



American Finance Association

An Empirical Investigation of U.S. Firms in Reorganization

Author(s): Julian R. Franks and Walter N. Torous

Source: *The Journal of Finance*, Vol. 44, No. 3, Papers and Proceedings of the Forty-Eighth Annual Meeting of the American Finance Association, New York, New York, December 28-30, 1988 (Jul., 1989), pp. 747-769

Published by: Blackwell Publishing for the American Finance Association

Stable URL: <http://www.jstor.org/stable/2328781>

Accessed: 26/11/2009 07:28

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=black>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Blackwell Publishing and American Finance Association are collaborating with JSTOR to digitize, preserve and extend access to *The Journal of Finance*.

<http://www.jstor.org>

An Empirical Investigation of U.S. Firms in Reorganization

JULIAN R. FRANKS and WALTER N. TOROUS*

ABSTRACT

The purpose of this paper is to understand the institutional features of Chapter 11 from an empirical examination of thirty firms that have emerged from reorganization. We find the recontracting framework of Chapter 11 to be complex, lengthy, and costly. Violations of absolute priority in favor of stockholders are frequently encountered. These deviations may result from the bargaining process of Chapter 11 or from a recontracting process between creditors and stockholders which recognizes the ability of stockholder-oriented management to preserve firm value. An example of such recontracting addresses Myers' underinvestment problem. An investigation of the effects of Chapter 11 on the pricing of risky debt is also provided.

THE PURPOSE OF THIS paper is to understand the institutional features of Chapter 11 (Ch. 11) from an empirical examination of thirty firms that have emerged from Ch. 11 proceedings. This permits us to characterize more realistically investment and financing decisions, whose value is affected by the probability of default.

The 1978 Bankruptcy Act affords the debtor substantial protection against creditors through Ch. 11. It is widely accepted that this protection is much greater than that prevailing prior to the Act (see Boyes and Faith (1986)). The very large increase in the number of firms seeking protection would seem to confirm this view. For example, in 1987 17,142 companies filed for Ch. 11 compared with only 6,298 in 1980. One important feature is that when the firm enters reorganization all repayments of capital and interest are postponed until the reorganization is

* London Business School and Anderson School of Management, UCLA, respectively. We thank Laura Quinn for collecting some of the data. We wish to thank members of the legal fraternity who have given us valuable advice on Chapter 11 proceedings including Judge Samuel Bufford, Professor R. Jordan (School of Law, UCLA), Ken Klee, Professor T. Jackson (School of Law, University of Virginia), and Leo Herzel (Mayer, Brown and Platt). We would also like to thank Mr. W. A. Mallory (Chief Financial Officer, Wickes) for giving us his insights on the reorganization process of Wickes Group. We are grateful to David Hirshleifer and Ted Anderson for valuable discussions. This paper was presented at seminars at UBC, UCLA, UNC Chapel Hill, LSE, City Business School, London Business School, the University of Virginia at Charlottesville, Keele University, and Warwick University. We are grateful for the numerous suggestions and comments of participants, especially those of Jim Brandon, Dick Brealey, Rick Boebel, David Brown, Bob Conroy, Phil Dybvig, Bob Eisenbeis, Mark Flannery, Robert Harris, Stewart Hodges, Mervyn King, Colin Mayer, Stan Ornstein, Eric Rasmusen, Dick Roll, Eduardo Schwartz, Steve Schaefer, Mike Selby, Eli Talmor, Anjan Thakor, Sheridan Titman, Ian Walker, David Webb, and Joe Williams. The paper was presented at the Annual Meeting of the American Finance Association at New York, 1988. We wish to thank our discussant Robert Damon for helpful comments. We wish to acknowledge financial support from UCLA's Centre for Finance and Real Estate. This work was begun when one of the authors was visiting UCLA.

complete. From an analysis of our sample of thirty firms the average period spent in reorganization is nearly four years. The delay in repayment of capital may be viewed as the exercise of an option purchased by the borrower from the creditor when the bond contract is originally completed. A second feature of the Ch. 11 process is that any reorganization plan, prior to court approval, must be agreed to by a majority of creditors (including the stockholders). The committee structure and non-unanimity requirements for creditors give rise to a protracted bargaining process. In certain circumstances, stockholders may exercise an important influence on the reorganization plan that in large part stems from their managerial representatives remaining in control of the business and their exclusive albeit temporary right to propose a reorganization plan. As a result senior claimholders may be encouraged to give up some of the value of their claims to stockholders. Such a reduction in claims is referred to as a deviation from absolute priority. Absolute priority denies any claimholder a stake in the securities of the reorganized firm, until more senior claims have been totally satisfied (see Warner (1977) for an early discussion and White (1983)). Deviations from absolute priority are not unusual in our sample. These deviations may be viewed as an *ex post* change in the priorities of creditors.

Given the length of the proceedings in Ch. 11 it should not be surprising that the legal and administrative costs may be high. It is an interesting question why these firms perceived that the recontracting process in Ch. 11 was the least costly form of reorganization. It may be because equityholders bear little or no costs of the reorganization but possess the prerogative to enter and protract the reorganization process while their managerial representatives retain control of the firm. Also, some creditors may obtain some value from a period in Ch. 11 insofar as the judicial process reveals the 'true' value of creditors' and debtors' claims. Notwithstanding, after some period the costs may provide creditors with an important incentive to purchase (prior to expiration) the stockholders' option to remain in reorganization. The purchase takes the form of writing down creditors' claims and writing up those of stockholders, thereby giving rise to deviations from absolute priority.

We examine two applications of the Ch. 11 process to investment and financing decisions. First we consider Myers (1977) underinvestment problem in light of the recontracting process that takes place. Second, we examine how the pricing of risky debt is affected by the option to delay repayment of capital and interest. We compare the risk premia on debt incorporating these provisions with the risk premia calculated by Merton (1974) who assumed an absence of Ch. 11 and that the rule of strict absolute priority prevailed. A number of the parameter values in these simulations are based on the empirical evidence in our sample of firms that have emerged from Ch. 11. To the extent that this is ignored, the premium on risky debt may be biased significantly downwards.

I. A Description of the Bankruptcy Process in Chapter 11

Ch. 11 of the 1978 Bankruptcy Code protects a company from its creditors while it works out a plan for reorganization.¹ In the majority of cases the firm is

¹ Ch. 11 supersedes Chapters X, XI, and XII of the 1898 Bankruptcy Act as amended by the Chandler Act of 1938 (11USC 0 1101-74 (Supp. V 1981)).

