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Security Pricing and Deviations from the Absolute Priority Rule in Bankruptcy Proceedings

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ABSTRACT

Claims ultimately awarded to shareholders of firms in reorganization were examined for a sample of 30 filings under the 1978 Bankruptcy Reform Act. We measured the amount paid to shareholders in excess of that which they would have received under the absolute priority rule and found that this amount represents, on average, 7.6% of the total awarded to all claimants. Evidence is also reported that common share values reflect a significant proportion of value ultimately received in violation of absolute priority, suggesting that deviations from the rule were expected by the equity markets.

THE ABSOLUTE PRIORITY RULE (hereafter APR) states that a bankrupt firm's value is to be distributed to suppliers of capital such that senior creditors are fully satisfied before any distributions are made to junior creditors, and junior creditors are paid in full before common shareholders. Bankruptcy reorganization proceedings, however, are leaving shareholders and junior creditors with valuable assets, even when senior claimants receive only partial settlements. As Barrett and Sullivan (1988) noted:

Traditionally, shareholders have been last in line. Their claims on a troubled company's assets have had the lowest priority and their impact on the course of bankruptcy-code proceedings generally has been next to nil. But lately the balance of power has been shifting.

Warner (1977) provided one of the early discussions of the implications of deviations from the APR. Baldwin and Mason (1983, pp. 510–511) examined the resolution of claims in the Massey Ferguson reorganization and provided no support for “the hypothesis that the market believes absolute priority rules will be enforced if the firm defaults on its financial obligations.” Franks and Torous (1989) analyzed a sample of bankruptcies that occurred during the period 1970 through 1984, and found that 21 of 27 sample cases exhibited departures from the APR. More recently, Weiss (1990) examined 37 firms that filed for bankruptcy between 1980 and 1986 and reported that 27 of the cases involved APR violations.

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The high frequency and large magnitude of deviations from the APR imply that they should be reflected in security prices. The main purpose of this study is to measure the proportions of firm value given to shareholders in violation of the APR and to determine whether these deviations are priced in the equity market.

The Bankruptcy Reform Act of 1978 (hereafter the Act) provides an environment conducive to deviations from the APR. Considerable power is conferred upon incumbent management during the reorganization period, informational asymmetry is clearly in management's favor, and creditors face an uphill battle in having recalcitrant managers removed (Franks and Torous (1989), Brown (1989)). Consequently we focus our analysis on cases filed subsequent to the effective date of the Act. In each case the amount paid to shareholders in excess of that due under strict adherence to the APR is measured, and this amount is on average 7.6% of the total value paid to all claimants. The excess amount received by shareholders varies from zero to 35.71% of total value paid, and 23 of the 30 cases examined resulted in violations of the APR.

Firms' equity values measured subsequent to the announcement of bankruptcy reflect both the amounts paid in adherence to the APR and the amounts paid in violation of the rule. This finding is consistent with that of Clark and Weinstein (1983), who reported that the average announcement-period abnormal return for shares that ultimately retain value is higher than the average abnormal return for those that end up valueless.

Franks and Torous (1989) portrayed shareholders' ability to delay reorganization as a call option. By agreeing to a reorganization plan sooner rather than later, shareholders can expect to be paid for the forfeiture of their option, and the payment takes the form of value distributed in violation of the APR. We offer preliminary evidence in support of this argument; our measure of the time delay is lower for cases where deviations from the rule in favor of shareholders were greater.

In Section I we summarize those features of the Act that are conducive to deviations from the APR. The sample of bankruptcy cases is described and deviations from the APR are reported in Section II. In Section III we test the relationship between equity values after the announcement of bankruptcy and the amounts ultimately received by shareholders in reorganization. Section IV concludes with a summary of the findings and their implications.

