

Preliminary

How Costly is Financial (not Economic) Distress?

Evidence from Highly Leveraged Transactions that Became Distressed

by

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Abstract

This paper studies thirty-one highly leveraged transactions (HLTs) of the 1980s that subsequently become financially distressed. At the time of distress, all sample firms have operating margins that are positive and in the majority of cases greater than the median for the industry. Therefore, we consider these firms largely financially distressed, not economically distressed. The net effect of the HLT and financial distress is a slight increase in value -- from pre-transaction to distress resolution, the sample firms experience a marginally positive change in (market- or industry-adjusted) value. This finding strongly suggests that, overall, the HLTs of the late 1980s succeeded in creating value. We also present quantitative and qualitative estimates of the (direct and indirect) costs of financial distress and their determinants. For the entire sample, we estimate the costs of financial distress as 10% to 20% of firm value. Our most conservative or upper bound estimates do not exceed 23% of firm value. For a subset of firms that do not experience an adverse economic shock, we estimate the costs of financial distress to be negligible. Consistent with some costs of financial distress, we find evidence of unexpected cuts in capital expenditures, undesired asset sales, and costly managerial delay in restructuring. To the extent they occur, the costs of financial distress that we identify are heavily concentrated in the period after the firms become distressed, but before they enter Chapter 11.

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1. *Introduction.*

Many of the highly leveraged transactions (HLTs) completed in the latter half of the 1980s subsequently defaulted on debt payments, filed for bankruptcy, and, in general, encountered financial distress. Kaplan and Stein (1993a and 1993b), for example, find that more than 30% of management buyouts completed after 1985 later defaulted. Kaplan and Stein attribute the increased default rates to poorly designed capital and incentive structures while Jensen (1991) argues that regulatory shocks and a downturn in the overall economy also played a role.

In this paper, we study the effects and sources of financial distress for thirty-one HLTs from the samples in Kaplan and Stein (1990 and 1993a) that became distressed. The analysis follows each HLT from before the leveraging transaction to the resolution of financial distress.

We address two primary questions. First, we address how poorly (or well) the HLTs of the second half of the 1980s ultimately fared. Several of the defaults and failures of those HLTs involved large well-known companies. These companies received a great deal of attention from the popular press, most of which was negative and equated default with disaster.¹ Jensen (1991) argues that such defaults were very costly. According to him, regulatory changes in the late 1980s and early 1990s “substantially increased the frequency and costs of financial distress and bankruptcy.” [p. 26.]

In contrast, Kaplan (1989b, 1994a, and 1994b) study one of the most celebrated defaults, that of Federated Department Stores, and find that the original HLT increased Federated's value even after taking into account the costs of financial distress and bankruptcy. Jensen (1989) argues that this outcome should be expected when defaulting firms have substantial going concern value.

To address this first question, we follow the analysis in Kaplan (1989a, 1989b, 1994a, and 1994b) and estimate the value of each distressed HLT from before the HLT announcement until the resolution of financial distress. Our findings are consistent with those predicted by Jensen (1989). We find that from

¹ For accounts of this attention, see Kaplan (1989b, 1994a, and 1994b).

pre-transaction to distress resolution, the sample firms experience a marginally positive change in value -- adjusted for market or industry stock performance. This finding indicates that the values of the distressed HLTs do not decline on average. Given that distressed HLTs did not lose any value, it is highly likely that HLTs overall -- distressed and non-distressed -- created value. This finding is not consistent with the view that the HLTs of the later 1980s were unsuccessful.

Second, we address how costly financial distress is (both directly and indirectly) and what determines those costs. Financial economists have found it difficult to measure the costs of financial distress. The difficulty is driven by an inability to distinguish whether poor performance by a firm in financial distress is caused by the financial distress or is caused by the same factors that pushed the firm into financial distress in the first place. For example, Altman (1984) finds large indirect costs of financial distress, but does not distinguish them from negative operating shocks. Recent studies by Asquith, Gertner, and Scharfstein (1994), Gilson (1997), Hotchkiss (1995), and LoPucki and Whitford (1993b) examine financially distressed firms and find indirect evidence that financial distress is costly.² A large fraction of the firms in the samples in all of these papers, however, have negative operating income, and, therefore, questionable value as going concerns. Those firms are not only financially distressed, but also economically distressed, making it difficult to identify whether those papers measure costs of financial distress or economic distress.