Table I
Rights of Debtor-in-Possession and Creditors

Rights of Debtor-in-Possession:	Rights of Creditors:
1. Can seek protection under Chapter 11.	* Propose immediate liquidation.
2. Debtor retains control of business.	* Creditors' committees set up to oversee running of the business. Rights of discovery.
	* Trustee can be appointed by court if evidence of wrongdoing.
	* Creditors may demand change in management.
	* Creditor may object to any payment made to a third party.
3. Debtor has exclusive right to propose reorganization plan in first 120 days. Court can renew exclusivity.	* Creditors can oppose extension of exclusivity.
4. Debtor can obtain extensions to Ch. 11 proceedings.	* Oppose extension.
	* Propose reorganization plan.
5. Approval of plan requires strict majority in each and every class by number and two thirds by book value.	* Creditor must obtain at least that which would have accrued in liquidation (absolute priority rules).
	* Creditor who votes against plan, but is outvoted, may appeal.
6. The proposer of the reorganization plan (debtor-in-possession or creditor) can propose cram-down.	

liquidated in Ch. 11, and in a minority it emerges as an operating concern, but with new financial claims replacing the old. The larger companies tend to be in this minority, since they are better able to obtain the administrative skills required to cope with the complexities of the reorganization process. The emerging company is usually smaller than its pre-Ch. 11 size, although there are some notable exceptions; for example, Trans American Natural Gas Company grew in reorganization to be second only to Exxon Corporation as the largest of the Texas natural gas producers.

The main purpose of Ch. 11 is to preserve the company as an operating concern while a plan for reorganization is worked out among creditors.² To achieve this end, substantial rights are given to the company (referred to as the debtor-in-possession) seeking protection under the Code. In Table I some of those rights are listed. We discuss those rights and their limitations below.

Although a company may seek protection in Ch. 11, the creditors may petition

² Such reorganization plans could be worked out outside Ch. 11, and many are. For example, Wickes made efforts to reorganize outside Chapter 11, but gave up because the multiplicity of creditors (approximately 250,000) and subsequent lawsuits made agreement difficult; creditors' actions may be compared to those of depositors in bank "runs". This market failure is surely one justification for bankruptcy legislation.

for its liquidation or for that protection to be denied. The latter is extremely rare and will only be granted if the debtor's action is viewed as frivolous; and a liquidation will not be agreed to by the judge in bankruptcy if the company is expected to have a positive cash flow excluding financing charges.³

Recently, the reasons for seeking protection have broadened. Some firms are not insolvent but seek protection against large uncertain legal liabilities. For example, Manville and A. H. Robbins have used it as an "escape hatch" from litigation in product liability suits. Texaco has used it as a result of an expensive legal claim made against it by Pennzoil. Also, Chicago Central Pacific Railroads claimed to be solvent with assets exceeding liabilities. It had sought protection because one creditor changed the terms of a loan, significantly affecting the company's interest and posing a challenge to the company's operations. In another filing Chas. A. Stevens cited "cash flow problems which have been exacerbated by the general downturn in the woman's apparel industry. The company is not insolvent, and it is working very hard for a substantial settlement with its creditors." (*Wall Street Journal*, June 2, 1988). Several senior executives involved in reorganization and a judge in bankruptcy have referred to Ch. 11 as an important strategy in a company's armory when the going gets tough, rather than when the company is insolvent.

During Ch. 11 the debtor-in-possession retains control of the business, although the court can appoint a trustee if inappropriate conduct is suspected. However, creditors can and frequently do obtain a change of management.⁴

Initially, the debtor-in-possession has the exclusive right to propose a plan of reorganization within 120 days of entering Ch. 11, although extensions are frequently granted. Creditors may oppose extensions, for example, on the basis that the debtor-in-possession is unable or unwilling to propose a realistic plan that will be confirmed by the judge or creditors. Creditors were successful in their petition to terminate exclusivity in Sharon Steel, but Pennzoil's petition failed in the Texaco reorganization.

The period spent in Ch. 11 (or the old Ch. X) varies enormously; in our current sample of 30 firms the period varies from 37 days to 13.3 years with an average of about 4 years. The length of time may depend upon the size of the company,

³ In rare cases, creditors may seek to file an involuntary Ch. 11 petition against the company. For example, in 1987 a group of creditors filed such a petition against Rooney, Pace Group Inc. Also, in 1987 creditors filed a similar petition against Radice Corporation (see *Wall Street Journal*, November 26, 1987).

⁴ For example, in the Wickes reorganization (one of the largest on record) Mr. Sigoloff and his management team replaced the pre-Ch. 11 management. Also, in A. H. Robbins two top officers of the company were ousted because of protests by creditors that they had substantial conflicts of interest. It is an interesting question as to the extent to which creditors can get appointed a new board that is compliant to their interests. Some obstacles stand in their way—the fact that appointments may be recommended by non-executive directors who may side with stockholders' interests. Moreover the bankruptcy judge may find it inequitable if the managerial representatives of stockholder interests were interfered with by creditors.

It is interesting to compare this approach with UK insolvency legislation. Until 1986, existing management was always removed and a receiver (or liquidator) appointed whose interests were primarily the repayment of creditors' claims. The new 1986 Insolvency Act has amended this approach by permitting in some cases an 'administrator' to be appointed. The latter must act in interests of both creditors and owners (see Webb, 1988).

the number of creditors, the complexity of the financial claims and, in general, the bargaining process. In the case of Wickes there were approximately 250,000 creditors, all of whom had to be contacted in order for their claims to be processed and agreed before a reorganization plan could be prepared. Those proceedings can be greatly lengthened if the financial records of the company are inadequate and if creditors seek to take advantage of the proceedings by claiming higher payments than are actually due. In one case 25 percent of creditors' claims were the subject of serious dispute.

The process may be lengthened if the debtor-in-possession is prepared to be litigious. In the case of Trans America Natural Gas Company delays resulted from lawsuits against creditors, defying court orders, missing or abruptly ending creditors' meetings, shuffling assets between companies (thereby causing more lawsuits and greater delays), and numerous objections to amounts claimed by creditors. In the Hunt reorganization case the *Wall Street Journal* (July 23, 1987) writes, "Bank attorneys say the essence of the Hunt reorganization is to buy time. They are saying sue us in perpetuity and we'll go on running our business." The incentives to lengthen the proceedings are, however, limited: legal fees rise with the period spent in Chapter 11,⁵ and creditors can (with the court's permission) propose their own plan of reorganization.⁶ Moreover creditors can use rights of discovery to demand information and interrogate management, with the objective of enlightenment or harassment. They may also object to particular expenditures made by the debtor-in-possession. For example, A. H. Robbins was cited for contempt for making unauthorized payments, and LTV was prevented by creditors from hiring lobbyists to plead its case.