I. Reasons for Deviations from Absolute Priority

Reorganization of the corporation is governed by Chapter 11 of the Act, and this Chapter does not generally require that the APR be followed.¹ Strict adherence to the APR is required in a cram-down, which may be forced by any class of impaired claimants, thereby blocking acceptance of a particular reorganization

¹ For additional details and implications of the Act, see Blum (1980), Brown (1989), Franks and Torous (1989), Giammarino (1989), Hagedorn (1980), Jackson (1986), Klein (1979), Morrison (1985), Morse and Shaw (1988), Treister et al. (1988), and White (1984, 1989).

plan to which they object (see Klee (1979)).² However, in a cram-down the court usually demands a costly and perhaps lengthy valuation hearing involving additional audits and expert testimony. Thus the total value available for distribution is thereby reduced, and impaired claimants may actually receive less by forcing a cram-down than by accepting a plan which deviates from the APR (Brown (1989)).

Provisions of the Act confer considerable power upon incumbent management, particularly in the crucial early stages of the reorganization process. With rare exceptions, management has the exclusive right to file a reorganization plan during the first 120 days following the bankruptcy petition. As proposer of the plan, management has some discretion over the priority levels assigned to certain classes of claimants. To the extent that management favors equity, the plan will generally deviate from the APR since equityholders otherwise stand to lose if the rule is followed. The threat of downgrading a claimant's priority may be used to convince certain creditors to accede to lower payments. In addition, management may exploit the provision of the Act whereby post-petition interest payments to unsecured creditors can be suspended. Thus management has considerable leverage in having a plan confirmed that results in deviations from the APR.

In addition to the leverage granted under the Act, management enjoys a natural information advantage vis-à-vis outside creditors, one that is not effectively neutralized under the law. Although the Act specifies that "adequate information" be disseminated to claimants, this is usually interpreted to mean only financial statements. Management is not required to inform claimants of other possible or competing plans. This information advantage, coupled with more precise knowledge of asset values, can be exploited in bargaining with creditors.

Management's leverage is not totally unbridled, although some of the checks and balances provided under the Act may be ineffective. For example, creditors may demand that certain managers be replaced, but the Act restricts the possible reasons for replacement to "fraud, dishonesty, incompetence, or gross mismanagement" (Section 1104(a)(1), U.S. Code).

II. Evidence of Deviations from Absolute Priority

A. Sample Selection and Description

An initial sample of 190 firms was compiled from the *Wall Street Journal Index* and the samples listed in Altman (1986), Altman and Nammacher (1985), and Johnson (1989). The sample was then purged of cases in which petitions were filed before October 1, 1979 (the effective date of the Act) and those cases in which reorganization plans had not yet been confirmed.

The most restrictive screen was the requirement of complete information needed to assess values of assets distributed to various classes of claimants.

² A reorganization plan does not impair a claim if it leaves "unaltered the legal, equitable, and contractual rights" of a class of creditors/owners, reinstates the obligation, or fully compensates the creditors/owners in cash at the effective date of the plan (Section 1124 (1), U.S. Code). Unimpaired claimants are presumed to be satisfied with the plan; thus their votes are not required for confirmation.

Articles published in the *Wall Street Journal* (*WSJ*) often provided details of the amounts distributed to various classes. *Moody's Manuals* and the *Capital Changes Reporter* were consulted for information confirming and supplementing that in the *WSJ* articles. Requests were also sent to firms for copies of the confirmed reorganization plans (eight responded). Since many classes of claimants were paid at least partially in marketable securities, market values were sought in *Barron's*, the *Wall Street Journal*, the *Capital Changes Reporter*, the *Commercial and Financial Chronicle*, and the *Standard & Poor's Daily Stock Price Record*.

