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FIRM PERFORMANCE AND INSIDER TRADING: A COMPARISON BETWEEN VOLUNTARY AND INVOLUNTARY BANKRUPTCY FILINGS

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We compare the financial performance and insider trading characteristics of firms filing for voluntary bankruptcy with firms that are petitioned into bankruptcy involuntarily by their creditors. We find that shareholders of firms filing for voluntary bankruptcy experience significantly greater losses around the bankruptcy announcement than shareholders of involuntary filers. We also find that insiders of firms filing voluntarily are net sellers of their firm's shares in the years leading up to bankruptcy, vs. net buying by insiders of involuntary filers. Moreover, firms filing voluntary bankruptcy successfully reorganize less frequently and liquidate more frequently than firms that file involuntary bankruptcy. These findings are consistent with the idea that corporate insiders in firms filing for voluntary bankruptcy have reduced incentives to maximize shareholder welfare throughout the Chapter 11 process compared with insiders of firms that are petitioned into bankruptcy by their creditors.

Introduction

Much of the research in the area of financial distress and bankruptcy focuses on whether managers have the proper incentives to maximize shareholder welfare during periods of financial distress (e.g., Bradley and Rosenzweig 1992, 1995, Altman 1993, Betker 1995a, and Chen, Weston and Altman 1995). We investigate the financial performance and insider trading characteristics of firms during the years leading up to their filing for corporate bankruptcy. In particular, we compare firms filing for voluntary bankruptcy with firms that are petitioned into bankruptcy involuntarily by their creditors. We find that shareholders of firms filing for voluntary bankruptcy experience significantly greater losses around the bankruptcy announcement than shareholders of involuntary filers, and that insiders of firms filing voluntarily are net sellers of their firm's shares in the years leading up to bankruptcy (vs. net insider buying by managers of involuntary filers). We also find that firms filing for voluntary bankruptcy successfully reorganize less frequently and liquidate more frequently than firms that enter involuntary bankruptcy. These findings are consistent with the idea that corporate insiders in firms filing for voluntary bankruptcy have reduced incentives to maximize shareholder welfare throughout the Chapter 11 process compared with managers of firms that are petitioned into bankruptcy by their creditors.

The debate regarding managerial behavior during bankruptcy is as old as U.S. bankruptcy law itself. In the early 1800s bankruptcy proceedings were initiated by complaints from the firm's creditors, similar to what is now referred to as involuntary bankruptcy. In those

times formal bankruptcy was viewed as a criminal act — debtors unable to satisfy their debts were often incarcerated. Liquidation of the firm was usually the end result, and if creditors were not paid in full following liquidation, debtors frequently remained incarcerated.

Attitudes regarding bankruptcy changed substantially during the 1800s. The first provision in U.S. law permitting the discharge of debt is found in the Bankruptcy Act of 1867. Restrictions on the filing of bankruptcy were further relaxed by passage of the Bankruptcy Act of 1898, reflecting a gradual decline in the stigma associated with financial distress. Over the course of the 19th century the perception of bankruptcy evolved from that of an offense to the economic community deserving of punishment to nothing more than an unfortunate financial state of affairs.

In response to the large number of business failures during the Great Depression, the Bankruptcy Acts of 1933 and 1934 permitted voluntary filings for the first time. Under the new system, managers retained their positions and played a major role in determining the course of the firm's reorganization. This change in procedure prompted numerous claims that managers were abusing the process for their own gain at the expense of shareholders, and the SEC launched an investigation. The results of that investigation, contained in the *Douglas Report*, concluded that managers responsible for firms' poor financial performance remained in office too long and acted in a self-serving manner to the detriment of public investors.

The findings of the *Douglas Report* led to passage of the Chandler Act of 1939, which removed a substantial amount of managerial discretion during the bankruptcy process. Voluntary bankruptcy remained a

rare provision under the code, and firms that filed voluntary bankruptcy were often sued to allow more control by creditors. These laws remained largely unchanged until the Bankruptcy Reform Act of 1978. This legislation re-introduced the pre-1939 practice of voluntary bankruptcy filing, which allows managers to remain with the firm and exert a significant influence on the company's reorganization. The 1978 Bankruptcy Reform Act also eliminated the SEC's role in investigating bankruptcies. Predictably, in the first year following implementation of the reform act, 85% of bankruptcies were voluntary filings by managers (see Wruck 1990).