The proposer of the plan allocates creditors to a particular class. The rules for allocation are based upon Section 1122 of the 1978 Act. Two clear rules emerge. You cannot place a significantly dissimilar claim in a class, unless the holder so agrees. Thus, secured and unsecured creditors will be in different classes. In addition claims with different collateral may be further classified according to the nature of the collateral. Stockholders are usually placed in their own class. The second rule permits a separate class to be established for small claims which can be paid off in full by the debtor. Given the broad nature of these rules, the power by the proposer to allocate a creditor to a particular class rather than another (a form of 'gerrymandering') may be important in gaining consent to a plan.

For the reorganization plan to be approved unanimity is not required. Within each class, a strict majority of creditors by number and two thirds by value is

⁵ In the Wickes case administrative and legal costs of the reorganization totalled \$250 million of which between \$75 and \$120 million are estimated to be incremental to Ch. 11. Those costs constitute between 16 and 26 percent of the value of securities distributed via the reorganization plan to former holders of publicly traded securities. These estimates are based on numbers provided to the SEC in registration documents and amended after discussions with Wickes management. In the case of Texaco, legal fees are estimated at \$55 million for the 9 month period of reorganization and \$31.5 millions for the expenses of the creditor committees (see Cutler and Summers (1988)). See Haugen and Senbet (1978) for a theoretical discussion of costs of bankruptcy.

⁶ The length of the period in Ch. 11 affects some creditors more than others. Unsecured creditors may not be paid interest for the period in Ch. 11, whereas secured creditors accrue interest providing principal and interest does not exceed the value of their collateral.

necessary for confirmation of the plan. Should a plan fail to gain the agreement of each class, an amended plan may be proposed; for example, Seatrain Lines formally proposed a total of four plans. If agreement still cannot be reached, the creditors may request the judge to decide the disposition of funds among the claimholders (as in A. H. Robbins). Alternatively, the proposer of the ill-fated plan may decide on 'cram-down' which requires that claims made by objecting creditors are treated according to the rule of absolute priority (see Klee, 1979). Under a cram-down, a creditor's claim is treated as though all the more senior claims have been paid in full. The use of cram-down will require a hearing to produce a valuation for the firm's assets, a lengthy and costly process. Cram-down is rarely used, but the threat may be important if senior creditors prove recalcitrant since if the hearing produced a higher valuation than the 'true value' the market value of the securities issued (equity or debt) could be below their nominal value, (see Brown, 1986). Legal opinion suggests that the threat of cram-down works in favor of stockholders if a valuation of assets is required. According to Klee (1979), "The threat of valuation gives negotiating leverage to the class of ownership interests. Since a valuation of the business must be made if the shareholders dissent, often seniors will give up value to shareholders to obtain their consent to the plan. If the shareholders consent, a costly valuation may be avoided" (page 145). Given the rules for approval of the plan, which includes the consent of the judge, some protection is afforded for those who vote against an approved plan through an appeals procedure. For example stockholders in Manville appealed on the basis that they were inadequately represented in their creditors' committee. Another grounds for appeal may be that the value of the claims allowed to a particular set of securities is smaller than that which would be obtained in a liquidation.

The general picture of Ch. 11 is that substantial rights are afforded to the debtor-in-possession, especially if it can impose costs on creditors by protracting the reorganization process. We conjecture that shareholders obtain some share of the reorganized firm even when creditors' claims have not been satisfied in full. In the next section, we analyze our sample of firms to determine the extent of deviations from strict absolute priority.

II. Data and Analysis

A. The Sample

A sample of thirty firms which emerged from Ch. 11 (or the equivalent Ch. X prior to 1978) is examined. This sample is largely taken from Altman and Nammacher (1985), who listed one hundred twenty-five firms (65 of which had public debt) that had defaulted on bonds outstanding during 1970 through 1984, as reported by Standard and Poor's Bond Guide and Moody's Bond Record. The sample is biased towards large publicly traded firms. Not all of Altman and Nammacher's list of companies is included, because either the company had not yet emerged from reorganization, or it had been liquidated, or details were not in our main information source, *The Capital Changes Reporter*.

The names of the firms are listed in Table II with the dates when the company

Table II
List of Firms Reorganized with Dates of Entry and Exit from
Chapter 11*

Name of Firm	Entry Date	Exit Date	Number of Years in Reorganization
Boston & Main Corp.**	3/12/70	6/30/83	13.3
Elcor	7/20/71	8/08/71	0.10
Reading**	11/23/71	12/31/80	9.13
Bohack (Key International Manuf.)	7/30/74	11/11/79	5.34
Daylin	2/26/75	10/20/76	1.65
Chicago Rock Island and Pacific Railway**	3/17/75	6/01/84	9.25
Continental Mortgages	3/03/76	3/31/83	7.06
GAC Corp	6/07/76	10/01/80	4.33
Permaneer	6/25/76	11/15/78	2.40
Duplan	8/31/76	6/04/81	4.76
Allied Supermarkets	11/06/76	10/14/81	4.94
Interstate Stores (Toys 'R' Us)	3/11/77	4/04/78	1.07
Metroplex	12/30/77	10/15/79	1.80
Commonwealth Oil Refining Co.	3/02/78	7/24/81	3.40
Food Fair	10/03/78	7/17/81	2.83
Inforex	10/24/79	9/26/80	.93
Penn-Dixie Ins. (Continental Steel Corp.)	4/07/80	3/15/82	1.90
White Motor (NE Ohio Axle)	9/04/80	11/28/83	3.24
Itel Corp.	1/19/81	9/19/83	2.67
Seatrains Lines**	2/11/81	4/10/87	6.16
Sambo's	11/27/81	7/30/84	2.67
Morton Shoe	1/07/82	8/01/83	1.56
Bobbie Brooks	1/15/82	2/16/83	1.08
A. M. International	4/14/82	9/25/84	2.45
Saxon	4/15/82	3/22/85	2.94
Wickes	4/24/82	1/26/85	2.76
Braniff	5/13/82	12/15/83	1.60
Revere Copper	10/27/82	8/12/85	2.80
Continental Air	9/24/83	9/02/86	2.92
Anglo Energy	11/04/83	8/28/86	2.92
Mean 3.67 years			
Standard Deviation 2.88 years			

* Names in brackets are names of reorganized firms if different.

