee of equity holders may be formed if necessary or when requested by the equity holders; it is not automatically formed in every bankruptcy case. Committees are formed in order to represent their respective interests in the reorganization. Both the creditors' committee and the equity holders' committee are made up of any person willing to serve that hold the seven largest amounts of claims (creditors' claims or equity claims) against the debtor. We would expect to see equity holders' committees formed in firms with large outside block holdings, where shareholders are more concentrated. The formation of these committees will affect the resolution of the bankruptcy.

The objectives of a reorganization plan are fairness and feasibility. Fairness of a plan

refers to the priority of claims.[5] Lower-order claims may not receive payment until all higher-order claims are satisfied, unless the higher-order claims willingly accept less than the face value of their claim. Feasibility refers to the possibility of a successful reorganization, without further need for legal assistance by the firm. All claims are classified into classes in the reorganization plan; "a plan may place a claim . . . in a particular class only if such claim . . . is substantially similar to the other claims . . . of such class" [11 U.S.C. §1122(a)]. The reorganization plan specifies both which classes are not impaired and the treatment of all impaired classes.[6] Along with the reorganization plan, a written disclosure statement, approved by the court, is issued to all classes of claimants. Each class votes on the reorganization plan, which the court deems acceptable if at least two-thirds in dollar amount of claims and more than one-half in number of claims vote in favor of the plan.

We often see senior claimants sharing the claims on the reorganized firm with junior claimants, including common stockholders, while the senior claims are not fully satisfied. Two explanations for the existence of deviations from absolute priority are reduction of the time spent in bankruptcy and avoidance of the cram down procedure. Weiss (1990) finds that direct costs (including legal and other administrative expenses) of bankruptcy, on

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[5]The absolute priority doctrine specifically states the order in which claims must be satisfied in bankruptcy. All administrative expenses related to the bankruptcy are satisfied first and all secured claims are satisfied by the sale of the secured asset. If the secured claim is not fully repaid, then it is classified as an unsecured claim. The law clearly states the order in which unsecured claims must be satisfied. Once unsecured claims are satisfied, preferred stockholders and common stockholders are entitled to what remains [11 U.S.C. §507(a)].

[6]A class of claims is impaired unless the plan "leaves unaltered the legal, equitable, and contractual rights to which such claim or interest entitles the holder of such claim or interest" (11 U.S.C. §1124).

average, amount to about 3.1% of the market value of the firm (book value of debt plus market value of equity). These direct costs are positively related to the length of time spent in bankruptcy. He suggests that deviations from absolute priority may occur in order to shorten the time spent in bankruptcy, as well as to reduce the direct costs of bankruptcy.

Other authors suggest that deviations from absolute priority may occur in order to avoid the legal procedure of cram down.[7] The court, using this cram down procedure, can confirm a reorganization plan so long as it "does not discriminate unfairly, and is fair and equitable, with respect to each class of claims or interests that is impaired under, and has not accepted, the plan" [11 U.S.C. § 1129(a)(7)]. A class whose claims are not fully satisfied can oppose a plan only if a lower-order class receives or retains property under the plan. If a plan is opposed, the opposing class must prove that no more senior class receives more than 100% of its claims. In this case, it will be necessary to determine in the bankruptcy court the value of the claims received under the plan, which can be costly and time-consuming. This threat of delay for valuation gives equity holders negotiating leverage in the acceptance of the reorganization plan. Under cram down, the court will confirm a plan that has not been accepted by an impaired class of claims as long as this class will receive "property of a value that is not less than the amount that such holder would receive or retain if the debtor were liquidated" and as long as no other class receives more than the face value of its claim (11 U.S.C. §1129). The threat of cram down and the cost of court-mandated valuations both induce parties to accept some deviation from absolute priority.

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[7]See Kenneth Klee, "All You Ever Wanted to Know about Cram Down Under the New Bankruptcy Code," *American Bankruptcy Law Journal* 53 (1979), for more information about the cram down procedure.

Reducing the time spent in bankruptcy and avoiding cram down may not fully explain deviations from absolute priority. Cram down is in fact rarely used in bankruptcy cases, and if it is used senior creditors would benefit. LoPucki and Whitford (1990) find that in eleven cases in which cram down was employed, the hearing did not last more than one day, and that overall the expense of the cram down procedure would have been only a fraction of the distribution made to equity holders. If a firm is insolvent, there is no reason to expect shareholders to be entitled to a claim on the reorganized firm. There must be another explanation for the existence of deviations from absolute priority. This paper addresses the incentives of managers during the reorganization process and describes deviations from absolute priority as an attempt by bondholders to induce managers to preserve firm value during the exclusivity period.

Managers clearly play an important role in the reorganization of an insolvent firm under current bankruptcy laws. This role intensifies the agency problems within the firm. Management may be more inclined to take actions for its own benefit, rather than in the interests of other stakeholders of the firm, especially during the exclusivity period. Managers have strong incentives to preserve their positions to maintain their financial and nonfinancial compensation. Alternatively, managers may direct effort away from the successful reorganization of the firm and instead search for a new position, especially if they expect to be replaced. A majority of firms eventually replace the incumbent management in the reorganization process. Betker (1995) finds that 75% of the 75 financially distressed firms in his sample experience a change in a senior level management position during the period of financial distress. Hotchkiss (1995) finds that 70% of the firms in her sample have

replaced their chief executive officer by the time a reorganization plan is implemented after bankruptcy. In the sample presented here, the chief executive officers of 56% of the firms in the sample are replaced by the time the reorganization is complete.

Bondholders and shareholders have a strong incentive to motivate managers to preserve firm value during the reorganization period. Motivation might be enhanced by allowing the manager to retain some value of the reorganized firm, perhaps through stock ownership. Cash compensation made directly to the manager will not be approved by claim holders or the court, but may occur indirectly through deviations from absolute priority. Bondholders might be willing to accept less than the face value of their claims if in doing so they are able to increase the value of the firm and limit wasteful spending of time and resources by management.

3. Literature Review

The literature examining the occurrence of bankruptcy and the outcome of the bankruptcy proceedings can be divided into three areas. The first area discusses why formal bankruptcy proceedings are necessary and studies when and why firms file for bankruptcy. Another area examines the agency problems that occur within the firm, stressing that these agency problems are even more severe for a financially distressed firm. A third area examines the resolution of bankruptcy proceedings, studying the distribution of claims following the reorganization.

3.1 Why Formal Bankruptcy is Necessary

Theoretical work that develops the reason for the existence of formal bankruptcy proceedings includes Bulow and Shoven (1978), White (1989) and Berkovitch, Israel and Zender (1998). These articles begin with a given set of assumptions, develop conditions of financial distress and examine likely outcomes of the reorganization.

Bulow and Shoven (1978) separate the classes of claimants of a financially distressed firm into three classes: bondholders, a noncohesive group of small investors; bank lenders, large creditors that have the power to negotiate with equity holders; and equity holders, who comprise the managers and shareholders of the firm. Bulow and Shoven conclude that the actions claimants take in response to financial distress may not always be those that will maximize the value of the firm. Because bank lenders are able to negotiate with equity holders, for example, there may be some value lost to the bondholders due to the reorganization. By aligning managers and shareholders, Bulow and Shoven have ignored the agency problem between these two classes. Managers may have incentives to preserve their position with the firm, without considering shareholders' goals in the reorganization.

White (1989) develops a model that examines the economic efficiency of existing bankruptcy laws under three different priority rules: (1) claims are paid off in entirety in the order in which they were made, (2) claims are paid off in entirety in reverse order in which they were made, and (3) an equal priority rule. The current absolute priority structure has features of all three of these rules. White separates the classes of claimants into three categories similar to the structure presented in Bulow and Shoven (1978), aligning managers and equity holders in the bargaining process. She argues that the current bankruptcy code

is inefficient because it encourages nonviable firms to file for reorganization. Managers will always prefer to reorganize rather than liquidate, due to their interest in retaining their position with the firms, as well as their position favoring equity in the negotiations. White also aligns managers and shareholders in the reorganization process. The model presented here relaxes this assumption, allowing for a divergence of interest among managers and shareholders.

Berkovitch, Israel and Zender (1998) acknowledge that managerial effort will determine the value of the firm and examine the moral hazard problem between managers and creditors. Their theoretical model shows that the possibility of deviations from absolute priority encourages managers to exert effort for the benefit of the firm by protecting the manager's firm-specific human capital invested in the firm. The authors conclude that the bias toward the incumbent management in the current bankruptcy code leads to an efficient allocation of resources, as well as encourages managers to preserve and enhance firm value. Berkovitch, Israel and Zender do not test their model empirically.

Empirical studies that examine the reasons firms file for formal bankruptcy include Gilson, John and Lang (1990) and Franks and Torous (1994). Gilson, John and Lang (1990) develop a model that explains why firms file for bankruptcy instead of restructuring their obligations out of court. They find that, overall, out-of-court restructurings tend to occur more frequently in firms that have fewer lenders, higher levels of bank debt and more intangible assets. Financially distressed firms whose creditors do not agree to an out-of-court settlement often resort to formal bankruptcy. Franks and Torous (1994) also compare financially distressed firms that renegotiate claims outside formal bankruptcy proceedings

to those that choose to file for Chapter 11 reorganization. They find that formal bankruptcy proceedings cost more than out-of-court workouts because claims are first renegotiated informally and the bankruptcy filing is delayed. Also, they find that equity holders receive more through out-of-court workouts because debtholders are more willing to give up some firm value in order to avoid the costlier bankruptcy proceeding.

A formal bankruptcy procedure is necessary in order to provide financially distressed firms an opportunity to reorganize or liquidate. The correct procedure that will eliminate economically inefficient firms and allow those firms that are economically viable to continue, without error, has not been determined. Often firms that should be shut down will be allowed to continue to operate due to current bankruptcy laws. One difficulty in designing an optimal bankruptcy law is the agency problems that arise in a financially distressed firm. These agency problems give rise to a game theoretic situation in which each participant in the reorganization negotiates with respect to their own self interest, without regard for the total value of the firm. The next section discusses the related literature regarding agency theory and the reorganization of a financially distressed firm.

3.2 Agency Problems Within a Financially Distressed Firm

Due to the separation of ownership and control in the corporate form of organization, agency problems are inherent in a firm. Agency problems become more severe when the firm experiences financial distress, especially given current bankruptcy law. Managers have monopoly control over the firm during the beginning of the bankruptcy proceedings, and they may use this control in order to pursue their own goals. Recognizing and understanding the

agency problems among all claimants of a financially distressed firm will allow us to develop a more complete theory of bankruptcy and bankruptcy resolution. Studies that examine the agency problems that occur in a financially distressed firm include Meckling (1977), Jensen and Meckling (1976), Demsetz (1983), Fama and Jensen (1983), and Stulz (1988).

Meckling (1977) points out that the special nature of the market for human capital will cause managers to use the existing bankruptcy laws for their own benefit, given that managers are to act in the interest of shareholders and not necessarily creditors. He states that a corporation consists of a set of contracts among all claimants of the firm whose future cash flows are uncertain. Monitoring will be necessary in order to ensure that the terms of the contracts are met. Each party will act in its own self-interest, creating agency problems within the firm. Meckling does not address the agency problem between shareholders and managers, focusing instead on the agency problem between insiders (managers/shareholders) and outsiders (creditors).

Jensen and Meckling (1976) point out that one way to alleviate the agency conflict between managers and shareholders is to alter the proportion of equity in the firm held by the manager. They predict a direct positive relationship between a manager's actions and shareholders' goals as managerial ownership increases. At low levels of ownership, managers do not derive a substantial portion of their financial wealth from the value of the firm. Managers who own little or no firm equity prefer to consume more perquisites and expend less effort because the costs of these decisions are borne by all shareholders, while the manager receives all the benefits. As managerial ownership increases, we would expect managers to limit perquisite consumption and exert more effort, focusing now on

maximizing the value of the firm. The goals of the shareholders and the manager are better aligned when the manager is also a shareholder.

A contrasting hypothesis developed by Demsetz (1983), Fama and Jensen (1983) and Stulz (1988) posits that higher levels of managerial ownership create an entrenchment effect; managers become more conservative in order to preserve existing firm value and avoid risk taking that could result in the loss of their position with the firm. This entrenchment effect is balanced by shareholder concentration. Firms with a high concentration of outside block holdings will experience more managerial monitoring, thereby dampening the entrenchment effect. Allen and Cebenoyan (1991) test this hypothesis empirically by examining bank acquisitions, and find that the entrenchment effect is stronger in firms with large insider ownership and diluted outside ownership. They also find that returns to bidders are positive only for the group of firms that have high insider ownership and also high concentrated outside ownership.

Agency problems become more severe when a firm faces financial distress. These agency problems may result in a distribution of claims that does not strictly follow the absolute priority rule. The resolution of the financial distress will depend on the power of each participant in the negotiations, as well as the current bankruptcy law. The next section will summarize the literature on the resolution of bankruptcy proceedings, specifically focusing on deviations from absolute priority.

3.3 Resolution of Bankruptcy Proceedings

The bankruptcy law would lead us to expect to see strict adherence to the priority

structure of claims inherent in a corporation. In practice, though, we see that the majority of accepted reorganization plans override this priority structure. Weiss (1990), for example, finds the existence of deviations from absolute priority in 78% (29 firms of 37 firms studied) of his sample. Eberhart, Moore and Roenfeldt (1990) observe that deviations from absolute priority occur in 77% (23 out 30 firms) of the firms in their sample. And Betker (1995) finds that deviations from the absolute priority rule occur in 72% (54 of a total of 75 firms) of his sample. In the sample in this paper, deviations from absolute priority occur in 69% of the firms (61 of 88 firms). Deviations from absolute priority appear to be the rule rather than the exception.

How can these deviations from absolute priority be explained? The literature generally assumes that management acts in the interests of shareholders throughout the reorganization procedure, thus allowing shareholders to gain some value in the post-bankruptcy firm (Eberhart and Senbet (1993) and Daigle and Maloney (1994)). The exclusive right to propose the initial reorganization plan allows managers to distribute claims as they deem appropriate, which may include distributing some value to shareholders. "To the extent that management favors equity, the plan will generally deviate from the absolute priority rule since equity holders otherwise stand to lose if the rule is followed" (Eberhart, et al., (1990)). Therefore, most authors align the interests of managers and shareholders in explaining the existence of deviations from the absolute priority rule. We do not assume managers' incentives are perfectly aligned with shareholders. If management has its own interests, then both shareholders and debtholders must take actions that will induce managers to maximize firm value. Deviations from absolute priority are approved by all claimants

because they encourage managers to preserve firm value.

Eberhart and Senbet (1993) use simulations to show the effectiveness of deviations from absolute priority in mitigating the conflict of interest between bondholders and shareholders. They show that traditional methods of controlling the risk-shifting incentive of shareholders, which arises when convertible debt is issued, are not effective when a firm is in financial distress. The value of the convertibility option is zero, but as the firm approaches bankruptcy, the possibility of a deviation from absolute priority alleviates this risk-shifting incentive by providing equity holders with a portion of the reorganized firm. Eberhart and Senbet assume that managers act in the interest of shareholders, disregarding the manager's monopoly control over the reorganization process in the beginning of the bankruptcy proceedings. This agency problem will be addressed in the theoretical model presented in our paper.