Existing theoretical models often assume that managers are acting in the interests of shareholders during bankruptcy (e.g., Altman 1993, Betker 1995a, and Chen, Weston and Altman 1995). The results of numerous empirical studies of bankruptcy and financial distress provide support for this assumption. Khanna and Poulsen (1995) find that the strategies of managers of distressed firms (e.g., downsizing, capital structure changes, investments and spin-offs) are similar to those of managers of healthy firms in the same industry. As a result, they conclude that managers of distressed firms often serve as scapegoats, shouldering more of the blame for their firms' misfortunes than is justified. Denis and Denis (1995) provide further evidence on this issue. They find that external factors such as recession and regulatory change are important in causing financial distress, which suggests that managers may not be solely responsible for the firm's poor financial performance. Lang and Stulz (1992) present evidence of contagion surrounding bankruptcy announcements, which also implies that financial distress may be at least partly caused by industry-wide factors. Betker (1995b) finds that firms negotiating prepackaged bankruptcies spend less time in financial distress than firms entering traditional Chapter 11, which suggests that the managers of these firms pursue strategies intended to minimize the impact of financial distress on shareholder wealth.

Other researchers conclude that there is a greater misalignment of manager and shareholder interests when firms enter bankruptcy, however. One factor that contributes to this problem is that incentive contracts (performance-based bonuses and stock options) lose most of their value and are less effective for aligning the interests of managers and shareholders when firms are in financial distress (Wruck 1990 and Aghion, Hart, and Moore 1992).

Seyhun and Bradley (1997) present evidence that suggests a misalignment of incentives during bankruptcy. They find that insiders sell a significant

portion of their firm's stock in the years prior to filing a bankruptcy petition. Seyhun and Bradley acknowledge that while this fact alone does not constitute *prima facie* evidence that managers have breached their fiduciary responsibilities to shareholders, it is nonetheless true that corporate insiders who reduce their holdings of their firm's shares also reduce their incentive to maximize shareholder value. This idea is further supported by the findings of Betker (1995a), who reports a positive relation between shareholder gains during Chapter 11 and the level of insider holdings in the firm.

Other studies conclude that managers place their firms into bankruptcy to capture the job protection awarded them during the Chapter 11 process. Delaney (1992), Bradley and Rosenzweig (1992), White (1983), Wruck (1990), Aghion, Hart and Moore (1992), and Hotchkiss (1995) all suggest that managers whose firms are in financial distress may have a preference for Chapter 11 because of the greater job protection afforded by the bankruptcy process. LoPucki and Whitford (1993) also document that generous compensation and severance contracts ("golden parachutes") are often awarded to top managers when the firm is in the midst of a bankruptcy reorganization.

Bradley and Rosenzweig (1992) suggest that managers pursue sub-optimal operating strategies at shareholders' expense during the bankruptcy period, and that these managers may be seeking to obtain large severance contracts and further entrench themselves in their firms when they file a voluntary bankruptcy petition. They also find that firms entering bankruptcy are financially healthier following the 1978 Bankruptcy Reform Act — post-Act firms have significantly higher return on assets for the five years leading up to the bankruptcy filing. Bradley and Rosenzweig (1992) further report that shareholder losses for the six-month period surrounding the bankruptcy announcement are much larger following bankruptcy reform (–63% vs. –36% in the pre-Act period). Rimbey, Anderson and Born (1995) report similar findings: negative returns to shareholders around bankruptcy announcements are exacerbated following the 1978 Bankruptcy Reform Act.

If, as suggested by numerous authors, there is an increased misalignment of manager and shareholder interests when firms enter bankruptcy, we would expect to observe these firms performing poorly over an extended period of time. Hotchkiss (1995) documents poor long-term performance for firms filing bankruptcy under the Reform Act. She reports that 40% of firms emerging from bankruptcy continue to suffer losses in the three years following bankruptcy, with a significant number of second and third filings for these firms.

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Hotchkiss (1995) concludes that this long-term underperformance is largely due to the continued involvement of pre-bankruptcy management, and that Chapter 11 is not an effective influence on the rehabilitation of distressed firms.

Given that there is a distinction in both law and practice between voluntary and involuntary bankruptcy filings, and that most of the significant changes in bankruptcy law over the past 70 years have been concerned with whether or not it is appropriate to allow managers to file voluntary Chapter 11 and continue their involvement with the firm, we examine whether there are any economic differences between the two types of filings. If there is an increased misalignment of manager and shareholder interests when firms enter bankruptcy, we hypothesize that evidence of this misalignment of incentives will be more evident in firms filing for voluntary bankruptcy, where managers have the opportunity to use bankruptcy as part of their overall corporate strategy.

Our study is therefore an empirical investigation of differences between firms that file for voluntary bankruptcy vs. firms entering involuntary bankruptcy via creditor petitions. We focus on differences in the financial health and performance of these firms, patterns of insider trading leading up to the bankruptcy filing, and differences in their post-bankruptcy outcomes. We find little difference in the financial condition of the two subgroups in the years leading up to a bankruptcy filing. We find that shareholders of firms filing for voluntary bankruptcy earn stock returns that are significantly more negative than shareholders of involuntary filers, however, leading up to and following the bankruptcy announcement. We also find that insiders of firms filing voluntarily are net sellers of their firm's shares in the years leading up to bankruptcy, vs. net insider buying for the involuntary filers. Moreover, firms filing voluntary bankruptcy successfully reorganize less frequently and liquidate more frequently than firms that file involuntary bankruptcy. These findings are consistent with the idea that there is a greater reduction in managerial incentives to maximize shareholder welfare in firms filing for voluntary bankruptcy vs. firms that are petitioned into bankruptcy by their creditors.

