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Postbankruptcy Performance and Management Turnover

EDITH SHWALB HOTCHKISS*

ABSTRACT

This article examines the performance of 197 public companies that emerged from Chapter 11. Over 40 percent of the sample firms continue to experience operating losses in the three years following bankruptcy; 32 percent reenter bankruptcy or privately restructure their debt. The continued involvement of prebankruptcy management in the restructuring process is strongly associated with poor post-bankruptcy performance. The substantial number of firms emerging from Chapter 11 that are not viable or need further restructuring provides little evidence that the process effectively rehabilitates distressed firms and is consistent with the view that there are economically important biases toward continuation of unprofitable firms.

THE DRAMATIC RISE in the number and size of firms filing for Chapter 11 bankruptcy in the 1980s has led to substantial interest among financial economists in understanding how financial distress affects the allocation of resources. Jensen (1991) describes the Bankruptcy Code as strongly prodebtor and argues that “chronic inefficiencies” arise from certain features of this process. The current structure of the Bankruptcy Code allows incumbent management to retain control of the firm in bankruptcy and gives management an initially exclusive right to propose a plan of reorganization. Critics of the Chapter 11 process argue that this structure leads to excessively long and expensive conflicts among claimholders and that the process is biased toward reorganization rather than liquidation.¹

Much of the recent empirical work in the area of bankruptcy and financial distress focuses on documenting the strategic outcomes and costs of renegoti-

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¹For example, Baird (1986) argues that bankruptcy law favors reorganization and “does not squarely face the possibility that all interested parties might be better off as a group if the firm’s assets were put to a different use.” Bradley and Rosenzweig (1992) argue that “bankruptcy law fails to provide managers with appropriate incentives to allocate corporate resources to their highest-valued uses.”

ation in bankruptcy.² However, the empirical evidence does not consider the performance of firms after they emerge from Chapter 11. This article undertakes such an examination and begins an analysis of whether there are economically important biases toward continuation of unprofitable firms. In particular, the results suggest that management's role in the Chapter 11 process may be an important source of this bias. The results also suggest that there are other factors outside of management's control that affect subsequent performance.

Postbankruptcy performance is examined using a sample of firms filing for Chapter 11 between October 1979 and September 1988 that later emerged as public companies. Over 40 percent of the firms emerging from bankruptcy continue to experience operating losses in the three years following bankruptcy. Thirty-two percent of the sample firms are involved in a second bankruptcy or distressed restructuring. Over half of the sample firms (55 percent) have replaced the chief executive officer (CEO) in office 2 years before filing by the time a plan of reorganization is proposed; 70 percent of the firms have replaced their CEO by the time a reorganization plan is implemented after bankruptcy. Most importantly, the continued involvement of original management in the restructuring process is strongly associated with poor postbankruptcy performance. Firms are also more likely to perform worse than was projected at the time of reorganization when original management remains in office during bankruptcy.

There are two alternative interpretations of these results. The first is that Chapter 11 favors management, allowing them to make inefficient, self-serving decisions or allowing less able managers to remain. A more benign interpretation is that firms with poorer prospects have greater difficulty attracting new management to the firm, particularly while the firm is in bankruptcy. Under both interpretations, management changes provide useful information about the prospects for the reorganized firm.

Several theoretical models suggest why Chapter 11 may facilitate the rescue of inefficient firms. Bulow and Shoven (1978) and White (1989) consider the reorganization versus liquidation choice of firms in financial distress and show how the risk-shifting incentives of lower priority claimants can lead to excessive continuation of investment. Gertner and Scharfstein (1991) show that key provisions of Chapter 11 reorganization law, such as the automatic stay, Chapter 11 voting, and the maintenance of equity value in the reorganized firm (deviations from absolute priority) lead to increased investment. White (1993) also argues that, while Chapter 11 decreases the

²Several authors document that in Chapter 11 lower priority creditors and shareholders often receive some distribution under the plan of reorganization even though more senior creditors are not repaid in full. See for example Eberhart *et al.* (1989), Weiss (1990), and Franks and Torous (1989). Warner (1977), Altman (1984), and more recently Weiss (1990) provide measures of bankruptcy costs.

probability that economically efficient firms shut down, it increases the probability that economically inefficient firms continue to operate.³ Mooradian (1994) builds on Gertner and Scharfstein's (1991) work and explicitly models the bankruptcy choice for distressed firms; the model shows that a large proportion of firms choosing reorganization under Chapter 11 are economically inefficient. Based on these models, Chapter 11 increases investment but may lead to overinvestment if firms that should be liquidated are reorganized. Empirically we may observe that poor investment decisions made in bankruptcy are reflected in the postbankruptcy performance of firms emerging from the process.

Recent criticism of the Chapter 11 process focuses on management as the source of a bias toward the preservation of unprofitable firms.⁴ Bradley and Rosenzweig (1992) argue that management has too much power in Chapter 11 and that they exercise this power in a self-serving manner. LoPucki and Whitford (1993a) describe the key sources of management's power in Chapter 11; managers typically remain in control of the firm's operations and have an exclusive right, often throughout the entire case, to propose a plan of reorganization. However, a strong check on management's power is the likelihood of being removed. High management turnover for distressed firms has been documented in several empirical studies.⁵ The debate over management's role in the restructuring process has led to a number of proposals for reform of the current system (these include Baird (1986) and Aghion, Hart, and Moore (1992)) that would be free from these sources of inefficiencies and would "place appropriate discipline on management." Replacement managers, whose reputations are less tied to existing assets, who have less firm-specific human capital, and who often have lower initial shareholdings, may be less likely to share the biases described above.