To address this second question, we first examine the factors that drive the sample firms into financial distress. We find that high leverage is the primary cause of distress. Poor firm performance and, then, poor industry performance play much smaller roles. More importantly, all of our sample firms have

² Both Ofek (1993) and Opler and Titman (1994) study larger samples of firms that experience some financial distress. Ofek finds evidence consistent with leverage reducing the cost of financial distress; Opler and Titman find the opposite.

positive operating margins in the years they are distressed. In fact, the operating margins typically exceed the industry median. In other words, without their high leverage, our sample firms would appear healthy relative to other firms in the industry. Because of this, we argue that these firms are largely financially distressed, not economically distressed. Our analysis, therefore, attempts to isolate the costs of “pure” financial distress.

We examine quantitative measures of operating performance for evidence of financial distress costs. Operating and net cash flow margins of the distressed firms increase immediately after the HLT, decline when the firms become distressed and while they are distressed, but then rebound after the distress is resolved. The decline in margins from distress onset to post-resolution is 10% to 15%. The change in margins from pre-HLT to post-resolution is negligible.

We then estimate the magnitude of the net costs of financial distress directly using capital values -- debt and equity market values. For the entire sample, we estimate the costs of financial distress as 10% to 20% of firm value. Our most conservative estimates do not exceed 23% of firm value. Because these estimates may include the effects of negative economic shocks (in addition to the costs of financial distress), we separate firms that experience such a shock from those that do not. For the subset of firms that do not experience a negative shock, we estimate the costs of financial distress to be negligible.

Our analysis also considers qualitative measures of financial distress costs. The firms in our sample appear to incur three such costs most frequently. First, a number of firms are forced to curtail capital expenditures, sometimes substantially. Second, a number of firms appear to sell assets at depressed prices. Third, a number of firms delay restructuring or filing for Chapter 11 in a way that appears to be costly. In contrast, we find no evidence that the distressed firms engage in risk shifting / asset substitution of any kind. In addition to costs of financial distress, we also find benefits: many firms cut costs and replace management.

To the extent they occur, the costs of financial distress that we identify are heavily concentrated in

the period after the firms become distressed, but before they enter Chapter 11. We find little evidence that Chapter 11 is inefficient or costly. This result is in agreement with recent work by Alderson and Betker (1995), Gertner and Picker (1992), and Gilson (1997). The result also suggests that the experience of Eastern Airlines, documented in Weiss and Wruck (1996) may be more the exception than the rule.

In our last set of analyses, we estimate the cross-sectional determinants of the costs of financial distress. We find that these costs are negatively related to HLT value and the fraction of total debt owed to banks, but are not related to capital structure complexity, the presence of junk bonds, the presence of buyout sponsors, time in distress, or industry performance. These results are not consistent with increased complexity increasing the costs of financial distress. They also suggest that costs of financial distress have a fixed component. The results are somewhat supportive of Haugen and Senbet (1978) who argue that claimants in financial distress should be able to renegotiate without affecting the value of the underlying firm. The results are less supportive of the arguments in Gertner and Scharfstein (1991), Giammarino (1989), Wruck (1990), and others that greater bargaining conflicts and information problems increase the costs of financial distress. The results also fail to support Shleifer and Vishny (1992), who argue that costs of distress increase as industry performance declines.

We conclude the paper by discussing the implications and generality of our findings. Compared to estimates of the direct costs of financial distress on the order of 3% of firm value (Weiss [1990]), our estimates of the costs of financial distress for the entire sample -- an average of 10% with an upper bound of 23% -- appear high. This would be particularly true if there is a selection bias in which firms with low costs of financial distress are more likely to become highly leveraged.

Alternatively, the costs of financial distress are (obviously) low when we rely on our estimates of the costs of financial distress for the subset of firms that do not experience an economic shock. Furthermore, from an ex ante perspective that trades off expected costs of financial distress against the tax and incentive benefits of debt, the costs of financial distress seem low both for the non-shocked subset and

for the entire sample.

While we acknowledge that both interpretations are plausible, we favor the latter and believe our results are consistent with the views in Jensen (1989) and Kaplan (1994b) that financial distress is not particularly costly in HLTs. To the extent that they generalize to mature firms, our results suggest that the pure costs of financial distress are modest. Consistent with this generalization, the results in Opler and Titman (1993) as well as two tests on our sample suggest that the selection bias in this sample is modest.