The final sample consists of 30 cases. Table I contains the names of the firms, bankruptcy announcement dates, reorganization confirmation dates, and the market value of equity before and after the bankruptcy announcement.³ The bankruptcy announcement date provided in column (1) is the publication date of the filing announcement in the *WSJ*. At least one announcement occurred in each of the years from 1979–1986, and 27 of the announcements occurred during 1980–1984. The confirmation date in column (2) is the date the bankruptcy court confirmed the reorganization plan. Confirmation came within ten months for Inforex but took over six years for Seatrain Lines. The average length of time between petition and confirmation was 2.1 years for the 29 firms with known confirmation dates.⁴

The market values of equity before the bankruptcy announcements are provided for the 30 firms in column (3) of Table I and are based on the closing prices of common stock immediately before the announcement dates. The equity values range from a low of \$1.484 million for Leisure Dynamics to a high of \$136.854 million for Storage Technology, and the average is \$29.471 million (median \$16.390 million). The equity values subsequent to the bankruptcy announcements are contained in column (4) and are based on closing prices on the *WSJ* announcement dates. The average for the post-announcement equity values is \$19.245 million (median \$9.262 million), ranging from \$1.250 million for Leisure Dynamics to \$98.364 million for Storage Technology.

Chapter 11 filing announcements appear to convey substantial information because substantial decreases in equity values accompanied the bankruptcy announcements. For example, the equity value for Storage Technology declined \$38.490 million. In addition, the cumulative average prediction error is -35.78% ($Z = -32.09$) for the two days -1 and 0 relative to the *WSJ* bankruptcy announcement.⁵ Twenty-eight of the 30 prediction errors are negative. These results are consistent with those reported by Clark and Weinstein (1983) for bankruptcy petitions filed before the 1978 Bankruptcy Reform Act. The bankruptcy announcements subsequent to the Act convey about the same amount of information as the announcements did in the era before the 1978 Act, consistent with the observation made by Morse and Shaw (1988).

³ The cases of Johns Manville, A. H. Robbins, and Texaco, Inc. were excluded due to their unique legal circumstances.

⁴ The average time in reorganization was 2.6 years for the 15 firms in the Franks and Torous (1989) sample that filed after October 1, 1979.

⁵ These results are based on market model prediction errors using test statistics shown in Mikkelsen and Partch (1988). The mean-adjusted returns model based on Ryngaert (1988) yields similar results.

Table I

Bankruptcy Announcement Dates, Reorganization Confirmation Dates, and Pre- and Post-Announcement Equity Values for 30 Firms Filing Under Chapter 11 During 1979–1986

Pre-Announcement Market Value of Equity is calculated as the number of shares outstanding as of the end of the month before the bankruptcy announcement multiplied by the most recently observable share price immediately before announcement. Post-Announcement Market Value of Equity is calculated similarly using the closing price on the announcement date.

Firm	(1) WSJ Bankruptcy Announcement Date	(2) Reorganization Confirmation Date	(3) Pre-Announcement Market Value of Equity (in millions)	(4) Post-Announcement Market Value of Equity (in millions)
Allied Technology	031980	083181	\$ 2.216	\$ 2.217
AM International	041582	091384	14.081	11.521
Baldwin-United	092783	092086	94.694	68.390
Bobbie Brooks	011882	021683	9.811	5.194
Braniff International	051482	090283	42.540	17.517
Charter Company	042384	040187	57.971	45.548
Colonial Commercial	120181	010683	1.910	1.528
Computer Communications	111080	052984	17.475	8.854
Continental Airlines	092683	070186	89.622	75.618
Evans Products	031385	070386	31.070	25.892
Global Marine	012886	020289	40.811	28.568
HRT Industries	112482	021384	15.822	9.669
Inforex	102579	082880	16.958	7.267
KDT	080682	033084	11.010	6.881
Kenilworth Systems	090182	012784	8.197	3.643
Leisure Dynamics	011483	120683	1.484	1.250
Lionel Corp.	022282	091385	55.490	15.215
J. W. Mays	012682	021484	8.441	4.901
Omni Exploration	030183	020384	5.365	4.471
Partners Oil	041383	101084	13.069	5.419
Penn-Dixie Industries	040880	030482	12.588	7.288
Revere Copper & Brass	102882	080185	57.130	29.993
Richton International	031980	082881	2.233	2.233
Saxon Industries	041682	032285	22.028	13.217
Seatrains Lines	021281	040187	21.719	12.669
Steelmet	022383	041085 ^a	9.095	4.815
Storage Technology	110184	061987	136.854	98.364
Threshold Technology	111282	041384	13.707	7.044
Victor Technologies	020884	012885	17.303	18.321
Wickes Companies	042682	092484	53.438	33.844

^a A confirmation date was not available for Steelmet, thus the effective date of the reorganization is provided instead.