The article proceeds as follows. The following section describes the sample and data sources, while Section II describes several measures of the firms' postbankruptcy "success." Section III describes management turnover for the sample and examines the relationship to postbankruptcy performance. Section IV concludes.

³Specifically, White (1993) develops a game theoretic model of the bankruptcy process, which describes the probability of a type I error (economically inefficient firms are saved in Chapter 11) relative to the probability of a type II error (economically efficient firms are shut down).

⁴Though not in the context of bankruptcy, several models demonstrate that managers acting in their own self interest may have tendencies toward overinvestment. Shleifer and Vishny (1989) describe how management's choice of investments reflects concern for their own survival. Jensen (1986) and Stulz (1990) also develop models where managements' self-serving behavior leads to overinvestment.

⁵Gilson (1989), Gilson and Vetsuypens (1993), Betker (1993), and LoPucki and Whitford (1993a) each examine management turnover during financial distress. Evidence reported by Warner *et al.* (1988) and by Weisbach (1988) also shows that turnover is higher following a period of poor performance.

I. Sample Description

Annual reports of the Securities and Exchange Commission (SEC) and unpublished memoranda available from the SEC were used to obtain a listing of 806 public companies filing for Chapter 11 between October 1979 and September 1988. This sample represents all public companies known to the SEC that filed for Chapter 11 during this time period, but does not include some large private firms (such as failed leveraged buyouts) that filed for Chapter 11. For each firm, the status or outcome of the filing as of the firm's 1989 fiscal year end was determined using various sources including the *Wall Street Journal*, *Predicast's Index of Corporate Changes*, press releases, and individual company SEC filings. Of the firms for which a plan of reorganization was confirmed, 197 (24 percent of all filings) emerged from bankruptcy as public companies that continued to file financial statements with the SEC following the completion of the reorganization.⁶ These 197 companies form the sample used to evaluate postbankruptcy performance. Each firm has at least 3 years of postbankruptcy data to evaluate performance; 80 percent of the sample firms have at least 5 years of data.

Selected characteristics of the firms emerging as public companies versus all other filing outcomes are described in Table I. Firms that emerge as public companies tend to be larger, as measured by the book value of assets and by total revenues. Nevertheless, these companies are smaller than those included in previous studies of distressed companies that consider only New York Stock Exchange (NYSE) and American Stock Exchange (AMEX) firms (for example, the median book value of assets in Gilson's (1990) study is \$75 million versus \$21 million in this study). The mean leverage at filing, measured as the book value of liabilities divided by assets, is considerably lower than for other firms but still indicates severe financial distress; the median leverage is closer but still significantly different. Finally, the number of months spent in bankruptcy is similar between groups.

The sample firms come from 49 distinct 2-digit Standard Industrial Classification (SIC) groups. Three industry groups, oil and gas extraction (31 firms), industrial and commercial machinery and computer equipment (21 firms), and business services (12 firms) together comprise almost 33 percent of the sample. Industry membership of the sample of emerged public firms is similar to that of all other Chapter 11 filings.

Bankruptcy court documents, including a plan of reorganization and disclosure statement, were obtained for 125 of the emerging public firms. Documents were obtained directly from companies (42 firms), from the bankruptcy court for the Southern District of New York (SDNY; 7 firms), or when

⁶Other firms may be classified as emerged private (18 percent), merged (7 percent), liquidated (15 percent), or still in bankruptcy or unresolved as of their 1989 fiscal year end (36 percent). Hotchkiss (1993) examines hypotheses concerning which firms will successfully emerge from Chapter 11. Firms that emerged as private companies were significantly more distressed based on leverage and operating losses prior to bankruptcy.

Table I
Selected Mean and Median Characteristics for 806 Publicly
Traded Firms Filing for Chapter 11 Between
October 1979 and September 1988

Public companies filing for Chapter 11 were identified from Securities and Exchange Commission (SEC) publications. Firms classified as emerged public continued to file financial statements with the SEC following bankruptcy. Other outcomes includes firms that emerged as private companies, merged, liquidated, or for which the outcome was unresolved as of the firm's 1989 fiscal year end based on information provided in the *Wall Street Journal*, press releases, and SEC filings. Balance sheet data are measured at the time of filing from SEC publications. Revenues are measured at the fiscal year end prior to filing using data from COMPUSTAT and 10-K reports. Time in bankruptcy for other outcomes is based on 320 firms for which the outcome was resolved by 1989 and which could be determined from news sources or SEC filings.

Characteristic	Mean (Median) Characteristics		
	Full Sample	Emerged Public	Other Outcomes
Number of firms	806	197	609
Book value of assets (\$ millions)	122.7 (10.7)	285.4 (21.1)	58.4*** (7.0)***
Revenue (\$ millions)	259.4 (22.6)	419.9 (30.2)	137.1 (17.6)**
Book value liabilities/assets	2.50 (0.98)	1.45 (0.95)	2.92* (1.00)***
Months in bankruptcy	19.5 (17.0)	20.2 (17.2)	19.0 (16.8)

***, **, *Denote mean (median) significantly different between emerged public and other outcome firms based on *t*-test (Wilcoxon rank sum test) at 0.01, 0.05, and 0.10 level, respectively.

possible from 8-K or 10-K reports (76 firms). These documents, distributed to creditors prior to voting on the plan, have been approved by the court as providing sufficient information to "enable a hypothetical, reasonable investor, typical of those involved in the case, to make an informed judgement about the plan."⁷ The court documents as well as 10-K and 8-K filings were used to obtain detailed information concerning the events leading to and during bankruptcy, terms of the restructuring, and the business plan for the reorganized firm.