Daigle and Maloney (1994) develop a theoretical model to explain deviations from absolute priority, but conclude that liquidations will be more common than reorganizations and that deviations from absolute priority should occur rarely.[8] Their conclusions are inconsistent with empirical observation, since deviations from absolute priority occur in approximately 75% of bankruptcy cases. In their model, shareholders will not misappropriate the firm's assets for their own benefit if and only if their share of the reorganized firm is worth more than the value of the assets that can be exploited.

In essence, the Daigle and Maloney (D-M) model is a special case of the model

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[8]Daigle and Maloney also assume that managers act in the interests of shareholders, ignoring the agency conflict between managers and shareholders explicitly modeled here.

presented here. A critical assumption of the D-M model is that as more and more of the firm's assets are misappropriated by shareholders, it becomes harder and harder to misappropriate funds. This is equivalent to assuming some sort of deadweight loss in the return to misappropriation function. This deadweight loss limits the amount of funds that the shareholders can exploit. Rather than assuming this, we model the manager's return to misappropriation. Managers have an undiversified investment in human capital. If too much of the firm is misappropriated, managers risk dismissal. In this case, managers will voluntarily reduce this misappropriation in order to increase the probability that they retain their position with the firm.

Another problem with the D-M model is the time frame investigated. D-M examine the entire financial distress period, which they assume to be five years prior to the bankruptcy filing, for all firms. While this simplifies the model, D-M do not acknowledge that financial distress occurs at different times for different firms. The window of time they model allows shareholders to take advantage of all forms of expropriation of funds, including asset substitution and underinvestment as well as distributing cash as dividends. The model presented here concentrates on the exclusivity period, allowing us to focus solely on the incentives and behaviors of the manager as they relate to shareholders and bondholders. The exclusivity period is clearly determined by the bankruptcy filing. A focus on the exclusivity period removes the need to consider the asset substitution and underinvestment problems. First, after filing for reorganization the firm must obtain permission from the court before any assets are sold. Also, during bankruptcy, the reorganization process will occupy management's time obviating investment in new projects. LoPucki and Whitford (1993), in

an analysis of 43 firms that filed for bankruptcy, find that during reorganization these firms "generally did not start new businesses, make acquisitions not integrally related to the company's existing business, expand significantly the existing business or engage in high risk activity." During reorganization, management has only two outlets for misappropriating the firm's assets: perquisite consumption and reduced effort. D-M ignore the behavior of the manager, focusing only on shareholders' attempt to maximize wealth, which consists of the portion of the distressed firm that is misappropriated for their benefit plus their share of the reorganized firm. The model presented in this paper does address manager behavior, independent of shareholders' goals, in explaining deviations from absolute priority.

Several authors emphasize the potentially conflicting incentives of managers and shareholders in the reorganization process (see LoPucki and Whitford (1990 and 1993), Betker (1995) and Venkataraman (1996)). LoPucki and Whitford (1990 and 1993) provide an in-depth analysis of 43 firms that filed for bankruptcy between 1979 and 1988. They conducted extensive interviews with attorneys in each case in order to understand the negotiations involved in the reorganization. The interviews reveal the usual motivations for allowing deviations from absolute priority: avoidance of the costly and time-consuming valuation process involved in a cram down hearing and a desire for mutually agreeable plans.[9] Deviations from absolute priority were necessary in order to ensure that all impaired classes would accept the proposed reorganization plan. LoPucki and Whitford do not present

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[9]LoPucki and Whitford (1990) find that, if cram down had been employed, creditors would have been better off. The expense of cram down was not as large as the distribution given to shareholders. The threat of cram down appears to be enough to encourage mutual agreement among all claimants in the bankruptcy plan.

a theoretical or empirical model in their discussion, but they do provide anecdotal evidence that managers do not always act in the best interests of shareholders. "Management's orientation was clearly a function of the company's solvency. The managements of solvent companies never aligned with creditors, while the managements of insolvent companies did so frequently" (LoPucki and Whitford, 1993). For the solvent firms in their sample, the managers of three (out of 25) firms were clearly aligned with equity, while not one manager was aligned with creditors. For the insolvent firms, the managers of nine firms were clearly aligned with creditors, and only two of the managers were clearly aligned with equity.[10] Therefore, the simplifying assumption that managers always act in the interests of shareholders is not correct.

Betker (1995) examines the actions of managers, shareholders and debtholders in the bankruptcy process in order to explain deviations from absolute priority. Betker emphasizes the fact that traditional monitoring devices to control managerial behavior are no longer effective when a firm declares bankruptcy. Courts have held that shareholders cannot call a meeting in order to remove management, and the threat of a hostile takeover is diminished by financial distress. The reduced effectiveness of these monitoring devices aggravates the agency problems between managers and shareholders.

Betker finds that deviations from absolute priority are significantly related to the proportion of claims held by banks and secured creditors, but are not related to firm size or creditor concentration. He also finds that ownership structure is significant. That is, the

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[10]The other eleven managers were classified, according to the authors, as attempting to maximize the value of the estate or attempting to preserve the company.

extent of shareholdings of the chief executive officer is positively related to the level of absolute priority deviations in his sample. Betker's comparison of firms that have replaced the CEO due to the financial distress and those that have retained the CEO indicates that shareholders are rewarded more when the firm does not replace its CEO. For example, 74% of his sample firms that do not replace their CEO experience positive deviations in absolute priority; only 32% of the firms that replace the CEO experience positive deviations from absolute priority. Betker does not develop a theoretical model that explains the behavior of managers during the reorganization process and he does not endogenize the manager's personal incentives in the reorganization process. The theoretical model presented here will incorporate the manager's utility function in explaining the common occurrence of deviations from absolute priority.

Venkataraman (1996) develops a theoretical model that compares the effectiveness of both deviations from absolute priority and capital contributions by the manager in controlling the agency problems in a financially distressed firm. He examines small firms, and shows that capital contributions by the owner-manager are one way to ensure that the manager will engage in value-preserving behavior. When these capital contributions are not possible, creditors will allow the manager to retain some value in the reorganized firm, through deviations in absolute priority, in order to create the appropriate incentives for the manager to preserve firm value. While capital infusions by an owner-manager are a feasible source of financing for a small firm, it is not necessarily likely that managers of large corporations will be willing to provide such personal financing. The level of capital required to assist a large corporation may be substantial and the manager of a large corporation has

even less of an incentive to provide the needed funds than the owner-manager of a small firm. In this paper, we focus on large, publicly traded corporations, whose behavior differs significantly from small, owner-managed firms.

The evidence is that courts are confirming reorganization plans allowing current shareholders who contribute a substantial amount of capital to the firm to retain ownership in the firm, even if creditors' claims are not fully satisfied. This doctrine, referred to as the New Value Exception Rule, is justified primarily because managerial effort is unobservable and because this capital infusion by shareholders provides an incentive for managers/equity holders to take actions that will benefit the firm (see Venkataraman (1996), Basil (1996) and Sterbach (1994)).

This paper will examine the incidence of deviations from absolute priority and the relationship between ownership structure and these deviations. The theoretical model assumes the behavior of the manager to be utility maximizing, not necessarily firm value maximizing. The manager may therefore take actions that are not in the best interests of either shareholders or bondholders.

4. Theory

4.1 Assumptions Underlying the Theoretical Model

The incentives of the players involved in a bankruptcy process are all very different. There are conflicts of interests among all major participants of the firm during the reorganization process. Managers are more interested in remaining in their current position or at least delaying their inevitable firing by prolonging the bankruptcy process until they

find other employment. Debtholders are interested in recovering the face value of their investment, as well as any interest due. Shareholders are interested in maximizing the value of equity for their own financial gain. Furthermore, the various parties have access to differing levels of information regarding the true value of the firm. Managers are closest to the daily operations of the firm and better aware of the firm's future cash flow prospects. Large institutional shareholders may be activists and also aware of the firm's future opportunities. Debtholders, with their senior priority claim on the assets of the firm, are less involved in project selection for the firm, and therefore less informed about the cash flows. In the event of financial distress, each party has an incentive to protect its own interests, even at the expense of overall firm value. While there are always inherent agency problems and information asymmetries among claim holders as well as with managers, financial distress exacerbates the conflicts.

The model assumes the manager faces two major decisions during the reorganization process. He must choose, first, the level of perquisites to consume, and, second, the amount of effort to put forth in contributing to the success of the firm during the exclusivity period. These choices will directly affect the value of the firm as well as the manager's probability of retaining his position with the firm. Effort is positively related to both outcomes, and perquisite consumption is negatively related to both outcomes.

The ownership structure of the firm will directly affect the manager's perquisite consumption and effort decisions. Jensen and Meckling (1976) predict that the goals of managers and shareholders will be better aligned when the manager is also a shareholder. As managerial ownership increases, we would expect managers to take actions that will

maximize the value of the firm. On the other hand, increased managerial ownership may produce an entrenchment effect (Stulz, 1988); managers may act more conservatively in order to preserve their position with the firm, as well as preserve the value of their equity in the firm. Instead of a direct positive relationship between managerial ownership and firm value, there may be a nonmonotonic relationship.

There are some outside influences on manager actions. Managers are subject to the market for corporate control, along with other monitoring devices. Outside shareholders also provide some form of monitoring over the firm, particularly in the case of large block holders, who have a significant interest in the firm. The entrenchment effect is expected to be negatively related to the level of outside monitoring of manager actions. When outside monitoring is high, a manager will not be able to take actions for his own benefit. In our case, we further test the entrenchment effect to see whether managers take advantage of their exclusive control during reorganization and also to see whether outside block holders provide some form of control over manager actions.

The manager of a distressed firm may be either replaced or retained. We assume the manager prefers to be retained because of an investment in firm-specific human capital. The actions the manager takes during the exclusivity period, perquisite consumption and amount of effort exerted, will affect the probability the manager will be retained. The manager derives utility from his position with the firm, holds equity in the firm and consumes perquisites. There is a positive relationship between the manager's utility and retention of his position and perquisite consumption, and a negative relationship between the manager's utility and the amount of effort exerted for the firm. We will assume that effort (perquisite

consumption) decreases (increases) the manager's utility, increases (decreases) the value of the firm and increases (decreases) the manager's probability of being retained by the bankrupt firm.

Bondholders are aware of the manager's incentive to pursue utility maximizing goals and will attempt to alleviate this agency problem. One way bondholders can better align the manager's actions with their own goals in the reorganization process would be to offer some form of compensation in the reorganized firm, perhaps through deviations from absolute priority. If managers are granted a portion of the reorganized firm, they may have incentives to limit perquisite consumption and increase the amount of effort put forth.

Managerial perquisite consumption will be limited by the amount of free cash flow within the firm. We will assume that free cash flow is fixed; that is, the firm does not sell any assets during the exclusivity period.[11] More free cash flow within the firm will allow managers to consume more perquisites, if they so choose. As higher levels of perquisites are consumed by managers, the potential value of the reorganized firm is diminished. Bondholders who expect managers to consume more perquisites may be willing to negotiate with management in order to limit the amount of cash spent during this period. Bondholders may also be willing to accept less than the face value of their claims in order to quickly resolve the bankruptcy.

In financial distress, the manager's choice of perquisite consumption and effort will have an even larger consequence on the manager's future with the firm. If managers derive

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[11]By law, a firm must request permission from the court to sell any asset during the bankruptcy proceedings.

utility from their position, they have a countervailing incentive to limit perquisite consumption and increase effort. We assume managers can affect the probability of retaining their job through reduced perquisite consumption and increased effort. The next section will formally present the theoretical model which will be empirically tested in Section 5.

4.2 The Theoretical Model

We consider a one-period model, in which the firm declares bankruptcy at t = 0 and management proposes a reorganization plan at t = 1:

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|----------------------|
0                      1
bankruptcy     reorganization
filing date    plan filed by management
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The period between t = 0 and t = 1 is the exclusivity period, during which management has complete control of the firm.

The model assumes that the manager cannot be fired at t = 0 when bankruptcy is declared because there is some value lost in firing him. An incumbent manager possesses some expertise or knowledge specific to this firm, and this knowledge increases the value of the firm. Thus, if management is fired, the value of the firm will be lower than if the manager is retained, assuming no change in managerial effort or perquisite consumption. The manager can be fired, however, at the end of the exclusivity period, i.e., at t = 1.

The monopoly control given to managers by the bankruptcy laws means that management retains control of the firm and outside claimants risk losing firm value due to actions managers take during this exclusivity period. The manager chooses the dollar

amount of perquisite consumption, $\tilde{\phi}$, and the level of effort, F, to exert during the exclusivity period (t = 0 through t = 1). These choices are unobservable to outside claimants, but will both affect the value of the firm at time t = 1 and the probability that the manager is retained at time t = 1. At the end of the exclusivity period, the manager's choice of $\tilde{\phi}$ and F will be observable to outsiders, so managers may choose to forgo perquisite consumption and increase effort in order to increase the probability that they are retained at t = 1. If managers choose instead to exploit their position and maximize perquisite consumption, this consumption will be limited to the firm's existing level of free cash flow, ϕ^*. Thus:

$$0 \leq \tilde{\phi} \leq \phi^* \tag{1}$$

The manager is assumed to maximize expected utility subject to several constraints. This expected utility depends on the value of the firm at the end of exclusivity, along with the manager's expected probability of retaining his current position with the firm. The manager derives utility from both pecuniary and nonpecuniary benefits, as well as stock ownership in the firm.[12] The expected value of this stock ownership will depend on how the claims on the firm are satisfied in the reorganization plan that the manager proposes at time t = 1. If a distribution to equity holders is included in the reorganization plan, the manager's equity has a positive value. If distributions to shareholders are not included in the claims on the reorganized firm, the manager's equity is worthless.

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[12]Stock ownership is used in its broadest sense, including employee stock option plans or contracts that explicitly include stock options for managers.

The value of the firm at t = 1 will depend on the choices the manager makes during exclusivity, specifically his perquisite consumption and effort decisions. Let D equal the renegotiated value of the firm's liabilities as stated in the reorganization plan. The value of the equity, $E_{t=1}$, in the firm can be valued in the same manner as a call option:

$$E_{t=1} = \max[\{V_{t=1}(\tilde{\phi}, F) - D\}, 0] \quad (2)$$

If the firm is insolvent, the value of the firm's equity can be considered an out-of-the-money option. And if absolute priority rules are strictly followed, the equity of an insolvent firm is clearly worthless. Value can be derived from this option only through deviations from absolute priority.

If we let α denote the proportion of equity held by the manager, the value of the manager's equity is $\alpha E_{t=1}$, where $E_{t=1}$ is described in Equation (2). The value of the manager's equity in this firm depends on the proportion of equity he holds and the value of the firm's equity. The value of the firm's equity depends on the value of the firm at the end of the exclusivity period, which in turn depends on the perquisite consumption and effort decisions made by the manager during the exclusivity period, minus the value of the renegotiated claims on the firm due to the reorganization.

