The Administrative Costs of Corporate Bankruptcy: A Note

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IN THIS PAPER WE present evidence on the direct administrative costs of corporate bankruptcy. The investigation is directed toward providing evidence that may be helpful in answering questions about the role of bankruptcy costs as a determinant of corporate capital structures.

The importance of bankruptcy costs as a determinant of corporate financing policy has been extensively debated in the finance literature. The origins of the debate can be traced to Modigliani and Miller [8] and Robichek and Myers [9]. Under the assumption that debt is default-free and interest payments are tax-deductible, Modigliani and Miller demonstrated that firms will maximize their market values by maximizing their use of debt financing. Robichek and Myers demonstrated that this conclusion also holds when debt is not default-free, but bankruptcy is costless. To explain observed corporate debt to total value ratios, which typically fall in the range of 20 percent to 30 percent, Robichek and Myers [9] and Baxter [1] appealed to the existence of bankruptcy costs as a possible counterweight to the tax-deductibility of interest payments. Subsequently, Kraus and Litzenberger [5], Scott [10], Lee and Barker [6], Kim [4] and Turnbull [13] developed formal models in which firms maximize value by increasing their use of debt financing to the point where the marginal present value of future tax shields equals the marginal present value of future bankruptcy costs.[1]

The bankruptcy cost literature has identified three types of costs as potentially relevant to the determination of a firm's optimal mix of debt and equity financing: (1) the direct administrative expenses paid to various third parties involved in the bankruptcy proceedings; (2) the "shortfall" in realized value when assets are sold in liquidation or the "indirect" costs of reorganization; and (3) the loss of tax credits which the firm would have received had it not gone bankrupt.

Contrarily, Haugen and Senbet [3], and to a lesser extent Miller [7] and Warner [14], have argued that the only bankruptcy costs relevant to the determination of a firm's optimal capital structure are the direct administrative costs of bankruptcy. The crux of their argument is that the "shortfall" costs of liquidation, the "indirect" costs of reorganization, and the loss of tax credits which occurs upon dissolution of the firm are, in fact, relevant to the liquidation/investment decisions of the firm. These costs would be borne by the security holders of a failing firm

[1] Brennan and Schwartz [2], Kim [4], and Wrightsman [15] demonstrated that the loss of tax credits due to bankruptcy may give rise to an optimal capital structure even when bankruptcy per se is "costless".

regardless of the composition of its capital structure. For this reason, and because of data availability, we focus our attention on the direct administrative costs of corporate bankruptcy.

In the following section we briefly review earlier studies of the administrative costs of business bankruptcy. In Section II, we describe our sample selection procedure. In Section III we analyze the data. Section IV contains a summary and concluding remarks.

I. Earlier Studies

The administrative costs of business bankruptcy include fees and compensation paid to third parties involved in the dissolution or reorganization of the bankrupt firm. By law, each party who performs services related to the bankruptcy must apply to and receive approval of the courts before he can be paid from the assets of the bankrupt firm. Payments may be claimed by the attorneys for both the debtor and the creditors, by trustees, auctioneers, referees, accountants, appraisers, expert witnesses, and so on. Filing fees are an additional administrative cost of the bankruptcy process.

Earlier studies by Stanley and Girth [11] and by Warner [14] have reported evidence on the administrative costs of business bankruptcies. As a byproduct of an extensive investigation of the administrative procedures of the bankruptcy system, Stanley and Girth generated estimates of the administrative costs of a sample of business bankruptcies which were completed in 1964. Their sample includes an agglomeration of proprietorships, partnerships, and corporations, each of which was liquidated in bankruptcy. In 31 percent of the cases, liquidation of the firm yielded no proceeds for payments of claims against the firm. For the cases in which liquidation of the business yielded some return, the median amount was $3,190 with administrative expenses consuming approximately 20 percent of this total. In 13 percent of the cases, the liquidating value of the assets was just sufficient to cover administrative expenses.

In a study of 11 railroads which were in bankruptcy between 1933 and 1955 Warner estimated that, for the individual firms, the dollar amount of the administrative costs of the bankruptcy process ranged from a low of $820 thousand to a high of $2.89 million. Perhaps most importantly, Warner finds that there appears to be a "scale" effect in the cost data such that the administrative costs of bankruptcy are a concave function of the market value of the firm. For each firm he reports the direct administrative costs of bankruptcy as a fraction of the firm's market value at the time of the initial bankruptcy filing. The mean of these ratios is 5.3 percent. However, the ratio is 9.1 percent for the smallest firm in the sample and it is 1.7 percent for the largest one.

II. Sample Selection

Although the administrative costs of corporate bankruptcies are a matter of public record, these records are scattered throughout the country in the various district courts. For this study, a sample is taken from the Western District of Oklahoma.