II. "Success" After Bankruptcy

This section describes the postbankruptcy performance of the 197 firms that emerged from Chapter 11 as public companies using three different measures: (1) accounting measures of profitability, (2) whether the firm meets cash flow projections developed at the time of reorganization, and (3)

⁷ Bankruptcy Reform Act of 1978, Section 1125(a).

whether the reorganized business needs to restructure again through a private workout or second bankruptcy.

A. Accounting Measures of Postbankruptcy Performance

Accounting measures of profitability have been used in previous studies to identify improvement in firm performance following leveraged buyouts, management buyouts, and mergers.⁸ Similar variables are considered here using data obtained from COMPUSTAT and from 10-K statements. Data were collected from 10-Ks for approximately 50 firms that did not reappear or had missing data on COMPUSTAT following bankruptcy in order to avoid a source of sample selection bias. Typically, these firms chose not to, or were unable to, list their reorganized stock on an exchange, so that excluding them from the analysis might bias the results toward stronger performance.

Cash flow is measured by the firms' operating income, defined as net sales less cost of goods sold, and selling, general, and administrative expenses *before* deducting depreciation and amortization. The calculation does not deduct interest expense, dividends, or taxes and so does not reflect differences in capital structure. Operating income is normalized either by sales (measuring a return on sales or operating margin) or by total assets (measuring a return on assets). The return on sales measure is less directly affected by asset write downs or divestitures and by differences in accounting treatment between the sample firms and their industry counterparts.⁹

The cash flow variables are also reported on an industry-adjusted basis by subtracting the median of an industry portfolio. Industry portfolios for each firm are constructed using all other COMPUSTAT firms with the same 2-digit SIC code.¹⁰ The firm's primary SIC code was verified each year from 10-K reports and other SEC filings. This procedure allows firms to change industry groups, which commonly occurs in the years surrounding the reorganization.

The following schematic illustrates the dating convention used to describe performance:

-5 -4 -3 -2 -1 F ... C +1 +2 +3 +4 +5

F represents the fiscal year during which the company filed a petition for Chapter 11, and C represents the fiscal year during which the plan of

⁸See for example Kaplan (1989) and Smith (1990) on management buyouts, Muscarella and Vetsuypens (1990) on leveraged buyouts, and Healy *et al.* (1992) on mergers.

⁹Many firms wrote down assets and made accounting changes at the first 10-K reporting date following reorganization. The accounting treatment was not consistent across the sample. Twenty percent of the sample elected a "quasi-reorganization" for accounting purposes and adjusted their assets and liabilities to fair market value. The results of Section II.A are qualitatively similar using the market value of assets (market value of equity plus book value of debt) to deflate operating income, though data for the market value of equity are not available for the full sample.

¹⁰The results reported in Tables II and III are nearly identical using industry portfolios based 3- or 4-digit SIC codes.

reorganization was confirmed. Year +1 represents the first full year of postbankruptcy results. Performance for years between F and C is not considered; the number of years varies by firm (averaging 2 years with a maximum of 7 years). Furthermore, many firms do not file 10-K reports for some years while in bankruptcy.

Table II reports the medians of the absolute and industry-adjusted accounting variables for the 197 firms. The percentage of observations showing negative operating income and the percentage of observations lower than the industry median are also shown.¹¹ Starting at Year -5, the median operating income/sales and operating income/total assets are significantly positive and not significantly different from the industry. As we would expect, the cash flow variables fall closer to filing and are significantly different from the industry groups. The percentage of firms with negative operating income increases to 67.5 percent by the year of filing. The magnitude of operating losses indicates that many firms are not just financially distressed but also economically distressed. Following the confirmation of a plan and exit from bankruptcy, there is an improvement in the medians, as both variables reach levels similar to Year -3. However, a number of firms continue to report negative operating income (40.7 percent in Year +1), and all years after bankruptcy remain significantly lower than the industry for both variables.¹²

It is also possible that firms need several years after bankruptcy to recover. However, results (not reported) for 93 firms with data available for all five postbankruptcy years show that performance varies little over this period. Over the 5-year postbankruptcy period, the average annual operating income/sales is 0.029 (-0.059 industry adjusted); for the same firms, the average in the 2 years before filing is 0.012 (-0.106 industry adjusted).

¹¹ Missing observations occur in Years +4 and +5 for 41 firms that have been out of bankruptcy less than 5 years. Additional missing observations in postbankruptcy years are due to firms that left the sample because of a second Chapter 11 or liquidation (28 firms) and firms that were merged or taken private (21 firms). An additional 30 firms have some missing observations in postbankruptcy years; 25 of these were financially distressed and either restructured their claims through a private workout or experienced negative operating cash flow for 3 years prior to leaving the sample. Due to survivorship bias, Table II may understate the percentage of firms experiencing operating losses.