The manager's utility depends on the sum of the value of his equity ownership in the firm, his salary, τ, and his choice of perquisite consumption, $\tilde{\phi}$, and effort, F, decisions. The value of his salary is assumed to be the present value of the future excess salaries earned if the manager is retained by the firm. If he is not retained, the value of τ is assumed to be zero. Thus, the manager attempts to maximize the utility function:

$$U(\alpha \max[\{V_{t=1}(\tilde{\phi}, F) - D\}, 0], \tau, \tilde{\phi}, F) \tag{3}$$

Utility is assumed to be positively related to the value of the equity owned by the manager, as well as the value of the firm. Utility is also assumed to be positively related to salary and perquisite consumption, but negatively related to effort.

The manager's uncertainty about retaining his current position with the firm alters his incentives. Maximizing effort and minimizing perquisite consumption will improve the manager's probability of retaining his position with the firm. Therefore, including the probability of retaining the manager, q, or replacing the manager, (1 - q), the manager's objective function, H, becomes:

$$\begin{aligned} H = \underset{\tilde{\phi},F}{\text{Max}}\{&q(\tilde{\phi},F,\alpha)U[\alpha\{V_{t=1}(\tilde{\phi},F)-D\},\tau,\tilde{\phi},F] \\ &+[1-q(\tilde{\phi},F,\alpha)]U[\alpha\{V_{t=1}(\tilde{\phi},F)-D\},\tilde{\phi},F]\} \end{aligned} \tag{4}$$

subject to: $0 \le \tilde{\phi} \le \phi^*$ $\qquad 0 \le F \le F^{max}$ $\qquad 0 \le q, \alpha \le 1$

$$V_{t=1} = V_{t=0} + \Delta V(\phi, F)$$

where: H = manager's objective function
q = probability of retaining the manager at t = 1
(1 - q) = probability the manager is replaced at t = 1
$\tilde{\phi}$ = manager's choice of perquisite consumption over the period t = 0 through t = 1

ϕ^* = free cash flow within the firm
α = manager's share of equity in the firm
τ = present value of all future excess salaries earned from the manager's position with the firm, if retained
F = level of effort exerted by the manager over the period t = 0 through t = 1
F^{max} = maximum effort that could be exerted by the manager
$V_{t=1}$ = value of the firm at the end of the exclusivity period
$V_{t=0}$ = value of the firm at the beginning of the exclusivity period
$\Delta V(\phi, F)$ = change in the value of the firm during the exclusivity period
D = value of the firm's liabilities as stated in the reorganization plan

Equation (4) represents the expected utility of the manager. The first term in Equation (4) represents the utility if the manager is retained in his current position. The second term represents the manager's utility if fired from the firm. Note that if the manager is fired, he is no longer entitled to future salaries earned in this position; that is $\tau = 0$ and it does not appear in that expression

The next section will further examine the managerial utility function for certain corner solutions, developing comparative statics associated with priority rules and managerial retention.

4.2.1 Corner Solutions of the Model

4.2.1.1. *Strict Absolute Priority Rules and Automatic Replacement of Manager*

Assuming strict priority rules are followed, either the manager retains his position with the firm or he does not retain his position with the firm. In either case, the manager maximizes utility only by increasing perquisite consumption and/or reducing effort. Suppose the manager expects to be replaced once the reorganization is complete; that is, $q \to 0$. Now,

the manager is no longer entitled to the excess salary earned at his current position ($\tau = 0$) and strict enforcement of absolute priority rules reduces the manager's objective function [Equation (4)] to:

$$H = \underset{\tilde{\phi},F}{Max}\, U[\tilde{\phi}, F] \tag{5}$$

Utility maximization can then occur only through increased perquisite consumption and decreased effort, resulting in the optimal decisions to consume the maximum amount of perquisites, ϕ^*, and exert the minimum amount of effort, F = 0:

$$\frac{\partial H}{\partial \phi} = \phi^* \quad \text{and} \quad \frac{\partial H}{\partial F} = 0$$

In the absence of deviations from absolute priority and in the case of automatic replacement of the manager, the manager will fully exploit his position with the firm during the exclusivity period, thereby destroying value, and making outside claimants, including bondholders, worse off.

4.2.1.2. *Strict Absolute Priority Rules and Automatic Retention of Manager*

If we assume the manager is automatically retained by the firm once exclusivity ends and that absolute priority rules are strictly enforced, we reach the same conclusion. The manager's utility function becomes:

$$H = \underset{\tilde{\phi},F}{Max}\, U[\tau, \tilde{\phi}, F] \tag{6}$$

The solution to Equation (6) is identical to Equation (5).[13] The manager will maximize utility through increasing perquisite consumption and minimizing effort. We are again at the following corner solution:

$$\frac{\partial H}{\partial \phi} = \phi^* \quad \text{and} \quad \frac{\partial H}{\partial F} = 0$$

In either case, when deviations from absolute priority are prohibited, the manager will take value reducing actions and bondholders will be worse off.

4.2.1.3. *Deviations from Absolute Priority Rules*

If strict enforcement of absolute priority rules causes managers to destroy value during the exclusivity period, allowing for deviations from absolute priority rules will better align the incentives of managers and outside claimants. If we allow for deviations from absolute priority, the manager, as a shareholder, has the potential to share in the claims on the reorganized firm. Allowing for deviations from absolute priority provides managers with a countervailing incentive to limit perquisite consumption and increase effort. It is possible for managers to increase the value of their claims on the reorganized firm through their actions.

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[13]The model assumes that τ is fixed. A more complete explanation would allow for τ to be a function of effort, acknowledging the fact that an extremely high salary may induce the manager to take firm value maximizing actions in order to preserve this salary. Under this assumption, a tradeoff still exists and we would arrive at an interior solution to the model.

In this case, retention or replacement of the manager will not affect the results, due to the fixed nature of salary, τ. Assuming the manager will be replaced ($q \rightarrow 0$) once the reorganization is complete and allowing for deviations from absolute priority, the managerial utility function becomes:

$$H = \underset{\tilde{\phi},F}{\text{Max}}\, U[\alpha\{V_{t=1}(\tilde{\phi}, F) - D\}, \tilde{\phi}, F] \tag{7}$$

Assuming the manager will be retained ($q \rightarrow 1$) the managerial utility function becomes:

$$H = \underset{\tilde{\phi},F}{\text{Max}}\, U[\alpha\{V_{t=1}(\tilde{\phi}, F) - D\}, \tau, \tilde{\phi}, F] \tag{8}$$

In either case, the first-order conditions are as follows (positive and negative signs are given to indicate the relationship between the two variables):

$$\frac{\partial H}{\partial \phi} = \alpha \underset{+}{U_V} \underset{-}{V_\phi} + \underset{+}{U_\phi} = 0 \qquad \text{and} \qquad \frac{\partial H}{\partial F} = \alpha \underset{+}{U_V} \underset{+}{V_F} + \underset{-}{U_F} = 0$$

As the manager consumes more perquisites, the value of the firm is diminished but the manager's utility is positively related to the value of the firm and the amount of perquisites consumed. As the manager exerts higher levels of effort, the value of the firm increases, thus increasing the manager's utility. But as more effort is exerted, the manager's utility declines.

The decisions the manager chooses in this scenario are not clearly defined in the case of insider holdings. Under a Jensen-Meckling (1976) framework, we would expect greater insider holdings to create incentives for the manager to limit perquisite consumption and

maximize effort. Conversely, the entrenchment effect may cause the manager to take value reducing actions. Our empirical tests will attempt to reconcile these competing hypotheses.

At an extreme, managers who do not own equity in the firm have no incentive to preserve firm value, when job retention is unaffected by managerial behavior. Here, the manager's utility is positively related to only perquisite consumption (and negatively related to effort), so preserving firm value will diminish utility. If the manager expects to be replaced once the reorganization is complete and does not own any equity in the firm, he will maximize perquisite consumption and minimize effort.

The next section will discuss the uncertainty case where the manager can affect the probability of retaining his position with the firm.

4.2.2 Interior Solutions of the Model

In section 4.2.1, we considered only cases in which the manager knows, at t = 0, whether he will be retained or not. If we allow for uncertainty in manager retention, the manager's objective function is more complicated. That is, the manager knows the retention rule that is applied by the shareholders based on the manager's choice of perquisite consumption and effort.

4.2.2.1. *Strict Absolute Priority Rules*

Under uncertainty, if absolute priority rules are strictly enforced and the firm is insolvent, the manager's objective function becomes:

$$H = \underset{\tilde{\phi},F}{Max}\, q(\tilde{\phi}, F, \alpha)U[\tau, \tilde{\phi}, F] + [1 - q(\tilde{\phi}, F, \alpha)]U[\tilde{\phi}, F] \qquad (9)$$

The first-order conditions are as follows:

$$\frac{\partial H}{\partial \phi} = q_{\phi}\,U[\tau, \tilde{\phi}, F] + U_{\phi} - q_{\phi}\,U[\tilde{\phi}, F] = 0 \qquad (10)$$

and

$$\frac{\partial H}{\partial F} = q_{F}\,U[\tau, \tilde{\phi}, F] + U_{F} - q_{F}\,U[\tilde{\phi}, F] = 0 \qquad (11)$$

The first term in Equation (10) represents the marginal cost of perquisite consumption to the manager; the second and third terms represent the marginal benefit of perquisite consumption. The manager will choose the level of perquisite consumption in order to equate the marginal cost with the marginal benefit. If the manager expects to be replaced once the reorganization is complete, then limiting perquisite consumption will reduce his utility; he will thus increase perquisite consumption in order to compensate for an anticipated loss in salary and other benefits he receives from his current position. On the other hand, if the manager believes he can increase the probability of retaining his position with the firm, he will limit perquisite consumption.

The first term in Equation (11) represents the marginal benefit of effort for the manager; the second and third terms represent the marginal cost of effort. Again the manager will choose to exert that level of effort that will equate the marginal cost and marginal benefit of effort. If the manager expects to lose his job, then exerting effort to increase the value of

the firm will reduce his utility. Conversely, the manager may exert more effort in order to increase the probability of retaining his position.

The manager's decisions will be directly related to his expectations of retaining his position. If bondholders can somehow indicate to managers that limiting perquisite consumption and maximizing effort will improve the chances managers will be retained, we will see managers taking actions that increase the value of the firm. Managers who own equity in the firm can also increase their utility by limiting perquisite consumption and maximizing effort if there is a positive probability that deviations from absolute priority will occur.

4.2.2.2. *Deviations from Absolute Priority Rules*

Allowing for deviations from absolute priority further alters the manager's objective function and the optimal solution. The first order conditions are as follows:[14]

$$\frac{\partial H}{\partial \phi} = q_{\phi}\, U\{\alpha(V-D),\ \tau,\ \phi,\ F\} + U_{V}\, V_{\phi}\, \alpha + U_{\phi} - q_{\phi}\, U\{\alpha(V-D),\ \phi,\ F\} = 0 \quad (12)$$

and

$$\frac{\partial H}{\partial F} = q_{F}\, U\{\alpha(V-D),\ \tau,\ \phi,\ F\} + U_{V}\, V_{F}\, \alpha + U_{F} - q_{F}\, U\{\alpha(V-D),\ \phi,\ F\} = 0 \quad (13)$$

Now the marginal costs and marginal benefits of perquisite consumption and effort are more complicated. If there are deviations from absolute priority, managers can maximize this

[14]See Appendix for further details.

value by reducing perquisite consumption and maximizing effort. The first two terms in Equation (12) represent the marginal cost of perquisite consumption. The first term shows that the manager reduces the probability he will be retained by the bankrupt firm through perquisite consumption. The second term shows that the manager reduces the value of the firm through perquisite consumption. The third and fourth terms represent the marginal benefit of perquisite consumption; the manager increases utility in the third term and decreases utility in the fourth term. Comparing Equation (12) with Equation (10), we see that allowing for deviations from absolute priority provides an even stronger incentive for managers to preserve firm value. The possibility of deviations from absolute priority increases the marginal cost of consuming perquisites [the second term in Equation (12)], reducing the manager's utility that is derived from a misappropriation of firm value.

The first two terms in Equation (13) represent the marginal benefit of effort. The first term shows the manager's increased probability of retaining his position with the firm through increased effort, and the second term shows the increase in utility derived from the increase in firm value through increased effort. The third and fourth terms represent the marginal costs of effort to the manager, showing the decrease in utility from increased effort. Equation (13), as compared to Equation (11), shows that the possibility of deviations from absolute priority increases the marginal benefit of effort [the second term in Equation (13)], thus inducing the manager to increase the amount of effort put forth during the exclusivity period.

Both Equations (12) and (13) show the complex decision structure for the manager, in which effort and perquisite consumption directly and indirectly affect utility. The effort

and perquisite consumption decisions indirectly affect utility through the value of the firm and job retention. Limiting perquisite consumption will increase the probability he retains his current position with the firm, as well as increase the potential value of his equity position in the firm (assuming deviations from absolute priority are possible), although this action will also negatively affect the manager's utility. The manager will choose to limit perquisite consumption as long as the utility he derives from the probability of retaining his position and the possible deviations from absolute priority outweighs the utility lost from limiting perquisite consumption. If bondholders can clearly indicate throughout the negotiations that managers will retain their positions and shareholders will be allowed to retain a portion of the reorganized firm, it is possible that firm value will be preserved through reduced perquisite consumption by the manager.

In the same manner, the manager can be induced to exert higher amounts of effort in order to increase firm value. The manager does not value effort in his utility function; exerting effort reduces utility. But exerting effort will increase the probability of retaining his position with the firm, as well as increase the value of the firm. If bondholders accept deviations from absolute priority, the manager as a shareholder will be better off exerting a higher level of effort.

The effect of ownership structure on the manager's actions can be examined through the second order conditions of Equation (4). The second derivative of the manager's objective function with respect to perquisite consumption and ownership structure is:

$$\frac{\partial^2 H}{\partial \phi \partial \alpha} = \underset{+}{U_V} \underset{-}{V_\phi} < 0 \qquad (14)$$

From Equation (14), it is expected that the manager will choose to reduce his perquisite consumption as his equity ownership in the firm increases. And the second derivative of the manager's objective function with respect to effort and ownership structure is:

$$\frac{\partial^2 H}{\partial F \partial \alpha} = \underset{+}{U_V}\,\underset{+}{V_F} + \underset{+}{U_{V\alpha}}\,\underset{+}{V_F} \tag{15}$$

This relationship is not clearly defined. It is expected that increased ownership in the firm will induce managers to take actions that will maximize firm value and, thus, will exert higher levels of effort.

The next section will examine the effect of the manager's decision on the bondholders' claims.

4.3 End of Exclusivity Period

At t = 1 the reorganization plan is filed by management and the exclusivity period ends. The value of the firm at the end of exclusivity will tell bondholders something about decisions managers have made during the exclusivity period. The value of the reorganized firm is:

$$V_{t=1} = V_{t=0} + \Delta V(\tilde{\phi}, F) \tag{16}$$

which is the value of the firm at time t = 0 plus the change in the value of the firm during the exclusivity period. The change in the value of the firm during the exclusivity period is directly related to actions taken by management. If managers have limited perquisite

consumption and maximized effort, the value of the firm at t = 1 will be greater than the value of the firm at t = 0. That is, as $\tilde{\phi} \rightarrow 0$ and $F \rightarrow F^{max}$, $\Delta V > 0$. On the other hand, if managers exploit their positions, maximizing perquisite consumption and minimizing effort, the value of the firm at t = 1 will be less than the value of the firm at t = 0. That is as $\tilde{\phi} \rightarrow \phi^*$ and $F \rightarrow 0$, $\Delta V < 0$.