** Railroad.

entered and emerged from reorganization. The average period spent in reorganization is 3.67 years, although the range is large, from thirty-seven days to over thirteen years (standard deviation is 2.88 years). The railroads spent the longest periods in Ch. 11, perhaps because of the regulatory nature of the industry. Some companies which filed for bankruptcy under Ch. X (prior to 1978) subsequently switched to Ch. 11 after 1978.

From *The Capital Changes Reporter* we obtained a list of securities that were outstanding prior to reorganization and the new financial claims (type, amount and usually price) that were exchanged for the old claims. If more than one reorganization plan was formally proposed, the details of each were recorded.

The list of securities outstanding prior to reorganization as recorded by *The Capital Changes Reporter* included preferred (convertible or otherwise), convertible debt, straight debt (including some mortgages), and notes (including income notes). In a small number of cases, we have been able to obtain (from the reorganization documents) details of some non-traded claims.

B. Value and Type of Securities Issued on Reorganization

In Table III we detail the market value of the new securities given in exchange for the old securities. For each security we provide the adjusted face value in brackets and the market value of the securities issued in exchange immediately above. The face values have been adjusted to include accrued interest. The latter is obtained either from *The Capital Changes Reporter*, or it has been calculated using the coupon rate on the security. In some cases this adjustment does not appear to be correct. In the case of CRIP, a mortgage bond received \$63.095 million in exchange for an adjusted face value of \$42.535 million. In this case the coupon was very low (2 $\frac{7}{8}$ percent) and the debt was contracted to mature prior to reorganization. If we assume a market rate of interest is applied after the stated redemption date (the reorganization date) to accrue interest the adjusted face value very closely approximates the market value of the securities issued.

For particular securities, there is no face value or one is not given; as a result it is not possible to know what amount they should obtain in liquidation. In this case, a deviation from absolute priority cannot be established.

Reorganizations which show deviations from absolute priority are given an asterisk in Table III. To calculate such deviations the priority of securities in liquidation must be known. For some securities including equities, preference shares, convertibles, mortgages, debentures and income notes, the seniority is usually clear. However, in other cases the seniority is less clear. For example, in the case of CRIP two mortgage notes are outstanding and one is not designated as senior to the other. In these cases we have amalgamated the two securities for the purposes of calculating deviations from absolute priority. It should be noted that the maturity of the bonds are different and this may have raised issues as to seniority.

Of the twenty-seven firms described in Table III, twenty-one exhibit deviations from absolute priority. Of these twenty-one, stockholders in eighteen actually receive some consideration. It does appear that deviations from absolute priority are the rule rather than the exception. There are some striking deviations. In the case of Bohack Corporation stockholders received more than \$0.57 million even though convertible debtholders received only \$14,000 (where the adjusted face value was \$6.354 million).⁷ Other features include:

⁷ Conversations with a judge in bankruptcy disclosed little surprise in such an outcome. The convertible debtholders are unsecured creditors and this class often fares particularly badly in reorganization. It is possible they would not have obtained more in a 'cram down' (i.e. under absolute priority). An interesting question raised by the convertible is whether the courts took account of the conversion feature. If so, the face value would not necessarily provide the correct benchmark for measuring deviations. An alternative explanation, given by Richard Roll, is that the convertible debt may be held by other more senior claimholders, and that they influence how the proceeds of the reorganized firm are paid. For example, it may be more tax efficient to be repaid in one form of claim than another or to have one claim repaid in full and another only partially repaid.

- (i) For Anglo, holders of accounts payable (A/P) received \$.3 million which constituted less than 10 percent of its face value (without any accrued interest). In contrast, short and long bonds were virtually repaid in full (including accrued interest).
- (ii) For Bobbie Brooks, the holder of the capital lease received full repayment including accrued interest, whereas noteholders did not receive full repayment. We suspect the lease was secured on property whose value equalled or exceeded the full amount owed.
- (iii) For White Motor the short debentures and the 12 percent long debt received 54 percent and 47 percent, respectively, of what was owed but the 11 percent long debt received only 10 percent. Possibly this was the result of differences in seniority (and security).
- (iv) For GAC all four debt securities outstanding received between 51 and 70 percent of their adjusted face value whereas the equity received nothing. In contrast, for Food Fair the debt securities received between 54 and 55 percent of face value, whereas the equity received almost 60 percent of the total proceeds available.
- (v) For Braniff the senior debt received about 69 percent of face value, the junior debt only 13 percent and the equity received in dollar terms more than the junior.

These results suggest that unsecured creditors receive only a small fraction of what secured creditors obtain, and that there are large deviations from absolute priority. Such a pattern of deviations may not present difficulties for some legal scholars such as Baird and Jackson (1988), who suggest they reflect a recontracting process between stockholders and senior creditors:

The problem (of deviations from absolute priority) is presented most starkly when the firm is worth less than what the most senior creditor is owed and the senior creditor has reason to recombine with the old shareholder. The effect of the recombination would be to freeze out an intermediate creditor. . . . From this baseline, then, one can argue that intermediate creditors have lost nothing when the senior creditor exercises those rights and then decides to share the assets it thereby acquires with the old shareholder. . . . Under this view, the senior creditor, having the exclusive right to a firm's assets following foreclosure, should be able to convey an interest in them to anyone it pleases. (pages 3 and 4)

There are, however, limitations on the extent to which deviations from absolute priority will be sanctioned by the court. In *Northern Pacific Railway v Boyd*, the Supreme Court struck down a transaction that froze out an intermediate class of owners while granting some ownership rights to former shareholders. It is an interesting question the extent to which observed deviations from absolute priority reflect wealth transfers from one class of security holders to another

In the case of Wickes, a group of income notes obtained less than 55 percent of their face value (excluding any accrued interest) on reorganization, whereas all of the other notes were paid virtually their face value. Those other notes were not income notes, but the differences remain stark. It has been suggested to us that the income note holders were widely dispersed and individually held small holdings. This may have affected their bargaining power in committee.

