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CHARACTERISTICS OF FARM REORGANIZATION
BANKRUPTCY FILINGS

BY

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Abstract: Although agricultural financial conditions and reorganization options have been analyzed extensively by agricultural economists, an analysis of actual Chapter 11 bankruptcy filings has not previously been completed. This study contains analysis of actual Chapter 11 bankruptcy filings has not previously been completed. This study contains analysis of 219 filings in South Dakota from 1980-85 and documents the financial characteristics of producers and creditors.

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CHARACTERISTICS OF FARM REORGANIZATION BANKRUPTCY FILINGS

Greatly increased farm financial stress in the 1980's has caused substantial asset and debt restructuring by farm businesses and debt writedowns by agricultural lenders [8, 10, 12]. How financial losses are distributed between producers and their creditors may be determined by voluntary negotiation or the legal processes of foreclosure or bankruptcy. During the 1980's farm bankruptcy filings have greatly increased. For example, the total number of farm bankruptcy filings in South Dakota, a state with 36,000 farms in 1986, increased from 37 in 1981 to 189 in 1983, 338 in 1985 and 564 in 1986 [4].

Although discussssion has been directed towards the use of reorganization bankruptcy by farmers, an analysis of actual reorganization bankruptcy filings has not occurred [10]. The purposes of this study are to: (1) examine the major characteristics of farm applicants filing for chapter 11 reorganization bankruptcy, (2) examine the major characteristics of their secured and unsecured creditors, and (3) determine whether financial and other background information contained on the initial filing had predictive value on the eventual court action.

Overview of Chapter 11 Bankruptcy

Federal bankruptcy chapters 7, 11, 12 and 13 are presently available to farmers [14]. Chapter 7 involves liquidation of the farming operation, while the remaining bankruptcy chapters involve business reorganization plans. A farmer filing a chapter 13 bankruptcy must be a proprietorship with a total debt less than or equal to \$350,000 secured and \$100,000 unsecured debt. Chapter 12 became effective on November 27, 1986 and is intended to reduce difficulties farmers experienced in reorganizing under chapters 11 and 13. Chapter 12 is limited to qualified farm debtors with less than \$1.5 million of total secured and unsecured debt. A reorganization plan can only be submitted

by the debtor and creditors can not vote on the proposed plan. The reorganization plan must be submitted within 90 days of filing and the judge has 45 days to take final action.

During 1980 to 1985, 52 percent of South Dakota farm bankruptcy filings were chapter 11. Prior to 1985, no official records were kept concerning the incidence of chapter 7 and 13 filings. From 1985 to 1987 the ratio of chapter 7 to chapter 13 bankruptcies was 3.8 to 1.

A chapter 11 reorganization bankruptcy is extremely complicated and a comprehensive treatment is not possible in this paper. Briefly, this process is initiated by filing a chapter 11 bankruptcy petition, which contains initial filing schedules prepared by the farmer and their attorney. After the initial filing, a reorganization plan must be submitted in 120 days and the judge has 240 days to take action on the reorganization plan. Their creditors are typically divided into classes (fully secured, impaired and unsecured) and each class has specific voting rights on the proposed plan. The three potential outcomes of the process are (1) a confirmed reorganization plan, (2) the chapter 11 filing is converted by the farmer to a chapter 7, and (3) dismissal.

Data Sources and Limitations

The primary data sources were the initial filing schedules for Chapter 11 reorganization bankruptcy. The schedules used were filed at the Federal Bankruptcy Court in Sioux Falls and represent filings for the entire state of South Dakota. The schedules contain detailed listings of the debtor's property, debts, secured and unsecured creditors, estimated value of secured claims and related information. One-half of the farm chapter 11 filings were randomly selected within the total debt strata specified in Table 1.

Initial filings provide a financial "snapshot" of the farm business prior

to their proposed reorganization plan. The initial filings do not have sufficient information to determine: (1) the causes of the farms' financial difficulties; (2) the dynamics of farmer-attorney-creditor negotiations; and (3) the eventual success of the proposed reorganization plans.

However, information on the financial structure and conditions of these farm firms and the relative position of their creditors is provided. Although reported asset values may be less reliable, the expectation would be that data presented on debt levels is fairly accurate.

Analysis of Chapter 11 Farm Debtor Characteristics

Farm reorganization bankruptcies are filed by farmers of all experience and age levels. On average the filers had operated a farm for 20 years and the median experience level was 18 years. One-fourth have been farming as adults for over 30 years, while 34 percent have only farmed 2-10 years (Table 1).