Let ρ denote the portion of the value of the firm that is given to shareholders in the reorganization plan.[15] The value of equity in the reorganized firm, $E_{t=1}$, is equal to the portion of the firm received by shareholders multiplied by the total value of the reorganized firm minus any new debt securities issued:[16]

$$E_{t=1} = \rho(V_{t=1} - D) \tag{17}$$

where: $E_{t=1}$ = value of equity in the reorganized firm
ρ = shareholders' portion of the reorganized firm
$V_{t=1}$ = value of the reorganized firm
D = value of new debt securities issued in the reorganized firm

Managers, as shareholders are entitled to their share of this value, which depends on their proportion of ownership in the firm.

The portion of the firm received by bondholders, $D_{t=1}$, is equal to the value of the new debt securities issued to them, D, as well as the portion of the new equity they retain, which is equal to one minus the equity value given in Equation (17), as negotiated in the reorganization plan:

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[15]Under strict absolute priority rules $\rho = 0$ for an insolvent firm. If $\rho > 0$, deviations from absolute priority have occurred.
[16]To simplify, the model assumes a zero discount rate.

$$D_{t=1} = (1-\rho)(V_{t=1} - D) + D \tag{18}$$

Bondholders make two decisions immediately preceding time t = 1, based on their expectations of $V_{t=1}$. First, the bondholders must decide whether or not to accept deviations from absolute priority. Second, they must decide whether or not to fire managers. These decisions are directly related to the expected value of the firm at time t = 1, which is directly related to the manager's decision variables. It is assumed that the bondholders will choose to retain a manager only when it is expected that the manager did not destroy value during exclusivity. Therefore, the value of the firm is higher when the manager is retained.

Let E[V''] denote the expected value of the firm when the manager is retained and E[V'] denote the expected value of the firm when the manager is replaced, where E[V''] > $V_{t=0}$ > E[V']. The value of the bondholders' claims can be described as follows:

Bondholders' Claims	Manager Retained q = 1	Manager Replaced q = 0
Deviations from APR occur ρ > 0	$(1-\rho)(E[V'']-D)+D$ **a**	$(1-\rho)(E[V']-D)+D$ **b**
Deviations from APR do not occur, ρ = 0	E[V''] **c**	E[V'] **d**

Whether or not deviations from absolute priority occur, bondholders are always better off when they retain the manager (cell a > cell b and cell c > cell d). By assumption, the value of the firm is greater when the manager takes firm value maximizing actions.

Regardless of whether the manager is retained or not, bondholders will be willing to accept deviations from absolute priority when the value of the reorganized firm minus the lost perquisite consumption is greater than the value of the new debt securities issued to bondholders. This conclusion is reasonable because deviations from absolute priority occur only when they are willingly accepted by bondholders, and bondholders will accept them when the expected value of the firm exceeds the renegotiated value of their claims on the firm. The value available to bondholders is the greatest when the manager is retained and deviations from absolute priority occur (cell a). Therefore it is advantageous for bondholders to clearly indicate to managers that they will be retained only when they add value during exclusivity and that deviations from absolute priority will occur only when the manager has taken actions that increase the value of the firm.

The next section will present several testable hypotheses that are derived from the theoretical model presented above.

5. Testable Hypotheses

Deviations from absolute priority make the firm more valuable for all shareholders than if absolute priority rules were to be followed. In most reorganization cases, if absolute priority rules are followed, the equity claims on the firm would be extinguished, and bondholders would become the owners of the firm. Managers who are shareholders benefit all the more from deviations in absolute priority. From the comparative statics described above we know that as managerial ownership increases, the effort the manager exerts will increase and the amount of perquisites the manager consumes will decrease. These actions

increase the value of the firm, thereby increasing the value of the bondholders' claims. We expect firms in which bondholders accept deviations from absolute priority to experience less value lost through managers' choices of perquisite consumption and more value gained through managers' choices of effort. Therefore, it is to the advantage of bondholders to accept deviations from absolute priority in order to encourage managers to take actions that will benefit the firm.

We expect ownership structure to determine the occurrence of deviations from absolute priority. Deviations from absolute priority are expected to be more effective at resolving agency problems if managers are also shareholders. Managers will be more inclined to preserve firm value when their financial wealth is tied to the value of the firm. That is, deviations from absolute priority are expected to be positively related to insider holdings. As more equity is held by managers, outside claim holders have to provide an incentive, through deviations from absolute priority, for managers to take firm value maximizing actions during exclusivity. Outside stockholders play a monitoring role over managers, alleviating the entrenchment effect, so we would expect to find a negative relationship between the amount of equity held by block holders and deviations from absolute priority. Or, there may be a greater probability of deviations from absolute priority when block holdings are significant because these shareholders have a greater incentive to take an active part in the reorganization process.

The amount of free cash flow is expected to be positively related to deviations from absolute priority. Managers who have control over the spending of free cash flow, whether for profitable investments or for perquisite consumption, will have more opportunity to

consume perquisites during the exclusivity period. At the same time, bondholders will be more willing to permit deviations from absolute priority when there is greater firm value to lose, via perquisite consumption.

The pre-bankruptcy solvency level, the complexity of the firm's capital structure and the size of the firm are also expected to affect the occurrence of deviations from absolute priority. The more solvent the firm, the higher the probability that equity holders are entitled to some form of distribution in the reorganization plan. We expect to find a positive relationship between the pre-bankruptcy solvency level of the firm and deviations from absolute priority. The complexity of the bankruptcy case can be proxied by the number of classes included in the bankruptcy case. A more complex bankruptcy proceeding will produce more classes of claimants entitled to vote on the reorganization plan; negotiations will be lengthier and the bankruptcy more costly. We therefore expect to see a negative relationship between the number of classes in the bankruptcy proceeding and deviations from absolute priority. The size of the firm is also expected to be positively related to deviations from absolute priority, because a larger firm will have more severe agency problems, all else equal. The theoretical model can be tested empirically by examining the incidence of deviations from the absolute priority. The logistic regression to be estimated (with predicted signs) is:

$$\rho = f[\underset{+}{\alpha},\ \underset{-}{\beta},\ \underset{+}{\phi^*},\ \underset{-}{\theta},\ \#\ \text{of classes},\ \underset{+}{\text{sales}}] \qquad (19)$$

where: ρ = deviations from absolute priority; this is a dummy variable equal to 1 if deviations from absolute priority occur and 0 otherwise.

α = insider holdings, percent of equity held by the chief executive officer, prior to the declaration of bankruptcy

β = outsider holdings, measured as the percentage of common stock, including warrants and exercisable options held by block holders, as reported in the proxy statement, prior to filing for bankruptcy

ϕ^* = free cash flow, measured by the portion of the firm held in current assets at the time bankruptcy is declared

θ = debt ratio of the firm immediately prior to declaring bankruptcy, measured by total debt divided by total assets

# of classes = number of classes included in the reorganization plan, which proxies for the complexity of the bankruptcy case

sales = natural log of the total annual sales of the firm immediately prior to declaring bankruptcy, which proxies for size

The dependent variable is a dummy variable equal to one if deviations from absolute priority occur and zero otherwise. While researchers have attempted to quantify the extent of these deviations (see Eberhart, Moore and Roenfeldt (1990)), we believe that quantification is subject to error. Correct quantification requires a determination of the market value of common stock. The common stock of many bankrupt firms is not traded for weeks or even months following the resolution of the bankruptcy. Therefore, in order to avoid this measurement error we use a dummy variable that indicates the presence of deviations from absolute priority. The next section will present the data and empirically test the model presented above.

6. Data and Empirical Results

6.1 Data

A list of 110 firms that filed for and successfully completed a reorganization was compiled. The sample contains publicly traded industrial firms that filed for Chapter 11 reorganization between 1985 and 1999 and had reorganization plans confirmed between

1987 and 1999. The firms are presented in Table 1, along with the date the bankruptcy was filed, the district in which the bankruptcy was filed and the time spent in bankruptcy. Table 2 presents the distribution of bankruptcies by year. A majority of the bankruptcies in this sample occur in the early 1990's, 79% of the firms in this sample file for Chapter 11 between 1990 and 1995. Information on each bankruptcy was obtained primarily from the Bankruptcy DataSource in the Lexis/Nexis Academic Universe. Supplementary information was gathered from the Compustat tapes, 8K and 10K filings, annual reports, proxy statements, and newspaper articles. Of these 110 firms, a complete data set was available for 95 firms. The following analysis was performed on these 95 firms.

Firms in SIC codes 6000 (finance), 8000 (health, educational and social services) and 9000 (government organizations) are excluded from the sample; all other codes are considered. The regulatory environments of these industries may result in inherent differences from other industries. Table 3 classifies the sample by industry based on two-digit SIC codes for each firm in the sample. Industries are diverse. The most frequent industries are Apparel and Accessory Stores (SIC code 5600, 8% of the sample) and General Merchandise Stores (SIC code 5300, 6% of the sample).

Descriptive statistics for the full sample are provided in Table 4a. Tables 4b and 4c describe two groups of firms: those that include deviations from absolute priority in their reorganization plans, and those that do not. The portion of the firm that can be exploited by managers, free cash flow, is measured by the percentage of total assets held as current assets immediately preceding the bankruptcy filing. The average free cash flow for this sample was 42.9% (median of 42.7%) of total assets. Consistent with theory, the level of free cash flow

also appears to be related to deviations from absolute priority. The average level of free cash flow is higher for firms with deviations from absolute priority (mean of 45.6% and median of 45.4%) than for firms without deviations (mean of 36.4% and median of 28.6 %). This difference is significantly different between the two groups at the 10% significance level.[17]

Insider holdings were measured according to stock holdings, including any stock options, held by all directors and officers of the firm and also by the chief executive officer, alone. For the entire sample, the outstanding common equity held by all insiders ranges from 0.2% to 69.2%, with a mean of 24.7% (median of 16.4%). The equity holdings of the chief executive officer ranges from 0.0% to 64.2%, with a mean of 10.9% and a median of 3.5%. Ownership structure appears to be directly related to deviations from absolute priority. Consistent with theory, firms that experience deviations from absolute priority tend to have higher insider holdings for all insiders (mean of 25.2%, compared to a mean of 23.5% for firms without deviations from absolute priority) as well as higher levels of equity held by the CEO (mean of 12.0% , compared to a mean of 8.2%). The firms in this sample appear to have higher amounts of equity held by the chief executive officer compared to previous studies. Betker (1995) finds that, on average, the chief executive officers of the firms in his sample hold approximately 3.9% of the outstanding common stock.

Block holdings, measured by the percentage of common stock owned by large outside shareholders, as reported in the firm's proxy statement prior to the bankruptcy filing, are

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[17]A difference of means test was performed across the two groups for all of the variables in the tables. There are three variables in which the means are significantly from each other, free cash flow, classes and block holdings. The means are not significantly different from each other for the other variables.

higher for firms that do not experience deviations from absolute priority, mean of 26.5% (median of 22.7%), compared with mean of 19.1% (median of 15.4%) for firms that do experience deviations from absolute priority. This difference is significantly different between the two groups at the 10% significance level.

The firms in the entire sample spent an average of 1.54 years (median of 1.35 years), or about 18.5 months in Chapter 11. Firms with deviations from absolute priority tend to spend slightly more time in reorganization, 1.58 years (median of 1.34 years) compared with 1.42 years (median of 1.35 years) for firms that do not include the equity holders the distribution of the claims on the reorganized firm. This statistic is similar to other studies, Altman (1993) and Hotchkiss (1995) find that the average time spent in Chapter 11 was 17.1 months and 18 months, respectively.

The average firm size of the sample firms presented here is considerably smaller than in the Betker (1995) sample. The mean book value of total assets for this sample is $532.2 million (median of $229.3 million), whereas Betker (1995) reports a mean asset size of $843 million. Consistent with theory, firms that include equity in the distribution of claims on the reorganized firm are larger in total assets (mean of $584.2 million, median of $229.3 million) and sales (mean of $686.6 million, median of $254.9 million) than firms that do not: total assets mean of $407.7 million (median of $234.9 million) and sales mean of $409.7 million (median of $211.2 million). The firms in this sample are highly leveraged, with an average debt ratio of 0.87 (median of 0.83). The occurrence of deviations from absolute priority appears to be related to the solvency of the firm. The debt ratio is higher for firms that do not experience deviations from absolute priority (0.96 vs. 0.84).

It is unusual for the first reorganization plan to be accepted without revision. On average between two and three reorganization plans were proposed during the Chapter 11 process, which is consistent for both subsamples of firms. The complexity of the capital structure of the sample firms is depicted by the number of classes included in the reorganization plan. On average, there were 11.5 classes for the sample firms (median of 10.0 classes). Consistent with theory, the occurrence of deviations from absolute priority appears to be negatively related to the number of classes included in the reorganization plan. Firms that adhere strictly to absolute priority rules have more classes of claimants (mean of 13.2 classes and median of 12.5 classes) compared to firms that do not (mean of 10.8 classes and median of 10 classes). This difference is significantly different between the two groups at the 1% significance level.

6.2. Empirical Results

The results of the empirical estimation of equation (19) are presented in Table 5. Consistent with the model presented above, insider holdings, denoted α, are positively related to deviations from absolute priority although not statistically significant. The probability of deviations from absolute priority is negatively related, although not significant, to the proportion of equity held by outside shareholders, denoted β. Consistent with prediction, the amount of free cash flow within the firm is positively related to the incidence of deviation from absolute priority, implying that the more malleable are the assets of the firm, the more bondholders are willing to share with equity holders in the reorganization plan in order to reduce managerial agency costs. The coefficient on the free cash flow variable is positive

and significant at the 5% level in regression (2) and significant at the 10% level in regression (1). As expected, there is a negative relationship between the debt ratio of the firm and deviations from absolute priority.

The number of classes included in the reorganization plan is statistically significant at the 5% level in regression (2) and significant at the 1% level in regression (3). As expected, the complexity of the firm's capital structure, measured by the number of classes included in the reorganization plan is indirectly related to deviations from absolute priority. This is consistent with the idea that it costs more to approve a reorganization plan without deviations from absolute priority if there are many different classes of claimants. Finally, the measure for the size of the firm (total sales) is positive and significant at the 10% level in regression (3), indicating that deviations from absolute priority are positively related to the size of the firm; since large firms tend to have more severe managerial control problems than do smaller firms.

Following Stulz (1990), we would not expect a linear relationship between deviations from absolute priority and ownership structure. A strict positive relationship between insider holdings and deviations from absolute priority ignores the influence of outside shareholders on the reorganization of a bankrupt firm. Although the relationship between outside stock ownership, specifically block holdings, and deviations from absolute priority is ambiguous. On one hand, we may see a monitoring effect of outside shareholders on the behavior of managers. Insider holdings and the entrenchment effect will be balanced by other control mechanisms, such as shareholder concentration. If outside block holders provide an effective monitoring mechanism and can control managerial behavior, deviations from absolute

priority will not be necessary.