Closed court cases involving Western District businesses are filed alphabetically

by the District Clerk of Courts.[2] Initially, a random sample of 105 corporations that filed bankruptcy petitions between 1963 and 1978 was drawn from this file for further study.[3] Individual case files for the bankrupt corporations were obtained from two sources: (1) files for cases closed after 1975 were obtained from the Office of the Clerk of Courts in Oklahoma City; and (2) files for cases closed before 1975 were obtained from the regional archives in Fort Worth, Texas.

The individual case files contain a detailed schedule of the debts owed by the bankrupt firm at the time the petition was filed. These debts include: (1) amounts owed to all persons and corporations in the position of priority creditors; (2) taxes due to federal, state, and local governments; (3) amounts owed to secured creditors; and (4) amounts owed to unsecured creditors.

Final disposition of each case was traced through to the court dockets. In each instance, the business involved was liquidated and the proceeds distributed among the various claimants to the firm's assets. The court dockets contain information on the amount of funds used to pay administrative expenses incurred in bankruptcy, the amount paid to taxing authorities, and amounts paid to each class of creditors. From the original sample of 105 cases selected, sufficient data for further analysis were available for 86.

While it is not possible to determine the industrial classification of each enterprise, firms in the sample represent a wide spectrum of business activities, including several machine tool manufacturers, construction firms, retail and wholesale furniture outlets, restaurants, hair styling salons, plumbing supply distributors, and at least one each of the following: an ice distributor, a janitor supply distributor, a mobile home retailer, an oil distributor, and so on.

Each of the cases was initiated and concluded sometime between 1963 and 1979. The incidence of initial filings were distributed roughly uniformly over the 17 year interval with the exception of 1975. Approximately one-fourth of the businesses initially petitioned for bankruptcy in that year. This "bulge" probably reflects the severe economic downturn that began in early 1974 and continued through mid-1976.

In terms of the duration of the bankruptcy cases, over 80 percent were completed in less than two years. The longest one lasted just over four and one-half years, while the average length of time between the initial filing of the bankruptcy petition and the final filing of the closed bankruptcy case was approximately 14 months.

III. Results

A. Tabulation of the Evidence

Some indication of the sizes of the businesses involved is given in Column 2 of Table I. Column 2 is a frequency distribution of the dollar amounts of total

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[2] This file contains all court cases involving businesses in the Western District of Oklahoma since Oklahoma achieved statehood. No distinction is made between bankruptcy cases and other types of cases. Sorting through the alphabetical case file to distinguish bankruptcy cases from other types of cases was the most time consuming aspect of the data collection effort.

[3] In order to file a bankruptcy petition in the Western District of Oklahoma, a business must either have been incorporated in the district or its principal place of business must have been located in the district.

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Table I

Size Distributions of Listed Debts and Cash Disbursements by Bankrupt Firms

(1)	(2)	(3)	(4)
		Number of Firms	
Dollar Amount	Total Debts Listed at Bankruptcy Filing[a]	Total Payments from Liquidation[b]	Administrative Fees Paid in Bankruptcy
0		31[c]	31[c]
1–1,000		2	35
1,001–5,000		3	13
5,001–10,000	1	9	3
10,001–15,000	3	2	2
15,001–30,000	10	7	2
30,001–50,000	11	4	
50,001–70,000	7	6	
70,001–90,000	6	3	
90,001–110,000	5	4	
110,001–150,000	7	6	
150,001–250,000	13	2	
250,001–500,000	16	4	
500,001–1,000,000	4	2	
Greater than 1,000,000	3	1	
Low	$ 7,662	$ 0	$ 0
High	1,513,540	1,136,467	26,475
Mean	205,172	108,771[d]	2,518[d]
Median	109,242	58,459[d]	841[d]

[a] Includes priority debt, secured debt, unsecured debt, and taxes due.

[b] Includes payments to creditors, taxing authorities, trustees, attorneys, expert witnesses, appraisers, and so on.

[c] These are the zero asset cases.

[d] Excludes zero asset cases.

liabilities listed by the corporations at the date of bankruptcy. The amounts listed range from $7,662 to $1,513,540 with a mean of $205,172. If we assume that, on average, firms are financed one-third by debt, this suggests that at some time prior to bankruptcy, the dollar amount of assets of the enterprises ranged from $22,980 to $4,540,620 with a mean of $615,516.[4] On this basis, about 30 percent of the sample (i.e., 24 businesses) would have had total assets of less than $150,000 and about 4 percent of the sample (i.e., 3 businessses) would have had assets of more than $3.0 million.