The results of this study have implications for regulators and legislators that establish policy governing bankruptcy and insider trading laws. For example, calls for review and reform of these laws have accompanied the recent high-profile bankruptcy filings of firms such as Enron and Global Crossing, Ltd. Insiders of these firms are estimated to have earned anywhere from \$1 billion (Enron) to \$1.3 billion (Global Crossing) by

selling stock in their companies over the three year period preceding their bankruptcy filings. Outraged creditors of these firms have formed committees charged with investigating all insider sales that took place within 12 months of the bankruptcy filing, with the intention of claiming the proceeds from some of these insider transactions. In a similar move, Amalgamated Bank filed a lawsuit alleging illegal insider trading that seeks to freeze the bank accounts of senior executives at Enron.

DATA AND METHODOLOGY

The sample of firms filing for bankruptcy was compiled by searching the *Wall Street Journal Index*, *Lexis/Nexis* files, and from information obtained from the InDepthData Corporation and the New Generation Research Company. *Lexis/Nexis* search terms include: voluntary bankruptcy; voluntary petition; voluntary Chapter 11; involuntary bankruptcy; involuntary petition; and involuntary Chapter 11. All of the involuntary filings represent court-filed petitions by a minimum of three creditors under rule 303 (b) 1 of the 1978 Bankruptcy Reform Act. These petitions were filed under the grounds stipulated in rule 303 (h) where the "debtor is generally not paying debts as they become due."

Firms were included in the sample if their bankruptcy filing date occurs between October 1, 1979 (the date the Reform Act was implemented) and December 31, 1994. We focus on these dates to avoid the confounding effect of the unusually high stock returns earned during the period 1995-1999. The original sample contains 368 voluntary and 110 involuntary Chapter 11 bankruptcy announcements. Firms were subsequently eliminated from the sample if they were privately held, or according to *Lexis/Nexis* were "not publicly traded, too small, or otherwise inappropriate for coverage." Application of this screen reduced the sample size to 222 voluntary and 51 involuntary filings. Firms with excessive missing returns on the Center for Research in Securities Prices (CRSP) database were also excluded from the sample. This further reduced the sample size to 176 voluntary filers and 42 involuntary filers. Additionally, firms that entered bankruptcy primarily due to adverse outcomes in lawsuits (e.g., asbestos cases) were deleted, as were utilities and financial firms (SIC codes in the 4900s and 6000s) due to the regulatory constraints imposed on these industries. Application of these screens reduced the final sample size to 150 voluntary and 34 involuntary bankruptcy filings.

Table 1 presents the distribution of the sample over time and by SIC code. The frequency of voluntary and

involuntary filings increases beginning around the "credit crunch" of the late 1980s, and remains high through the 1991 recession. While the rate of involuntary filings slows afterward, the frequency of voluntary filings remains curiously high through the economic recovery of the early 1990s.

This table describes the sample of firms filing voluntary and involuntary bankruptcy petitions. The percentages of total observations by year are shown in the panel at left, and the percentage of total observations by the first digit of the firm's SIC code are shown at the panel at right.

Table 1: Sample Description by Year and SIC Code

Observations by Year			Observations by SIC Code		
year	voluntary	involuntary	first SIC digit	voluntary	Involuntary
1980	3.3%	2.9%	1	8.7%	14.7%
1981	2.7%	5.9%	2	12.0%	5.9%
1982	9.3%	2.9%	3	26.7%	26.5%
1983	6.0%	8.8%	4	8.0%	14.7%
1984	1.3%	5.9%	5	30.7%	17.6%
1985	2.7%	2.9%	6	2.7%	2.9%
1986	0.0%	2.9%	7	8.7%	14.7%
1987	2.0%	5.9%	8	2.0%	2.9%
1988	1.3%	2.9%	9	0.7%	0.0%
1989	4.0%	11.8%			
1990	6.0%	8.8%			
1991	18.7%	17.6%			
1992	14.7%	8.8%			
1993	14.0%	2.9%			
1994	14.0%	8.8%			

Table 2: Descriptive Statistics

Firm Characteristic (in \$1000s)	mean		t-statistic	median		Wilcoxon
	voluntary	involuntary		voluntary	involuntary	
Book Value of Assets	165.950	517.380	1.55	47.420	163.230	3.23*
Net Income	-24.400	-6.800	-0.38	-4.970	-3.310	-0.17
Market Capitalization	32.600	211.270	1.91	12.436	16.460	0.69
Sales	276.680	446.490	1.97*	63.270	221.060	2.15*
Long-term Debt Ratio	25.02%	34.25%	0.54	18.20%	31.67%	0.82