B. Values Distributed to Claimants

The values distributed to creditors and shareholders in accordance with the reorganization plans were obtained from the sources cited in the second paragraph of Section II.A. Claimants were paid in various combinations of cash and securities, the values of which were determined in the manner described below.

B.1. Common Shareholders

The amounts awarded to common shareholders were in all cases based on market values of common shares and/or warrants distributed to them under the respective plans. These values were determined by multiplying the number of shares (or warrants) issued or retained under each plan by the market price per common share (warrant) on the date of distribution. These values are reported for each firm in column (1) of Table II. In the Wickes Companies case for example, common shareholders received 14,385,000 common shares in the new company, along with 2,877,088 common stock warrants, in exchange for their old shares. On the distribution date the stock price was \$3.625 and the warrant price was \$1.625, implying a total market value of \$56.821 million.

B.2. Creditors

The amounts paid to creditors included combinations of cash and securities. Security values were determined by market prices exclusively in 12 of the 30 cases. In the remaining 18 cases combinations of face and market values were used.⁶ To the extent that face values overstate true market values, the amounts paid to creditors are biased upward.

To illustrate the method for calculating amounts paid to creditors, we return to the Wickes Companies case. Creditors received \$600,000,000 in cash in addition to the following securities: (1) extendable, two-year 12% notes, \$173,000,000 face value (market value = 97% of face value); (2) nine-year, 12% debentures, \$246,000,000 face value (market value = 85.75% of face value); (3) 20-year debentures, \$150,000,000 face value (market value = 50% of face value); (4) 79,117,500 shares of common stock (market price \$3.625), and (5) 8,151,749 common stock warrants (market price \$1.625). The market values of the securities plus the cash paid total \$1,353,802,530.

In cases where the amount distributed to creditors was less than they were owed, the difference is defined as the creditor deficit. These amounts are presented in column (2) of Table II and, for the Wickes Companies example, the creditor deficit was the amount owed to creditors (\$1,600,000,000) less the amount paid to creditors (\$1,353,802,530), or \$246.197 million. The average creditor deficit for the firms in the sample is \$81.868 million and ranges from zero for six firms to \$818.867 million for Global Marine.

B.3. Preferred Shareholders

Several firms in the sample had preferred stock outstanding, representing in each case a small percentage of firm value. The amounts paid to preferred shareholders were valued as previously discussed. As an example, the preferred shareholders of Wickes Companies were awarded 2,397,574 new common shares priced at \$3.625 per share for a value of \$8,691,206.

⁶ In some of these cases, the information available on the plans was not sufficiently detailed to determine the extent to which face values were included in the amounts reported. For instance, in the Evans Products case, the *WSJ* reported only that creditors would receive 79% of \$649,500,000 in allowable claims.

Table II

Amount Paid to Common Shareholders, Creditor Deficit, Total Value Distributed, and Percentage Deviation from Absolute Priority Rule (APR) Based on Reorganization Plans of 30 Firms Filing for Bankruptcy Protection Under Chapter 11 During 1979–1986

The Amount Paid to Common Shareholders is the number of shares (or warrants) issued or retained under each plan times the market price per share (or warrant) on the distribution date. The Creditor Deficit is the total amount creditors were owed less the sum of cash and the market values of securities issued on the distribution date. Total Value Distributed is the sum of cash and the market values of all securities issued to or retained by common shareholders, preferred shareholders, and creditors. Deviation from the APR (δ) is the amount ultimately paid to common shareholders in violation of the absolute priority rule divided by the total value distributed to all claimants.