Table III
Market Value (in Millions of Dollars) of New Securities Given to Each Type of Security
Outstanding Prior to Reorganization and Their Respective Adjusted Face Values
(in Brackets)

Firm	All Securities on			MV of Claims to:			
	Reorganization	Equity	Pref.	Conv. Pref.	Conv. Debt.	Debt	Notes
B & M*	48.847	0	0			18,249 (mort) (21,632)	30,598 (inc) (33,641)
Elcor	9.061				9.061 (12,566)		
Reading*	258.88	98.08				70.56 (First Mort) (71.62) 90.24 (Gen. Mort) (193.30)	
Bohack*	.573	.559			.014 (6.354)		
Daylin*	29.414				.796 (3.746)	28,618 (59,277)	
CRIP	222.91	42.357				63,095 (SHmort) (42,535) 28,524 (LGmort) (24,263)	88,934 (inc) (75,585)
Continental Mortgages GAC*	101.802 139.548	0 0	0		101.802 (124.041) 6,807 (SH) (11,908) 38,467 (LG) (68,475)	49,136 (SH) (70,589) 45,138 (LG) (68,589)	
Permaneer*	3.963	1.297				1,350 (SH) (8,744) 1,316 (LG) (5,921)	

Duplan	.2102		.2102 (2.565)		
Allied Supermarkets*	15.746	7.175		8.570 (23.816)	
Interstate	40.170	39.692	.477 (.458)		
Metroplex*	18.849	.888		17.960 (22.575)	
CORCO*	77.85	52.50	7.36 (32.00)		6.21 (SH) (11.59)
Food Fair*	68.978	41.093			21.675 (LG) (39.342)
Inforex*	38.266	1.746			17.071 (SH) (17.673)
					19.449 (LG) (20.160)
Penn-Dixie*	20.216	11.365	8.851 (9.887)		
White Motor*	94.351	81.865	1.918 (16.244)	5.878 (SH) (10.900)	
				.804 (LG.11%) (8.089)	
				3.886 (LG.12%) (8.186)	
Itel Corp*	183.447	7.569		175.878 (298.851)	
Bobbie Brooks*	38.75	13.596			9.810 (SH) (11.247)
					10.816 (LG) (12.184)
A. M.** Intern*	218.8	40.41	40.51 (12.38)		4.527 (CL) (4.170)

Table III—Continued

All Securities				MV of Claims to:					
Firm	Reorganization	Equity	Pref.	Conv Pref.	Conv Debt.	Debt	Notes	Other	
Saxon*	23.623	8.988			4.183 (S) (14.735)	3.690 (13.090)			
					6.762 (J) (23.487)				
Wickes*	463.81	55.157	5.926 (22.500)	2.592 (18.167)	16.025 (34.346)	167.73 (190.896)	216.380 (425.280)		
Braniff*	85.533	3.316				39.587 (S) (57.120)	40.566 (S) (58.209)		
						2.064 (J) (27.333)			
Revere*	104.390	81.052				23.338 (26.491)			
Continental	372.745	322.072			27.095 (27.095)	23.578 (23.735)			
Air						182.738 (S) (189.679)		.3 (A/P) (3.084)	
Anglo	238.05	28.125				26.888 (J) (23.826)			
Energy*									

* Indicates deviations from absolute priority. SH - short, LG - long, S - senior, J - junior, A/P - accounts payable, CL - capital lease, inc - income note, Mort - mortgage.
 ** The debt settlement was given per \$100 of "allowable claim." Since we could not determine what proportion of the debt claim was allowable we assumed 100%.

class of securityholders, when the former does not initiate the reorganization plan.

There are three other explanations of deviations from absolute priority to that provided by Baird and Jackson. One is that the deviations are caused simply by the bargaining powers to the debtor-in-possession. The ability to remain in Ch. 11 when the costs are borne by the firm, and therefore in most part by creditors, may encourage the latter to give something to the equity holder. By contrast, in Baird and Jackson's framework this recontracting reflects more management's unique ability to preserve firm value rather than the bargaining powers conferred by law. The third explanation is based on misrepresentation. Managers usually know more than creditors about firm value. They overstate values so that new equity (or quasi-equity) securities are worth less than that anticipated by creditors and judges. The deviations reflect these differences in value when the truth is revealed.⁸ Finally, some deviations from absolute priority may reflect bankruptcy proceedings using (imputed) market values rather than book values for liabilities.

We formally calculate deviations from absolute priority as follows. To begin with, assume there is only one security in each creditor class, and that each security has a face value, then the amount P_j a creditor should have obtained under absolute priority for a security j is

$$P_j = \min(D_j, F - \sum_{J=j+1}^n S_J) \quad (1)$$

where

D_j = face value of claim j adjusted for interest in Chapter 11 at the coupon rate on the security

F = total market value of all securities distributed at reorganization.

S_J = market proceeds to all the more senior claimholders J where $J = j + 1, j + 2, \dots, n$ assuming absolute priority prevails.

When there is more than one security in each class equation (1) becomes

$$P_j = \frac{D_j}{\sum_{i=1}^m D_i} \cdot \min(\sum_{i=1}^m D_i, F - \sum_{I=j+1}^N S_I) \quad (2)$$

where $\sum_{i=1}^m D_i$ is the adjusted face value of all securities in a particular class i . A deviation from absolute priority, X_j , for security j is measured by

$$X_j = A_j - P_j \quad (3)$$

where A_j is the market value of the securities actually received by security j . We can express the deviation X_j as a proportion of the aggregate proceeds of reorganization. The sum of the deviations as a proportion of the total value of

⁸ Misrepresentation may arise as a result of deviations from absolute priority. Say the face value of the debt is 100 and the true value of the firm $V = 101$. Given the bargaining process in Ch. 11 say stockholders obtain .1V if $V \geq 90$, then stockholders will wish to misrepresent the firm as being below its true value so the firm can enter Ch. 11. Alternatively, if the true value of $V = 60$ and shareholders obtain .05V if $60 \leq V < 90$ then there will be an incentive to misrepresent the firm value as being 90 or above. These incentives to misrepresent can only be effective if quasi-equity type are given in exchange for old securities. Such misrepresentation may give rise to a bargaining framework (see Giammarino (1987) and Aumann and Maschler (1985)).

the claims given is simply $\sum_j X_j/F$. For each company in reorganization we calculate this deviation from absolute priority. This measure is based upon the assumption that judges in bankruptcy base liabilities on the face value of financial claims rather than their market value.

In order to compare deviations from absolute priority across companies an index of deviations for each company has been constructed. For each individual firm the deviations for each security are squared and then summed. To normalize, the sum of the squares is divided by 2, to obtain an index with bounds of [0, 1]. The construction of such an index is inevitably arbitrary. For example, the value of the index declines as the number of securities increases.