¹² To provide a better comparison to previous studies of distressed firms, the same analysis is performed using only firms with total assets prior to filing in excess of the sample median of \$21 million (this produces a median book value of assets prior to bankruptcy of \$70 million, similar to firms in Gilson's (1990) study). For this subsample, the percentage of firms with negative operating income is similar to that reported above, and industry-adjusted performance is significantly negative in all years following bankruptcy.

The analysis is also repeated using a measure of free cash flow, operating income minus capital expenditures and additions to net working capital, to account for discretionary outlays. The medians of this variable (not reported) are again significantly lower than industry groups for all years starting at Year -4. The sample firms reduce capital expenditures as they approach bankruptcy, and these expenditures remain lower in postbankruptcy years; the median capital expenditures as a percentage of sales (total assets) falls from 5 to 4 percent (6 to 4 percent) in the 5 years before bankruptcy and remains near 2 percent (3 percent) for each of the postbankruptcy years.

Table II
Accounting Measures of Profitability Prior To and Following Chapter 11

The sample consists of 197 firms emerging from Chapter 11 as public companies by fiscal year end 1989. Years are shown relative to the fiscal year in which the firm filed for bankruptcy (Year F) and relative to the fiscal year in which a plan of reorganization was confirmed (Year C). *N* denotes the number of observations. All data is obtained from COMPUSTAT and 10-K reports. Industry-adjusted medians are calculated by subtracting for each firm the contemporaneous median of an industry portfolio consisting of all other COMPUSTAT firms with the same 2-digit SIC code.

Year	N	Percentage Negative		Operating Income/Sales			Operating Income/Total Assets		
		Operating Income	Median	Industry-Adjusted Median	Percentage < Industry	Median	Industry-Adjusted Median	Percentage < Industry	Median
-5	143	12.0	0.085*	-0.005	54.6	0.113*	-0.013	52.1	
-4	159	19.6	0.075*	-0.017*	60.1	0.097*	-0.029*	62.7	
-3	178	27.7	0.045*	-0.054*	71.2	0.062*	-0.065*	72.3	
-2	190	39.7	0.023	-0.080*	77.9	0.031	-0.091*	81.0	
-1	181	61.5	-0.033*	-0.137*	83.9	-0.034*	-0.146*	86.7	
F	168	67.5	-0.084*	-0.182*	85.6	-0.073*	-0.184*	82.5	
C	181	46.4	0.015	-0.072*	73.6	0.019	-0.064*	68.2	
+1	191	40.7	0.028	-0.063*	73.9	0.029	-0.051*	66.1	
+2	170	39.4	0.040	-0.056*	70.7	0.045*	-0.046*	64.7	
+3	146	35.6	0.043*	-0.044*	70.6	0.055*	-0.037*	67.8	
+4	120	37.5	0.037	-0.050*	69.3	0.057*	-0.040*	64.1	
+5	97	37.1	0.045	-0.045*	67.0	0.059*	-0.044*	69.6	

*Denotes medians significantly different from zero based on two-tailed Wilcoxon signed rank tests at the 5 percent level.

Operating income/total assets shows similar improvement relative to the years just prior to filing, but little variation across postbankruptcy years.

Table III describes postbankruptcy year-to-year changes for the cash flow measures and for additional variables that reflect other possible goals such as growth of the reorganized company. The median annual percentage change in each variable is reported, as well as the percentage of observations showing a positive change. Based on the changes in total assets, revenues, employees, and operating income (Panel A), many firms increase in size after bankruptcy,¹³ with much of the change occurring in the first postbankruptcy year. From Panel B, however, only the industry-adjusted changes in profitability are significantly different from zero. Although many firms experience positive growth, profitability does not show strong increases during the postbankruptcy period.

B. Ability to Meet Cash Flow Projections

In order for a plan of reorganization to be confirmed by the court, the debtor must show that the plan is “feasible,” i.e., it is not likely to be followed by the need for further restructuring. To meet this requirement, many firms provide earnings forecasts, generally prepared by management or their financial advisors, when the plan is submitted to creditors and the court. The ability to meet these projections provides another measure of postbankruptcy success, through we must also consider how industry and market conditions influence the results. Using the subsample of firms for which bankruptcy court documents were obtained, cash flow projections for 72 firms are available.

Panel A of Table IV summarizes this data for operating income *after* depreciation, return on assets (operating income – depreciation/total assets), and operating margin (operating income – depreciation/sales). Projections for the year of confirmation (Year C) are included if they cover at least six months of postbankruptcy data. The median percentage deviation of actual from projected performance is reported as well as the percentage of negative observations where firms did not meet their forecasts. For all firms with projections available, the median forecast errors in each year are negative and significantly different from zero. Failure to meet projections cannot be solely attributed to industry performance, based on the low number of firms whose performance was lower than projected but was still better than industry groups (not reported).

The forecasts presented at the time of reorganization may also reflect reporting incentives of the persons preparing those forecasts. If managers have private information about their firm’s prospects, they may have incentives to overstate or understate these projections. Management, concerned with the firm’s survival, may need to convince creditors and the court that

¹³ These firms are, however, substantially downsized from their prebankruptcy size. The median declines in revenues, assets, and employees from the fiscal year end preceding bankruptcy to the first full fiscal year following bankruptcy are each close to 50 percent.

Table III
Annual Changes in Accounting Measures of Postbankruptcy Performance

Table values are the median percentage changes (percentage of positive changes) for the sample of 197 firms emerging from Chapter 11. The industry-adjusted change in profitability for a given firm is the change in the deviation from the contemporaneous industry median. Year + 1 is the first full fiscal year following emergence from Chapter 11.