Firm	(1) Amount Paid to Common Shareholders (in millions)	(2) Creditor Deficit (in millions)	(3) Total Value Distributed (in millions)	(4) Deviation from APR (δ) (%)
Allied Technology	\$ 0.025	\$ 5.397	\$ 5.753	0.43
AM International	37.088	36.863	295.450	12.48
Baldwin-United	15.609	152.885	355.850	4.39
Bobbie Brooks	15.005	0.000	31.505	0.00
Braniff International	3.316	91.467	483.520	0.69 ^a
Charter Company	91.097	376.100	571.867	15.93
Colonial Commercial	4.202	11.007	19.196	21.89
Computer Communications	12.116	0.780	22.116	3.53
Continental Airlines	322.078	0.000	1,247.078	0.00
Evans Products	0.000	136.395	513.105	0.00
Global Marine	6.629	818.867	458.075	1.45
HRT Industries	5.933	17.217	123.616	4.80 ^a
Inforex	4.441	9.458	53.984	8.23
KDT	1.306	0.000	28.347	0.00 ^a
Kenilworth Systems	19.734	0.000	23.718	0.00
Leisure Dynamics	2.500	2.431	10.149	23.96 ^a
Lionel Corp.	46.316	8.563	173.754	4.93
J. W. Mays	21.511	0.000	47.711	0.00
Omni Exploration	3.129	3.993	25.269	12.38
Partners Oil	3.028	6.216	37.813	8.01
Penn-Dixie Industries	11.097	11.097	72.194	15.37
Revere Copper & Brass	79.982	15.500	364.482	4.25
Richton International	4.465	7.600	18.303	24.39 ^a
Saxon Industries	8.988	167.762	152.238	5.90
Seatrains Lines	0.452	268.651	31.802	1.42
Steelmet	0.107	4.700	11.907	0.90
Storage Technology	124.024	0.000	1,307.049	0.00
Threshold Technology	3.427	0.525	4.367	12.02
Victor Technologies	10.000	56.362	28.000	35.71
Wickes Companies	56.821	246.197	1,419.315	4.00

^a In the cases of Braniff International, HRT Industries, KDT, Leisure Dynamics, and Richton International, the precise amount owed to creditors or the amount actually paid could not be determined. We were able to identify an upper and a lower bound in each case, and the amounts reported are those which yield the more conservative estimates of the Deviation from the APR (δ). The upper bound estimates of δ are 1.01% (Braniff), 5.88% (HRT), 4.61% (KDT), 24.63% (Leisure Dynamics), and 28.14% (Richton).

The total value distributed to all claimants, column (3) in Table II, is the sum of the amounts paid to common shareholders, creditors, and preferred shareholders. For the Wickes Companies, the total value distributed was \$1,419.315 million (\$56.821 + \$1,353.803 + \$8.691). The total value distributed ranged from \$4.367 million in the case of Threshold Technology to \$1.419 billion for Wickes Companies and averages \$264.584 million.

C. Relative Deviations from the APR

A measure of the deviation from the APR that allows comparisons to be made across firms is defined as the amount ultimately paid to common shareholders in violation of the APR divided by the total value distributed to all claimants upon confirmation of the reorganization plan. These deviations (δ) are reported in column (4) of Table II.⁷ Generally, deviation from the APR includes the difference between what creditors and preferred shareholders were owed and what they received. For our sample, however, in every case where preferred shareholders were not fully compensated, the creditor deficit exceeded the amount paid to common shareholders. Thus, deviations from APR can be determined directly by comparing the creditor deficit with the amount paid to common shareholders. For example, in cases where the creditor deficit is zero, preferred shareholders were also fully compensated, and the amounts paid to common shareholders are not in violation of the APR, hence δ is zero. In the case of Continental Airlines, the creditors were paid in full, and, though common shareholders received \$322.078 million, none of this amount was in excess of that to which they were entitled under the APR.

In six cases the creditor deficit was positive but less than the amount paid to common shareholders. In these cases the deviation from the APR was not the total amount paid to shareholders but only the amount of the creditor deficit. As an example, δ for AM International is calculated as the creditor deficit (\$36.863 million) divided by the total amount distributed (\$295.450 million), or 12.48%.