The distribution of farm business legal organizations among filers was relatively close to that for all South Dakota farmers. Eighty-nine percent of the filers were organized as sole proprietorships with the proportion of proprietorships declining as total debt increased.

Bankruptcy was a "new" experience for most filers, while the high incidence of "other" lawsuits may be a possible reason why these farmers may have filed for protection from creditors under chapter 11. Ninety-five percent of the debtors had not previously filed for bankruptcy and 42 percent were involved in other lawsuits at the time of filing.

Past due local property taxes were owed by 51 percent of those filing (Table 1). Federal income taxes were overdue by 14 percent of those filing. Overdue taxes averaged \$5,280. The higher incidence of local property taxes primarily reflects stability of ad valorem taxes levied on real estate regardless of current income levels. Tax liens take precedence over the

Table 1: Major Financial Characteristics of Farm Reorganization Bankruptcy Filings in South Dakota, 1980-1985, by Overall, Size of Total Debts, Time of Filing, and Debt to Asset Ratio.

Major Characteristics	Overall	Size of Total Debt in Thousands				Time of Filing			Debt to Asset Ratio**			
		<\$500	\$501- \$1000	\$1001- \$1500	>\$1500	1980- 1983	1984	1985	Less than 1.00	1.00 to 1.99	Greater than 2.00	
A. Sample size												
1. Number	219	96	85	22	16	89	58	72	69	94	56	
2. Percent of total	100%	44%	39%	10%	7%	41%	27%	33%	32%	43%	26%	
B. Average number of years in farming												
	21	19	23	22	19	18	24	21	23	20	19	
C. Sole proprietorship (percent of incidence)												
	89%	90%	91%	91%	75%	88%	93%	87%	87%	89%	91%	
D. Other lawsuits (percent of incidence)												
	42%	38%	48%	32%	37%	42%	28%	53%	38%	45%	41%	
E. Taxes owed to local government (percent of incidence)												
	51%	48%	55%	45%	50%	48%	52%	53%	49%	45%	62%	
F. Total debt												
1. Millions of dollars	\$157.8	\$32.0	\$61.0	\$25.9	\$38.9	\$66.1	\$38.0	\$53.7	\$45.2	\$64.2	\$48.5	
2. Percent of total	100.0%	20.3%	38.6%	16.4%	24.7%	41.9%	24.1%	34.0%	28.6%	40.7%	30.7%	
G. Average per debtor in thousands of dollars												
1. Livestock & grain Machinery inventory	\$182.8	\$90.1	\$157.4	\$387.4	\$592.7	\$226.5	\$143.2	\$160.6	\$270.8	\$164.8	\$104.9	
2. Real estate	\$371.4	\$200.0	\$342.1	\$666.3	\$1,149.9	\$446.2	\$377.7	\$273.9	\$633.2	\$288.9	\$187.1	
3. Other property	\$63.5	\$29.4	\$65.4	\$91.3	\$220.6	\$79.3	\$48.5	\$56.1	\$112.5	\$45.9	\$32.7	
4. Total property*	\$617.7	\$319.5	\$564.9	\$1,145.1	\$1,963.2	\$752.0	\$569.4	\$490.6	\$1,016.5	\$499.6	\$324.7	
5. Total debt	\$720.7	\$333.5	\$719.3	\$1,178.9	\$2,293.5	\$742.3	\$655.3	\$746.5	\$654.8	\$682.7	\$859.6	
H. Average number of creditors												
1. Secured	5.7	4.8	5.9	7.1	8.0	6.0	5.5	5.5	5.5	6.0	5.5	
2. Unsecured	9.0	9.1	8.6	10.6	8.2	9.7	9.3	7.9	7.5	9.5	9.9	

Source: Compiled from initial filing data for chapter 11 farm bankruptcy, 1980-1985, Federal Bankruptcy Court, Sioux Falls, South Dakota

* Total property includes livestock, grain inventories, farm machinery, real estate and all other property owned by the debtor.

** The debt to asset ratio is the ratio of total debt to total property values reported.

position of secured and unsecured creditors in bankruptcy and eventual tax recovery should be fairly high.

Average total debt at time of filing was \$720,700 with \$662,200 of that amount being secured debt and the remainder being unsecured. The total amount of debt outstanding for the 219 filers was \$157.8 million. Only 7.3 percent of the filers had more than \$1.5 million of debt, but these filers represented 24.7 percent of total debt. Because their debt level exceeds the \$1.5 million debt limit specified by chapter 12, this category of filers would still need to use chapter 11. An average of 14.7 creditors (5.7 secured creditors and 9 unsecured creditors) were listed by those filing under Chapter 11. The number of creditors varied between 2-50 creditors. Analysis of variance by time period or by total debt class were conducted for this variable. Significant differences in the means were tested using the Waller-Duncan k-ratio t-test. The term "significant" reflects a statistically significant difference in means for this and other variables at $p = 0.05$. The number of secured creditors was positively and significantly related to the amount of total debt but was not significantly related to the time of filing.