Variable:	Percentage Change from Year <i>i</i> to Year <i>j</i>					Average Annual Percentage Change from Year <i>i</i> to Year <i>j</i>		
	+ 1 to + 2	+ 2 to + 3	+ 3 to + 4	+ 4 to + 5	+ 1 to + 5	+ 1 to + 3	+ 1 to + 5	+ 1 to + 5
Number of Observations	167	143	119	97		142		93
Panel A. Firm Size								
Total revenue	7.9%*** (60.1)	7.4%*** (58.5)	3.0% (55.5)	3.1%*** (57.0)		10.7%*** (65.7)		9.4%*** (72.7)
Total assets	6.1%*** (57.0)	-0.3% (47.9)	-0.2% (49.8)	1.0%* (55.8)		10.7%*** (64.4)		9.7%*** (63.0)
Employees	2.9%*** (52.0)	0.0% (46.0)	0.0% (43.8)	0.0% (46.8)		3.7%*** (59.8)		4.6%*** (62.3)
Operating income	21.6%*** (59.9)	15.3%*** (58.7)	8.5% (53.8)	20.7% (57.7)		3.8%*** (62.9)		16.7%*** (60.2)
Panel B. Firm Profitability								
Operating income/total assets	-3.2% (46.7)	-3.0% (48.2)	-2.9% (47.9)	-0.8% (49.5)		-0.9% (48.9)		-1.3% (47.7)
Operating income/ total assets - industry	-10.6% (44.0)	-10.2%* (46.1)	-1.8% (49.1)	-8.2% (47.8)		-12.2%*** (42.1)		-30.7%*** (29.5)
Operating income/sales	0.1% (50.0)	-4.7% (45.0)	-4.3% (43.4)	6.2% (55.4)		-3.2% (47.4)		-2.6% (45.9)
Operating income/ sales - industry	0.0% (47.3)	-13.3%*** (45.0)	-10.0%* (45.5)	15.2% (58.2)		-18.4%*** (42.0)		-23.6%*** (31.0)

***, **, * Denote the median change is significantly different from zero at the 0.01, 0.05, and 0.10 probability level, respectively, as measured by two-tailed Wilcoxon signed rank statistics.

Table IV

Actual Postbankruptcy Performance Versus Management Projections

The sample includes 72 firms for which projections are available from court documents. Median difference of actual from projected performance is calculated as (actual – projected)/|projected|. Percentage < 0 shows the percentage of negative differences of actual from projected performance projections for Year C, the fiscal year in which the plan of reorganization is confirmed, are included if they cover at least 6 months of postbankruptcy performance. Firms are classified as retaining CEO if the individual in office 2 years prior to filing remains in office at the time projections are made. Nonmanagement group proposed plans are cases where the confirmed plan was not proposed solely by management.

	Operating Income			Operating Income/(Total Assets)			Operating Income/Sales		
	Year C	Year +1	Year +2	Year C	Year +1	Year +2	Year C	Year +1	Year +2
A. All firms									
Median difference	-58.2%***	-80.6%***	-71.9%***	-60.4%***	-80.4%***	-69.1%***	-56.4%***	-94.2%***	-64.7%***
Percentage < 0	71.8%	72.9%	65.9%	65.8%	76.8%	76.7%	76.5%	81.5%	83.3%
No. of observations	39	59	44	38	56	43	34	54	42
B. Firms retaining CEO									
Median difference	-156.0%***	-105.4%***	-87.3%***	-162.8%***	-103.0%***	-80.7%***	-191.7%***	-105.6%***	-61.6%***
Percentage < 0	88.2%	76.7%	69.6%	82.4%	75.9%	72.7%	92.9%	92.3%	85.7%
No. of observations	17	30	23	17	29	22	14	26	21
C. Firms replacing CEO									
Median difference	-23.4%	-59.5%	-71.3%	-31.0%	-64.5%*	-68.8%***	-22.8%	-68.1%	-67.9%***
Percentage < 0	59.1%	69.0%	61.9%	52.4%	77.8%	81.0%	65.0%	71.4%	81.0%
No. of observations	22	29	21	21	27	21	20	28	21
D. Nonmanagement group proposed plans									
Median difference	-68.0%	-155.5%	-113.6%	-68.7%	-159.6%*	-127.1%	-67.0%	-155.0%*	-163.8%
Percentage < 0	75.0%	80.0%	75.0%	75.0%	100.0%	75.0%	75.0%	100.0%	75.0%
No. of observations	4	5	4	4	5	4	4	5	4

***, **, * Denote that the median difference is significantly different from zero at the 0.01, 0.05, and 0.10 probability level, respectively, as measured by two-tailed Wilcoxon signed rank statistics.

the firm value is high enough to warrant reorganization rather than liquidation. A shareholder-oriented management might also overstate forecasts in order to justify giving a greater share of the reorganized stock to prepetition equity holders. Alternatively, there may be incentives to understate the firm's prospects in order to justify greater concessions from creditors.¹⁴ The tendency found in this sample to overstate projected operating income is consistent with the former view and is similar to the findings of Kaplan (1989) in the case of management buyouts. In contrast, McNichols (1989) finds no support for the hypothesis that management earnings forecasts are systematically biased.