Alternatively, firms with high insider equity stakes and also high outsider block holdings may experience an even higher incidence of deviations from absolute priority in a reorganization. Firms like these, where manager's interests are better aligned with those of outside shareholders, may require bondholders to make even greater concessions in order to resolve the bankruptcy and avoid losses during the exclusivity period. Block holders have more of an incentive to involve themselves in the reorganization process because of their large ownership stake in the firm. We would expect to see more equity committees formed in the reorganizations of firms with concentrated outside shareholders.

In order to fully determine the effect of ownership structure on deviations from absolute priority, we generalize the ownership structure definitions. The sample was divided into four types, separated by high and low inside ownership and high and low outside ownership. Inside ownership was measured as the proportion of equity held by the chief executive officer prior to the bankruptcy filing. Outside ownership was measured as the proportion of equity held by large block holders prior to the bankruptcy filing, as reported in the firm's proxy statement. It is posited that there exist some optimum cutoff points in which to define high and low ownership. The four types are defined as follows:

Type I: $(\alpha < \alpha^*, \beta < \beta^*)$
Type II: $(\alpha < \alpha^*, \beta \geq \beta^*)$
Type III: $(\alpha \geq \alpha^*, \beta < \beta^*)$
Type IV: $(\alpha \geq \alpha^*, \beta \geq \beta^*)$

The optimum cut off points are defined as α^* for insider holdings and β^* for outsider holdings. The cut off points are be defined using a variety of methods. The first definition

we used was the mean of insider holdings and outside block holdings, as given by the data. Table 6 separates the sample by type using the means as separating points, with ownership divided into four types, high ownership and low ownership, for both insiders and outsiders. Deviations from absolute priority are much more common (88.2%) in firms in which the manager is entrenched and outside shareholders do not have strong incentives to monitor the manager's behavior (Type III). Deviations from absolute priority are less common in firms in which outside shareholders are sufficiently concentrated. Both Types II and IV (60.7% and 60.0%, respectively), which include all firms with block holdings above the mean have a lower occurrence of deviations from absolute priority compared to Types I and III (72.5% and 88.2% respectively). A chi-squared test of significance indicates that Types II and III are significantly different from each other at the 5% level and Types III and IV are significantly different from each other at the 10% level. The other four pairs of types are not significantly different from each other.

Table 7 repeats the regressions presented in Table 5 including dummy variables for Type, as discussed above, with Type II as the omitted variable.[18] The coefficient for Type III is consistently positive and significant at the 10% level in regressions (3) and (4), indicating that these firms, in which entrenched managers are not closely monitored by outside shareholders, experience a greater occurrence of deviations from absolute priority.

The optimum cut off points that separate high and low insider and outsider ownership can also be defined according to the sample medians. Table 8 separates the sample by Type using the sample medians as separating points, with ownership divided into four types, high

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[18]Omitting Types 1 or 4 yielded results consistent with those presented here.

ownership and low ownership, for both insiders and outsiders. A chi-squared test of significance indicates that Types I and II and Types III and IV are both significantly different from each other at the 10% level. The other four pairs of types are not significant different from each other. Table 9 repeats the regressions in Table 7 using the medians as cut off points to define the types. The results are consistent with those presented above.

The above specifications impose exogenous cutoff points on the data according to sample means and medians. Goldfeld and Quandt (1973) describe a method for endogenizing these cutoff points. Specifically they formulate a switching regressions model which allows for different regimes for data points with different characteristics. The model allows for structural shifts across different regimes. Restricting the model to be identical across firms with varying levels of insider and outsider ownership may not fully capture the effects of ownership structure on deviations from absolute priority. The switching regressions model is defined as follows:

$$Y_i = X_i B_{1i} + U_1 \qquad \text{for Type I: } (\alpha<\alpha^*, \beta<\beta^*) \qquad (20)$$

$$Y_i = X_i B_{2i} + U_2 \qquad \text{for Type II: } (\alpha<\alpha^*, \beta\geq\beta^*) \qquad (21)$$

$$Y_i = X_i B_{3i} + U_3 \qquad \text{for Type III: } (\alpha\geq\alpha^*, \beta<\beta^*) \qquad (22)$$

$$Y_i = X_i B_{4i} + U_4 \qquad \text{for Type IV: } (\alpha\geq\alpha^*, \beta\geq\beta^*) \qquad (23)$$

where the error terms, U_i, are assumed to be independent and distributed normally, $N(0,\sigma^2)$. The optimal cutoff points, α^* and β^*, are endogenously determined by the data. The coefficients are assumed to be different across regimes, that is $B_i \neq B_j$. The regimes can be estimated by maximizing the log likelihood conditional on α^* and β^*, where

$$LogL(Y^*|\alpha^*,\beta^*) = \sum_{k=1}^{4}\left\{\sum_{i=1}^{n}(1-Y_i)\ln[1-F(B_{ki}'X_i)]+Y_i\ln[F(B_{ki}'X_i)]\right\} \quad (24)$$

To find α^* and β^*, we estimated the system of regressions given in equations (20)-(23). The estimates for α^* and β^* are chosen based on the values that maximize the likelihood of equation (24). We found the cutoff point for insider holdings, α^*, to be 0.9% and the cutoff point for outsider holdings, β^*, to be 35.0%. The results of the switching regression model are presented in Table 10.[19] Although the sample sizes for Types II and IV are relatively small, there are a number of conclusions that can be drawn from these results. The coefficient on the free cash flow variable is positive and significant at the 1% level for Type III firms. This coefficient is negative and insignificant for all of the other types of firms. This indicates that, consistent with the theory presented above, the higher the level of free cash flow in the firm, the greater the probability of deviations from absolute priority occurring, especially when severe managerial agency costs exist. The coefficients on the debt ratio variable are insignificant and negative for Type I and Type IV firms. This coefficient is insignificant and positive for Type II and Type III firms. According to the theory presented above this coefficient is expected to be negatively related to the occurrence of deviations from absolute priority. The coefficient on the number of classes variable is negative and significant at the 5% level for Type III firms, indicating that for firms in which managers hold a high level of equity and block holders do not, deviations from absolute

[19]The regressions presented are similar to Regression (2) in Tables 5, 7 and 9. The results of the other regressions by type are similar to those presented here.

priority occur less frequently when the firm's capital structure is complex. There is a positive relationship between the number of classes included in the reorganization plan and deviations from absolute priority when insiders hold a low level of equity and outsiders hold a high level of equity in the firm (Type II firms). And, there is a negative relationship between the number of classes and deviations from absolute priority when both insiders and outsiders hold little equity in the firm (Type I firms) or when both insiders and outsiders hold a low level of equity in the firm (Type IV firms). To test the null hypothesis that there is no structural shift across observations a likelihood ratio test is performed comparing the pooled regression to the switching regressions. The pooled regression is given in Table 10. The log likelihood for the standard pooled regression (denoted L_0 and found to be equal to -49.18) is compared to the maximized value of the log likelihood function for the switching regression given in equation (24) (denoted L_1 and found to be equal to -36.11). The likelihood ratio statistic $-2(Ln_0 - Ln_1)$ is asymptotically χ^2 distributed with nine degrees of freedom and is significant at the one percent level. Thus, we can conclude that the switching regressions model is superior to the pooled regression. Specifically, there is a structural difference across regimes that is not captured by the pooled regression.

Table 11 separates the sample by type using the results of the switching regressions model ($\alpha^* = 0.9\%$ and $\beta^* = 35.0\%$). Deviations from absolute priority occur more frequently when outside block holdings are below this cutoff point (Types I and III) and most frequently when both insider and outside block holdings are above the cutoff points (Type IV) indicating that firms in which insiders and outsiders own a lot of equity have an even more severe agency problem in resolving the financial distress. Deviations from absolute priority

occur infrequently (33.3%) when insider holdings are below this cutoff point and outside block holdings are above this cut off point (Type II). Firms in which outside block holders provide a strict monitoring mechanism over managerial behavior do not rely on deviations from absolute priority. Due to the low ownership of the manager it would be prohibitively expensive for bondholders to use deviations from absolute priority to control managerial behavior during the reorganization process. Type IV has the highest occurrence of deviations from absolute priority, indicating that shareholder concentration as well as insider holdings affects the existence of these deviations. Here, block holders have a strong incentive to actively participate in the reorganization. A chi-squared test of the significance between types was performed for all six pairs of types. The difference between Types II and III is significant at the 1% level and the difference between Types II and IV is significant at the 5% level. The other pairs of types are not significantly different.

Table 12 re-estimates the regressions in Table 7 using the results of the switching regression to divide the sample into four types. For example, firms with insider holdings less than 0.9% and outsider holdings greater than or equal to 35.0% are placed into Type I. Type II is the omitted category[20]. Separating the firms using the switching points from Goldfeld and Quandt's switching regressions model provides far superior results than using the means or medians as cutoff points. The coefficients on Types III and IV are always positive and significant. These results indicate that it is much more likely for deviations from absolute priority to occur when managers hold significant levels of equity in the firm (Types III and IV). It is also more likely for deviations from absolute priority to occur when outside

[20]Omitting Types I or IV yielded results consistent with those presented here.

ownership is high (Type IV).

To interpret the coefficients on these dummy variables we need to compute the odds ratios ($=e^{Bi}$). For example, from regression (2) deviations from absolute priority are 3.13 ($e^{1.14}$) times more likely for Type I firms as compared to the omitted type (Type II), 5.75 ($e^{1.75}$) times more likely for Type III firms and 8.08 ($e^{2.09}$) times more likely for Type IV firms. Deviations from absolute priority for Type II firms, the omitted category, are less likely to occur as compared to Types I, III and IV. Intuitively this means that it is much more expensive to utilize deviations from absolute priority to induce managers to behave when their equity ownership is low and also block holders have less of an incentive to create an equity committee and actively partake in the reorganization when their holdings are low. Therefore, deviations from absolute priority are much more likely when managerial ownership is high, regardless of shareholder concentration. But when shareholders are more concentrated, deviations from absolute priority are even more likely to occur.

Consistent with the theoretical model presented above, the coefficients on the free cash flow variable, φ, are all significantly positive. Firms with large amounts of free cash flow risk the loss of firm value during the exclusivity period when managers may exploit the firm for their own benefit through the consumption of perquisites. Therefore, deviations from absolute priority are utilized in order to induce the manager to curb this consumption. The manager benefits from the positive value of their equity holdings in the firm and bondholders benefit through the preservation of firm value. As expected, deviations from absolute priority are also negatively related to the firm's debt ratio. The number of classes in the reorganization plan is negatively related to the occurrence of deviations from absolute

priority and significant at the 5% level in regressions (2) and (3). And, as expected, the size of the firm, proxied by the pre-bankruptcy sales, is positively related to the occurrence of deviations from absolute priority.

Table 13 replicates the regressions presented in Table 12 omitting Type IV firms instead of Type II firms. Here the coefficients on Type II firms are all negative and significant, indicating that it is less likely for deviations from absolute priority to occur in firms where insider ownership is low and outside block holdings are high, as defined by the results of the switching regressions model. Deviations from absolute priority will not be an effective tool to control managerial perquisite consumption when managers hold very little equity in the firm. For these firms, where managerial equity holdings is low and outside block holdings are high, outside shareholders effectively monitor managers. The results on free cash flow, debt ratio, number of classes and sales are consistent with those presented above.

Due to the sample size, applying the switching regressions model as presented above is somewhat questionable. Three of the four types have an extremely small sample size. In order to strengthen the explanatory power of the model, we next estimate the cutoff points for insider holdings and outside holdings one at a time, allowing us to divide the sample into only two cases. We first found the cutoff point for insider holdings, α^*, by defining the switching regression model as:

$$Y_i = X_i B_{1i} + U_1 \qquad \text{for Case 1: } (\alpha < \alpha^*) \qquad (25)$$

$$Y_i = X_i B_{2i} + U_2 \qquad \text{for Case 2: } (\alpha \geq \alpha^*) \qquad (26)$$

Following the methodology described above, the regimes are estimated by maximizing the

log likelihood conditional on α^*, where

$$LogL(Y^*|\alpha^*) = \sum_{k=1}^{4} \left\{ \sum_{i=1}^{n} (1 - Y_i) \ln[1 - F(B_{ki}' X_i)] + Y_i \ln[F(B_{ki}' X_i)] \right\} \quad (27)$$

Again, we estimate the system of regressions given in Equations (25) and (26) and endogeneously determine α^* where Equation (27) is maximized. Now, we find the cutoff point for α^* to be 0.7%. Interestingly, the cutoff point is very close to the cutoff point estimated earlier when α^* and β^* were determined simultaneously. The results of this switching regressions model are presented in Table 14. The positive and highly significant coefficient on the free cash flow variable for Case 2 firms indicates that bondholders must utilize deviations from absolute priority in order to curb managerial perquisite consumption when managers are entrenched. The free cash flow variable is negative and insignificant for the firms in which managers have a low equity stake (Case 1). Managers who own a high level of equity in the firm will be more inclined to limit perquisite consumption when deviations from absolute priority are expected.

The system of regressions given in Equations (25) and (26) can also be utilized to endogeneously determine the cutoff point for block holdings, β^*. This cutoff point is determined by maximizing Equation (27) for a given β^*. Here the cutoff point for outside block holdings is determined to be 44.0%, again very close to the cutoff point determined earlier. The results of this switching regression model are presented in Table 15. Interestingly, free cash flow now has the opposite effect. Free cash flow is positive and significant at the 1% level for firms in which shareholders are disperse. Now it is the firms

with low outside block holdings in which free cash flow is positively related to deviations from absolute priority. Specifically, those firms that do not have an outside influence over managerial actions, such as monitoring by outside shareholders, have to protect the assets of the firm during the reorganization process through deviations from absolute priority. Bondholders are aware of the manager's tendency to exploit the firm during the exclusivity period and attempt to preserve firm value by offering managers compensation through their equity ownership. When outside ownership is significantly concentrated bondholders are less likely to use deviations from absolute priority due to the monitoring that occurs. In effect, there is no free rider problem for these firms.

Comparing Tables 14 and 15, we see that the number of classes in the reorganization is consistently negative. Also the pre-bankruptcy debt ratio is not significant. In effect these two variables are solvency measures, with the number of classes as a proxy for the complexity of the capital structure of the firm. The insignificant coefficient on the debt variable may be a direct result of the number of classes variable as a measure of prebankruptcy solvency.

We can clearly see that the ownership structure of the firm will directly affect the occurrence of deviations from absolute priority. Managerial actions during the exclusivity period can be controlled through a variety of mechanisms. Concentrated outside shareholders will provide one monitoring mechanism over managerial behavior, but in the absence of this bondholders can induce managers to take value maximizing actions through deviations from absolute priority. The necessity of deviations from absolute priority is reduced when monitoring exists.

