

Asset sales by financially distressed firms

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Abstract

This paper examines asset sales by financially distressed firms. Contrary to the results for healthy firms, we find significantly lower returns to shareholders when asset sales proceeds are used to repay debt than when sales proceeds are retained by the firm. We find that asset sales proceeds are more likely to be paid out to creditors, as opposed to being retained by the firm, the larger the proportion of short-term senior bank debt in the firm's capital structure and the poorer the selling firm's investment opportunities. Our results suggest that creditors significantly influence the liquidation decisions of financially distressed firms.

Key words: Liquidation; Financial distress; Debt; Capital structure

JEL Classification: G32, G33

1. Introduction

Recent research by Shleifer and Vishny (1992), Asquith, Gertner and Scharfstein (1992) and others stress the importance of asset sales as a way of resolving financial distress. As these papers point out, in financial distress,

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the liquidation value of a firm's assets is likely to be less than the face value of the firm's liabilities. As a result, absent pressure from the firm's creditors, stockholders have little incentive to sell assets to repay debt since liquidation eliminates equity's option on any future increases in asset values. This argument suggests that creditor pressure, particularly from short-term senior lenders, plays a pivotal role in the decision to liquidate assets and determines how sales proceeds are used.

The potential influence of creditors in the liquidation decision of distressed firms suggests that the valuation effects of asset sales by these firms may be quite different from the valuation effects of asset sales by healthy firms. In particular, studies of asset sales by healthy firms find on average positive abnormal returns to stockholders and bondholders associated with the announcement of an asset sale.² This evidence is consistent with the view that asset sales by healthy firms allocate assets to higher valued uses. In contrast, as Shleifer and Vishny (1992) point out, illiquid asset markets may lead cash flow constrained firms to sell assets at significant discounts from their current use value. Moreover, even if the assets of distressed firms are sold to higher valued users, the firm's debt overhang may result in shareholders receiving little, if any, of the gain from the sale.

This paper examines asset sales undertaken by financially distressed firms. Specifically, we investigate the role of creditor pressure in these sales by examining the determinants of how sales proceeds are used. We also investigate the valuation effects of asset sales announcements for the selling firm's common stock and publicly placed bonds.

In examining how sales proceeds are used by firms, we distinguish between sales where the proceeds are retained by the firm and sales that are used to repay outstanding debt claims. We argue that asset sales that are used to repay debt are more likely the result of creditor pressure or bargaining power (i.e., they are sales that would not occur in the absence of creditor pressure). One measure of bargaining power is the proportion of the firm's debt held by short-term senior bank lenders. As discussed in Diamond (1993) and Rajan (1992), these lenders play a pivotal role in the liquidation decision. In examining the valuation effects of asset sale announcements, we expect that asset sales that are used to repay debt are more likely to benefit creditors and harm shareholders since they extinguish equity's call option on the assets sold.

Our analysis is based on a sample of 62 asset sales by financially distressed firms during the period 1979 through 1988. Consistent with the argument that short-term lenders play a pivotal role in the liquidation decision, we find

² See for example, Hite, Owers and Rogers (1987), Jain (1985) and John and Ofek who find positive and statistically significant abnormal stock returns on announcements of asset sales.

that the likelihood that asset sales proceeds are used to repay debt is positively related to the proportion of total debt outstanding held by commercial banks. We also find that asset sales proceeds are less likely to be retained by the firm when the firm has limited profitable investment alternatives. In addition, we find that sales proceeds are more likely to be distributed to creditors when the industry into which the asset is being sold is performing poorly.

For the entire sample of asset sales we find a positive but statistically insignificant average abnormal stock return at the announcement of asset sales. This contrasts with a positive average share price reaction associated with asset sales announcements by healthy firms. In addition, we find a positive, although statistically insignificant, average return to bondholders associated with the announcement of asset sales. Cross-sectionally, we find that the stock price reaction is significantly related to how the sales proceeds are used. In particular, the average abnormal stock return associated with asset sales that are used to repay debt is significantly less than the average abnormal return associated with asset sales where the sales proceeds are retained by the firm. In contrast, bondholder returns are higher for sales where proceeds are used to repay debt. These results are consistent with the hypothesis that asset sales that are used to repay debt transfer wealth from stockholders to creditors.

Lang, Poulsen and Stulz (1992) also find that the use of the proceeds from asset sales is an important determinant of the stock price reaction to asset sale announcements. However, Lang et al. find that asset sales used to repay debt result in a *larger* average abnormal stock return than when sales proceeds are retained by the firm. They argue that this finding is consistent with the hypothesis that sales proceeds retained by the firm represent free cash flows that generate significant agency costs. Our results suggest that another agency problem is important for financially distressed (and cash flow constrained) firms. Specifically, the influence of creditors in financially distressed firms may result in asset sales that benefit creditors to the detriment of shareholders when the sales proceeds are used to repay debt.

To examine further the influence of creditors in the asset sale decision, we investigate CEO turnover following asset sales. The likelihood of CEO turnover should be lower if managers use the proceeds to repay debt either (1) in response to creditor demands or (2) to retain control by buying out certain creditors. Consistent with this argument, we find a significantly lower probability of CEO turnover when the proceeds are used to repay debt. This result suggests that managers that respond to creditor pressure and act in creditors' best interests are more likely to be retained by the firm.

In summary, we find that creditors fare better and stockholders worse when the proceeds of an asset sale are used to repay creditors. Whether the asset sale proceeds are retained in the firm or distributed to creditors

appears to be influenced by creditor incentives and bargaining power. Specifically, the probability that the proceeds are distributed to creditors increases with the proportion of the firm's debt held by banks but decreases with the firm's financial condition. Overall, the evidence suggests that creditors exert significant influence over liquidation decisions in financial distress.

The remainder of the paper is divided into six sections. In section 2, we discuss the economics of asset sales in financial distress. In sections 3 through 6, we describe our sample of asset sales and present our empirical results. In section 7, we provide a conclusion and a brief summary.

2. Asset sales in financial distress

Recent studies by Asquith, Gertner and Scharfstein (1992), Ofek (1992) and others find that firms in financial distress frequently sell assets as part of the restructuring process. As discussed above, firms in financial distress, like healthy firms, may sell assets to promote operating efficiencies. Alternatively, for firms in financial distress, asset sales are likely to play an important role as a source of funds for cash constrained firms and as a mechanism for creditors to obtain control over the firm's assets. Furthermore, these arguments concerning the rationale for asset sales by financially distressed firms suggest that the effect of asset sales on the value of the firm's common stock and debt depends on how the proceeds of the sale are used and the availability of alternatives to asset sales that might resolve financial difficulties.