We conjecture that as the market value of securities at reorganization increases as a proportion of the adjusted face value of all securities, so the deviations from absolute priority decrease. Thus, as F/D_j increases, $\sum_j X_j/F$ diminishes. Given that there are deviations from absolute priority in our sample, it is interesting to determine which types of securities bear the costs of the greatest deviations, and how the size of proceeds received by stockholders compares with the proceeds received by those security holders who have given up some priority of payment. We also conjecture from the provisions of the 1978 code and from conversations with lawyers and a bankruptcy judge that deviations from absolute priority have increased as a result of the 1978 Act.⁹ It may also be that the deviations are different depending upon the proposer of the plan (old management, new management or creditors).

Our results are tabulated in Table IV. As expected, for some firms these deviations are large; for example, Bohack, Saxon, Allied Supermarkets, Food Fair, Permaneer, and Reading Corporation.

In Table V the type and value of new securities issued in exchange for the old securities are described. Existing holders of equity always receive new equity in exchange. In contrast other creditors may receive varying combinations of equity, cash, debt and notes. An interesting question arises as to what determines the type of new instruments issued. It seems likely that the greater the uncertainty surrounding the value of the emerging enterprise the greater the role for equity-like instruments.

III. The Effect of Ch. 11 on a Firm's Investment and Financing Decisions

The treatment of default is crucial to the firm's capital structure decision and the pricing of risky debt. It is commonly assumed that, when the firm defaults on its debt, the firm is taken over by the bondholders and the proceeds from liquidation shared out between creditors according to the rules of absolute priority (see, for example, Merton (1974), Titman (1984), and Myers (1977)). For the purposes of illustration, we examine how the recontracting process of Ch. 11 will affect the under-investment problem discussed by Myers and the pricing of risky debt modelled by Merton.

⁹ Morse and Shaw (1988) conclude from an event study using share price data that firms entering reorganization did not obtain, on average, greater gains as a result of the 1978 Act.

Table IV
An Index of Deviations from Absolute Priority for each Reorganized Firm

Firm	Index of Deviations	Equity	Pref.	Conv. Pref.	Conv. Debt	Debt	Notes	Other
B & M	.005	0				-.0693	.0693	
Elcor	.000	.00		.00				
Reading	.142	.379				-.004 (First Mort)		
						-.375 (Gen. Mort)		
Bohack	.96	.98		-.98				
Daylin	.0003			.027		-.027	0	
CRIP	.000	0				0		
Cont. Mort.	.000	.00		.00				
GAC	.103	.0	.0	.322		-.322		
Permaneer	.107	.327				-.327		
Duplan	.000	.00		.00				
Allied Supermarkets	.207	.455				-.455		
Interstate	.000	.00		.00				
Metrolplex	.002	.0472		-.0472				
CORCO	.113	.352	-.317	-.035				
Food Fair	.112	.334				-.334		
Inforex	.0011	.0343				-.0343		
Penn-Dixie	.003	.051				-.051		
White Motor	.082	.328		-.152		-.176		
Itel	.002	.041				-.041		
Bobbie Brooks	.009	.0634					-.0724	.009 (CL)
A. M. International*	.243	-.545		.129	.160 (SH)	.416		
Saxon	.180	.380		-.177 (LG)		-.398		
Wickes	.033	.119	.013	.006	.035	-.050	-.122	
Braniff	.002	.0188				-.0629 (S)		
						.0241 (J)		
Revere	.0011	.03		-.03				
Continental Air	.000	0	0	0				
Anglo	.0011	.0278				-.029 (S)		-.0117 (A/P)
						.0129 (J)		

* See footnote to Table III.

Table V
The Type and Value of New Securities Issued in Exchange for the Old Securities

Firm	Old Security	Equity	Cash	Pref.	Conv. Pref.	Liq. Pref.	Debt	Conv. Debt	Notes	Warr.
B & M	bonds (mort)		18,249							
	notes (inc)		30,598							
Elcor	conv. debt	9.061								
Reading	equity	98.08								
	first mortg		3.87				66.69			
Bohack	gen. mortg		77.46				12.78			
	equity	.559								
	conv. debt	.014								
Daylin	debt	16.312	4.579						2.576	
	conv. debt.						.634		.162	
CRIP	equity	42.357								
	bonds (SHmort)	42.57				20.52				
	bonds (LGmort)	22.67				5.85				
	notes (inc)	51.95				36.98				
Cont. Mort	conv. debt		38.074	47.542			16.186			
GAC	debt. (SH)	20.052	15.338				13.746			
	debt. (LG)	18.859	13.393				12.886			
	conv. debt. (SH)	2.800	2.127				1.880			
	conv. debt. (LG)	15.830	11.988				10.649			
Permaneer	equity	1.297								
	debt. (SH)	1.350								
	debt. (LG)	1.316								
Duplan	conv. debt	.0121	.1981							
Allied Superm.	equity	7.175								
	debt	5.870	2.700							
Interstate	equity	39.692								
	conv. debt.	.477								
Metroplex	equity	.888								
	debt	17.96								

Table V—Continued

Firm	Old Security	Equity	Cash	Pref.	Conv. Pref.	Liq. Pref.	Debt	Conv. Debt	Notes	Warr.
Braniff	equity	3,316								
	debt. (S)		35,419		3,119					1,049
Revere	debt. (J)	1,314	.750							
	notes (S)	36,202			3,312					1,052
Continental Air	equity	81,052								
	debt	9,452					3,664	10,222		
Anglo	equity	322,027								
	debt.		6,015				17,563			
	conv. debt		2,597				24,498			
	equity	28,125								
	debt(s)	73,688	42.30						66.75	
	debt (J)	10,688	1.20						15.00	
	A/P	.30								

A. Myers' Underinvestment Problem

In Myers' (1977) model, if the firm financed the purchase of future investment opportunities (i.e., "growth" opportunities) with debt finance, managers acting in stockholders' interests had an incentive in some states of the world not to invest in positive NPV projects. Myers assumed the value of growth opportunities was unique to the firm, and that the debt matured after the decision to invest. In the light of the description and evidence of the Ch. 11 process the underinvestment problem should be ameliorated if not eliminated. An example will illustrate the point. Assume the following balance sheet for the firm:

Assets in Place	70	Equity	0
NPV of growth opportunities	<u>15</u>	Debt (face value = 100)	<u>85</u>
	85		85

The growth opportunities require an investment of \$35 and have a present value of \$50. In this case there is no incentive for a stockholder-oriented management to raise equity and invest since the total NPV will accrue to creditors. The equity would be worth \$20 after investment compared with the initial investment required of \$35. As a result, the NPV of the growth opportunities would disappear and the debt would have a value of \$70.