**, * Significantly different at the one and five percent levels, respectively.

The table above shows descriptive statistics for the sample of firms filing voluntary and involuntary bankruptcy petitions. Data are reported as year-end figures for the year preceding the bankruptcy announcement. The *t*-statistics and Wilcoxon statistics test whether the mean and median firm characteristics are significantly different from one another. Descriptive statistics regarding the two types of firms are shown as table 2. These data are reported as year-end figures for the year immediately preceding the bankruptcy announcement. Examination of table 2 reveals that firms filing involuntary bankruptcy are larger than the voluntary firms in terms of both their book value of assets and market capitalization. The involuntary filers also have greater average sales volume than their voluntary counterparts, which would be expected given their larger size. We find little difference in leverage between the two types of firms. Involuntary filers have an average long-term debt-to-assets ratio of 34% vs. 25% for the voluntary filers. Similar to the results reported by Chatterjee, Dhillon and Ramirez (1996), we find that smaller firms with lower debt levels tend to file

for voluntary Chapter 11. The only evidence that the voluntary filers might be slightly worse off financially comes from comparing the average net income of the two groups. Although the mean annual earnings of both groups are negative, the voluntary filers post slightly larger annual losses on a significantly lower level of annual sales. The average profit margin in the year preceding bankruptcy of the voluntary filers is -8.8%, compared with only -1.5% for the involuntary filers.

In the following section we compare the pre-bankruptcy performance and capital structure of the voluntary and involuntary filers. Mean and median return on assets, operating margin and debt ratios for the four years preceding the year of the bankruptcy announcement are obtained from Compustat. We compare the pre-bankruptcy financial performance and capital structure of the voluntary and involuntary filers to see if differences in these variables might influence managers' decision to file for voluntary Chapter 11 bankruptcy.

We obtain daily stock price data from the CRSP database to investigate differences in the returns of the

voluntary and involuntary filers immediately surrounding the bankruptcy announcement, as well as for the year preceding and following the announcement. Previous researchers (Rimbey, Anderson and Born, 1995) report that estimates of beta become unstable around announcements of bankruptcy filings. If risk is changing as firms enter bankruptcy, using pre-event market model parameters may misstate the actual excess returns earned by these firms. We find that the firms in our sample exhibit just such a change in beta. The mean pre-event (days -270 to -121) ordinary least squares

market model beta for the voluntary filers is 0.67, which increases to 0.85 in the post-event period (days +121 to +270). The involuntary filers experience a decrease in their beta from the pre-event (0.85) to post-event period (0.24).

Due to the apparent instability of beta, we report abnormal returns calculated without market model parameters, using instead a measure of buy and hold compound returns adjusted for market effects using the CRSP value-weighted index of all NYSE and Amex stocks.

$$ER_{j(a \text{ to } b)} = \prod_{t=a}^b (1 + R_{jt}) - \prod_{t=a}^b (1 + MR_t) \quad (1)$$

In Equation (1), $ER_{j(a \text{ to } b)}$ = excess return for firm j from time period a to b (days -252 to +252 relative to the bankruptcy announcement day (day zero)); R_{jt} = the raw return for firm j on day t ; and MR_t = the return on the CRSP value-weighted index of all NYSE and Amex stocks. As we contend that insiders of firms filing voluntary bankruptcy experience a greater misalignment of incentives to maximize shareholder value, we expect to find significantly greater losses accruing to shareholders in these firms compared with shareholders of firms entering involuntary bankruptcy.

As would be expected in a study of firms filing bankruptcy, a substantial number of the firms in our sample are delisted during the event window spanning days 0 to +252. Shumway (1997) examines the accuracy of the delisting returns available on the CRSP database and reports that these returns are missing for the majority of firms covered by CRSP. Failure to include the delisting returns of the stocks in our sample in the buy and hold return calculations would impart an upward bias to these returns. We therefore follow the recommendation of Shumway and insert his estimate of the value of the average missing delisting return on CRSP (-30%) for all the firms in our sample that have missing delisting returns.

We also investigate insider trading in the years leading up to the bankruptcy filing (years -2 and -1) and the year beginning with the month in which the bankruptcy announcement takes place (year 0). Data on insider trading are obtained from the SEC's Insider Trading Tapes. Loderer and Sheehan (1989) find no evidence of insider trading prior to bankruptcy, while Gosnell, Keown and Pinkerton (1992) find that only insiders of Nasdaq firms "bail out" prior to bankruptcy. More recent research reports significant net insider

selling leading up to bankruptcy filings, however (Seyhun and Bradley 1997).