Consider first asset sales that are used to repay debt. When a firm is in financial distress, it is likely that the liquidation value of its assets is less than the face value of its liabilities. In this case, the only equity value is the option value associated with a potential increase in the value of assets. By selling assets and giving the proceeds to creditors, shareholders of the firm lose the option value of the sold assets. As a result, stockholders have little incentive to sell assets to repay debt unless an asset sale increases the likelihood that equity will retain control of the firm's other assets (for example, by facilitating a debt restructuring).

Shareholders of firms in financial distress have little incentive to sell assets to repay debt. Therefore, creditor pressure, particularly from private creditors, is likely to be an important factor influencing the decision to sell assets to repay debt. As Gertner and Scharfstein (1991), Diamond (1993) and Rajan (1992) argue, short-term private lenders play a pivotal role in the liquidation decision. A firm with a large proportion of short-term debt outstanding must periodically renegotiate with its creditors. More important, senior (and particularly secured) creditors receive little of the upside option value associated with the firm retaining assets. As a result, these creditors are more likely

to be in a position to (and have the incentive to) force asset sales that are detrimental to the interests of equity.³

While creditor pressure may lead firms to deploy assets to higher valued uses (i.e., so called efficient downsizing [see Jensen (1989)]), creditor pressure can lead to assets being sold at substantial discounts from current use value. In addition, self-interested managers may have an incentive to sell assets to lower valued users to generate cash to buy out recalcitrant creditors and preserve their control rights (for example, see Aghion and Bolton (1992) and Hart and Moore (1991)).

In contrast to asset sales that are used to repay debt, when sales proceeds are retained in the firm, equity does not lose any portion of its option value. As a result, one would expect that the stock price reaction to asset sale announcements where proceeds are retained by the selling firm to be greater than the stock price reaction to asset sales used to repay debt. This prediction for financially distressed firms differs from the predictions Lang, Poulsen and Stulz (1991) derive for healthy firms. For healthy firms, they argue that there exists a potential agency problem between management and shareholders over the use of cash flows arising from the sale.

For healthy firms, asset sales proceeds to repay debt avoids the potential management-shareholder agency problem and is expected to result in a greater stock price reaction than when the sales proceeds are retained by the firm. However, financially distressed firms are unlikely to have a free cash flow problem. For distressed firms, using sales proceeds to repay debt is not expected to result in a greater stock price reaction.⁴ In fact, using sales proceeds to repay debt is expected to result in a smaller stock price reaction given the potential wealth transfer from equity to debtholders associated with the unanticipated early repayment of risky debt claims.

A second reason the share price reaction to asset sales announcements may be larger when the proceeds are retained by the firm is that this conveys favorable information to the market concerning the value of the firm's remaining assets. Specifically, as Shleifer and Vishny (1992) point out, information and debt overhang problems make security issues by financially distressed firms extremely costly. As a result, asset sales serve as a substitute

³ As discussed below, whether creditors permit the firm to retain the proceeds from asset sales depends on industry conditions and the firm's investment opportunities. Consistent with the results reported in section 4, James (1993) finds that senior bank lenders frequently take equity and scale down their debt claims in a restructuring. He finds that the likelihood of the bank taking equity in a restructuring is positively related to the investment opportunities of the firm and positively related to the proportion of the firm's debt held by private lenders.

⁴ Implicit in this logic is the assumption that the asset sale where the proceeds are used to repay debt is truly a "distressed sale" and not a planned sale by a firm that chose to be highly leveraged.

for a security issue in raising funds. However, unlike the case of security issues made by healthy firms, the announcement that the firm must sell assets to raise cash is likely to be anticipated, since the firm is already known to be in financial distress. However, the announcement of *how* the proceeds will be used can convey information. Specifically, the announcement that the sales proceeds will be retained by the firm (or alternatively that creditors permit the firm to retain the proceeds) suggests that creditors perceive that the firm's remaining investment opportunities are sufficiently favorable that it can meet its debt service or that its creditors are willing to forbear.⁵ This argument suggests a larger share price reaction associated with asset sales where proceeds are retained by the firm.

The valuation effects of asset sales will depend not only on how the proceeds of the sale are used but also on the anticipated success of the sale in resolving the firm's financial problems and conditions within the distressed firm's industry. Specifically, John and Ofek (1993), Asquith, Gertner and Scharfstein (1992) and others find that asset sales are often an important part of debt restructuring plans. As discussed in the next section, asset sales in our sample are frequently part of a broad restructuring plan involving both public and private debt. As a result, the valuation effects of asset sale announcements may depend on the anticipated success of the debt restructuring plan of which the asset sale is a part. If the alternative to an asset sale (and debt restructuring) is a costly bankruptcy, then the share price reaction to the announcement of an asset sale will reflect the expected surplus associated with avoiding costly bankruptcy even though the asset sale does not result in a transfer of assets to more productive uses.

Finally, Shleifer and Vishny (1992) argue that the liquidity of asset markets depends, in part, on industry conditions. In particular, asset markets are expected to be more liquid the better the operating performance of firms within the industry. Greater liquidity in turn implies that firms can offer less of a discount to sell assets quickly to raise funds. This argument suggests that the valuation effects of asset sales will vary directly with the profitability of other firms within the industry.⁶

In summary, we expect that the proceeds of an asset sale are more likely to be distributed to creditors when creditors are in a strong bargaining position and the firm's investment opportunities are limited so that creditors do not stand to gain if the proceeds are retained in the firm. We also expect

⁵ Brown, James and Mooradian (1993) find that decisions by private lenders to secure assets in financial reorganizations convey unfavorable information to the market about the firm's prospects.

⁶ Consistent with this argument, Brown, James and Ryngaert (1992) find that the likelihood of asset sales following poor operating performance is directly related to the median operating return of other firms in the industry.

the returns to equity to be lower when the proceeds are distributed to creditors. There are three reasons to expect lower returns to equity in these transactions. First, the option value of equity's claim is extinguished when sales proceeds are paid out. Second, unfavorable information about the firm's investment prospects may be revealed when creditors are unwilling to allow the proceeds to be retained in the firm. Third, self-interested creditors may force cash constrained firms to sell assets at below their current use value. This will occur if a portion of the value of the assets sold consists of nontransferable control rights and is therefore not available to creditors (see Diamond (1993)).