In order to better explain the interaction between insider equity ownership and shareholder concentration, the data is again divided into four types according to ownership structure as defined in Equations (20) - (23). High and low ownership for insiders and outsiders is determined endogeneously using the two regime specification in a two step procedure. The cutoff point for insider ownership is determined first and then the switching regressions model is repeated in order to determine the cutoff point for outside ownership. Then using these results, the data is grouped as follows:

Type I: ($\alpha < 0.7\%$, $\beta < 44.0\%$)
Type II: ($\alpha < 0.7\%$, $\beta \geq 44.0\%$)
Type III: ($\alpha \geq 0.7\%$, $\beta < 44.0\%$)
Type IV: ($\alpha \geq 0.7\%$, $\beta \geq 44.0\%$)

Table 16 separates the sample by type as defined above. Firms in which the manager is entrenched and an outside monitoring mechanism does not exist have the highest occurrence of deviations from absolute priority, i.e Type III firms have a 79.7% occurrence of deviations from absolute priority. Firms in which the outside monitoring mechanism exists and managers are not entrenched have the lowest occurrence of deviations from absolute priority (Type II firms, 16.7%). A chi-squared test of the significance between types was performed for all six pairs of types. The difference between Types II and III is significantly different at the 1% level, the difference between Types II and IV are significantly different at the 5% level, and the difference between Types I and II and Types I and III are both significant at the 10% level. The other pairs of types are not significantly different.

In order to utilize the results of the switching regressions regime model and allow the

coefficients to vary based on regime, we first attempted to run the regressions separately by regime, but due to the limited sample size for Type II firms, a final solution was not found. Next, we include dummy variables in the regressions for Type. Table 17 repeats the regressions presented in Table 7 using the ownership structure regimes presented above[21]. Clearly ownership structure is related to deviations from absolute priority, with those firms with entrenched managers and little monitoring by outside shareholders (Type III firms) having a higher probability of deviations from absolute priority as compared to the other firms. The coefficient on Type II firms is consistently positive and significant at the 5% level. The coefficient on Type IV firms is always positive and it is significant in regressions (1), (2) and (3). This result indicates that Type IV firms, in which managers are entrenched and outside shareholders are sufficiently concentrated, also have a higher probability of deviations from absolute priority. One can conclude that deviations from absolute priority will occur more frequently in firms in which managers are entrenched. The coefficient on the free cash flow variable is always positive and significant, but from our previous results this is due to the strong relationship between free cash flow and deviations from absolute priority in Type III firms, where the manager is severely entrenched and an outside monitoring mechanism does not exist.

To interpret the coefficients on these dummy variables we need to compute the odds

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[21]Including Type II firms and omitting Type I firms yields results consistent to those presented here, except that the coefficient on Type II firms is always negative. This indicates that firms with significant outside monitoring and a manger who is not entrenched have a lower probability of deviations from absolute priority. Specifically, bondholders do not have to share the claims on the reorganized firm with shareholders in order to control managerial behavior due to the monitoring effect of block holders.

ratios ($=e^{Bi}$). For example, from regression (2) deviations from absolute priority are 11.36 ($e^{2.43}$) times more likely for Type I firms as compared to the omitted category (Type II), 31.5 ($e^{3.45}$) times more likely for Type III firms and 30.27 ($e^{3.41}$) times more likely for Type IV firms. Deviations from absolute priority for Type II firms, the omitted category, are less likely to occur as compared to Types I, III and IV. The results presented here are consistent with those presented earlier in Table 12. Again, we can see that it is much more expensive to utilize deviations from absolute priority to induce managers to behave when their equity ownership is low and also block holders have less of an incentive to create an equity committee and actively partake in the reorganization when their holdings are low. Therefore, deviations from absolute priority are much more likely when managerial ownership is high, regardless of shareholder concentration. But when an outside monitoring mechanism does not exist, deviations from absolute priority are even more likely to occur.

7. Conclusion

This paper examines ninety-five bankruptcy cases in order to see how equity holders fare in the reorganization plan. Earlier research explains the existence of deviations from absolute priority as a function of the manager's desire to provide for equity holders in the reorganization of the firm, ignoring the private incentives of the manager. Specifically, the manager may prefer to take actions that decrease the value of the firm during exclusivity. Bondholders attempt to alleviate this agency problem by indirectly compensating managers who are also shareholders through deviations from absolute priority. This incentive is even more important for firms when outside shareholders are disperse. By examining the

ownership structure of the firm prior to bankruptcy with the outcome of the reorganization, we find that deviations from absolute priority in favor of equity holders are more prevalent when insider holdings are high and outside block ownership is low, where the cutoff points are defined using a switching of regression regimes methodology. This finding implies that deviations from absolute priority are even more important in controlling the actions of managers of bankrupt firms, especially when outside shareholders do not provide a monitoring role in curbing managerial perquisite consumption. We therefore find some positive effects of these priority violations. By allowing shareholders a claim on the reorganized firm, bondholders can induce managers, who are also shareholders, to preserve firm value. Thus, deviations from absolute priority may help to ensure the successful reorganization of the firm.

Appendix

Derivation of First and Second Order Conditions

$$H = \underset{\phi,F}{Max}\, q(\phi,F,\alpha)U[\alpha\{V_{t=1}(\phi,F)-D\},\tau,\phi,F] + [1-q(\phi,F,\alpha)]U[\alpha\{V_{t=1}(\phi,F)-D\},\phi,F]$$

subject to: $0 \le \tilde{\phi} \le \phi^*$ $\quad 0 \le F \le F^{max}$ $\quad 0 \le q,\alpha \le 1$

$$V_{t=1} = V_{t=0} + \Delta V(\phi,F)$$

First Order Conditions:

with respect to φ:

$$\frac{\partial H}{\partial \phi} = q_\phi U\{\alpha(V-D),\tau,\phi,F\} + qU_V V_\phi \alpha + qU_\phi + U_V V_\phi \alpha + U_\phi - q_\phi U\{\alpha(V-D),\phi,F\} - qU_V V_\phi \alpha - qU_\phi$$

$$\frac{\partial H}{\partial \phi} = q_\phi U\{\alpha(V-D),\tau,\phi,F\} + U_V V_\phi \alpha + U_\phi - q_\phi U\{\alpha(V-D),\phi,F\} = 0 \qquad (18)$$

with respect to F:

$$\frac{\partial H}{\partial F} = q_F U\{\alpha(V-D),\tau,\phi,F\} + qU_V V_F \alpha + qU_F + U_V V_F \alpha + U_F - q_F U\{\alpha(V-D),\phi,F\} - qU_V V_F \alpha - qU_F$$

$$\frac{\partial H}{\partial F} = q_F U\{\alpha(V-D),\tau,\phi,F\} + U_V V_F \alpha + U_F - q_F U\{\alpha(V-D),\phi,F\} = 0 \qquad (19)$$

Second Order Conditions:
In terms of φ:

$$\frac{\partial^2 H}{\partial \phi \partial \tau} = q_\phi U_\tau + U_{V\tau} V_\phi \alpha + U_{\phi\tau} \tag{20}$$

$$\frac{\partial^2 H}{\partial \phi \partial F} = q_\phi U_V V_F \alpha + q_\phi U_F + U_{VF} V_\phi \alpha + U_V V_{\phi F} \alpha + U_{\phi F} - q_F U_V V_{\phi F} \alpha - q_\phi U_F$$

$$\frac{\partial^2 H}{\partial \phi \partial F} = U_{VF} V_\phi \alpha + U_V V_{\phi F} \alpha + U_{\phi F} \tag{21}$$

$$\frac{\partial^2 H}{\partial \phi \partial \alpha} = q_\phi U_\alpha (V - D) + U_V V_\phi - q_\phi U_\alpha (V - D)$$

$$\frac{\partial^2 H}{\partial \phi \partial \alpha} = U_V V_\phi < 0 \tag{22}$$

$$\frac{\partial^2 H}{\partial \phi^2} = q_\phi U_V V_\phi \alpha + q_\phi U_\phi + U_V V_{\phi\phi} \alpha + U_{\phi\phi} - q_\phi U_V V_\phi \alpha - q_\phi U_\phi$$

$$\frac{\partial^2 H}{\partial \phi^2} = U_V V_{\phi\phi} \alpha + U_{\phi\phi} \tag{23}$$

In terms of F:

$$\frac{\partial^2 H}{\partial F \partial \phi} = q_F U_V V_\phi \alpha + q_F U_\phi + U_V V_{F\phi} \alpha + U_{V\phi} V_F \alpha + U_{F\phi} - q_F U_V V_F \alpha - q_F U_\phi$$

$$\frac{\partial H^2}{\partial F \partial \phi} = U_V V_{F\phi} \alpha + U_{V\phi} V_F \alpha + U_{F\phi} \tag{24}$$

$$\frac{\partial^2 H}{\partial F \partial \tau} = q_F U_\tau + U_{V\tau} V_F \alpha + U_{F\tau} \tag{25}$$

$$\frac{\partial^2 H}{\partial F \partial \alpha} = q_F U_\alpha (V - D) + U_V V_F + U_{V\alpha} V_F - q_F U_\alpha (V - D)$$

$$\frac{\partial^2 H}{\partial F \partial \alpha} = U_V V_F + U_{V\alpha} V_F \tag{26}$$

$$\frac{\partial^2 H}{\partial F^2} = q_F U_V V_F \alpha + q_F U_F + U_{VF} V_F \alpha + U_V V_{FF} \alpha + U_{FF} - q_F U_V V_F \alpha - q_F U_F$$

$$\frac{\partial^2 H}{\partial F^2} = U_{VF} V_F \alpha + U_V V_{FF} \alpha + U_{FF} \tag{27}$$

Table 1, Sample Firms

Firm	Bankruptcy Date	Filing District	Years in Chapter 11
All For a Dollar, Inc.	04/19/93	Ohio	1.02
All Seasons Resorts, Inc.	02/19/87	California	2.83
Amdura Corp.	04/02/90	Colorado	1.56
America West Airlines, Inc.	06/27/91	Arizona	3.16
American Ship Building Company	11/04/93	Florida	0.94
Americold Corp.	05/09/95	Oregon	0.14
Ames Department Stores, Inc.	04/25/90	New York	2.68
Anacomp, Inc.	01/05/96	Delaware	0.42
Automotive Industries, Inc.	09/25/89	Georgia	1.37
Barton Industries, Inc.	02/22/91	Oklahoma	0.95
Basix Corp.	02/29/88	New York	1.72
Biomedical Waste Systems, Inc.	09/15/95	New York	2.55
Bioplasty Inc.	04/29/93	Minnesota	0.84
Blue Diamond Coal Co.	05/07/91	Tennessee	1.69
Bonneville Pacific Corp.	12/05/91	Utah	6.91
Bradlees, Inc.	06/23/95	New York	3.53
Braun's Fashions Corp.	07/02/96	Delaware	0.42
CAI Wireless Systems, Inc,	07/30/98	Delaware	0.21
Calton, Inc.	03/09/93	New Jersey	0.23
Cambridge Biotech Corp.	07/07/94	Massachusetts	2.29
Cardis Corp.	05/25/88	California	1.55
Carter Hawley Hale Stores, Inc.	02/11/91	California	1.66
CCX, Inc.	03/24/94	Delaware	0.13
CF&I Steel Corp.	11/07/90	Utah	2.23
Chyron Corp.	09/17/90	ED New York	1.28
Circle Express Inc.	09/11/90	Indiana	0.18
Colorocs Corp.	09/05/91	Georgia	2.26
Columbia Gas System, Inc.	07/31/91	Delaware	3.33
Columbia Western, Inc.	05/17/94	Massachusetts	0.57
Consul Restaurant Corp.	09/09/91	Minneapolis	1.06
Continental Information Systems Corp.	01/13/89	New York	5.94
Daily International, Inc.	05/28/99	Delaware	0.26
Dep Corp.	04/01/96	Delaware	0.59
Digicon, Inc.	01/31/90	Texas	1.35
Divi Hotels, N. V.	07/25/91	Florida	0.53
Doskocil Companies, Inc.	03/05/90	Kansas	1.74
Edison Brothers Stores, Inc.	11/03/95	Delaware	1.90
Edisto Resources Corp.	10/26/92	Delaware	0.68
EECO, Inc.	05/02/90	California	0.78
El Paso Electric Company	12/31/91	Texas	4.12
Elsinore Corp.	10/31/95	Nevada	1.33
Endevco, Inc.	06/04/93	Texas	0.42
F&C International, Inc.	04/19/93	Ohio	0.98
Fairfield Communities, Inc.	10/03/90	Arkansas	1.91
Financial News Network, Inc.	03/01/91	New York	1.32
Finevest Foods, Inc.	02/11/91	Florida	1.41

Table 1, Sample Firms, cont.

Firm	Bankruptcy Date	Filing District	Years in Chapter 11
Forstmann & Company, Inc.	09/22/95	New York	1.83
Freymiller Trucking, Inc.	04/20/95	Oklahoma	0.80
Gaylord Container Corp.	09/11/92	Louisiana	0.14
Greyhound Lines, Inc.	06/04/90	Texas	1.41
Gulf USA Corp.	10/22/93	Delaware	1.84
Hadson Corp.	10/15/92	Oklahoma	0.17
HAL, Inc.	09/21/93	Hawaii	0.98
Harvard Industries, Inc.	05/08/97	Delaware	1.54
Heartland Wireless Communications, Inc.	12/04/98	Delaware	0.33
Hexcel Corp.	12/06/93	California	2.18
Hills Department Stores, Inc.	02/04/91	New York	2.67
House of Fabrics, Inc.	11/30/94	California	1.67
Integra A Hotel & Restaurant Company	07/14/92	Colorado	1.65
Interco, Inc.	01/24/91	Missouri	1.53
International Broadcasting Corp.	08/30/91	Minnesota	1.77
Interscience Computer Corp.	03/06/97	California	1.78
Jay Jacobs, Inc.	05/13/94	Washington	1.54
Jumping Jack Shoes, Inc.	02/06/90	Missouri	0.79
JWP, Inc.	12/21/93	New York	1.00
Krystal Company	12/15/95	Tennessee	1.36
Lamonts Apparel, Inc.	01/06/95	Washington	3.07
Leisure Technology, Inc.	04/26/91	California	1.80
Leslie Fay Companies, Inc.	04/05/93	New York	4.16
Live Entertainment, Inc.	02/02/93	California	0.14
Lone Star Industries, Inc.	12/10/90	White Plains, NY	3.34
LTV Corp.	07/17/86	New York	7.95
Marcade Group, Inc.	10/30/92	New York	0.67
MEI Diversified, Inc.	02/23/93	Minnesota	1.64
Mr. Gasket Company	04/21/90	California	2.04
Munsingwear, Inc.	04/21/90	Minnesota	3.04
National Convenience Stores, Inc.	12/09/91	Texas	1.25
ORFA Corporation of America	03/20/90	Pennsylvania	0.78
Orion Pictures Corp.	12/11/91	New York	0.90
Paul Harris Stores, Inc.	02/27/91	Indiana	1.55
Payless Cashways, Inc.	07/21/97	Missouri	0.36
Penn Traffic Company	03/01/99	Delaware	0.33
Phoenix Medical Technology, Inc.	08/02/91	South Carolina	2.51
Rax Restaurants, Inc.	11/24/92	Ohio	0.96
Rexene Corp.	10/18/91	Delaware	0.92
Rexon, Inc.	09/13/95	Colorado	0.48
Rose's Stores, Inc.	09/05/93	North Carolina	1.64
Rymer Foods, Inc.	02/03/93	Illinois	0.18
Siliconix, Inc.	04/10/90	California	0.70
Sizzler International, Inc.	06/03/96	California	1.31
Solitron Devices, Inc.	01/24/92	Florida	1.57
Solo Serve Corp.	07/21/94	Texas	1.01

Table 1, Sample Firms, cont.