We investigate differences in insider trading between our samples of voluntary and involuntary filers. We report both the net number of shares traded and total dollar volume of trades by insiders. Following Seyhun and Bradley (1997) we use a narrow definition of insiders: the firm's president, CEO, chairman of the board of directors, and all board members. Finding significantly greater insider selling among the voluntary filers would provide support for the view that managers and other insiders of firms filing for voluntary Chapter 11 bankruptcy have reduced incentives to maximize shareholder value. Also, if managers possess superior information regarding the firm's future prospects, finding more insiders buying among the involuntary filers also suggests that managers of these firms perceive a higher probability of successful reorganization than managers of firms that file for voluntary bankruptcy.

We obtain data from *The Directory of Obsolete Securities*, *Lexis/Nexis*, and Reuters Financial Services regarding post-bankruptcy outcomes. In particular, we compare the rate with which voluntary and involuntary filers merge with or are taken over by other firms, reorganize successfully, or undergo liquidation. Previous research (Hotchkiss 1995) concludes that poor long-term performance following bankruptcy is caused by the continued involvement of the management team that led the firm into bankruptcy. Finding a greater rate of failure and/or liquidation among the voluntary filers would provide further support for the idea that managers have reduced incentives to maximize shareholder value when firms file for voluntary Chapter 11 bankruptcy.

EMPIRICAL RESULTS

We present our empirical results in the following

four sub-sections. The first sub-section reports measures of firm performance and leverage for the four years preceding the year in which firms announce bankruptcy. The second sub-section presents changes in shareholder wealth during the years preceding and following the bankruptcy announcement. The third sub-section reports insider trading leading up to and following bankruptcy. The fourth sub-section presents the post-bankruptcy outcomes for the voluntary and involuntary filers.

Firm Performance and Leverage Before Bankruptcy

Table 3 presents measures of firm performance and

$$ROA = \frac{\text{operating income before depreciation and amortization}}{\text{total assets}} \quad (2)$$

Both types of firms exhibit steady downtrends in their mean ROA for the four years preceding bankruptcy. The voluntary filers exhibit consistently higher ROA than the involuntary filers for each year

leverage for the four years preceding the year in which firms announce bankruptcy. We investigate whether there are significant differences in profitability and leverage between the voluntary and involuntary firms prior to filing for bankruptcy. If the financial condition and performance of the two types of firms is similar leading up to the bankruptcy filing, it is less likely that financial factors are a significant influence on managers' decision to file for voluntary bankruptcy.

Mean performance and characteristic measures are presented in Panel A. Return on assets (ROA) is computed as in Hotchkiss (1995):

except year -1, when their ROA declines precipitously. The difference-between-the-means *t*-statistics are insignificant for each year, indicating no difference in the mean ROA of the voluntary and involuntary filers.

Table 3: Pre-Bankruptcy Performance

Panel A: mean performance measure	year -4	year -3	year -2	year -1
return on assets				
voluntary	8.18%	5.84%	0.05%	-9.01%
involuntary	4.82%	1.23%	-1.88%	-3.56%
<i>t</i> -statistic	-1.06	-0.90	-0.05	0.60
operating margin				
voluntary	-0.84%	-2.15%	-8.25%	-11.14%
involuntary	3.34%	0.56%	-7.53%	0.87%
<i>t</i> -statistic	0.53	0.51	0.60	1.17
long-term debt ratio				
voluntary	25.83%	26.72%	28.68%	25.02%
involuntary	30.26%	35.20%	36.19%	34.25%
<i>t</i> -statistic	0.96	1.80	1.39	1.41
Panel B: median performance measure	year -4	year -3	year -2	year -1
return on assets				
voluntary	11.00%	8.66%	6.61%	-0.08%
involuntary	9.82%	7.82%	6.09%	3.74%
Wilcoxon	-1.13	-0.90	-0.52	0.86
operating margin				
voluntary	6.92%	5.73%	4.46%	0.07%
involuntary	8.05%	5.98%	4.86%	3.66%
Wilcoxon	0.40	0.64	0.65	1.48
long-term debt ratio				
voluntary	25.90%	26.56%	24.58%	18.20%
involuntary	30.64%	36.95%	33.42%	31.67%
Wilcoxon	0.78	1.31	1.44	1.77

The table above presents firm characteristic and performance measures for the four years leading up to the year of the bankruptcy announcement. Results are reported for the subsamples of firms filing voluntary and involuntary bankruptcy. Return on assets is computed as in Hotchkiss (1995): operating income before depreciation and amortization/total assets. Operating margin = operating income/sales, and the long-term debt ratio = long-term debt/total assets. The *t*-statistics and Wilcoxon statistics test whether the mean and median

characteristics of the subgroups are significantly different. The next performance measure reported in Panel A of table 3 is mean operating margin, defined as operating income/sales. Operating margin declines steadily during the four-year period, with the exception of an increase in year -1 for the involuntary filers. We find no significant difference in the mean operating margins of the two types of firms. The average long-term debt ratios (long-term debt/total assets) for each type of bankruptcy filing are consistent and stable for the

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four years leading up to bankruptcy. Once again, there is no significant difference in leverage between the voluntary and involuntary filers in any of the pre-bankruptcy years.