The paper proceeds as follows. Section 2 describes the sample. Section 3 describes the causes of financial distress. Section 4 presents the valuation analysis. Section 5 presents both quantitative and qualitative evidence of the costs of financial distress. Section 6 describes the cross-sectional determinants of costly financial distress. Section 7 summarizes our results and discusses their implications and generality.

2. *Sample selection and description.*

The sample companies are taken from the HLTs in Kaplan and Stein (1990 and 1993a). Kaplan and Stein (1993a) study 124 management buyouts completed between 1980 and 1989, in which (1) the companies are originally publicly owned; (2) at least one member of the incumbent management team obtains an equity interest in the new private firm; and (3) the total transaction value exceeds \$100 million. Kaplan and Stein (1990) study 12 leveraged recapitalizations completed between 1985 and 1989. A leveraged recapitalization is similar to a management buyout in many respects except that it does not involve the repurchase of all of a company's stock. While there is a dramatic increase in leverage, public stockholders retain some interest in the company.

HLT's that subsequently become financially distressed are identified from searches of the NEXIS database and from post-transaction financial statements. We use two basic measures of distress as of December, 1995: (1) defaulting on a debt payment (possibly leading to a Chapter 11 filing); and (2) an

indication that the HLT has attempted to restructure its debt because of difficulty in making debt payments. Companies that encounter some form of distress after a post-transaction releveraging are not considered to have defaulted because the original transaction did not default.

As of December 1995, 31 of the 136 firms have defaulted. An additional 8 firms attempted to restructure debt because of difficulty in making debt payments leading to a total of potentially 39 financially distressed firms. Consistent with Kaplan and Stein (1993a), the distressed firms are concentrated in later HLTs, with all but four completed after 1985.

We have obtained data for thirty-one of the thirty-nine financially distressed firms from the time of the HLT transaction to the resolution of financial distress. Data on four firms were only partially available either because the firms were sold very shortly after the HLT or because the firms lacked data for several years during distress. Data on four firms were unavailable because the firms were private when they became distressed and subsequently remained private. We do not know how these omissions affect our results, if at all. It also is worth adding that our selection criteria likely exclude some firms that experienced modest financial distress, but were able to restructure without defaulting and without indicating they had difficulty making debt payments.

Data on the firms we have analyzed are obtained from SEC documents that describe the original transaction, from post-transaction filings of 10-Ks, S-1 registrations, prospectuses, and, plans of reorganization, and from press reports available on NEXIS. Stock price data are obtained from the Center for Research in Security Prices (CRSP) database and Standard & Poor's Daily Stock Price Record. Other financial data are obtained from the COMPUSTAT Tapes.

When we perform analyses that require an industry control group, we use the firms covered by the Value Line Investment Survey that are in the same industry as our sample firms at the time of the HLT. We use Value Line's classifications because they provide a well-known, economically-based, and widely-accepted classification scheme. We also do so because of the well-documented inaccuracy of CRSP

industry classifications and the non-availability of historical SIC codes from COMPUSTAT.

Table 1 lists the thirty-one sample companies along with the date of the HLT, the nature and date of distress, and the nature and date of the resolution of distress. Twenty-three of the sample firms defaulted on their debt after the HLT. Eight firms successfully restructured without defaulting.

Table 2 reports information about the value of the HLTs as well as the pre- and post-HLT capital structures of the sample firms. The median total capital of the HLT transaction for these firms was \$1 billion. Table 2 also indicates that the HLTs were indeed very highly leveraged after the transactions. The median coverage ratio, the ratio of operating income before depreciation and amortization (EBITDA) to interest expense, is only 1.16 in the first post-HLT year.³

3. *Reasons for financial distress.*

In this section, we determine the factors that led to the financial distress of the HLTs. We define the first year of financial distress as the first year that a firm either has EBITDA less than interest expense, attempts to restructure its debt, or defaults. We refer to the first year of financial distress as year 0. For twenty-six firms, the first year of financial distress is the first year the firm attempts to restructure its debt or defaults. For five firms, interest coverage drops below one in the year preceding a default or an attempted restructuring (Burlington Industries, Morse Shoe, National Gypsum, RJR Nabisco and Southland).⁴

³ In the paper, interest expense includes total interest payments and, therefore, includes both cash and non-cash interest.