Firm	Bankruptcy Date	Filing District	Years in Chapter 11
Standard Brands Paint Co.	02/11/92	California	1.34
Stratosphere Corp.	01/27/97	Nevada	1.69
Streamlogic Corp.	06/26/97	California	0.76
Sudbury, Inc.	01/10/92	Ohio	0.64
Sunshine Jr. Stores, Inc.	12/18/92	Florida	1.51
Tacoma Boatbuilding Co.	09/23/85	New York	1.98
Today's Man, Inc.	02/02/96	Delaware	1.91
Town and Country Corp.	11/17/97	Massachusetts	0.55
Transcisco Industries, Inc.	07/31/91	California	2.26
U.S. Home Corp.	04/15/91	New York	2.18
UDC Homes, Inc.	05/17/95	Delaware	0.49
United Merchants & Manufacturers, Inc.	11/02/90	Delaware	0.82
USG Corp.	03/17/93	Delaware	0.17
Value Merchants, Inc.	12/13/93	Wisconsin	1.54
Wang Laboratories, Inc.	08/18/92	Massachusetts	1.12
Westmoreland Coal Co.	11/08/94	Delaware	0.12
WTD Industries, Inc.	01/31/91	Washington	1.83
Zenith Electronics Corp.	08/23/99	Delaware	0.21

Table 2, Distribution of Bankruptcies by Year

Year	Number of Bankruptcies
1985	1
1986	1
1987	1
1988	2
1989	2
1990	17
1991	24
1992	11
1993	17
1994	7
1995	11
1996	5
1997	6
1998	2
1999	3
Total	110

Table 3, Industry Membership Based on 2-Digit Primary SIC Codes

2 Digit SIC Code	Industry Name	# firms	% sample
10	Metal Mining	2	0.02
12	Coal Mining	3	0.03
13	Oil & Gas Extraction	4	0.04
15	Building Construction - General Contractors & Operative	5	0.05
17	Construction - Special Trade	1	0.01
20	Food & Kindred Products	4	0.04
22	Textile Mill Products	3	0.03
24	Lumber and Wood Products	1	0.01
26	Paper & Allied Products	2	0.02
27	Printing, Publishing and Allied	1	0.01
28	Chemicals & Allied Products	2	0.02
31	Leather & Leather Products	1	0.01
32	Stone, Clay, Glass & Concrete Products	2	0.02
33	Primary Metal Industries	1	0.01
34	Fabricated Metal Products	1	0.01
35	Industrial & Commercial Machinery & Computer Equipm	3	0.03
36	Electronic & Other Electric Equipment & Components Ex	5	0.05
37	Transportation Equipment	5	0.05
38	Measuring & Controlling Instruments; Photo, Medical &	3	0.03
39	Misc. Manufacturing Industries	1	0.01
41	Transit and Passenger Transportation	1	0.01
42	Motor Freight Transportation & Warehousing	3	0.03
45	Transportation by Air	2	0.02
47	Transportation Services	1	0.01
48	Communications	3	0.03
49	Electric, Gas & Sanitary Services	7	0.06
50	Durable Goods - Wholesale	4	0.04
51	Nondurable Goods - Wholesale	1	0.01
52	Building Materials, Hardware, Garden Supply & Mobile H	2	0.02
53	General Merchandise Stores	7	0.06
54	Food Stores	3	0.03
55	Auto Dealers, Gas Stations	1	0.01
56	Apparel & Accessory Stores	9	0.08
58	Eating & Drinking Places	4	0.04
59	Miscellaneous Retail	1	0.01
70	Hotels, Rooming Houses, Camps & Other Lodging Places	4	0.04
73	Business Services	4	0.04
78	Motion Pictures	1	0.01
79	Amusement & Recreation Services	2	0.02
	Total	110	100%

Table 4a, Descriptive Statistics for All Sample Firms

	Average	Standard Deviation	Median	Range	N
Time spent in Chapter 11, in years[a]	1.54	1.35	1.35	0.12 - 7.95	95
Total Assets, book value (in million $)[b]	532.2	970.2	229.3	1.2 - 6,306.7	95
Sales (in million $)[b]	605.0	1,076.7	248.0	1.32 - 8,198.8	95
Debt ratio (Book Value Liabilities / Total Assets)	0.87	0.35	0.83	0.3 - 2.3	95
Free Cash Flow[c]	42.9%	0.22	42.7%	6.3% - 93.3%	95
Number of plans filed during reorganization	2.7	1.2	2.0	1.0 - 7.0	93
Number of classes included in the reorganization plan	11.5	4.7	10.0	5.0 - 31.0	95
Insider holdings, all insiders[d]	24.7%	0.21	16.4%	0.2% - 69.2%	95
Insider holdings, CEO[e]	10.9%	0.16	3.5%	0.0% - 64.2%	95
Blockholdings, including exercisable options[f]	21.3%	0.20	16.7%	0.0% - 78.1%	95

[a] measured from the date bankruptcy is declared until the date the effective date of the reorganization plan.
[b] in the year immediately preceding the bankruptcy announcement.
[c] total current assets / total assets, measured in the year immediately preceding bankruptcy.
[d] measured as the percentage of all outstanding common stock, including exercisable options, held by all directors and officers of the corporation prior to filing for bankruptcy.
[e] measured as the percentage of all outstanding common stock, including exercisable options, held by the chief executive officer of the firm prior to filing for bankruptcy.
[f] measured according to proxy statements filed prior to filing for bankruptcy

Table 4b, Descriptive Statistics for Sample Firms with Deviations from Absolute Priority

Includes only firms that include deviations from absolute priority in their reorganization plans. There were 67 firms (70.5% of sample firms) in which pre-bankruptcy equity holders received financial securities above what would have been received under strict absolute priority rules.

	Average	Standard Deviation	Median	Range	N
Time spent in Chapter 11, in years[a]	1.58	1.4	1.34	0.14 - 7.95	67
Total Assets, book value (in million $)[b]	584.2	1,101.4	229.3	1.2 - 6,306.7	67
Sales (in million $)[b]	686.6	1,202.6	254.9	1.3 - 8,198.8	67
Debt ratio (Book Value Liabilities / Total Assets)	0.84	0.27	0.83	0.27 - 1.88	67
Free Cash Flow[c]	45.6%	0.20	45.4%	7.3% - 93.3%	67
Number of plans filed during reorganization	2.6	1.14	2.0	1.0 - 6.0	65
Number of classes included in the reorganization plan	10.8	4.5	10.0	5.0 - 31.0	67
Insider holdings, all insiders[d]	25.2%	0.21	17.2%	0.3% - 69.2%	67
Insider holdings, CEO[e]	12.0%	0.17	3.9%	0.00% - 64.2%	67
Blockholdings, including exercisable options[f]	19.1%	0.19	15.4%	0.0% - 78.1%	67

[a] measured from the date bankruptcy is declared until the date the effective date of the reorganization plan.
[b] in the year immediately preceding the bankruptcy announcement.
[c] total current assets / total assets, measured in the year immediately preceding bankruptcy.
[d] measured as the percentage of all outstanding common stock, including exercisable options, held by all directors and officers of the corporation prior to filing for bankruptcy.
[e] measured as the percentage of all outstanding common stock, including exercisable options, held by the chief executive officer of the firm prior to filing for bankruptcy.
[f] measured according to proxy statements filed prior to filing for bankruptcy

Table 4c, Descriptive Statistics for Sample Firms with No Deviations from Absolute Priority

Includes only firms that do not include deviations from absolute priority in their reorganization plans. There were 28 (29.5% of the sample) firms in which pre-bankruptcy equity holders did not receive any financial securities above what would have been received under strict absolute priority rules.

	Average	Standard Deviation	Median	Range	N
Time spent in Chapter 11, in years[a]	1.42	1.3	1.35	0.12 - 5.94	28
Total Assets, book value (in million $)[b]	407.7	537.0	234.9	35.5 - 2,154.2	28
Sales (in million $)[b]	409.7	666.8	211.2	8.4 - 3,271.3	28
Debt ratio (Book Value Liabilities / Total Assets)	0.96	0.48	0.87	0.36 - 2.30	28
Free Cash Flow[c]	36.4%	0.26	28.6%	6.3% - 91.6%	28
Number of plans filed during reorganization	2.8	1.5	2.5	1.0 - 7.0	28
Number of classes included in the reorganization plan	13.2	4.7	12.5	7.0 - 24.0	28
Insider holdings, all insiders[d]	23.5%	0.21	15.4%	0.15% - 63.7%	28
Insider holdings, CEO[e]	8.2%	0.14	2.4%	0.00% - 49.3%	28
Blockholdings, including exercisable options[f]	26.5%	0.20	22.7%	0.00% - 61.8%	28

[a] measured from the date bankruptcy is declared until the date the effective date of the reorganization plan.
[b] in the year immediately preceding the bankruptcy announcement.
[c] total current assets / total assets, measured in the year immediately preceding bankruptcy.
[d] measured as the percentage of all outstanding common stock, including exercisable options, held by all directors and officers of the corporation prior to filing for bankruptcy.
[e] measured as the percentage of all outstanding common stock, including exercisable options, held by the chief executive officer of the firm prior to filing for bankruptcy.
[f] measured according to proxy statements filed prior to filing for bankruptcy

Table 5, Coefficient Estimates from Logistic Regression Relating Deviations from Absolute Priority to Variables that Measure Management's Incentives in the Bargaining Process

	Coefficient Estimates (standard errors)			
Explanatory Variables	(1)	(2)	(3)	(4)
constant	1.08 (0.78)	2.27** (0.99)	0.95 (1.20)	0.10 (1.11)
α	1.30 (1.76)	1.61 (1.92)	2.46 (2.03)	1.75 (1.81)
β	-1.16 (1.20)	-1.19 (1.25)	-1.16 (1.27)	-1.13 (1.21)
φ	1.93* (1.13)	2.03** (1.17)	1.76 (1.17)	1.76 (1.14)
debt ratio	-0.95 (0.69)	-0.89 (0.72)	-0.99 (0.72)	-1.03 (0.70)
# of classes		-0.11** (0.05)	-0.14*** (0.05)	
sales			0.33* (0.18)	0.20 (0.16)
Model chi-square	8.12*	12.96**	16.47**	9.66*
Sample size	95	95	95	95

*,**,*** denote significance at the 10%, 5%, and 1% level, respectively.
A full set of data is available for 95 of the 110 firms. All regressions are performed on these 95 firms in order to ensure consistency.
The dependent variable in all equations is a dummy variable for the existence of deviations from absolute priority (D=1 if deviations from absolute priority occur, otherwise, D=0).

Explanatory Variables:
α = insider holdings, measured by the percentage of common stock, including stock options, held by the CEO in office prior to filing for bankruptcy
β = outsider holdings, measured as the percentage of common stock, including warrants and exercisable options held by block holders, as reported in the proxy statement, prior to filing for bankruptcy
φ = free cash flow immediately prior to declaring bankruptcy, measured as current assets / total assets
debt ratio = total debt / total assets immediately prior to declaring bankruptcy
# of classes = the total number of classes included in the reorganization plan, measures the complexity of the firm's capital structure
sales = natural log of total sales in the year prior to filing for bankruptcy

Table 6, The Occurrence of Deviations from Absolute Priority According to Ownership Structure Type, Type Defined by Means

Type (CEO, Blockholders)	α-CEO	β-Blockholders	Count	DAPR	No DAPR
I - low, low	$\alpha < 10.88\%$	$\beta < 21.31\%$	40	29(72.5%)	11
II - low, high	$\alpha < 10.88\%$	$\beta \geq 21.31\%$	28	17(60.7%)	11
III - high, low	$\alpha \geq 10.88\%$	$\beta < 21.31\%$	17	15(88.2%)	2
IV - high, high	$\alpha \geq 10.88\%$	$\beta \geq 21.31\%$	10	6(60.0%)	4

A chi-squared test of the significance between types was performed for all six pairs of types. The difference between Types II and III is significant at the 5% level and the difference between Types III and IV is significant at the 10% level. The other pairs of types are not significantly different.

Table 7, Coefficient Estimates from Logistic Regression Relating Deviations from Absolute Priority to Variable that Measure Management's Incentive in the Bargaining Process

Types are defined according to sample means

	Coefficient Estimates (standard errors)			
Explanatory Variables	(1)	(2)	(3)	(4)
constant	0.59 (0.82)	1.77 (1.02)	0.29 (1.24)	-0.61 (1.15)
ϕ	1.95* (1.15)	2.05* (1.18)	1.77 (1.18)	1.75 (1.15)
debt ratio	-0.98 (0.68)	-0.92 (0.71)	-1.01 (0.73)	-1.06 (0.69)
# of classes		-0.11** (0.05)	-0.14** (0.06)	
sales			0.38** (0.19)	0.25 (0.17)
dType I	0.43 (0.54)	0.45 (0.55)	0.33 (0.57)	0.33 (0.55)
dType III	1.35 (0.86)	1.35 (0.90)	1.83* (0.97)	1.66* (0.91)
dType IV	-0.01 (0.77)	-0.09 (0.83)	-0.18 (1.86)	-0.04 (0.79)
Model chi-square	9.65*	14.16**	18.59***	11.93*
Sample Size	95	95	95	95

***, **, * Denote significance at the 0.01, 0.05, and 0.10 level respectively

Note: The dependent variable in all equations is a dummy variable for the existence of deviations from absolute priority (D=1 if deviations from absolute priority occur, otherwise, D=0).

Explanatory Variables:

ϕ = free cash flow immediately prior to declaring bankruptcy, measured as current assets / total assets

debt ratio = total debt / total assets immediately prior to declaring bankruptcy

# of classes = the total number of classes included in the reorganization plan, measures the complexity of the firm's capital structure

sales = natural log of total sales in the year prior to filing for bankruptcy

dType I = dummy variable for Type I firms, low inside ownership, low outside ownership

dType II = dummy variable for Type II firms, omitted category, low inside ownership, high outside ownership

dType III = dummy variable for Type III firms, high inside ownership, low outside ownership

dType IV = dummy variable for Type IV firms, high inside ownership, high outside ownership

Table 8, The Occurrence of Deviations from Absolute Priority According to Ownership Structure Type, Type Defined by Medians

Type (CEO, Blockholders)	α-CEO	β-Blockholders	Count	DAPR	No DAPR
I - low, low	$\alpha < 3.53\%$	$\beta < 16.7\%$	24	19(79.2%)	5
II - low, high	$\alpha < 3.53\%$	$\beta \geq 16.7\%$	23	12(52.2%)	11
III - high, low	$\alpha \geq 3.53\%$	$\beta < 16.7\%$	23	18(78.3%)	5
IV - high, high	$\alpha \geq 3.53\%$	$\beta \geq 16.7\%$	25	18(72.0%)	7

A chi-squared test of the significance between types was performed for all six pairs of types. The difference between Types I and II and Types III and IV are both significant at the 10% level. The other pairs of types are not significantly different.