Average total property value reported at time of filing was \$617,700. Sixty percent of reported property value was in farm real estate including the house. The remaining asset categories were the following percent of total property value: livestock, grain and other farm inventories (19 percent), machinery and equipment (10 percent), and other personal or financial assets (11 percent).

Total reported property values were significantly related to time of filing--average total property values in 1984 were significantly lower than those reported in 1983 and significantly higher than those reported in 1985. Declining real estate values per farm explain most of this decline (\$273,900

in 1985 versus \$446,200 from 1980-83).

Trends in reported real estate values conform closely to other published data on South Dakota farm real estate value and sale price trends. Farmland values statewide were fairly constant between 1980-1982. Farmland prices declined at accelerated rates in all regions of the state from 1983 to 1985 [3,11].

The average property value per farm filing was 40 to 70 percent greater than average farm asset values reported in the South Dakota farm sector balance sheets for 1980-1985 [13]. However, the distribution of asset values by type of property was similar.

Based on the debt and property (asset) values reported, most farm filers were insolvent at the time they filed for chapter 11 bankruptcy. Almost 69 percent reported total debts exceeding estimated property values (Table 1). According to a Federal Bankruptcy Court official, there is a general tendency to under report asset values in initial filings, while reported debt levels are usually accurate. It was not possible for this study to confirm or reject this perception of bias or its magnitude. Average total debt increased as the estimated debt/asset ratio increased, while reported total property values significantly declined.

If filers are insolvent, this may suggest that proposed reorganization plans are not likely to be workable, even if confirmed. However, initial filings do not contain information to accurately estimate debt-income ratios, debt servicing ratios and other important cash flow measures of financial stress.

The amount of time required to obtain a confirmed plan and legal fees are two major factors to be considered by a farmer filing for bankruptcy. Seventeen months was the average amount of time from filing to final disposition, i.e. confirmed, dismissed or converted. Larger, more complex

cases had significantly longer time periods from filing to disposition. A significant direct relationship existed between the amount of time from filing to disposition and both the amount of total debt and the number of secured creditors. The average cash expense per filing was \$4,800 in initial attorney fees, with \$75-\$80 per hour being charged for subsequent legal actions.

Major Characteristics of Secured and Unsecured Creditors

Almost 92 percent of total debt or \$145.7 million was secured by real estate or chattel. The average filer owed \$662,900 to 5.7 creditors. Overall, commercial banks and the Farm Credit System held 51 percent of secured credit volume, Federal credit agencies (FmHA, CCC, SBA) held another 29.4 percent, individuals held 10.3 percent, and the remainder was held by insurance companies and agribusiness suppliers (Table 2).

Commercial banks were listed by more debtors (80.8 percent) than any other type of secured creditor. The average amount of debt owed to one or more commercial banks was \$241,900 per debtor. Commercial banks were 23.7 percent of listed secured creditors and held 29.9 percent of the secured credit volume.

Federal government agencies were secured creditors for a majority of the debtors. Farmers Home Administration (FmHA) loans averaged \$249,200 and were listed as a secured creditor by 65.3 percent of the filers. Not all of the farmers experiencing financial stress have borrowed capital from the FmHA. Other Federal credit agencies (primarily CCC) had secured loans averaging \$52,900.

The Farm Credit System agencies, Federal Land Bank (FLB) and Production Credit Association (PCA), were also major creditors and held 21.1 percent of the total secured debt. The Federal Land Bank had an average loan volume of \$154,300 on 43.4 percent of the filings. Only 18.7 percent listed the

Table 2: Distribution of Secured Creditors by Incidence of Farm Debtors, Average Dollar Amount, Total Secured and Impaired Credit Volume.