3. Sample selection and data description

3.1. Sample selection

The sample of asset sales by financially distressed firms was constructed as follows. First, we conducted a key word search using the *Dow Jones New Retrieval Service* and the *Standard and Poors Corporate News Service* for the period 1979 through 1988. The key words used in the search are "asset sales," "debt restructuring," and "financial restructuring." For the American or New York Stock Exchange listed firms identified by this search, we read the news account of the transaction in the *Wall Street Journal*. If a firm announced an asset sale or announced an intention to sell assets, and if the news account indicated that the sale was undertaken (1) to remedy a pre-existing default or anticipated default, (2) to avoid bankruptcy, or (3) to facilitate debt restructurings or as part of a debt restructuring or exchange offer of a financially distressed firm, the firm was included in the sample.⁷

Many of the firms identified from the key word search announced multiple asset sales. We include in our sample the first asset sale announcement and subsequent asset sale announcements if the *Wall Street Journal* announcement indicates that the purpose was to facilitate a debt restructuring. When multiple asset sales are included in the sample, the sales are part of separate debt restructuring announcements.⁸ Finally, we included firms in our sample if stock price information is available from the CRSP files. Our sample

⁷ A firm is considered financially distressed if the news announcement indicates that the restructuring was undertaken to remedy or avoid a default. We exclude sales announced by firms in bankruptcy.

⁸ For example, two announcements by Allis Chalmers are included in our sample. The first, in 1985, was part of a debt restructuring involving public and private debt. The second transaction in 1987, was part of a restructuring transaction involving bank debt. In all cases, multiple asset sales are separated by at least six months.

selection procedure resulted in a sample of 62 asset sales undertaken by 49 financially distressed firms. Selected transactions are summarized in the appendix.

Financial characteristics of firms announcing asset sales are obtained from the *Compustat File*, *Moody's Manual* and the firms' 10K and annual reports. Information concerning management changes are obtained from the *Wall Street Journal* and *Standard and Poors Register of Corporations, Directors, and Executives*. Following Gilson (1989) and Weisbach (1988), we define management turnover as any change in the group of individuals who together hold the title of CEO.

Information on the type of assets sold, the purchase price received and the type of consideration (i.e., securities or cash) is not reported in any standard format in the news announcements, annual reports or 10Ks. We obtain information on the sales price, cash received and use of the proceeds from each of these sources. Unfortunately, we are able to obtain information on the sales price of the asset sold for only 32 of the asset sales in the sample.⁹

For each asset sale, we determine the four digit SIC code that matches the industry classification of the asset sold. If the asset to be sold is not described in the news announcement with enough detail to determine an industry classification, we assume that the sold asset has the same industry classification as the selling firm. Using this industry classification, we obtain information on the ratio of earnings before interest, taxes and depreciation (EBIT, item #A13 from Compustat) to assets for the median firm in the industry from the Compustat tape. In cases in which the industry consists of less than four firms, the industry is defined at the three digit SIC code.

Finally, bond prices for firms with publicly traded bonds are obtained from the *Wall Street Journal* for the period beginning 25 trading days before the asset sale announcements to one day after the sale announcements. Bond price information is obtained for all publicly traded nonconvertible debt issues of the selling firm.

3.2. Data

Table 1 provides summary statistics for the 62 asset sales and the firms that made them.¹⁰ Since we are interested in whether firm characteristics

⁹ Of the remaining 30 asset sale announcements, 28 consist of completed sales in which sale price information is not reported. For the remaining two sale announcements, the sale is not completed because the firm filed for bankruptcy protection prior to the completion of the transaction.

¹⁰ Unless otherwise indicated, accounting information is for the fiscal year-end immediately preceding the asset sale announcement.

vary with how the proceeds of the sale are used, we divide the sample according to whether the proceeds of asset sales are used to repay debt or for other corporate purposes. We classify an asset sale as being used to repay

Table 1

Selected characteristics of 62 asset sales made by financially distressed firms during the period 1979–1988 ^a

Firm Characteristics	Entire Sample 62		Sold to Repay Debt 30		Sold for Other Corporate Purposes 32	
	Mean	Median	Mean	Median	Mean	Median
Book Value of Assets (millions)	1,396.68	756.96	1,288.66	756.96	1,504.73	953.50
Market Value of Equity (millions)	224.43	102.56	162.41	102.56	286.43	99.64
Debt ÷ Total Liabilities						
i. Bank	0.53	0.51	0.61 **	0.68 **	0.45	0.49
ii. Publicly Traded	0.27	0.23	0.20 **	0.19 **	0.34	0.27
Leverage Ratio ^b	0.83	0.792	0.88 *	0.81 **	0.77	0.71
Market/Book Assets ^c	1.06	0.96	1.05	0.94	1.08	0.98
Prior 1 Year Stock Returns						
i. Unadjusted	-33.78%	-37.14%	-36.98%	-39.66%	-30.58%	-31.01%
ii. Market Adjusted	-46.34%	-46.38%	-47.47%	-46.77%	-45.18%	-45.33%
EBIT/Assets	3.27%	3.76%	2.58%	0.75% *	3.94%	5.99%
Coverage Ratio ^d	0.634	0.434	0.423 **	0.193 **	0.837	1.16
Value of Assets Sold/Book Value of Assets ^c	14.03%	7.88%	19.84% **	8.27% *	6.98%	3.87%
Change in Liabilities from Sale to Two Years After Sale	-6.72%	-4.77%	-12.38% *	-5.77%	-1.41%	-5.18%
Change in Assets from Sale to Two Years After Sale	-28.92%	-32.22%	-36.69% *	-46.90% *	-21.82%	-27.19%
Industry EBIT/Assets ^f	10.93%	10.61%	9.92% *	9.83%	12.06%	11.98%
Percentage of Stock Held by Officers and Directors	13.9%	6.5%	13.9%	7.00%	13.9%	6.2%

* Significantly different at the 10% level from mean (median) for the sample where sales proceeds are used for other corporate purposes.

** Significantly different at the 5% level from mean (median) for the sample where sales proceeds are used for other corporate purposes.

^a All accounting data are from Compustat and the firm's 10K or annual report. Information concerning returns and the market value of equity are from CRSP. All information is for the year immediately prior to the asset sale.