⁴ All our results -- for operating performance and for returns -- are insensitive to defining the first year of distress as the first year of either default or an attempted financial restructuring.

Column 1 of table 3 shows that the median firm in the sample has an operating margin (EBITDA / Sales) of 9.8% in year 0. This median operating margin exceeds the 8.5% for the industry comparison group. In other words, all thirty-one firms have positive operating income and are, typically, more healthy than the typical firm in the industry despite being financially distressed.

Those results contrast with those for the samples used in previous studies of the effects of financial distress by Asquith et al. (1994), Hotchkiss (1995), and Gilson (1997). The median firm in those studies has operating income roughly equal to zero.

Although the firms have healthy operating margins and operating income, column 1 of table 4 confirms that operating income at those firms roughly equals interest payments. The median interest coverage ratio (EBITDA to interest expense) in the first year of financial distress is 0.98.

The rest of tables 3 and 4 explore the factors that led to distress in more detail. There are four possible factors: (1) industry performance; (2) firm performance; (3) short-term interest rate changes; and (4) firm leverage. In table 3, we follow the analysis in Asquith et al. (1994) to measure the relative contribution of these four factors.⁵ To do this, we measure how much cash flow after interest (EBITDA net of interest expense) in year 0 would have improved if (1) the firm performed the same relative to its industry, but the industry performed at its median level in year -1 -- industry performance; (2) the firm performed as well as the median firm in the industry in year 0 -- firm performance; (3) the firm paid interest at the short-term interest rate in effect in year -1; and (4) the firm had the same ratio of interest to assets as the median firm in the industry -- firm leverage. The sum of all these changes would move the sample firms' after-interest cash flow to that of the median firm in the industry in the prior year.

To calculate the relative contribution of each source, we divide the change in cash flow after

⁵ The methodology is not identical because they do not consider the effect of changes in short-term interest rates.

interest attributable to each source by the sum of the changes from all four sources. Table 3 indicates that firm leverage is the primary cause of distress for twenty-six of the thirty-one HLTs and accounts for a median of 104% of the shortfall in cash flow after interest. Even the 104% understates the importance of leverage because leverage is responsible for a positive cash shortfall for two firms, RJR Nabisco and Walter Industries, but the sum of the different sources is negative. I.e., the sum and the ratio are negative because the industry and the firm performed unusually well. On average, firm performance, industry performance, and interest rate changes play no role in explaining financial distress.

In table 4, we use a second measure of the sources of financial distress. We calculate what interest coverage would have been if (1) the firm's industry had performed as well as the previous year; (2) the firm had performed as well as the industry; (3) interest rates had not changed; and (4) the firm had the same interest expense as the median firm in the industry. We also consider a fifth factor by measuring interest coverage using the firm's operating margins in the year before distress.

Table 4 confirms that high leverage is primarily responsible for financial distress in our sample. If the sample firms had had the industry level of interest expense, they would have had a median coverage ratio of 3.87 not 0.98. The table also indicates that poor firm performance, industry performance and interest rate changes have a negligible effect on interest coverage ratios and, did not lead to financial distress for the sample firms. In fact, the results show that HLT firm and HLT industry performance helped delay the onset of financial distress. I.e., interest coverage ratios would have been lower if the sample firms had not outperformed their industries (median of 0.76 not 0.98) and if the industries had not performed better than the previous year (median of 0.93 not 0.98).⁶

The fifth factor also plays a role in financial distress, albeit not nearly as much as leverage. Interest coverage would have been a median of 1.08 (not 0.98) if the firms had achieved the same operating

⁶ The results are similar when we use the pre-HLT year not the pre-distress year (year -1) as the reference year.

margins as in the year before distress. This suggests that the firms experience a decline in margins in the year of distress (and is confirmed in table 6 below). The result also is consistent some of the sample firms experiencing adverse economic shocks that contribute to the firms' becoming distressed. We explore this further in section 5.

Our results differ substantially from those in Asquith et al. (1994) and Denis and Denis (1995). Asquith et al. study a sample of firms that have very low operating income and find that poor firm operating performance is the primary source of financial distress, explaining 56% of the cash flow shortfall. Firm leverage explains only 21% of the cash flow shortfalls in their sample. Again, we view this as an important advantage for our study, in that we have isolated a sample of firms for whom leverage is the primary, if not only, source of cash flow shortfall. In that sense, our firms are largely financially distressed, not economically distressed.