Reporting incentives also may differ depending on whether the pre-bankruptcy management has been replaced at the time the projections are made. Panels B and C of Table IV show the actual versus projected performance for groups based on whether the CEO in office 2 years prior to bankruptcy was replaced by the time the plan was proposed. The median deviations are significantly negative each year for firms that retained their CEO. The median deviations for the group replacing their CEO are smaller and significantly different than the group retaining their CEO based on Wilcoxon rank sum tests (not reported) at 1 and 5 percent levels in Years C and +1, respectively.¹⁵ By Year +2 the deviations are not significantly different between the groups. Managers who remain in office appear to issue overly optimistic forecasts, consistent with the idea that they have incentives to preserve the firm or they are more shareholder oriented than replacement management.

Panel D of Table IV shows the forecast errors for firms where the reorganization plan was either proposed by a nonmanagement group or jointly proposed by management and creditors. In the sample of 125 firms, there were 15 cases where management's exclusive right to propose a plan was allowed to expire and a nonmanagement proposed plan was confirmed. However, only 7 of these firms provided cash flow projections. Based on the negative forecast errors from this small number of observations, forecasts from these firms do not appear more accurate.

C. Frequency of Postbankruptcy Distressed Restructurings

A simple measure of success after bankruptcy is the firm's ability to continue its operations without the need for further restructuring. As noted above, in order for a plan to be confirmed, the court must find that "confirma-

¹⁴Consistent with this view, DeAngelo *et al.* (1993) provide evidence that income-decreasing accounting choices help managers convince outsiders (for example, unionized labor) that the firm is seriously troubled and concessions are warranted.

¹⁵Negative forecast errors for insider CEO replacements (individuals associated with the firm prior to employment as the CEO) are larger than for outsider replacements. The median forecast errors for operating income in Years C and +1 for insiders are -31 and -102 percent, respectively, while for outsiders the medians are -19 and -50 percent, though there are only 9 observations for the insider replacements.

tion of the plan is not likely to be followed by the need for further financial reorganization.” Thirty-two percent of the sample (63 firms) restructured after emerging from bankruptcy either through a private workout (23 firms), a second bankruptcy (35 firms), or through an out-of-court liquidation (5 firms). Restructurings were identified from 10-K reports for the 5 years following the first bankruptcy and from 8-K reports and news articles included on the Lexis database from the time of confirmation through December 1993. These events were characterized as distressed restructurings following either a default on debt obligations or a period of operating losses.

The median time until the second restructuring is 3.8 years after emerging from bankruptcy. Fourteen firms privately restructured within 5 years of emerging; 9 of these firms subsequently dropped out of the sample, 3 returned to positive operating income, and 2 continued to experience losses for several years. Of the firms entering Chapter 11 a second time, 10 firms confirmed a second plan and emerged from bankruptcy,¹⁶ 10 firms were liquidated and 15 were still in bankruptcy as of December 1993. The group of firms that filed twice includes some of the largest bankruptcies in the sample. A similarly high incidence of large firms that reenter Chapter 11 is demonstrated by LoPucki and Whitford (1993b), who find that 12 of the 36 largest public companies to emerge from Chapter 11 by March 1988 (33 percent) reentered Chapter 11. Gilson (1993) also finds a high rate of distressed firms that file for bankruptcy or restructure their debt a second time.

The reasons cited by management at the time of the second filing or restructuring are varied and often similar to those at the time of the first filing. Some firms claim they had emerged with too much debt, while some suffer a relatively exogenous shock prior to the second filing.¹⁷ However, approximately half these firms cite operating problems as the primary reason for the second filing (though often blaming these problems on continued industry weakness), suggesting that they had not made adequate corrective changes in corporate policy in the earlier restructuring.

III. Management Turnover and Postbankruptcy Performance

As described above, recent criticism of Chapter 11 focuses on management's role in the restructuring process. This section examines the frequency and timing of management changes that occur for the sample and examines the hypothesis that postbankruptcy performance is related to management changes.

¹⁶ Three of the second filings are included in the sample of 197 firms.

¹⁷ For example, Anglo Energy reentered Chapter 11 to reduce debt service requirements. The feasibility of the company's first plan was based on the ability to defer payments on a substantial amount of secured debt; when the industry did not recover as anticipated, the secured debt was exchanged for equity through a prepackaged bankruptcy. Lionel Corp. suffered a more exogenous shock, citing large expenses incurred to fight off an unsolicited hostile takeover as a primary reason for its filing. Two other firms reentering Chapter 11 were unable to carry out the terms of their original plans.

Data regarding turnover and characteristics of management were collected from proxy, 10-K, and disclosure statements. By the month of filing, 81 firms (41 percent) have replaced the CEO who was in office 2 years prior to filing.¹⁸ At the time the reorganization plan is proposed, 108 firms (55 percent) have replaced their CEO. Further changes in management, often related to implementation of the plan, occur when firms exit bankruptcy; following the effective date of the plan, 138 firms (70 percent) have replaced their CEO. In comparison, Betker (1993) finds 51, 75, and 91 percent of CEOs are replaced by the time of filing, prior to emergence, and following emergence, respectively. LoPucki and Whitford (1993a) also find 91 percent of firms in their sample have replaced their CEO by 6 months after emergence and demonstrate a similar pattern of turnover where changes are concentrated around the filing date and 1 month after confirmation. Turnover following confirmation is also similar to the rates reported by Gilson (1990) and Gilson and Vetsuypens (1993). Thus, turnover is high for this sample, though there are more cases where the original managers remain following the restructuring (30 percent for this sample versus 9 percent in the studies noted above). If replacement CEOs are less subject to biases toward preserving investment, we may observe that replacement is associated with higher postbankruptcy profitability.