Panel B of table 3 presents median performance and characteristic measures for the two types of firms. The findings are similar to those presented in Panel A. ROA and operating margin are declining for each of the four pre-bankruptcy years. Long-term debt ratios are consistent and stable, and none of the measures reported are significantly different in any of the years leading up to bankruptcy. We interpret these findings as evidence that the financial performance and leverage of the two types of firms are similar during the pre-bankruptcy period. Both voluntary and involuntary filers are in the midst of a long-term decline in profitability, and neither exhibits a significant change in leverage prior to bankruptcy. There is no evidence that differences in the pre-bankruptcy financial condition of these firms influences the type of bankruptcy filing.

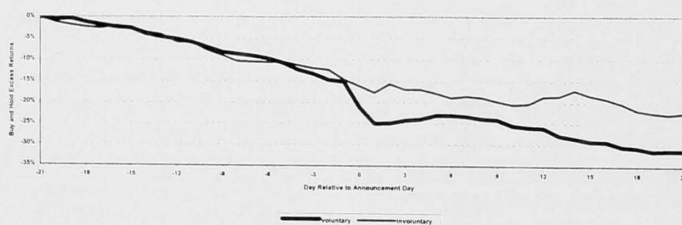
Changes in Shareholder Wealth

We examine changes in shareholder wealth over four trading periods relative to the bankruptcy

announcement (day zero): days -252 to -22; days -21 to +21; days -1 to +1; and days +22 to +252. Compound buy and hold excess returns (see equation 1) are reported in table 4. The buy and hold returns from days -21 to +21 are also shown as figure 1, and the buy and hold returns from days -252 to +252 are shown as figure 2.

During the period preceding the bankruptcy announcement (days -252 to -22) the stock price performance of the voluntary filers is significantly more negative than that of the involuntary filers: -81.2% vs. -61.5%. These buy and hold returns are significantly different at the one percent level ($t = 11.91$). Over the two month period immediately preceding and following the announcement (days -21 to +21), the voluntary filers also exhibit greater losses: -31.2% vs. -22.4% for the involuntary filers ($t = 5.82$). The buy and hold returns immediately surrounding the bankruptcy announcement (days -1 to +1) are also significantly more negative for the voluntary filers: -10.3% percent vs. -5.4% percent for the involuntary firms ($t = 3.19$). Figure 1 shows that the returns of the two types of firms are similar from days -21 to -2, but the more negative returns earned by the voluntary filers around the bankruptcy announcement persist through day +21.

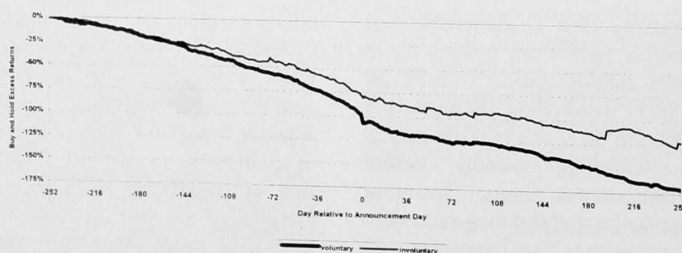
Figure 1: Buy and Hold Excess Returns From Days -21 to +21



The figure shown above depicts compound buy and hold excess returns for the subsamples of firms filing voluntary and involuntary

bankruptcy. The trading window spans days -21 to +21 relative to the bankruptcy announcement (day zero).

Figure 2: Buy and Hold Excess Returns From Days -252 to +252



The figure in the previous page depicts compound buy and hold excess returns (computed as shown in Equation 1) for the subsamples of firms filing voluntary

and involuntary bankruptcy. The trading window spans days -252 to +252 relative to the bankruptcy announcement (day zero).

Table 4: Buy and Hold Excess Returns

Trading Window	Voluntary	Involuntary	t-statistic
-252 to -22	-81.2%	-61.5%	11.91**
-21 to +21	-31.2%	-22.4%	5.82**
-1 to +1	-10.3%	-5.4%	3.19**
+22 to +252	-57.1%	-36.3%	15.26**

** Significantly different from zero at the one percent level.

The table above reports compound buy and hold excess returns (computed as shown in Equation 1) for the subsamples of firms filing voluntary and involuntary bankruptcy. The trading window defines the days relative to the event day over which the excess returns are measured (day zero = the day the firm announces it is filing for or has been petitioned into bankruptcy). The *t*-statistics test whether the buy and hold excess returns of the voluntary and involuntary filers are significantly different from each other. Over the eleven months following the bankruptcy announcement (days +22 to +252) the voluntary filers continue to post significantly greater losses than the involuntary filers: -57.1% vs. -36.3% for the involuntary filers (*t* = 15.26). This finding is confirmed by examination of Figure 2. In all four subperiods examined, the voluntary filers earn excess returns that are significantly more negative than the involuntary filers. The market evidently interprets the announcement of a voluntary bankruptcy filing as more negative for the future prospects of the firm than the announcement of an involuntary bankruptcy petition filing by the firm's creditors. These findings are consistent with the idea that corporate insiders in firms filing for voluntary bankruptcy have reduced incentives to maximize shareholder welfare throughout the Chapter 11 process compared with managers of firms that are petitioned into involuntary bankruptcy.