In cases where the creditor deficit exceeded the amount paid to shareholders, the entire shareholder payment was in violation of the APR. In the case of Charter Company, for example, shareholders received \$91.097 million in the face of a creditor deficit of \$376.100 million. The amount received by shareholders represents 15.93% of the total \$571.867 million distributed to all claimants.

The values of δ in Table II range from zero to 35.71%, with an average of 7.57%. For 24 cases the creditor deficit is positive. In 23 of these cases shareholders received payments in violation of the rule and δ averages 9.87%. Because the deviations are widespread and economically significant, one would expect security prices to reflect the market's expectation of payments in violation of the APR.

⁷ The deviation measure (δ) differs from that calculated by Franks and Torous (1989). Their index of deviation focused on the creditor deficit. Our measure captures the proportion of firm value distributed to all claimants that was paid to shareholders in excess of that which they would have received under the APR.

III. Equity Values and Deviations from Absolute Priority

A. Pricing Deviations from the APR

The post-announcement equity values presented in column (4) of Table I should reflect the amount shareholders expected to receive upon reorganization, discounted to account for the expected delay in payment and adjusted for risk. The amount expected in each case should be the sum of (1) the amount expected if the APR is enforced and (2) the amount expected to be paid in violation of the rule. Both amounts should be reflected in a firm's share price upon announcement of bankruptcy. For example, AM International common shareholders received \$37.088 million upon reorganization (column (1), Table II) despite a creditor deficit of \$36.863 million (column (2), Table II). Of the total paid to shareholders, only \$225,000 would have been distributed under the strict APR (\$37.088 – \$36.863), thus \$36.863 million was paid in violation of the rule.

Using the values ultimately paid to shareholders as proxies for expected receipts, we test whether post-announcement equity values reflect the present values of the amounts paid by estimating the following linear model:

$$\text{VALUE}_i = \beta_0 + \beta_1 \text{APR}_i + \beta_2 \text{VIOLATE}_i + \varepsilon_i, \quad (1)$$

where the post-announcement market value of equity (column (4), Table I) is denoted as VALUE. The total amount distributed to common shareholders (column (1), Table II) is composed of the amount distributed under strict application of the APR, and the amount distributed in violation of the rule. We discount each of these amounts at the Treasury Bill rate prevalent at the time of the filing for the number of months between the filing date and reorganization confirmation.⁸ The discounted amount paid under the APR is denoted as APR in equation (1), and the discounted amount paid in violation of the rule is denoted as VIOLATE.

The coefficients β_1 and β_2 in equation (1) are hypothesized to be positive and less than 1.0 to reflect the certainty equivalent. The model is estimated by ordinary least squares and the results are in equation (2).

$$\text{VALUE}_i = 9,877.0 + 0.318 \text{ APR}_i + 0.533 \text{ VIOLATE}_i. \quad (2)$$

(2.61) (4.99) (2.46)

The values in parentheses are *t*-statistics for the respective coefficient estimates. The estimated coefficient for the present value of the amount paid under strict adherence to the rule is 0.318, positive and significant (*t* = 4.99). The coefficient estimate for the amount paid in violation of the rule is 0.533, also positive and significant (*t* = 2.46). Actual amounts paid and the actual time in reorganization are used to calculate APR and VIOLATE in (2), whereas the market's (unobservable) expectations of those amounts are the values that should be reflected

⁸ The sign and significance reported below for the estimated β_1 and β_2 coefficients in (1) are robust with respect to the discount rate used. Using two different discount rates, 10 and 12%, applied uniformly to all payments to shareholders and using nondiscounted values, the estimation results are nearly the same as those provided below.