^b Leverage rate equals book value of short plus long-term debt/book value of assets.

^c Computed as (book value assets – book value equity + market value equity)/book value of assets.

^d Coverage ratio equals EBIT/Interest Expense.

^e The dollar value of assets sold is reported for 32 firms in the sample.

^f Industry EBIT/Assets represents the EBIT/Assets for the median firm in the same industry as assets sold. Industry is defined by four digit SIC code.

debt if the *Wall Street Journal* article describing the transaction or the firm's annual report indicated that the purpose of the sale is to repay debt. In cases where multiple uses of the proceeds are given, we use the first stated purpose or the purpose indicated by the news report as the primary purpose of the sale. Of the 62 asset sales in the sample, 30 are classified as used to repay debt.

The annual reports and news announcements indicate that for firms with public debt outstanding all asset sales used to repay debt involved bank lenders taking some or all of the proceeds. These transactions generally involve banks obtaining cash payments in exchange for waiving covenants, extending maturities, or scaling down their claims. These changes are required as part of a debt restructuring involving public and private debt. The following account of an asset sale by Pengo is typical of transactions in this category.

As part of the permanent debt restructure, Pengo has identified divestiture assets which it intends to sell. The proceeds from the divestitures will be applied 80% to the principal of Senior Secured Lenders' Supplemental Note and a total of 10% to Subordinated Secured Lenders as partial consideration for converting debt to equity and 10% to Old Debenture holders as the cash portion of the exchange offer. Pengo *Annual Report*, 1986, p. 39.

The firms in the sample are extremely highly levered and have poor financial performance in the year prior to the asset sale.¹¹ For example, the mean and median leverage ratio (based on book values) is 0.83 and 0.792, respectively.¹² Moreover, the mean and median coverage ratio (defined as the EBIT/Interest Expense) is less than one (0.634 and 0.434, respectively). Finally, the mean and median stock returns over the 250 days preceding the asset sale announcement are significantly negative. These data indicate that the firms in our sample have large debt burdens and are cash flow constrained.

Comparing the sample of asset sales used to repay debt to sales used for other corporate purposes, the sales used to repay debt are undertaken by firms with significantly higher leverage ratios and lower coverage ratios. The lower coverage ratio for firms using sales proceeds to repay debt results in part from lower operating returns for these firms. Specifically, notice that the median operating return (EBIT/Assets) for firms using sales proceeds to

¹¹ Tests for the differences in medians in Table 4 are based on Wilcoxon Sum Rank Test statistics.

¹² In contrast, the average leverage ratio in Lang, Poulsen and Stulz's sample of asset sellers is 0.36. The mean and median leverage ratios are similar to those reported in Gilson, John and Lang (1990) for troubled debt restructurings. The mean and median proportion of bank debt is somewhat higher for our sample of firms than reported in Gilson et al.

repay debt is significantly less than the median operating return for firms using sales proceeds for other corporate purposes.

The previous section argues that asset sales are more likely to be used to repay debt when firms have a large proportion of short-term senior debt. Consistent with this argument, we find a significantly higher mean and median proportion of bank debt to total debt outstanding for the sample of firms that use asset sales to repay debt. These firms also have a significantly lower mean and median proportion of public debt to total debt outstanding.¹³

The asset sales in our sample represent a large proportion of the total assets of the firms in our sample. Notice, for example, that the average value of assets sold relative to the pre-sale value of the selling firm's assets is 14.03%. The average relative size of the asset sales in our sample is virtually identical to the average relative size of sales reported in Lang, Poulsen and Stulz (1992) and Hite, Owers and Rogers (1987). The value of assets sold is a significantly larger proportion of the assets of firms using the proceeds to repay debt than of firms using sales proceeds for other purposes. For example, the mean and median value of assets sold are 19.84% and 8.27%, respectively, of total assets for the "repay debt" sample and 6.98% and 3.87%, respectively, for the "other purposes" sample.

Finally, firms that use asset sales to repay debt have significantly lower mean and median asset growth in the two years following the asset sale. Specifically, firms that use sales proceeds to repay debt shrink by more than a third in the two year period following the sale. In contrast, for the sample of firms using sales proceeds for other corporate purposes, the mean and median growth in assets is –21.82% and –27.19%, respectively. This finding is consistent with less retention of sales proceeds by firms in the repay debt sample.

To summarize, for the firms in our sample, asset sales are preceded by extremely poor operating performance. Firms using asset sales to repay debt are more highly levered, rely more heavily on bank debt and sell a larger proportion of their assets than do firms that use asset sales proceeds for other corporate purposes.

4. Determinants of the use of asset sales proceeds

As discussed in section 2, asset sales in financial distress may result (1) from attempts by firms to restructure operations to achieve operating effi-

¹³ Information on the priority structure of the firm's debt is frequently reported in the firm's annual report. Bank debt is generally reported as senior and often secured. The average proportion of bank debt that is secured is 36%.

ciencies by transferring assets to more productive uses, (2) as an alternative to security issues as a means of raising cash, and/or (3) from creditor pressure. These are not necessarily mutually exclusive explanations for asset sales in financial distress. For example, as discussed in Rajan (1992) and Diamond (1993), pressure from short-term senior creditors may result in more efficient liquidation policies than are obtained for firms with long-term debt that cannot be renegotiated.

To investigate the determinants of how asset sales proceeds are used, and the role of creditors in influencing how proceeds are used, we estimate a logistic regression relating the likelihood that proceeds are used to repay debt to firm and industry characteristics. In particular, we expect the larger the proportion of short-term senior bank debt to total debt outstanding, the more likely asset sales proceeds will be used to repay debt. The likelihood of asset sales being used to repay debt is also expected to be inversely related to the selling firm's investment opportunity set. Firms with more profitable investment opportunities are expected to be more likely to retain sales proceeds within the firm and less likely to use the proceeds to extinguish debt claims. Following Smith and Watts (1992), we use the ratio of the market to book value of assets as a proxy for the profitability of the firm's investment opportunities.¹⁴

The firm's current operating returns (EBIT/Assets) may also affect the likelihood of using sales proceeds to repay debt. Firms with higher operating returns are *ceteris paribus* more likely to have profitable operations in which to invest the proceeds from asset sales. Alternatively, the higher the firm's cash flow the greater the likelihood that fixed payment obligations (including interest payments) can be met out of operating cash flow and as a result, the less likely the firm will have to use sales proceeds to repay debt. The likelihood of using sales proceeds to repay debt is also expected to be related to the amount of debt in the firm's capital structure and the firm's cash flow from operations relative to the firm's interest expense.