Table 9, Coefficient Estimates from Logistic Regression Relating Deviations from Absolute Priority to Variable that Measure Management's Incentive in the Bargaining Process

Types are defined according to sample medians

	Coefficient Estimates (p-Values)			
Explanatory Variables	(1)	(2)	(3)	(4)
constant	0.14 (0.88)	1.32 (1.06)	0.27 (1.27)	-0.61 (1.19)
ϕ	2.17* (1.18)	2.18* (1.22)	1.93 (1.21)	2.05* (1.18)
debt ratio	-0.96 (0.69)	-0.90 (0.70)	-0.96 (0.71)	-1.00 (0.69)
# of classes		-0.10** (0.05)	-0.13** (0.05)	
sales			0.28 (0.18)	0.16 (0.17)
dType I	1.15* (0.67)	1.09 (0.69)	0.90 (0.71)	1.05 (0.69)
dType III	0.84 (0.69)	0.90 (0.71)	1.05 (0.72)	0.92 (0.70)
dType IV	0.93 (0.64)	0.84 (0.66)	0.88 (0.67)	0.97 (0.64)
Model chi-square	10.13*	14.35**	16.76**	11.02*
Sample Size	95	95	95	95

***, **, * Denote significance at the 0.01, 0.05, and 0.10 level respectively

Note: The dependent variable in all equations is a dummy variable for the existence of deviations from absolute priority (D=1 if deviations from absolute priority occur, otherwise, D=0).

Explanatory Variables:

ϕ = free cash flow immediately prior to declaring bankruptcy, measured as current assets / total assets

debt ratio = total debt / total assets immediately prior to declaring bankruptcy

# of classes = the total number of classes included in the reorganization plan, measures the complexity of the firm's capital structure

sales = natural log of total sales in the year prior to filing for bankruptcy

dType I = dummy variable for Type I firms, low inside ownership, low outside ownership

dType II = dummy variable for Type II firms, omitted category, low inside ownership, high outside ownership

dType III = dummy variable for Type III firms, high inside ownership, low outside ownership

dType IV = dummy variable for Type IV firms, high inside ownership, high outside ownership

Table 10, Coefficient Estimates from Switching Regression Model with Two Switching Variables, α and β, Each with One Cutoff Point. Dependent Variable is the Occurrence of Deviations from Absolute Priority

	Coefficient Estimates (standard errors)				
Explanatory Variables	**Type I** $\alpha < \alpha^*$ $\beta < \beta^*$	**Type II** $\alpha < \alpha^*$ $\beta \geq \beta^*$	**Type III** $\alpha \geq \alpha^*$ $\beta < \beta^*$	**Type IV** $\alpha \geq \alpha^*$ $\beta \geq \beta^*$	**Pooled Regression**
Constant	3.21 (2.36)	-20.25 (41.89)	-3.00 (2.33)	11.03* (5.46)	2.35 (1.20)
ϕ	-0.19 (2.23)	-35.95 (49.00)	9.20*** (2.86)	-7.53 (5.92)	2.34** (1.18)
Debt ratio	-0.90 (2.05)	14.85 (26.19)	3.63 (2.35)	-0.84 (1.86)	-0.58 (0.75)
# of Classes	-0.16 (0.14)	1.14 (2.03)	-0.18** (0.08)	-0.49 (0.28)	-0.11** (0.05)
dTypeI					1.14 (0.96)
dTypeIII					1.75* (0.89)
dTypeIV					2.09* (1.06)
Model chi-square	2.40	6.95**	20.10***	6.07	16.85***
n	19	9	53	14	95

***, **, * Denote significance at the 0.01, 0.05, and 0.10 level respectively

Note: The dependent variable in all equations is a dummy variable for deviations from absolute priority (D = 1 if deviations from absolute priority occur; otherwise, D = 0).

Explanatory Variables:

ϕ = free cash flow immediately prior to declaring bankruptcy, measured as current assets / total assets

debt ratio = total debt / total assets immediately prior to declaring bankruptcy

# of classes = the total number of classes included in the reorganization plan, which measures the complexity of the firm's capital structure

dType I = dummy variable for Type I firms, low inside ownership, low outside ownership

dType II = dummy variable for Type II firms, omitted category, low inside ownership, high outside ownership

dType III = dummy variable for Type III firms, high inside ownership, low outside ownership

dType IV = dummy variable for Type IV firms, high inside ownership, high outside ownership

Table 11, The Occurrence of Deviations from Absolute Priority According to Ownership Structure Type, Type Defined According to Switching Regression

Type (CEO, Blockholders)	α-CEO	β-Blockholders	Count	DAPR	No DAPR
I - low, low	$\alpha < 0.9\%$	$\beta < 35.0\%$	19	12(63.2%)	7
II - low, high	$\alpha < 0.9\%$	$\beta \geq 35.0\%$	9	3(33.3%)	6
III - high, low	$\alpha \geq 0.9\%$	$\beta < 35.0\%$	53	41(77.4%)	12
IV - high, high	$\alpha \geq 0.9\%$	$\beta \geq 35.0\%$	14	11(84.6%)	2

A chi-squared test of the significance between types was performed for all six pairs of types. The difference between Types II and III is significantly different at the 1% level and the difference between Types II and IV are significantly different at the 5% level. The other pairs of types are not significantly different.

Table 12, Coefficient Estimates from Logistic Regression Relating Deviations from Absolute Priority to Variable that Measure Management's Incentive in the Bargaining Process

Types are defined according to switching regression

	Coefficient Estimates (standard errors)			
Explanatory Variables	(1)	(2)	(3)	(4)
constant	-0.89 (1.23)	0.26 (1.39)	-0.55 (1.51)	-1.49 (1.40)
ϕ	2.27* (1.15)	2.34* (1.18)	2.07* (1.19)	2.13* (1.16)
debt ratio	-0.68 (0.73)	-0.58 (0.75)	-0.72 (0.76)	-0.76 (0.73)
# of classes		-0.11** (0.05)	-0.13** (0.06)	
sales			0.28 (0.18)	0.15 (0.17)
dType I	1.14 (0.92)	1.14 (0.96)	0.74 (0.99)	0.94 (0.95)
dType III	1.72** (0.85)	1.75* (0.89)	1.64* (0.88)	1.67* (0.85)
dType IV	2.03** (1.01)	2.09* (1.06)	1.81* (1.07)	1.87* (1.03)
Model chi-square	12.24**	16.85***	19.30***	13.12**
Sample Size	95	95	95	95

***, **, * Denote significance at the 0.01, 0.05, and 0.10 level respectively

Note: The dependent variable in all equations is a dummy variable for the existence of deviations from absolute priority (D=1 if deviations from absolute priority occur, otherwise, D=0).

Explanatory Variables:

ϕ = free cash flow immediately prior to declaring bankruptcy, measured as current assets / total assets

debt ratio = total debt / total assets immediately prior to declaring bankruptcy

# of classes = the total number of classes included in the reorganization plan, measures the complexity of the firm's capital structure

sales = natural log of total sales in the year prior to filing for bankruptcy

dType I = dummy variable for Type I firms, low inside ownership, low outside ownership

dType II = dummy variable for Type II firms, omitted category, low inside ownership, high outside ownership

dType III = dummy variable for Type III firms, high inside ownership, low outside ownership

dType IV = dummy variable for Type IV firms, high inside ownership, high outside ownership

Table 13, Coefficient Estimates from Logistic Regression Relating Deviations from Absolute Priority to Variable that Measure Management's Incentive in the Bargaining Process

Types are defined according to switching regression

	Coefficient Estimates (standard errors)			
Explanatory Variable	(1)	(2)	(3)	(4)
Constant	1.14 (1.01)	2.35* (1.20)	1.26 (1.40)	0.38 (1.30)
ϕ	2.27* (1.15)	2.34* (1.18)	2.07* (1.19)	2.13* (1.16)
Debt ratio	-0.68 (0.73)	-0.58 (0.75)	-0.72 (0.76)	-0.76 (0.73)
# of Classes		-0.11** (0.05)	-0.13** (0.06)	
Sales			0.28 (0.18)	0.15 (0.17)
dType I	-0.89 (0.83)	-0.95 (0.86)	-1.07 (0.89)	-0.94 (0.84)
dType II	-2.03** (1.01)	-2.09* (1.06)	-1.81* (1.07)	-1.87* (1.03)
dType III	-0.31 (0.75)	-0.34 (0.79)	-0.18 (0.81)	-0.20 (0.77)
Model chi-square	12.24**	16.85***	19.30***	13.12**
Sample size	95	95	95	95

***, **, * Denote significance at the 0.01, 0.05, and 0.10 level respectively

Note: The dependent variable in all equations is a dummy variable for deviations from absolute priority (D = 1 if deviations from absolute priority occur; otherwise, D = 0).

Explanatory Variables:

ϕ = free cash flow immediately prior to declaring bankruptcy, measured as current assets / total assets

debt ratio = total debt / total assets immediately prior to declaring bankruptcy

# of classes = the total number of classes included in the reorganization plan, which measures the complexity of the firm's capital structure

sales = natural log of total sales in the year prior to filing for bankruptcy

dType I = dummy variable for Type I firms, low inside ownership, low outside ownership

dType II = dummy variable for Type II firms, omitted category, low inside ownership, high outside ownership

dType III = dummy variable for Type III firms, high inside ownership, low outside ownership

dType IV = dummy variable for Type IV firms, high inside ownership, high outside ownership

Table 14, Results of Switching Regressions Model Defining α*, Insider Holdings

	Coefficient Estimates (standard error)	
Explanatory Variables	Case 1	Case 2
constant	3.16 (2.20)	0.94 (1.29)
φ	-0.59 (1.96)	4.97*** (1.78)
debt ratio	-1.28 (1.37)	-0.01 (0.98)
# of classes	-0.16 (0.13)	-0.12** (0.06)
Model chi-square	3.03	13.71***
Sample size	25	70

*,**,*** denote significance at the 10%, 5%, and 1% level, respectively.

Case 1= 0 if $\alpha < \alpha^*$, that is if insider holdings are less than 0.7%. There are 12 firms (48.0%) in which deviations from absolute priority occur.

Case 2= 0 if $\alpha \geq \alpha^*$, that is if insider holdings are less than 0.7%. There are 55 firms (78.6%) in which deviations from absolute priority occur.

The occurrence of deviations from absolute priority is significantly different between the two cases at the 10% significance level.

Note: The dependent variable in all equations is a dummy variable for the existence of deviations from absolute priority (D= 1 if deviations from absolute priority occur, otherwise, D=0).

Explanatory Variables:

φ = free cash flow immediately prior to declaring bankruptcy, measured as current assets / total assets

debt ratio = total debt / total assets immediately prior to declaring bankruptcy

# of classes = the total number of classes included in the reorganization plan, measures the complexity of the firm's capital structure

Table 15, Results of Switching Regression Model Defining β*, Block Holdings

	Coefficient Estimates (standard error)	
Explanatory Variables	Case 1	Case 2
constant	1.01 (1.15)	9.15* (4.00)
φ	4.02*** (1.43)	-7.44* (4.17)
debt ratio	-0.00 (1.02)	-1.01 (1.57)
# of classes	-0.13* (0.06)	-0.42* (0.22)
Model chi-square	13.08***	8.15**
Sample size	78	17

*,**,*** denote significance at the 10%, 5%, and 1% level, respectively.

Case 1= 0 if $\beta < \beta^*$, that is if block holdings are less than 44.0%. There are 58 firms (74.4%) in which deviations from absolute priority occur.

Case 2= 0 if $\beta \geq \beta^*$, that is if block holdings are less than 44.0%. There are 9 firms (52.9%) in which deviations from absolute priority occur.

The occurrence of deviations from absolute priority is not significantly different between the two cases.

Note: The dependent variable in all equations is a dummy variable for the existence of deviations from absolute priority (D= 1 if deviations from absolute priority occur, otherwise, D=0).

Explanatory Variables:

φ = free cash flow immediately prior to declaring bankruptcy, measured as current assets / total assets

debt ratio = total debt / total assets immediately prior to declaring bankruptcy

# of classes = the total number of classes included in the reorganization plan, measures the complexity of the firm's capital structure

Table 16, The Occurrence of Deviations from Absolute Priority According to Ownership Structure Type, Type Defined According to Switching Regression

Type (CEO, Blockholders)	α-CEO	β-Blockholders	Count	DAPR	No DAPR
I- low, low	$\alpha < 0.7\%$	$\beta < 44.0\%$	19	11(57.9%)	8
II - low, high	$\alpha < 0.7\%$	$\beta \geq 44.0\%$	6	1(16.7%)	5
III - high, low	$\alpha \geq 0.7\%$	$\beta < 44.0\%$	59	47(79.7%)	12
IV - high, high	$\alpha \geq 0.7\%$	$\beta \geq 44.0\%$	11	8(72.7%)	3

A chi-squared test of the significance between Types was performed for all six pairs of types. The difference between Types 2 and 3 is significantly different at the 1% level, the difference between Types 2 and 4 are significantly different at the 5% level, and the difference between Types 1 and 2 and Types 1 and 3 are both significant at the 10% level. The other pairs of types are not significantly different.

Table 17, Coefficient Estimates from Logistic Regression Relating Deviations from Absolute Priority to Variable that Measure Management's Incentive in the Bargaining Process

Types are defined according to switching regression

	Coefficient Estimates (standard errors)			
Explanatory Variables	(1)	(2)	(3)	(4)
constant	-0.23 (0.93)	1.02 (1.09)	-0.39 (1.41)	-1.12 (1.34)
ϕ	2.56** (1.21)	2.75** (1.24)	2.48* (1.26)	2.40* (1.22)
debt ratio	-0.54 (0.75)	-0.35 (0.79)	-0.45 (0.79)	-0.62 (0.75)
# of classes		-0.13** (0.05)	-0.15** (0.06)	
sales			0.30 (0.20)	0.16 (0.18)
dTypeI	2.05 (1.28)	2.43* (1.39)	1.81 (1.44)	1.68 (1.34)
dType III	1.01* (0.59)	1.03* (0.60)	1.38** (0.66)	1.19* (0.63)
dType IV	0.87 (0.85)	1.02 (1.09)	1.19 (0.92)	0.96 (0.86)
Model chi-square	16.69***	22.50***	24.98***	17.55***
Sample Size	95	95	95	95

***, **, * Denote significance at the 0.01, 0.05, and 0.10 level respectively

Note: The dependent variable in all equations is a dummy variable for the existence of deviations from absolute priority (D=1 if deviations from absolute priority occur, otherwise, D=0).

Explanatory Variables:

ϕ = free cash flow immediately prior to declaring bankruptcy, measured as current assets / total assets

debt ratio = total debt / total assets immediately prior to declaring bankruptcy

# of classes = the total number of classes included in the reorganization plan, measures the complexity of the firm's capital structure

sales = natural log of total sales in the year prior to filing for bankruptcy

dType I = dummy variable for Type I firms, low inside ownership, low outside ownership

dType II = dummy variable for Type II firms, omitted category, low inside ownership, high outside ownership

dType III = dummy variable for Type III firms, high inside ownership, low outside ownership

dType IV = dummy variable for Type IV firms, high inside ownership, high outside ownership

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