in equity prices. Thus, equation (2) exhibits an errors-in-variables problem that should bias the coefficient estimates for APR and VIOLATE toward zero. The statistically significant ($t = 2.61$) intercept estimate implies that the actual amounts paid, or the amount of time before the amounts are received, are forecast with error by the markets. The two coefficient estimates $\hat{\beta}_1$ (0.318) and $\hat{\beta}_2$ (0.533) are not significantly different at the 10% level. Since the two variables APR and VIOLATE account for over half the variability in VALUE ($R^2 = 0.51$), we conclude that share values upon bankruptcy announcement reflect significant proportions of those amounts ultimately paid in adherence to the rule and in violation of the rule.⁹ This finding is consistent with that reported by Clark and Weinstein (1983) which indicates that share price reactions to bankruptcy announcements are conditional on whether the shares are ultimately valueless. Similarly, Gilson, John, and Long (1990) found that negative stock price reactions to debt restructuring announcements are more severe for firms whose restructuring attempts ultimately fail.

B. Deviation from the APR and the Option to Delay

Payments to common shareholders in excess of what they would receive under the APR can be viewed as the purchase by creditors of the shareholders' option to delay reorganization (Franks and Torous (1989)). The option to delay reorganization is an American-type call created by federal bankruptcy law. The payment to shareholders to forfeit the option and accept a reorganization plan may include the fair value of the option and, in addition, a premium to "avoid future legal and administrative costs" that would otherwise be suffered by creditors (Franks and Torous (1989, p. 766)). In exchange for giving up the option sooner rather than later, shareholders can expect to receive a greater amount in violation of the rule. This argument implies a negative relation between the length of the proceedings and the deviation δ from the APR.

In this section we offer the results of a test of the relation between length of proceedings and δ . A complication arises in that the duration of the proceedings, apart from the delaying tactics of common shareholders, depends on the complexity of the firm's claims. Franks and Torous (1989) posit that the total reorganization period consists of a component that reflects the complexity of the case and a component that represents the length of the delay exercised by shareholders. Since only the total duration of the process is observable, however, the component due to complexity is estimated indirectly by assuming that it is a function of firm size. Thus, the component due to delay by shareholders is

⁹ The equity values of the firms in the sample vary greatly. Equation (1) was estimated using weighted least squares, where the weight is the firm's equity value before the bankruptcy announcement. The estimated coefficients and t -statistics (in parentheses) are similar to those obtained by ordinary least squares:

$$\text{VALUE}_i = 1,045.5 + 0.284 \text{ APR}_i + 0.394 \text{ VIOLATE}_i, \quad R^2 = 0.63.$$

(1.86)
(2.89)
(2.57)

Although the present value of the total paid (APR + VIOLATE) is based on observed market values, the decomposition of the total into APR and VIOLATE will introduce measurement error to the extent that the creditor deficit, hence APR, is based on (overstated) face values of claims. The effect will be biased coefficient estimates of equation (1).

estimated residually from the following linear model:

$$\text{TIME}_i = \alpha_0 + \alpha_1 \text{SIZE}_i + \alpha_2 \text{DELAY}_i + \varepsilon_i. \quad (3)$$

In equation (3), TIME is the number of months from bankruptcy filing to final acceptance of a reorganization plan. The total value of claims distributed under the plan is denoted as SIZE and represents our proxy for complexity.¹⁰ The variable DELAY is the time spent in reorganization beyond that needed to adjudicate claims and administer the bankruptcy in the normal course of reorganization. We cannot observe DELAY, but the residual e_i from the estimation of equation (4) serves as a noisy estimate of the DELAY component.

$$\text{TIME}_i = \alpha_0 + \alpha_1 \text{SIZE}_i + e_i. \quad (4)$$

A negative relationship between the measure of deviation from the rule δ and the residual from (4) would be consistent with the argument of Franks and Torous (1989). The residual from (4) is denoted as DELAY* in the linear model (5) below.

$$\begin{array}{rcccc} \text{DELAY}_i^* = & \beta_0 & + & \beta_1 \delta_i & + \varepsilon_i^*. \\ & 3.086 & & -.408 & \\ & (1.00) & & (-1.56) & \end{array} \quad (5)$$

Coefficient estimates using ordinary least squares appear immediately below the respective coefficients, and t -statistics are in parentheses. The estimate for the δ coefficient β_1 is negative and significant at the 7% level under the one-sided alternative.¹¹ The estimate is inefficient due to errors in measurement of DELAY*, thus the statistical significance of the estimate may be understated.¹²

¹⁰ The results reported below are not materially affected by the use of alternative measures of SIZE; i.e., equity value before filing and equity value upon announcement.