Insider Trading Preceding and Following the Bankruptcy Announcement

Results regarding average insider trading for the two types of bankruptcy filings are presented in table 5. We report the average annual net number of shares traded by insiders (Panel A) and the average annual net dollar volume of trade by insiders (Panel B). In both cases, a negative number indicates that insiders are divesting themselves of the stock of their firm (in terms of shares or dollars), and a positive number indicates that insiders are accumulating stock in their firm. Results are reported for years -2, -1 and the year beginning with

the month in which the bankruptcy announcement takes place (year zero). Panel A of table 5 shows that insiders of firms filing voluntary bankruptcy are net sellers of shares in all three years, with the largest volume of net shares sold occurring in the year immediately preceding the bankruptcy filing (year -1). This contrasts sharply with the trading patterns of insiders in firms filing involuntary bankruptcy. Insiders of these firms are net buyers of shares in years -2 and -1, and sell significantly less shares in the year following the bankruptcy announcement (an average of 27,000 shares vs. 72,000 for the voluntary filers).

These results are also depicted as figure 3, which shows the cumulative insider trading in shares for both types of firms. In the two years preceding and the year of the bankruptcy announcement, insiders of firms filing voluntary bankruptcy divest themselves of over 300,000 shares, while insiders of firms petitioned into bankruptcy by their creditors accumulate over 20,000 new shares during the same period. We interpret these findings as strong evidence that insiders of firms filing voluntary bankruptcy have a greater reduction in their incentives to maximize shareholder wealth compared with insiders of firms filing involuntary bankruptcy.

This table reports average insider trading per firm for the samples of firms filing voluntary and involuntary bankruptcy. Insiders are defined as the firm's president, CEO, and members of the board of directors. Results are reported for the two years preceding bankruptcy and the year of the bankruptcy filing (year zero). Panel A reports the net number of shares traded, by year and cumulatively. Panel B reports the net dollar amount of insider buying or selling, by year and cumulatively.

Panel B of table 5 reports average annual net dollar volume of insider trading for voluntary and involuntary filers. Cumulative average net dollar trading by insiders of both types of firms is also depicted as figure 4. Although insiders from both types of firms are buyers in net dollar terms in year -2, the average buying by insiders of the involuntary filers is over four times that

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of insiders from the voluntary filers. In year -1 insiders in voluntary firms become net sellers in dollar terms, while insiders in involuntary firms continue to be net buyers. In year zero insiders in both types of firms are net sellers in dollar terms, but the net dollar selling by insiders in the voluntary firms is more than five times greater than that of the involuntary insiders. These results are confirmed by examining figure 4, which shows that, on average, insiders of

involuntary filers accumulate approximately \$2 million in new stock during years -2 to 0, while insiders of voluntary filers divest themselves of approximately \$300,000 in stock over the same period. These findings provide further evidence that the misalignment of incentives thought to occur during bankruptcy manifests itself most strongly among managers and insiders voluntarily placing their firms into Chapter 11 bankruptcy.

Table 5: Insider Trading Around the Bankruptcy Announcement

Panel A: Insider Trading (in Shares)			
Net Insider Trading	year -2	year -1	year 0
Voluntary	-6,190	-224,726	-72,028
Involuntary	38,263	9,421	-26,864
Cumulative Net Insider Trading	year -2	year -1	year 0
Voluntary	-6,190	-230,916	-302,944
Involuntary	38,263	47,684	20,820
Panel B: Insider Trading (in Dollars)			
Net Insider Trading	year -2	year -1	year 0
Voluntary	\$340,474	-\$361,225	-\$293,948
Involuntary	\$1,475,593	\$542,827	-\$53,922
Cumulative Net Insider Trading	year -2	year -1	year 0
Voluntary	\$340,474	-\$20,751	-\$314,699
Involuntary	\$1,475,593	\$2,018,420	\$1,964,498

Figure 3 shown below depicts cumulative net insider trading in shares for years -2, -1 and zero relative to the year of the bankruptcy filing (year zero).