As an additional measure of firm performance, we include the firm's cumulative market adjusted stock returns over the year preceding the asset sale announcement. Since poorer stock performance reflects poor *future* operating returns, we expect a negative relation between the likelihood of sales and stock returns.

Shleifer and Vishny (1992) argue that the liquidity of asset markets depends, in part, on industry conditions. In particular, asset markets are expected to be more liquid the better the operating performance of firms within the industry into which the asset is being sold. Greater liquidity in turn

¹⁴ The market to book value of assets is calculated as (book value of assets – book value of equity + market value of equity)/book value of assets.

will imply firms need offer less of a discount to sell assets quickly to raise funds. This argument suggests that the likelihood of asset sales is directly related to profitability of other firms within the industry.

The likelihood that asset sales proceeds are used to repay debt may also be related to industry conditions. Specifically, if asset sales used for purposes other than repaying debt are more likely to arise from operating efficiencies (i.e., shareholders voluntarily undertake these sales), then these asset sales will be associated with better industry conditions than asset sales used to repay debt. Better industry conditions should imply greater liquidity in the market for the firm's assets and thus a higher sales price. Put differently, if asset sales used to repay debt are more likely the result of creditor pressure rather than bids by higher valued users, then one would expect the likelihood that sales proceeds are used to repay debt to be negatively related to profitability of other firms within the industry.¹⁵ To test this hypothesis, we obtain information on the operating returns (EBIT/Assets) for firms with the same industrial classification (four digit SIC code) as the sold assets. As a proxy for asset market liquidity, we use the operating return for the median firm in the industry in the year of the asset sale.

Table 2 contains estimates of a logistic regression relating the likelihood that sales proceeds are used to repay debt to firm and industry characteristics. As shown in Table 2, we find a negative and statistically significant (at the 0.05 level) coefficient on the ratio of market to book value (the proxy for the investment opportunity set). The negative coefficient suggests that firms with better investment opportunities are more likely to keep sales proceeds within the firm.

Consistent with the creditor pressure hypothesis, we find a negative and statistically significant (at the 0.05 level) coefficient on the ratio of bank debt to total debt outstanding. Also consistent with the creditor pressure hypothesis is the negative and statistically significant coefficient on industry operating returns. If creditor pressure results in asset sales used to repay debt, one expects these asset sales to occur in poorer performing industries (which is assumed to lead to larger discounts) compared with asset sales voluntarily undertaken by stockholders.

As expected, firms with greater amounts of debt in their capital structure are more likely to sell assets to repay debt (the coefficient on the coverage ratio is not significant at the 0.10 level). Finally, although the coefficients on

¹⁵ Simply put, creditors are likely to have a lower reservation price for the assets sold than stockholders since creditors do not consider the value of control rights in the liquidation decision.

Table 2

Estimates of a Logistic Regression Relating the Likelihood of Using an Asset Sale to Repay Debt to Measures of the Firm's Investment Opportunity Set, the Amount of Bank Debt Outstanding, Leverage, Firm Operating Performance, and Industry Conditions. Estimates are for a Sample of 62 Firms Undertaking Asset Sales in Financial Distress. (Asymptotic *t* statistics are in parentheses) ^a

	Model 1	Model 2	Model 3
Intercept	2.24 (1.44)	2.13 (1.31)	4.23 (2.16)
Ratio of the Market Value of Assets/Book Value of Assets ^b	-6.33 (-2.45)	-6.18 (-2.33)	-7.37 (-2.62)
Ratio of Bank Debt to Total Liabilities	3.85 (2.66)	3.76 (2.51)	4.00 (2.51)
Market Adjusted Stock Returns for Year Prior to Sale ^c		-0.27 (-0.23)	
Industry Cash Flows ^d	-11.53 (-1.89)	-11.411 (-1.87)	-14.83 (-2.19)
Debt/Assets	4.78 (1.99)	4.63 (1.87)	4.63 (1.87)
EBIT/Assets			-5.91 (-1.46)
Coverage Ratio ^e	-0.41 (-1.55)	-0.27 (-1.41)	
χ^2 Statistic	28.54	27.84	28.13

^a All accounting data are from Compustat and the firm's 10K or annual report. Information concerning returns and the market value of equity are from CRSP.

^b Computed as (book value assets - book value equity + market value equity)/book value of assets.

^c Firm's stock returns over the 250 days preceding the sale announcement date less the return on the equally weighted market portfolio.

^d Industry cash flows represent the EBIT/assets for the median firm in the industry. Industry is defined as the four digit SIC code associated with the assets sold.

^e Coverage ratio equals EBIT/Interest Expense.

operating returns and past stock returns are negative, they are not statistically significant at conventional levels. ¹⁶

Overall, the results in Table 2 provide support for the hypothesis that short-term senior lenders play an influential role in determining how asset sales proceeds are used. Moreover, for firms with valuable growth options, sales proceeds are more likely to be retained in the firm.

¹⁶ Lang, Poulsen and Stulz (1992) argue that asset sales are more likely to be used to repay debt the greater the percentage of the firm's stock held by management. In our sample, we find no statistically significant relation between the use of asset sales proceeds and management ownership. Our failure to find a relationship may result from our focus on financially distressed firms where agency costs arising from free cash flows are not likely to be a problem.

5. Analysis of stock and bond returns

5.1. Abnormal stock returns

Abnormal common stock returns for the two-day period around the asset sale announcement (day – 1 and day 0) are market model residuals estimated using common stock returns from the period 200 days to 20 days prior to the announcement. An equally weighted index of NYSE-AMEX stocks is used to estimate the market model. Since the events that we analyze may alter the parameter estimates of the market model, abnormal returns are also calculated using market model estimates over the period 20 days to 200 days after the sale (where the returns are available). Since the results using market model estimates before and after the event are virtually identical, we report only results based on the latter set of estimates.