¹¹ As noted recently by Brown and Klein (1986, p. 151), the traditional 5% significance level is "too low" for small samples and "too high" for large samples when compared to the (Bayesian) posterior odds ratio criterion. We compare the hypothesis (H_1) that $\beta_1 < 0$ with the hypothesis (H_2) that $\beta_1 > 0$ in equation (5) under the assumption that the error ε_i^* is normal and that prior information is diffuse. Zellner (1984, pp. 280–282) derived the posterior odds ratio of H_1 versus H_2 for this case as:

$$\Pr(t > -\hat{\beta}_1/S_{\hat{\beta}_1} | D) / \Pr(t < -\hat{\beta}_1/S_{\hat{\beta}_1} | D),$$

where $S_{\hat{\beta}_1}$ is the standard error estimate for $\hat{\beta}_1$ and D denotes the sample information. The odds ratio for our sample is $0.935/0.065 = 14.38$. The odds are over 14 to 1 in favor of $\beta_1 < 0$; the proportion δ of firm value awarded to common stockholders appears to be greater in those cases where delays are shorter.

¹² As an alternative to equation (5) we estimate the relationship between δ and TIME directly as follows:

$$\begin{array}{rcccc} \delta_i = & \beta_0 & + & \beta_1 \text{TIME}_i & + \varepsilon_i, \quad R^2 = 0.11. \\ & 13.01 & & -0.229 & \\ & (3.90) & & (-1.91) & \end{array}$$

This formulation does not avoid the errors-in-variables problem because TIME overstates the delay component, and the confounding effects of size (complexity) are not isolated. We also estimate the relationship with SIZE as a control and get the following result:

$$\begin{array}{rcccc} \delta_i = & \beta_0 & + & \beta_1 \text{TIME}_i & + & \beta_2 \text{SIZE}_i & + \varepsilon_i, \quad R^2 = 0.16. \\ & 13.83 & & -0.195 & & -0.00005 & \\ & (4.06) & & (-1.60) & & (-1.24) & \end{array}$$

We interpret the findings as modest support for the notion that shareholders are paid more for forfeiting their delay option early.

IV. Summary and Conclusions

Deviations from the absolute priority rule (APR) in bankruptcy proceedings have become a commonplace occurrence. For 30 bankruptcy cases filed subsequent to the effective date of the 1978 Bankruptcy Reform Act, 24 cases resulted in a creditor deficit. In 23 of these 24 cases shareholders received payments in violation of the APR. The percentage of total value received by shareholders in these 23 cases averaged 9.87%, ranging from 0.43 to 35.71%. The deviations are widespread, economically significant, and consistent with the findings of Franks and Torous (1989).

Deviations from the APR may be the result of any of several influences on the reorganization plan adopted. For example, management enjoys a powerful bargaining position because they generally are given exclusive right to file the initial reorganization plan. Creditors may also lack adequate information about firm value, or they may be willing to compromise because of the potential cost of lengthy reorganizations and cram-down procedures.

We find that share values subsequent to the bankruptcy announcement impound the present value of both the amount paid in adherence to the APR and the amount paid in violation of the rule. Over half of the cross-sectional variation in equity value immediately after bankruptcy announcement is explained by these amounts ultimately received. We also find weak evidence that payments to shareholders in violation of the APR may be viewed as compensation for forfeiting their option to delay reorganization proceedings. The length of the delay in the bankruptcy proceedings is negatively related to the proportion of the total distribution that shareholders are given in violation of the APR.

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