Type of Secured Creditor	Percent of Debtors Listing One or More Secured Creditors*	Average Amount Owed to Each Type of Secured Creditors**	Proportion of Total		
			Number of Secured Creditors***	Secured Creditor Volume***	Impaired Credit Volume***
A. Commercial banks	80.8%	\$241,900	23.7%	29.9%	34.7%
B. Farmers Home Administration	65.3%	\$249,200	12.6%	24.1%	28.8%
C. Other government agencies(SBA, CCC)	55.2%	\$ 52,900	12.8%	4.5%	2.5%
D. Individuals	43.8%	\$154,200	13.8%	10.3%	8.7%
E. Federal Land Bank	43.4%	\$154,300	7.7%	10.2%	4.8%
F. Farm implement dealers	32.9%	\$ 25,300	7.5%	1.3%	1.2%
G. Farm machinery finance companies	29.7%	\$ 38,800	8.6%	1.8%	1.9%
H. Production Credit Association	18.7%	\$380,500	3.4%	10.9%	12.5%
I. Insurance companies	9.6%	\$327,400	1.7%	4.8%	3.6%
J. Other farm suppliers	9.1%	\$ 25,300	2.3%	0.4%	0.3%
K. All other	26.9%	\$ 25,500	5.9%	1.0%	1.0%

Source: Compiled from initial filing data for Chapter 11 farm bankruptcy, Federal Bankruptcy Court, Sioux Falls, South Dakota.

* Percent of 219 debtors, where many debtors listed more than one bank or individual or other specified type of secured creditor.

** Average dollar amount reported is per debtor owing money to one or more secured creditors by type.

*** Percent of 1,246 secured creditors and \$145.0 million of secured credit volume.

Production Credit Associations as a secured creditor, but the average indebtedness (\$380,500) was the highest of any creditor group. Insurance companies were unsecured creditors to only 9.6 percent of the debtor filers, but the average loan amount was the second highest-- \$327,400.

Farm machinery dealers, farm machinery finance companies, and other farm suppliers were each listed as secured creditors by 26 to 33 percent of debtor-filers. The average amount of secured credit (\$25,300 to \$38,000) was much lower than reported for other creditors.

Individuals were listed as secured creditors by 43.8 percent of the filers and the average amount owed was \$154,200. Installment contracts for deed were the primary situation, where individuals were listed as a creditor. Individuals held 10.3 percent of the secured credit volume.

An important issue for secured creditors is whether their secured claim is impaired or not impaired. An impaired creditor is a secured creditor whose market value of security is less than loan volume outstanding. By contrast, an unimpaired creditor has a positive security (collateral) margin. In a reorganization plan, interests of secured creditors are fully protected only to the market value of their security interest.

Secured creditors were each classified as impaired or unimpaired creditor based on the estimated market value of their security interest to the amount of debt claimed. Preliminary estimates indicate nearly one-half of the secured creditors holding 58 percent of secured credit were impaired creditors. Commercial banks, FmHA, and PCA had significantly higher proportion of impaired credit volume than total secured credit volume (Table 2). For impaired creditors, the mean estimated value of their security interest was only 48 percent of their secured claim.

Unsecured Creditors

About 8 percent of total debt in the sample (or \$12.0 million) was held

by unsecured creditors or \$12.0 million. Ninety-one percent of debtor filers owed debts to one or more secured creditors. The average total amount of unsecured debt owed was \$60,000 split among 9.8 creditors (Table 3).

Local and regional mainstreet businesses were the major unsecured creditors. An average of 4.5 unsecured farm suppliers were collectively owed \$21,000 by 79 percent of debtor-filers. A majority of the filers also owed debt to unsecured machinery dealers, auto repair shops, retail merchants and retail service business. Nearly one quarter reported debts to builders and contractors or to doctors, dentists or hospitals. Average amounts owed to these types of unsecured creditors were less than \$6000.

Discriminant Analysis of Initial Filings-Preliminary Results

The initial Chapter 11 filing schedules contain a significant amount of financial structure data on the filers. Discriminant analysis was used to determine whether this information could be used to predict the eventual disposition of a chapter 11 filing i.e., debtor's reorganization plan is confirmed or not confirmed. Discriminant analysis has previously been used to classify agricultural loans based on the financial and management characteristics of the borrower [2, 6, 7].

A stepwise procedure was used to select a subset of variables to be used in a linear discriminant model [9]. The dependent variable in the discriminant function analysis was the case's disposition. Ten variables measuring management experience, the financial structure of the farm, the degree of lender impairment, number of secured and unsecured creditors, debt levels, and farm size were used in the initial analysis. Whether a variable was retained in the model was based on a F test from an analysis of covariance. Only cases filed from 1980 to 1983 were used to estimate the discriminant functions.