Abnormal common stock returns around the asset sale announcements are reported in Table 3. Panel A contains results for the entire sample of firms. The average abnormal return for the sample is 0.01%, which is not significantly different from zero. The average stock return on asset sale announcements in our sample is significantly less than for asset sales generally as reported in Hite, Owers and Rogers (1987) and Lang, Poulsen and Stulz (1992). The average abnormal returns associated with asset sale announcements where the proceeds are used to repay debt are negative but not statistically different from zero at the 0.10 level. However, the abnormal

Table 3
Two day abnormal stock returns around announcements of asset sales by 62 financially distressed firms during the period 1979–1988

	Two Day Return	Percent of Returns Positive	Z statistic	Number
<i>A. Entire Sample</i>				
All Purposes	0.01%	53%	0.14	62
Purpose to Repay Debt	– 1.63%	47%	– 1.31	30
All Other Purposes	1.87%	56%	1.98	32
<i>B. Bankrupt firms</i>				
All Purposes	– 2.33%	43%	– 2.67	29
Purpose to Repay Debt	– 2.85%	44%	– 2.61	19
All Other Purposes	– 1.74%	43%	– 1.19	10
<i>C. Distressed but not Bankrupt</i>				
All Purposes	2.14%	63%	2.66	33
Purpose to Repay Debt	– 0.61%	45%	– 0.012	11
All Other Purposes	3.59%	71%	3.30	22

return associated with asset sales used for other corporate purposes is positive and statistically significant at the 0.05 level. The difference in average abnormal returns between sales used to repay debt and sales used for other purposes is 3.17%, statistically significant at the 0.05 level (z statistic equals 2.33). The significantly lower announcement day returns associated with asset sales that are used to repay debt is consistent with the creditor pressure hypothesis.

The share price reaction to asset sales in financial distress may also be related to the anticipated success of the sale in avoiding bankruptcy. For example, Gilson, John and Lang (1990) find a significantly larger share price reaction associated with debt restructuring announcements (and completions) where the restructuring results in the firm avoiding bankruptcy. If asset sales are an important component of debt restructuring plans and asset sales permit firms to successfully avoid bankruptcy, one expects to observe a larger share price reaction for firms that successfully avoid bankruptcy.

To examine this question, we partition the sample into two groups based on whether the firm filed for bankruptcy protection during a two-year period subsequent to the asset sale announcement. Information on bankruptcy filings is obtained from the *Wall Street Journal* and *Predicast Funk and Scott Index of Corporate Changes*. The sample is about evenly split between firms that avoid bankruptcy (32) and firms that file for bankruptcy (30) within two years of the asset sale.

As shown in Panels B and C of Table 3, the average stock price reaction to the sales announcement is negative and statistically significant for the group of bankrupt firms. While the average return within this group is less when the proceeds are used to repay debt, the difference in average returns between the two purchase categories is not statistically significant at the 0.10 level (z statistic equals -0.64).

The average stock return is positive and statistically significant for firms that avoid bankruptcy. Moreover, the average return associated with asset sales by firms that avoid bankruptcy is significantly greater than the average stock price reaction associated with firms that file for bankruptcy. Finally, for firms that avoid bankruptcy, those that sell assets to repay debt have an average stock price reaction on the announcement date that is significantly less than the average stock price reaction associated with sales used for other corporate purposes (z statistic equals -3.63).¹⁷

¹⁷ Whether the firm files for bankruptcy may also be related to the financial condition of the firm at the time of the asset sale. Indeed, firms that file for bankruptcy have higher average leverage ratios and lower average coverage ratios than firms that avoid bankruptcy. In the next section, we examine the cross-sectional relationship between announcement returns, firm characteristics and the purpose of the sale.

5.2. Cross-sectional analysis of abnormal stock returns

The discussion in section 2 suggests that the stock price reaction to asset sales in financial distress will depend on how the proceeds of the sale are used. Specifically, the creditor pressure hypothesis predicts that sales used to repay debt result in lower returns to shareholders than sales used for other purposes.

The returns to shareholders associated with asset sales are likely to vary with the firm's investment opportunity set, industry conditions and the financial condition of the firm at the time of the sale. Specifically, industry conditions are inversely related to the discount associated with selling illiquid assets and therefore, directly related to stock returns. In addition, the share price reaction to asset sales is likely to vary with the firm's investment opportunities (as measured by the ratio of market to book value of assets). For example, the better the firm's investment opportunities, the more likely the firm will be able to deploy the proceeds from the sale efficiently (if the sales proceeds are retained).

The stock price reaction to asset sales is also expected to vary with the financial condition of the firm. Specifically, the riskier a firm's debt, the greater is the potential transfer from stockholders to debtholders associated with asset sales used to repay debt.¹⁸ Alternatively, the riskier a firm's debt, the greater is the potential transfer from debtholders to stockholders when asset sales are retained in the firm.¹⁹ We employ two proxies for the riskiness of a firm's debt. First, we use the coverage ratio (EBIT/Interest Expense) in the year preceding the asset sale. The higher the coverage, the less risky the firm's debt is assumed to be. Second, we use the leverage ratio in the year preceding the asset sale. The higher the leverage, the greater is the risk of the firm's debt.

Finally, as discussed in the previous section, the stock price reaction to asset sales is likely to vary with the market's assessment of the likelihood that the transaction will permit the firm to successfully avoid bankruptcy. To measure the market's assessment of the ultimate success of the asset sale in avoiding bankruptcy, we create a dummy variable which equals one if the

¹⁸ Moreover, the size of any transfer depends on the amount paid to creditors and the market value of the debt at the time of the sale. Unfortunately, neither the *Wall Street Journal* nor annual reports provide consistent information concerning the size of payments made to creditors.

¹⁹ The potential for these wealth transfers may explain why most privately restructured lending agreements contain covenants restricting the sale of assets. In particular, most contracts specify that the restructured debt must be prepaid with proceeds from any divestiture. See Gilson (1990).

Table 4

Weighted Least Squares Regression Relating Abnormal Stock Returns on Announcement of an Asset Sale to Firm Characteristics, the Purpose of the Sale and Industry Conditions. Estimates are for a Sample of 62 Firms Undertaking Asset Sales in Financial Distress during the Period 1979 through 1986 (t statistics in parentheses) Dependent variable = two day abnormal stock return

	(1)	(2)	(3)
Intercept	0.071 (1.52)	0.041 (0.656)	0.046 (0.844)
Purpose = 1 if Proceeds used to Repay Debt	–0.055 (–2.623)	–0.042 (–1.873)	–0.047 (–2.366)
Industry EBIT	–0.263 (–1.233)		–0.191 (–0.825)
Coverage Ratio		0.012 (1.966)	0.011 (1.736)
Market Value Assets/Book Value of Assets	–0.077 (–0.388)		0.005 (0.211)
Coverage * Purpose = 1		–0.004 (–0.266)	–0.003 (–0.265)
Bankrupt = 1 if Firm Files for Bankruptcy in Two Years Subsequent to Sale	–0.034 (–1.534)	–0.037 (–1.843)	–0.034 (–1.553)
Adjusted R ²	0.14	0.13	0.12

firm files for bankruptcy during the two years after the asset sale announcement and zero otherwise.