Column 3 of Table I shows the frequency distribution of total payments made from the liquidating value of the assets of the bankrupt corporations. These are the sum of payments for administrative expenses and taxes plus all payments to priority, secured, and unsecured creditors. Thirty-one (or about one-third) of the cases were zero-asset cases in which no funds were available for payments to claimants against the bankrupt enterprise.[5] The largest amount paid was

[4] For businesses with total assets between $250,000 and $3,000,000, Troy [12] indicates that the average debt to total capital ratio is approximately .33.

[5] This is very similar to the result of Stanley and Girth [11] who found that 31 percent of their sample involved zero-asset cases.

$1,136,467. The mean payout (excluding zero-asset cases) was $108,771, while the median was $58,459.

Column 4 of the table presents a frequency distribution of funds disbursed for the payment of administrative expenses incurred in the bankruptcy proceedings. Of the 55 cases in which some funds were available for payment of administrative expenses, 35 (or about 63 percent) of these involved administrative costs of less than $1,000. The largest amount expended in a single case was $26,475, while the mean and median were $2,518 and $814, respectively.

Table II is a frequency distribution of the ratio of administrative expenses to total liquidating value of the bankrupt corporation's assets. The lowest ratio is .12 percent and the highest is 100.0 percent. The mean and median of the ratios are 7.5 percent and 1.7 percent. If we assume that the liquidating values of the bankrupt firm's assets represent an unbiased estimate of the total market value of the business on the date on which the initial bankruptcy petition was filed, the mean ratio of administrative costs of bankruptcy to market value is approximately 42 percent greater than Warner's mean ratio of 5.3 percent on that date. In contrast, our estimated mean ratio is substantially less than the 20 percent estimated by Stanley and Girth.

B. Tests of the "Scale" Effect in the Administrative Costs of Bankruptcy

Warner hypothesized that there is a "scale" effect in the administrative costs of bankruptcy such that the costs are a concave function of the market value of the firm (at the time of bankruptcy). To test this hypothesis two functional forms of the equation relating the dollar amount of the administrative costs of bankruptcy to liquidating value were estimated. The first functional form of the relationship is the quadratic function

$$B = b_0 + b_1 A + b_2 A^2 \tag{1}$$

and the second is the logarithmic function

$$\log B = a_0 + a_1 \log A \tag{2}$$

where B is the dollar amount of the administrative costs of bankruptcy and A is the total liquidating value of the firm (including funds used to pay administrative expenses). The two functions were estimated with ordinary least squares regression using the 55 cases in which some administrative expenses were paid.

According to the scale effect hypothesis, the signs of the coefficients of the quadratic function are $b_0 = 0$, $b_1 > 0$, $b_2 < 0$. The hypothesized coefficients of the logarithmic regression are $a_0 = 0$ and $0 < a_1 < 1$. The results of the regressions are reported in Table III.

All coefficients are as hypothesized. In the quadratic equation, the intercept is not significantly different from zero at the .05 level. The coefficient of liquidating value is positive and significant at the .05 level, while the coefficient of liquidating value squared is negative and significant at the .05 level. The adjusted R^2 of the regression is .23.

For the logarithmic equation, the intercept is not significantly different from zero at the .05 level. The coefficient of the logarithm of liquidating values is significantly greater than zero and significantly less than 1.0 at the .05 level. In

Table II

Administrative Fees Paid as Percentage of Total Payments from Liquidation of Assets

Percentage[a]	Number of Firms[b]
0–.9	23
1–2.9	7
2–3.9	6
4–5.9	3
6–7.9	4
8–9.9	3
10–19.9	5
20–49.9	2
50–100.0	2
Low 0.12%	
High 100%	
Mean 7.5%	
Median 1.7%	

[a] (Administrative fees/(payments to creditors + taxes paid + administrative fees)) × 100.
[b] Excludes zero asset cases.

Table III

Regression Results: Administrative Costs of Bankruptcy as a Function of Liquidating Value[a]

	Intercept	Coefficient of Liquidating Value	Coefficient of Liquidating Value Squared	Adjusted R^2
Quadratic Equation[b]	$298 ($803)	0.0286* (0.0079)	$-0.0202 \times 10^{-6}*$ (-0.0080×10^{-6})	0.23
Logarithmic Equation[b]	1.004 (1.218)	0.5359* (0.1137)		0.29

* = Significant at .05 level.
[a] Standard errors are in parentheses.
[b] Sample size = 55.

sum, the results of the regressions do indicate that the administrative costs are a concave function of the liquidating values of the firms in our sample. If we were to extrapolate the results of our logarithmic equation to firms with liquidating values in excess of $1.0 million, the estimated bankruptcy costs would amount to less than 2.0 percent of the firm's value.