Table 3: Distribution of Unsecured Creditors by Incidence of Farm Debtor, Average Dollar Amount and Number of Creditors

Type of Unsecured Creditor	Percent of Debtors Listing One or More Creditor(s) *	Average Amount Owed to These Creditors**	Average Number of Creditors**
A. Any unsecured creditor	91%	\$60,000	9.8
B. Farm suppliers except for implement dealers	79%	\$21,000	4.5
C. Machinery and auto shops shops	56%	\$5,800	2.2
D. Retail merchants and service	53%	\$3,300	2.2
E. Financial Institutions	48%	\$40,200	1.7
F. Individuals and estates	47%	\$24,700	2.4
G. Hospital, doctor and dentist	24%	\$1,500	2.4
H. Builders and contractors	23%	\$4,800	1.5

Source: Compiled from initial filing data for Chapter 11 farm bankruptcy, 1980-1985. Federal Bankruptcy Court, Sioux Falls, South Dakota.

* Percent of 219 debtors

** Average dollar amount and average number of creditors is calculated per debtor owing money to one or more unsecured creditor by type.

Only four variables were retained in the discriminant model: total debt outstanding at the time of filing, the ratio of total debt to total assets, the percentage of total assets being grain, livestock and machinery inventory, and the percentage of total assets being real estate (Table 4). The coefficients were positive for the four variables. This would imply a farm with a large outstanding debt, a high debt to asset ratio and high proportion of total assets in the farming operation had a greater probability of having a confirmed plan. The model's F (4,61) value was 2.56 and was significant.

The model performed slightly better for the out-of-sample period than for the in-sample period. During the 1980-83 period, the model correctly classified 62 percent of all cases. Seventy-six percent of the confirmed plans and 49 percent of the not confirmed plans were classified correctly (Table 5). For the out-of-sample period, 1984-1985, 64 percent of the cases were correctly classified. Again the model more accurately forecasted confirmed plans compared to unconfirmed reorganization plans.

Because of the high costs associated with chapter 11, a useful model should have the ability to identify those cases which have a high potential for not being confirmed. By correctly identifying those cases which were not confirmed, such a model would enable producers to identify whether they had a high probability of failure.

These preliminary results indicate that the initial filings do not contain sufficient information to adequately forecast the disposition of a chapter 11 filing. Institutional factors such as the law firm retained, the judicial interpretation of specific situations, the objectives of the parties involved, and personalities may dominate the process rather than the economics associated with the financial structure of the firm.

Table 4: Mean values and Statistical Significance of Variables Included in the Discriminant Function for Confirmed and Not Confirmed Reorganization Plans, Sioux Falls Bankruptcy Court, 1980-1985

Variable	Action Taken (1980-83)		Partial R-squared	F-Test	Significance* Level
	Confirmed	Not Confirmed			
A. Total debt outstanding (\$1,000)	\$909.5	\$570.4	.039	2.47	0.12
B. Total debt to total assets	2.19	1.94	.034	2.17	0.15
C. Grain, livestock & machinery inventory to total assets	32.0%	32.7%	.052	3.33	0.07
D. Real estate assets to total assets	59.8%	48.1%	.093	6.28	0.02

* Variables were retained in the model if the level of significance was 15 percent.

Table 5: Contingency Table of Predicted and Actual Classification of Chapter 11 Bankruptcy Filings, Sioux Falls Bankruptcy Court, 1980-1985

Actual Disposition of the Chapter 11 Filer	Predicted Disposition		Totals
	Confirmed	Not Confirmed	
In-Sample Period: 1980-1983			
A. Confirmed	22	7	29
B. Not confirmed	18	19	37
C. Totals	40	26	66
Out-of Sample Period: 1984-1985			
A. Confirmed	26	8	34
B. Not confirmed	12	9	21
C. Totals	38	17	55

Conclusions:

Although considerable agricultural economic research has been conducted concerning the level of financial stress and reorganization options, an analysis of actual reorganization bankruptcy filings has not occurred. Based on initial bankruptcy filings for chapter 11 bankruptcy, these farmers were found to have a median experience level of 18 years in farming. The average amount of total debt was \$721 thousand with 92 percent of this debt being held by secured creditors. Nearly one-half of the secured creditors were impaired with the mean ratio of security interest to secured claim of 48 percent. Local and regional businesses were the primary unsecured creditors. About two-thirds (69%) of the farm businesses were insolvent at the time of filing.

A discriminant function analysis was used to determine whether information contained on the initial bankruptcy filing could be used to forecast whether a reorganization plan would be eventually confirmed. Producers with large total debt levels, higher debt to asset ratios, higher grain, livestock and machinery inventory to total asset ratios, and higher farm real estate to total asset ratios were found to be more likely to eventually have confirmed plans. Although the discriminant model was statistically significant and was able to identify those filers that eventually had a confirmed plan, the model lacked an ability to determine which filings did not result in a reorganization plan.

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