The recontracting process in Ch. 11 could overcome this underinvestment problem. The deviations from absolute priority are consistent with debtholders reducing the face value of their financial claims and thereby increasing the value of equityholders' claims. One purpose could be to provide incentives for a stockholder-oriented management to increase firm value. Using our prior example, if debtholders agreed to write down the face value of their claims from \$100 to \$75, the incentives to invest in the growth opportunities would be restored. The balance sheet after investment would be:

Assets in place	70	Equity	45
Present value of growth opportunities	<u>50</u>	Debt (face value = 75)	<u>75</u>
	120		120

The value of the equity is \$45 after the investment of \$35. If debtholders did not agree to write down their claims the market value of their claims would only be \$70, compared with the current value of \$75.

B. Valuation of Risky Debt

In his seminal analysis of the pricing of risky debt, Merton (1974) assumes absolute priority in the event of default. However, subsequent empirical analysis has shown that, for reasonable parameter values, spreads between risky and default-free interest rates based on absolute priority are significantly less than observed spreads. In this section we provide a framework for valuing risky debt which incorporates a number of the essential features of Ch. 11.

We assume informational symmetry. That is, the true value of the firm is known by all, including management, creditors, and the courts.

Without loss of generality, we assume that B dollars of pure discount debt is due at time T . Management, acting in the best interests of equityholders, has the exclusive right to declare Ch. 11. That is, if on the maturity date T the firm cannot pay off its debt, it can exercise its option to delay until time $T^* > T$. If the firm is not reorganized at T^* , we assume the judge imposes absolute priority via the cramdown procedure. The total value of equity, $E(T)$, is given by

$$E(T) = \max[C(T), e(T)], \quad (4)$$

where

$e(T)$ = value of equity at time T in the absence of Ch. 11,

$C(T)$ = value of the option to pay the face value of the debt (adjusted for accrued interest) at any time through T^* .

It should be noted that the option to delay is an American option. That is, once in Ch. 11, management has the right to fulfill its contractual obligations at any point in time through the option's expiration date, T^* . Furthermore, interest is assumed to accrue at the prevailing risk-free rate of interest; this is a simplification. As a result, the exercise price of the option increases deterministically with time. The longer management takes to exercise its option, the larger the amount of accrued interest due.

The direct administrative and legal costs of Ch. 11 are financed by the future cash flows of the firm. Management does not issue additional equity to finance these costs. We assume that costs, proportional to the value of the firm, are incurred continuously throughout the Ch. 11 process. This assumption, as opposed to a fixed cost paid upon entry, more accurately reflects how costs are incurred in reorganization.

The ability to avoid future legal and administrative costs may provide an incentive for creditors to purchase the debtor-in-possession's option to continue in Ch. 11. To make the point, assume that just prior to cramdown it is known that the debtor-in-possession's claim will be worthless at T^* . Both creditors and the debtor-in-possession can be made better off by creditors simply writing down their claims by a fraction α , $0 \leq \alpha \leq 1$, of the costs saved and giving this amount to the debtor-in-possession. Bargaining between creditors and the debtor-in-possession will determine α which is assumed exogenously specified. As a result deviations from absolute priority reflect not only the fair value of the option to delay but also a premium reflecting future administrative and legal costs saved.

We assume that an initial period of time τ ($0 \leq \tau \leq T^*$) is required to resolve the more serious conflicts among creditors through the acquisition of information, or entry into Ch. 11 is required to make threats credible (as in strikes, see Hayes (1984)). If $\tau = 0$ there is an incentive for a firm not to enter Ch. 11, and reorganize outside. We assume τ is exogenously specified. Beginning at time τ creditors are assumed to have an incentive to purchase the option to delay. When the option is purchased, the financial claims of creditors will be written down and those of

stockholders written up. Such changes appear as deviations from absolute priority.

We now compare Merton risky debt prices with risky debt prices which reflect the preceeding modelling of the Ch. 11 process. For reasonable parameter values, risk premia in the presence of Ch. 11 can be significantly larger than risk premia in the absence of Ch. 11.

The value of the firm is assumed to be log-normally distributed with variance s^2 . We assume the firm's volatility is not altered by its entry into Ch. 11. A flat term structure of risk-free interest rates at 10% is assumed throughout. We use the binomial algorithm to solve the relevant partial differential equation subject to the appropriate boundary conditions characterizing the particular default assumption.

In Table VI we consider the pricing of a risky pure discount bond with an original term to maturity of $T - t = 15$ years. It is assumed that costs C equal 5% of the value of the firm and are paid continuously in Ch. 11. In the bargaining between debtor-in-possession and creditors the proportion of total costs paid as a premium to equityholders is 50 percent ($\alpha = .50$). For a given $T^* - T$, τ , s^2 and d (Merton's quasi debt to firm value ratio) we tabulate both the differences in

Table VI
Comparison of Risk Adjusted Interest Rates with and without
Chapter 11

($T - t$) = 15, $\alpha = .50$, $C = .05$.

s^2	α	$T^* - T = 5$ $\tau = 2$		$T^* - T = 4$ $\tau = 2$		$T^* - T = 3$ $\tau = 2$		$T^* - T = 2$ $\tau = 1$		$T^* - T = 1$ $\tau = \frac{1}{2}$	
		Δ	% Δ	Δ	% Δ	Δ	% Δ	Δ	% Δ	Δ	% Δ
.03	.2	5	0.5	4	0.4	4	0.4	2	0.2	1	0.1
	.5	52	4.9	44	4.2	36	3.5	24	2.3	12	1.2
	1.0	139	11.6	117	9.8	95	7.9	61	5.1	30	2.5
	1.5	193	14.1	162	11.9	129	9.5	83	6.0	40	3.0
	3.0	255	14.6	212	12.1	167	9.6	105	6.0	50	2.9
.10	.2	63	5.9	43	4.0	35	3.3	24	2.3	13	1.2
	.5	124	10.2	89	7.3	73	6.0	49	4.1	26	2.1
	1.0	157	11.2	134	9.5	109	7.7	72	5.1	36	2.6
	1.5	202	13.0	154	9.9	124	7.9	89	5.7	41	2.6
	3.0	226	12.1	190	10.2	152	8.1	97	5.2	48	2.6
.20	.2	115	9.4	100	8.1	83	6.7	57	4.6	30	2.4
	.5	173	12.2	126	8.8	103	7.2	81	5.7	37	2.6
	1.0	191	11.7	163	10.0	133	8.2	88	5.4	46	2.8
	1.5	223	12.6	190	10.7	153	8.6	102	5.7	51	2.8
	3.0	255	12.4	197	9.5	158	7.7	103	5.0	52	2.5

Δ = differences in risk-adjusted rates expressed in basis points.