IV. Summary and Conclusion

In this paper we examine the direct administrative costs of bankruptcy for a randomly-selected sample of corporations which entered bankruptcy in the Western District of Oklahoma some time during the period 1963 through 1978. Each of the businesses was dissolved and the liquidating value of its assets was distributed among the administrative costs of bankruptcy, payment of taxes due,

and payments to priority, secured and unsecured creditors. The dollar amounts of these payments were determined from the court dockets for each case.

We find the mean ratio of administrative costs of bankruptcy to the liquidating value of the business to be 7.5 percent and the median value to be 1.7 percent. Furthermore, our evidence supports the hypothesis of a scale effect in the administrative costs of bankruptcy, wherein the dollar amount of the administrative costs is a concave function of the liquidating value of the firm.

The interpretation that one attaches to our results will depend upon his perception of the role of the administrative costs of bankruptcy as an ingredient of total bankruptcy costs. On the one hand, if one accepts the argument that the administrative costs are the only bankruptcy costs relevant to the determination of a firm's optimal capital structure, then the costs measured here appear to be insufficient relative to the alleged tax advantage of debt within the Modigliani-Miller tax model to explain observed capital structures. On the other hand, if one is inclined to the view that the administrative costs of bankruptcy represent only a fraction of total bankruptcy costs, then these results give some indication as to how large the other potential costs must be to explain observed capital structures.

Several caveats are in order when interpreting our results. First, the amounts reported on the court dockets are undoubtedly measured with error. Unfortunately, we do not know whether these errors result in any bias in the data, nor do we know of any means of determining the direction of the bias if one does exist. Second, the firms included in the sample all operated in the Western District of Oklahoma. Without comparison with data from other regions of the country, we have no way of determining if these results can be generalized. Administrative costs of bankruptcy may be peculiar to the district in which the firm petitions for bankruptcy. Alternatively, the types of businesses which flounder in the Western District of Oklahoma may be unique. Third, the firms considered in this sample are small relative to most publicly-traded companies. Still unresolved is the question of whether these results are directly applicable to large widely-held firms.

On the other hand, a comprehensive and detailed study of data from all regions of the country and for firms of all sizes is prohibitively expensive for one set of researchers. As additional studies of the administrative expenses of bankruptcy are conducted and reported by other researchers, some indication of the validity and generality of our results will become available. In the meantime, these results add to the thin but growing body of literature concerned with measuring the administrative costs of corporate bankruptcy.

REFERENCES

1. N. D. Baxter. "Leverage, Risk of Ruin and the Cost of Capital." *Journal of Finance* 22 (September 1967), 395–403.
2. M. J. Brennan and E. Schwartz. "Corporate Income Taxes, Valuation, and the Problem of Optimal Capital Structure." *Journal of Business* 51 (January 1978), 103–14.
3. R. A. Haugen and L. W. Senbet. "The Insignificance of Bankruptcy Costs to the Theory of Optimal Capital Structure." *Journal of Finance* 23 (May 1978), 383–93.
4. E. H. Kim. "A Mean-Variance Theory of Optimal Capital Structure and Corporate Debt Capacity." *Journal of Finance* 33 (March 1978), 45–63.

5. A. Kraus and R. H. Litzenberger. "A State Preference Model of Optimal Capital Structure." *Journal of Finance* 28 (September 1973), 911–22.
6. W. Lee and H. H. Barker. "Bankruptcy Costs and the Firm's Optimal Debt Capacity: A Positive Theory of Capital Structure." *Southern Economics Journal* 43 (April 1977), 1453–65.
7. M. H. Miller. "Debt and Taxes." *Journal of Finance* 32 (May 1977), 261–75.
8. F. Modigliani and M. H. Miller. "Corporate Income Taxes and the Cost of Capital: A Correction." *American Economic Review* 53 (June 1963), 433–43.
9. A. A. Robichek and S. C. Myers. "Problems in the Theory of Optimal Capital Structure." *Journal of Financial and Quantitative Analysis* 1 (June 1966), 1–35.
10. J. Scott. "A Theory of Optimal Capital Structure." *Bell Journal of Economics and Management Science* 7 (Spring 1976), 33–54.
11. D. T. Stanley and M. Girth. *Bankruptcy: Problem, Process, Reform.* Washington, D.C.: The Brookings Institute, 1971.
12. L. Troy. *Almanac of Business and Industrial Financial Ratios.* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1978 Edition.
13. S. Turnbull. "Debt Capacity." *Journal of Finance* 34 (September 1979), 931–40.
14. J. B. Warner. "Bankruptcy Costs: Some Evidence." *Journal of Finance* 32 (May 1977), 337–47.
15. D. Wrightsman. "Tax Shield Valuation and the Capital Structure Decision." *Journal of Finance* 33 (May 1978), 650–56.