Table V provides several specifications of logistic regressions where the dependent variable indicates firms with poorer postbankruptcy performance. The dependent variable in the first set of regressions indicates 49 of the 197 firms that restructured through a private workout, second bankruptcy, or liquidation within 5 years of emerging from the first bankruptcy.¹⁹ The second set of regressions uses a dependent variable indicating 95 firms that either reported negative operating income in 2 of the first 3 years following bankruptcy or restructured a second time within 3 years of the first bankruptcy. The third set of regressions uses a dependent variable indicating 108 firms that reported an operating margin (operating income/sales) lower than the calculated industry median in each of the 3 years following bankruptcy, or restructured within 3 years of the first bankruptcy. The first group includes only firms that clearly reenter financial distress; the second and third groups each include some less obviously distressed firms. These three alternative discrete variables describing performance are used rather than a continuous measure such as operating income/sales so that firms with missing observations (due primarily to the firms that reenter financial distress) are not excluded from the analysis.²⁰

¹⁸ Calculations in Section III are not sensitive to an earlier or later cutoff data (3 years or 1 year) prior to filing. Results are also similar based on the number of firms that have replaced at least two of three top managers, defined as individuals holding the title of CEO, Chairman, or President. Board replacement follows a pattern similar to management replacement.

¹⁹ Regression results are not sensitive to alternative definitions of the dependent variable such as firms that restructure within 3 years of the first bankruptcy.

²⁰ The results of ordinary least squares regressions using operating income/sales as the dependent variable are similar to those reported for the third set of logit regressions. The analysis in this section uses operating income deflated by sales rather than total assets to minimize the effects of differences in accounting treatment at reorganization.

Table V
Logit Regressions Relating Firm and Restructuring
Characteristics
to Postbankruptcy Performance Groups

The dependent variable in (1) equals 1 if the firm restructured through a private workout, second bankruptcy, or liquidation within 5 years of emerging from bankruptcy. The dependent variable in (2) equals 1 if the firm reported negative operating income (before depreciation) in 2 of the first 3 years following bankruptcy or restructured within 3 years of the first bankruptcy. The dependent variable in (3) equals 1 if the firm reported an operating margin lower than the industry median in each of the 3 years following bankruptcy, or restructured within 3 years of the first bankruptcy. Prebankruptcy industry-adjusted operating margin is measured as operating income/sales minus the median of an industry portfolio based on all other firms on COMPUSTAT reporting the same 2-digit SIC code, averaged for the first 2 fiscal years preceding bankruptcy. Postbankruptcy industry change in operating margin is measured as the median change in operating income/sales of firms in the industry portfolio, averaged for the 2 years following bankruptcy. Filing in Southern District of New York is a dummy variable indicating a bankruptcy filing in that court district. CEO retained is a dummy variable indicating that the individual in office 2 years prior to filing remained in office through the time the plan of reorganization was implemented. The sample consists of 197 firms emerging from Chapter 11 as public companies. Asymptotic *p*-values are shown in parentheses.

Explanatory Variable	(1)		(2)		(3)	
	2nd Bankruptcy or Workout		Negative Operating Income		Negative Industry-Adjusted Operating Margin	
Intercept	-2.039*** (0.00)	-1.407*** (0.00)	0.091 (0.83)	0.560 (0.16)	-0.268 (0.48)	0.107 (0.75)
Log of total assets at Year - 1	0.034 (0.71)	0.050 (0.58)	-0.271*** (0.00)	-0.223*** (0.01)	-0.066 (0.42)	-0.021 (0.79)
Number of two-digit SIC codes at Year - 2	0.084 (0.62)	0.069 (0.68)	0.035 (0.82)	0.039 (0.80)	0.100 (0.51)	0.138 (0.37)
Prebankruptcy industry-adjusted operating margin	-0.020 (0.63)	-0.021 (0.58)	-0.110 (0.36)	-0.118 (0.33)	-0.011 (0.62)	-0.016 (0.48)
Postbankruptcy industry change in operating margin	0.690* (0.09)	0.621* (0.10)	-0.213 (0.26)	-0.199 (0.29)	-0.063 (0.73)	-0.049 (0.79)
CEO retained	1.017** (0.02)		0.958*** (0.01)		0.794*** (0.01)	
Filing in Southern District of New York		0.458* (0.10)		0.006 (0.98)		-0.059 (0.23)
Model <i>p</i> -value	0.019	0.059	0.001	0.008	0.076	0.255

***, **, * Denote significance at the 0.01, 0.05, and 0.10 level, respectively.

Each regression controls for firm size, measured as the log of total assets at Year -1 . Larger firms are more likely to emerge from bankruptcy as public companies, but the implications of size for postbankruptcy performance are not clear (several of the largest companies are among those that filed for Chapter 11 twice). Firms that enter bankruptcy with a greater number of business lines may be able to turn around their companies by divesting unprofitable operations and focusing on core businesses.²¹ The diversity of the firm's prebankruptcy business is measured by the number of 2-digit SIC codes reported to the SEC in the second year prior to bankruptcy. The regressions show that larger firms are associated with a lower probability of reporting negative operating income. The number of 2-digit SIC codes prior to filing is not significant in any regressions.²²