% Δ = percentage differences in risk adjusted rates.

$T - t$ = original maturity of debt.

α = proportion of costs saved paid to equityholders.

C = costs of bankruptcy as a proportion of the value of the firm.

$T^* - T$ = maximum period to be spent in Ch. 11.

τ = end of year in which creditors buy out option to remain in Ch. 11.

risk premia measured in basis points (Δ) and the corresponding relative differences ($\%\Delta$). Notice that these differences can be substantial. For example, for $T^* - T = 3$ and $\tau = 2$, $d = 1.0$ and $s^2 = .10$, the difference in risk premia is 109 basis points. Also a number of interesting patterns emerge.

Given d , $T^* - T$ and τ , we can conclude that Δ and $\%\Delta$ increase with volatility s^2 . For example, for $T^* - T = 2$ and $\tau = 1$, $d = 1.0$, and $s^2 = .03$, the difference in risk premium in the two models is 61 basis points, compared with 88 basis points when volatility increases to .20. The larger the volatility the more valuable the option to delay and therefore the greater the risk adjusted rate of interest.

Given s^2 and d , we can conclude that Δ and $\%\Delta$ increase with $T^* - T$ for given τ . For example, for $s^2 = .10$ and $d = 1.0$, $\Delta = 109$ basis points for $T^* - T = 3$ and $\tau = 2$; $\Delta = 134$ basis points for $T^* - T = 4$ and $\tau = 2$; and $\Delta = 157$ basis points for $T^* - T = 5$ and $\tau = 2$. The longer in Ch. 11 the more valuable the call option to equityholders, and hence the greater risk adjusted interest rate required on debt.

IV. Conclusion

In this paper, we have described the rights of the debtor-in-possession in Ch. 11. Ch. 11 provides the debtor-in-possession with a valuable option, and we have shown how that option may be priced into risky debt. Using simulation, we have compared the risk adjusted rates of interest with the option to enter Ch. 11 with the risk adjusted rates without that option. The differences can be substantial.

We investigated a sample of thirty firms to determine the period spent in reorganization. In addition, we determined the market values of new securities each security holder obtained on reorganization and compared them with the amounts owed. We observed that substantial deviations from absolute priority frequently occurred in our sample in favor of stockholders. One explanation for these deviations is the bargaining framework of Ch. 11. The essential features of this framework are that a stockholder-oriented management remains in control of the firm, it can protract the proceedings especially when it retains the exclusive right to propose a reorganization plan, and, the costs of reorganization are paid out of the firm's cash flows and therefore are borne (in large part) by creditors. As a result, creditors may have an incentive to buy the stockholders' Ch. 11 option prior to expiration to avoid some of those costs. A deviation from absolute priority reflects the purchase of the option. An alternative explanation is that put forward by Baird and Jackson - that deviations reflect a recontracting process between stockholders and other creditors which recognizes the ability of a stockholder oriented management to preserve value. An example of the value of such recontracting is a cure for the underinvestment problem described by Myers.

Many questions raised in this paper remain unanswered. For example, how efficient is the reorganization process in Ch. 11 compared with alternatives? (See Bebchuk (1988) for a contingent claims approach.) The UK system reflects one alternative which has been far more creditor-oriented and has led to much shorter periods spent in reorganization. However, critics of the UK system point out that businesses are often prematurely liquidated. A second question is, how have lenders responded to the Ch. 11 process? For example, in leveraged buyouts have

lenders demanded higher risk premiums or have they formed coalitions with other lenders who will cooperate in any subsequent reorganization? A third question is, how has the firm's capital structure altered as a result of the reorganization process? It may be that because of adverse selection problems risky debt cannot be efficiently priced so that debt markets become more incomplete. For example, secured debt seems less susceptible to problems of recontracting and misrepresentation than unsecured debt. Answers to these questions are left to another paper.

REFERENCES

- Altman, E. J. and S. A. Nammacher, 1985, The default rate experience on high yield corporate debt, *Financial Analysts Journal* 25–38.
- Aumann, R. J. and M. Maschler, 1985, Game theoretic analysis of a bankruptcy problem from the Talmud, *Journal of Economic Theory* 36, 195–213.
- Baird, D. G. and T. H. Jackson, 1988, Bargaining after the fall and the contours of the absolute priority rule, *University of Chicago Law Review* 55, 738–789.
- Bebchuk, Lucian A., 1988, A new approach to corporate reorganization, *Harvard Law Review* 101, 775–804.
- Boyes, William J. and R. L. Faith, 1986, Some effects of the Bankruptcy Reform Act of 1978, *Journal of Law and Economics* 39, 139–149.
- Brown, D., 1989, Claimholder incentive conflicts in reorganization: The role of bankruptcy law, Forthcoming, *Review of Financial Studies*.
- Cutler, D. and L. Summers, 1988, The costs of conflict resolution and financial distress: Evidence from Texaco-Pennzoil litigation, *Rand Journal of Economics* 19, 157–172.
- Giammarino, R. M., 1987, The resolution of financial distress, Unpublished manuscript, The University of British Columbia.
- Haugen, R. A. and L. W. Senbet, 1978, The insignificance of bankruptcy costs to the theory of optimal capital structure, *Journal of Finance* 70, 383–393.
- Hayes, Beth, 1984, Unions and strikes with asymmetric information, *Journal of Labor Economics* 2, 57–83.
- Klee, K. W., 1979, All you ever wanted to know about cram down under the new bankruptcy code, *American Bankruptcy Law Journal* 133–171.
- Merton, R. C., 1974, On the pricing of corporate debt: The risk structure of interest rates, *Journal of Finance* 29, 449–469.
- Morse, D. and W. Shaw, 1988, Investing in bankrupt firms, *Journal of Finance* 45, 1193–1206.
- Myers, Steward C., 1977, Determinants of corporate borrowing, *Journal of Financial Economics* 5, 147–176.
- Titman, Sheridan, 1984, The effects of capital structure on a firm's liquidation decision, *Journal of Financial Economics* 13, 137–151.
- Warner, J. B., 1977, Bankruptcy, absolute priority, and the pricing of risky debt claims, *Journal of Financial Economics* 4, 239–276.
- Webb, David C., 1988, Does the 1986 Insolvency Act satisfy the creditors' bargain, Unpublished paper, London School of Economics.
- White, M., 1983, Bankruptcy costs and the new bankruptcy code, *Journal of Finance* 38, 477–488.