Figure 3: Cumulative Net Insider Trading (Number of Shares)

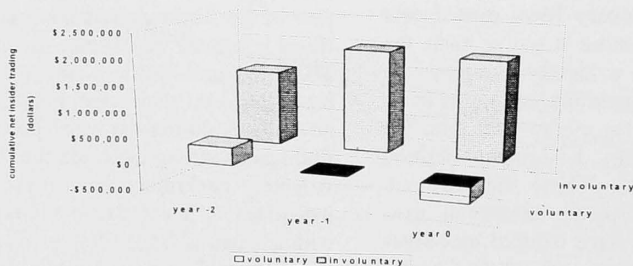
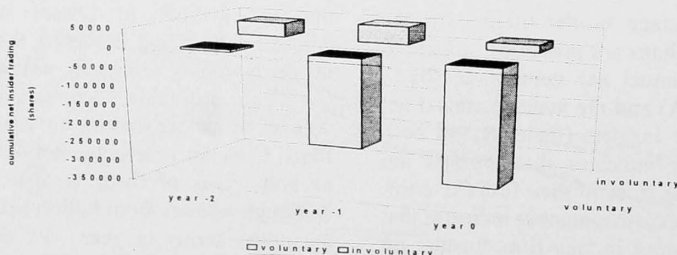


Figure 4 shown below depicts cumulative net insider trading in dollars for years -2, -1 and zero relative to the year of the bankruptcy filing (year zero).

Figure 4: Cumulative Net Insider Trading (Dollar Volume)



This table reports post-bankruptcy outcomes for the samples of firms filing voluntary and involuntary bankruptcy. Information is obtained from *The Directory of Obsolete Securities*, *Lexis/Nexis*, and Reuters

Financial Services. The difference between the means *t*-statistic tests whether the mean post-bankruptcy outcome for the subgroups are significantly different from one another.

Table 6: Post-Bankruptcy Outcomes

Type of Bankruptcy Resolution	Voluntary Firms	Involuntary Firms	Difference Between the Means <i>t</i> -statistic
Mergers/Takeovers and Acquisitions	15.9%	15.2%	-0.18
Successful Reorganization	42.1%	60.6%	1.88
Liquidations/Failures	42.1%	24.2%	2.00 [*]

* Significant at the five percent level.

Post-Bankruptcy Outcomes

Finally, we compare the post-bankruptcy outcomes of the two types of firms. Information is obtained from *The Directory of Obsolete Securities*, *Lexis/Nexis*, and Reuters Financial Services. These results are summarized in Table 6. The rates with which the two types of firms merge with or are taken over by other firms are almost identical: 16% of the voluntary filers and 15% of the involuntary filers emerge from bankruptcy as part of a merger or takeover. There are significantly different patterns in their respective rates of reorganization and liquidation, however. Sixty-one percent of the involuntary filers eventually complete a successful reorganization, compared with only 42% of the voluntary filers. Forty-two percent of the voluntary filers eventually liquidate their firms, while only 24% of the voluntary filers meet a similar fate. The lower frequency of successful reorganization and higher rate of liquidation for the voluntary filers provides further support for the view that insiders of firms filing voluntary bankruptcy have a greater reduction in their incentives to maximize shareholder wealth than the insiders of firms that are petitioned into bankruptcy by their creditors.

CONCLUSIONS

Previous studies reach different conclusions regarding how much responsibility for financial distress rests with the firm's managers. We hypothesize that these findings may be due to differences in the behaviors of managers filing voluntary Chapter 11 bankruptcy vs. managers of firms that are petitioned into bankruptcy by their creditors. We argue that greater misalignments of manager and shareholder interests are more likely to occur when managers choose to place the firm into Chapter 11 via a voluntary bankruptcy petition than when firms are petitioned into bankruptcy by their creditors.

We find that the financial performance and leverage

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of both types of firms are similar in the years preceding the bankruptcy announcement, which indicates that pre-bankruptcy financial performance and capital structure are not significant determinants of the type of bankruptcy filing. We present evidence that the shareholders of firms filing voluntary Chapter 11 suffer significantly greater losses at the time of the bankruptcy announcement than shareholders of firms petitioned into bankruptcy. Moreover, insiders of firms filing voluntary bankruptcy are net sellers of their firm's stock in the years leading up to bankruptcy, both in terms of shares and dollar trading volume, while insiders of involuntary filers are found to be net buyers of their firm's stock over the same period. These findings strongly suggest a greater misalignment of manager/shareholder interests in firms filing for voluntary bankruptcy. We also find that firms filing for voluntary bankruptcy successfully reorganize less frequently and liquidate more frequently than firms entering bankruptcy via involuntary creditor petitions.

In summary, firms filing for voluntary bankruptcy exhibit a more negative market reaction to the bankruptcy announcement, a higher level of insider selling, and a greater frequency of negative post-bankruptcy outcomes than firms entering bankruptcy via creditor-initiated petitions. These findings provide support for the idea that insiders of firms filing for voluntary bankruptcy have reduced incentives to maximize shareholder wealth compared with the insiders of firms filing involuntary bankruptcy. The results of this study are important for regulators and legislators that establish policy governing bankruptcy and insider trading laws, as U.S. bankruptcy law and the laws governing insider trading leading up to bankruptcy filings are drawing increased scrutiny, and are likely to undergo significant reform in the near future.

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