Table 4 contains the results of a set of weighted least squares regressions (with the weight equal to the standard error of the residuals from the market model) relating abnormal stock returns to firm characteristics and industry conditions. Consistent with the creditor pressure hypothesis, we find a negative and statistically significant (at the 0.10 level) coefficient on the purpose variable (purpose equals 1 if proceeds are used to repay debt). The only other variables that are statistically significant at the 0.10 level are the coverage ratio (our proxy for risk) and the bankruptcy dummy variable.²⁰

While the negative and significant coefficient on the purpose variable is consistent with the creditor pressure hypothesis, the creditor pressure hypothesis predicts that the riskier the firm, the greater the shareholder's loss associated with asset sales used to repay debt. However, the coefficient on purpose interacted with the coverage ratio is *not* statistically significant. A

²⁰ When we use leverage to proxy for firm risk, the leverage variable is not statistically significant at the 0.10 level. We also estimate a model interacting the purpose variable with the market to book ratio and industry conditions. The estimated coefficients for these variables are not statistically significant.

possible explanation for this result is that there is little meaningful cross-sectional variation within the sample in the riskiness of firm debt since all of the firms in our sample are financially distressed.

5.3. *Analysis of the bond returns*

If the negative share price reaction associated with asset sales used to repay debt results from a wealth transfer from stockholders to debtholders and if public bondholders receive a portion of the transfer, one would expect to observe an increase in the value of publicly traded bonds around these announcements. Public bondholders are likely to receive a portion of the transfer for two reasons. First, among the asset sales used to repay debt about a third (11) were undertaken to facilitate a debt restructuring involving both public and private debt. Generally, the banks receive some or all of the proceeds from the sale in exchange for their participation in the restructuring (through either waiving covenants, extending the maturity or taking equity in exchange for a portion of its outstanding debt). Second, while detailed accounts of how proceeds are distributed among creditors are not generally provided in the 10K or annual reports, subsequent to the asset sales, the outstanding amount of both bank debt and public debt declines. Specifically, over the two years subsequent to the asset sale, the average decline in bank debt is 13% and the average decline in public debt outstanding is 4% for firms that used asset sales to repay debt. Thus it appears the public debtholders share in the sales proceeds.²¹

To analyze the wealth effects of asset sales to bondholders, we examine abnormal bond returns around the announcement of asset sales. Of the 62 asset sales in our sample, only 22 involve firms with bond prices reported in the *Wall Street Journal*.²² For these events, we calculate abnormal bond returns using the mean adjusted returns model in Brown and Warner (1985). We calculate a daily mean bond return beginning 25 days prior to the asset sale announcement to five days prior to the announcement. A daily abnormal return around the announcement is calculated by subtracting the mean bond return from the bond return on the announcement day and the day prior to the announcement. We use the cross-sectional standard deviation in the two day abnormal bond returns to test the statistical significance of the abnormal bond return on the announcement date.

²¹ Where a description of how the proceeds are distributed among creditors is provided, commonly a sharing rule of 50% to 80% going to the banks and the remainder to other creditors is used.

²² We use only straight debt prices in our analysis. For firms with multiple public debt issues outstanding, we created a value weighted average return series for the firm's bonds.

Table 5

Weighted least squares regression relating abnormal stock returns to the purpose of the asset sale and abnormal bond returns around the announcement of asset sales by financially distressed firms

	Intercept	Purpose to Repay Debt	Abnormal Bond Return	Abnormal Bond Return if Purpose is to Repay Debt
Coefficient	0.078	-0.089	2.220	-2.098
t Statistic	(2.84)	(-2.373)	(4.294)	(-3.541)

$R^2 = 0.44$. F statistic = 7.96. N = 22

For the entire sample of asset sales with bond price information available, the average two day abnormal return is 1.56%, which is not statistically different from zero at the 0.10 level (the t statistic is 1.36). The average bond returns for the subsample of firms that subsequently file for bankruptcy is 1.58% (t statistic is 1.32) and the average return for firms that avoid filing for bankruptcy protection is 1.51% (t statistic is 0.62). The difference in returns for these two subsamples is not significantly different from zero at the 0.10 level.²³ Therefore, unlike the stock return analysis, the returns to bondholders do not vary with subsequent bankruptcy filings. Finally, although the average abnormal bond returns for firms using sales proceeds to repay debt is larger than the average bond return for firms using sales for other purposes, the difference is not statistically significant. The mean return is 2.00% with a t statistic of 2.035 for firms using proceeds to repay debt. For firms using proceeds for other purposes, the mean bond return is 0.38% with a t statistic of 0.17.

We test for wealth transfers between stockholders and debtholders using the following regression model:

$$PE_i = \alpha_1 + \alpha_2 \text{Repay} + \alpha_3 \text{BondRet}_i + \alpha_4 \text{BondRet}^* \text{Repay}_i + e_i, \quad (1)$$

where,

PE_i = two day abnormal stock return,

Repay = 1 if proceeds are used to repay debt, zero otherwise,

BondRet_i = the abnormal returns to bondholders on the announcement of an asset sale, and

e_i = error term.

Weighted least squares estimates of Eq. (1) are provided in Table 5. The coefficient on the binary variable Repay is negative and statistically significant at the 0.01 level. Moreover, there is a positive and statistically significant relationship between abnormal stock and bond returns when the proceeds of

²³ The size of each subsample is quite small and therefore the power of our tests are low.

asset sales are retained by the firm. This result is consistent with the view that these sales *do not* result in a transfer from bondholders to stockholders and are value enhancing to all of the firm's claimants. Notice however that this relationship is significantly less when the proceeds are used to repay debt. Put differently, in transactions where the proceeds are used to repay debt, stockholder returns are significantly lower and are not significantly related to bondholder returns.