The regressions also control for prebankruptcy firm profitability and postbankruptcy industry performance. Prebankruptcy profitability is measured by the firm's average industry-adjusted operating margin in the 2 years prior to filing. The coefficient for this variable in each regression is negative, suggesting worse performance before bankruptcy is associated with worse performance after bankruptcy, but it is not significant. Postbankruptcy industry performance is measured as the median change in operating margin for firms in the industry portfolio in the two years following Chapter 11. The causes cited by management at filing suggest that industry-related problems were important to performance before bankruptcy. However, postbankruptcy industry performance is positively related to the probability of a second bankruptcy or workout, though it is not significant for the other performance measures. Alternative measures of firm-specific prebankruptcy profitability and postbankruptcy industry performance, such as return on assets or growth in the number of employees, produce results similar to those reported in Table V.

To consider the relationship between management changes and postbankruptcy performance, the first regression for each performance measure includes a dummy variable indicating whether the CEO in office 2 years prior to bankruptcy remained in office at least until the reorganization plan was implemented. The regressions show that retaining the prebankruptcy CEO is positively related to the probability of lower postbankruptcy performance. This finding is robust to a number of specifications of this variable. A dummy variable indicating replacement by the time the plan was proposed (not reported) shows similar results, while a dummy variable indicating replace-

²¹ John *et al.* (1992) study the voluntary restructuring of 46 large firms in response to earnings declines and find that on average these firms retrench quickly and increase their focus on core operations. Many of the more diversified firms studied in this article behave similarly.

²² Measures of the extent of asset restructuring such as the number of business lines divested or changes in total assets or employment (not reported) are not significant in any regressions. In eight cases, the firm sold substantially all its assets and emerged as a shell company, preserving net operating losses to shelter earnings on subsequent acquisitions. Results are not changed when these firms are excluded from the analysis. A dummy variable indicating that the primary SIC code of the firm had changed after bankruptcy also is not significant.

ment by the time of filing was also significant but weaker. The tenure of the CEO in office following reorganization was also used to measure investment in human capital; the coefficient for this variable (not reported) was also positive and significant. Gilson and Vetsuypens (1993) also suggest important differences between insider and outsider replacements. In this sample, 69 percent of replacements for emerged firms are outsiders, defined as an individual who was not a manager, director, or blockholder of the firm prior to employment as a CEO. Using a variable to indicate that the original CEO was replaced by an outsider produces similar results to the variable shown in Table V, which represents all replacements.

As described above, two different interpretations for the relationship between CEO replacement and postbankruptcy performance must be considered. One interpretation is consistent with criticisms that leaving incumbent management in place leads to excessive continuation of unprofitable investment. Another is that it is difficult to attract new management to firms with poor prospects for recovery. Recognizing this endogeneity problem, it would be useful to have an instrument for CEO turnover, i.e., a variable correlated with turnover but not with firm performance. One possibility is to use a dummy variable indicating firms that filed for Chapter 11 in the SDNY. As Weiss (1990) points out, this court attracts a disproportionate share of bankruptcy filings and has developed a reputation for being more prodebtor with respect to important decisions such as the extension of management's exclusive right to propose a plan (LoPucki and Whitford (1991)). The second regression for each performance group uses this dummy variable in place of the CEO variable; this variable is positive and significant only for the probability of a second bankruptcy or workout.²³ These results are consistent with the arguments of Weiss (1990) and LoPucki and Whitford (1991) that this court tends to be prodebtor. However, as an attempt to identify the direction of causality, this approach provides only weak support for the interpretation that leaving the prebankruptcy management in place leads to worse postbankruptcy performance.

IV. Conclusions

This study contributes to our understanding of the bankruptcy restructuring of public companies. The results show that a large number of the firms that emerge either are not viable or soon require further restructuring. This evidence questions the view that financial distress leads to rehabilitating changes in corporate policy and is consistent with arguments that there are economically important biases toward reorganization under the current

²³30 firms filed in the SDNY; CEO turnover is slightly lower for this group despite the larger size of these firms. A two-stage estimation procedure could also be applied; however, an instrument more suitable than the SDNY variable could not be found. Regressions are also run using both the CEO variable (which is positive and significant) and the SDNY dummy variable (which is positive and just significant for the first performance variable).

structure of Chapter 11. While I cannot prove that liquidation was the preferred alternative for these firms, the analysis does provide information that can be used to evaluate numerous proposals for reform.²⁴

The article also examines the relationship between management changes and postbankruptcy performance. The results show that retaining prebankruptcy management is strongly related to worse postbankruptcy performance. Furthermore, firms often fail to meet cash flow projections prepared at the time of reorganization, particularly when prebankruptcy management remains in office through the time these projections are made. Management changes appear to provide useful information about future performance.

The firms considered in this article emerged from bankruptcy by 1989. Since that time, a number of large public companies have emerged from Chapter 11. Several of these firms were failed leveraged buyouts whose problems were largely related to their liability structure and that may have been less economically distressed than the firms studied here.²⁵ These firms arguably may show better postbankruptcy performance than those included in this study.

²⁴ LoPucki and Whitford (1993c) provide a convenient overview of these proposals.

²⁵ An additional 96 firms included in the SEC's listings of Chapter 11 filings emerged by June 1993. The median total assets (\$98.3 million) and ratio of total liabilities to assets (1.03) suggest this group includes firms that are larger and less financially distressed than those studied here.

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