Since, on average, stockholders gain and bondholders do not lose when sales proceeds are retained by the firm, these transactions appear to enhance firm value. For transactions in which proceeds are used to repay debt, the effect on overall firm value is less certain. Specifically, on average for these transactions, stockholder returns are negative though not statistically significant and bondholder returns are positive. The issue then becomes whether the decline in equity value offsets the increase in the value of the firm's debt claims. If the return on publicly traded bonds is a reasonable estimate of the return on other debt claims associated with the asset sale announcement, the average dollar value change in selling the firm's debt exceeds the average decline in the value of the common stock. Specifically, the mean and median dollar value change in the selling firm's common stock and debt together is \$17.34 and \$5.24 million, respectively. Neither is significantly different from zero.²⁴ As a result, asset sale announcements used to repay debt appear at worst to have no significant impact on firm value. Sales where the proceeds are retained by the firm are on average value enhancing.

6. CEO turnover and asset sales

The positive return to bondholders associated with asset sales used to repay debt suggests that creditors may influence the disposition of assets of financially distressed firms to their benefit. To investigate further the influence of creditors on the decision to sell assets, we investigate CEO turnover subsequent to asset sales. If management turnover in financial distress is less likely when management pursues policies in creditors' interests, then CEO turnover is expected to be less likely in firms that use the proceeds of asset sales to repay debt.

Within our sample, 34% of the firms experienced a CEO turnover during the two years following the asset sale. The proportion of firms in our sample

²⁴ These estimates are based on the market value of common stock and publicly traded debt two days prior to the earnings announcement. For nontraded debt claims, book values are used. These estimates are at best crude ones since they assume that the return on all debt (regardless of maturity and priority) is the same as the return on publicly traded debt.

with management changes is less than the proportion of firms with management changes following debt restructurings (43%) reported in Gilson (1989).²⁵ About half of the CEO changes in our sample involve firms that subsequently file for bankruptcy protection.

To examine whether the probability of CEO turnover is related to the use of the proceeds of asset sales (or proxy for creditor pressure), we estimate the following logit model,

$$\text{CEO Change} = \alpha_0 + \alpha_1 \text{Repay} + \alpha_2 \text{Coverage} + \epsilon,$$

where

CEO Change = 1 if CEO change occurs in the two years subsequent to the asset sale,

Repay = 1 if purpose of the sale is to repay debt, and

Coverage = EBIT/Interest Expense.

Coverage measures the financial condition of the firm at the time of the sale. The higher the coverage the less trouble the firm is assumed to have in meeting its fixed payment obligations. If financial distress provides an impetus for CEO changes, then a negative coefficient is expected for coverage.

The logit regression results are presented below (asymptotic t statistics are in parentheses).²⁶

$$\text{CEO Change} = 0.88 - 1.79 \text{Repay} + 0.177 \text{Coverage}$$

$$(2.03) \quad (-2.37) \quad (0.82)$$

$$\chi^2 \text{ statistic} = 25$$

$$N = 59$$

The negative and statistically significant (at the 0.05 level) coefficient is consistent with the argument that managers repay debt with the proceeds of asset sales in part because of creditor influence over management decision-making and employment.²⁷

7. Conclusion

The impetus for and hence the consequences of assets sales by distressed firms are related to how the proceeds of the asset sales are used. We find

²⁵ Gilson (1989) defines management changes more broadly than we do to include changes in CEO, President and Chairman of the Board.

²⁶ We excluded firms with asset sales within one year of a CEO change.

²⁷ Similar results are obtained when the firm's stock return in the year prior to the asset sale is used as a measure of the financial condition of the firm. When a binary variable that equals one if the firm subsequently files for bankruptcy is included, the variable is not statistically significant. Finally, when the percent of stock outstanding held by officers and directors is included in the regression, the coefficient is negative but not statistically significant.

evidence that creditors, banks in particular, are instrumental in the decision to sell assets to repay debt. Consistent with the creditor pressure hypothesis, asset sales used to repay debt benefit creditors rather than stockholders. Moreover, we find that CEO turnover is significantly less for firms that use asset sales to repay debt. This result suggests an avenue through which creditors influence the decisions of management.

We find that asset sales used to repay debt result in lower average share price reactions than when sales proceeds are retained by the firms. This result is consistent with the hypothesis that asset sales used to repay debt result in significant lost option value for stockholders. Overall, our results are consistent with the view that creditors exert significant influence over the real investment decisions of financially distressed firms. Our results are consistent with the theoretical models of Diamond (1993) and others that argue that short-term private lenders play a particularly influential role in liquidation decisions.

Appendix

Selected asset sale descriptions

Charter Company. The oil and insurance company announced on 4/16/84 that it planned to sell its insurance companies. The company was strapped for cash and faced pressure from creditors. The firm confirmed that it had experienced “a severe loss of trade credit” and if efforts to obtain outside funding were unsuccessful, the loss of trade credit could have a serious impact on the oil business. The cash generated from the sale was to be used primarily to satisfy oil suppliers and banks. The firm filed a bankruptcy petition seven days later. The two day abnormal stock returns around the announcement date was -23.19% .

Tiger International Corp. On 5/6/83 the financially ailing air cargo, truck and rail transportation concern sold its Aviquipo unit to Lear Siegler for an undisclosed amount. Aviquipo is an aerospace products export distributor. Tiger had suspended payments on about half of its \$1.8 billion in debt. The firm later restructured its debt and sold its leasing and rail car business, successfully avoiding bankruptcy. The two day abnormal stock returns around the announcement date was 12.94% .

Armco Inc. On 2/9/83 the steel manufacturer agreed to sell most of its West Virginia coal operations to Arch Mineral Corporation for at least \$320 million. The move reversed a strategy of diversification into the coal business undertaken in the 1980s. The firm ran heavy deficits but managed to avoid bankruptcy. The two day abnormal stock returns around the announcement date was 4.03% .

Ronson Corp. The maker of lighters and appliances announced it agreed to sell its Ogeltown, Delaware facility to Weyerhaeuser for \$5.8 million. The proceeds of the sale were used to reduce leverage. The firm avoided bankruptcy. The two day abnormal stock returns around the announcement of the sale was -4.83% .

Altec Corp. The high fidelity sound equipment manufacturer announced on 3/21/83 it was selling its Anaheim manufacturing facility for \$7.8 million. The sale was to consolidate the firm's manufacturing operations to its Oklahoma City plant. The firm filed for bankruptcy petition two years later. The two day abnormal stock returns around the announcement of the sale was -8.74% .

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