Denis and Denis (1995) find that poor industry performance, not poor firm performance is the primary cause of financial distress for their leveraged recapitalizations. Our results in tables 3 and 4 indicate that leverage is the primary cause of distress. Recent firm performance plays a modest role. Poor industry performance, in contrast, plays a slightly positive role not a negative one. The analyses we report in table 6 are closer in spirit to those in Denis and Denis, and also generate substantially different results. The most plausible explanation for the different results, is that they study a sample of firms with much more heterogeneous leverage levels.

4. Value calculations.

This section measures the change in value of the distressed HLTs from two months before the transaction is announced until the resolution of distress. The analysis follows those in Kaplan (1989a) and Kaplan (1994a). The date that a market value is available after the distress resolution is referred to as the

resolution valuation date.⁷

The value on the resolution date is one of four types: (1) a company's value when it exits Chapter 11; (2) a company's value when it is sold; (3) a company's value when it issues public equity; or (4) a company's value when it is liquidated. Sixteen of the firms in this sample exit Chapter 11 as public companies, two are sold in the process of exiting Chapter 11, one firm is liquidated in Chapter 11, three are sold as part of a restructuring, and eight subsequently go public after successfully restructuring. One firm, Supermarkets General, is still private and, therefore, cannot be valued yet. For three of the sample companies, we obtained a plan of reorganization, but were unable to obtain a market value at resolution. In these cases, we estimated equity values using the estimated reorganization value of the company. (The results are similar when we exclude these companies.)

For all thirty companies with resolutions, we estimate nominal, market-adjusted, and industry-adjusted returns. We calculate and present the returns to total capital (equity, debt, preferred stock, and capitalized leases) invested in the company two months before the HLT is announced. The market-adjusted returns adjust the nominal returns obtained by investors by the return on the CRSP value-weighted index over the same period. The industry-adjusted returns perform a similar adjustment, using as a benchmark the returns on a portfolio of firms in the same Value Line industry. The methodology is detailed in Appendix A.

⁷ The time from the beginning of the year of distress onset (year 0) until the month of distress resolution averages 44 months, varying from a minimum of 24 months to more than 60 months (for five firms). Compared to other studies, this time period may seem long. There are two reasons for the length. First, the period is artificially lengthened at the start, because it begins at the beginning of the fiscal year of distress, not at the time of distress. Second, the period is artificially lengthened at the end for those firms that are privately-held and restructure outside of Chapter 11. These firms can be valued only at the time of an IPO.

Three aspects of this methodology merit discussion. First, the market and industry adjustments are equivalent to assuming that the HLT assets would have performed as well as the market or the industry if the HLTs had not occurred. Because the market and industry adjustments are applied to total capital not equity, the market- and industry-adjusted calculations assume that the total capital of each HLT -- debt and equity -- has an *asset* beta of one. This is roughly consistent with the individual betas and the industry betas of the sample firms.

Second, the methodology calculates values using book values for debt. While this may misstate value in some cases, it is unlikely to do so by very much. Before the HLT, most firms do not have much long-term debt. The equity market value, which is correctly measured, is the primary value of the company. At the time of the distress resolution, companies that emerge from Chapter 11 typically recast their balance sheets to reflect the market value of the new debt liabilities. Companies that are sold report sale prices for debt. The book value estimates may be inaccurate only for those companies that restructure without Chapter 11 and, subsequently go public. Because such firms are substantially less highly leveraged after going public, the book value estimates slightly understate true market values. In fact, this is what we find when we use end-of-month bond prices for the public debt of these firms (obtained from Standard & Poor's).

Finally, our measures of return performance are equivalent to the realized net present value of the HLT scaled by the total capital invested. Because they are in present value terms, these measures are directly comparable across firms and do not have to be annualized.

Table 5 reports that the total capital of our sample firms earn marginally more than the industry, with a mean value of 12% and a median return of 4%. Adjusted for market returns, the sample firms earn a mean return of 8% and a median of 5%. With standard errors of roughly 8%, none of these returns

differs significantly from 0.⁸ These results, therefore, indicate that the combination of benefits from the HLTs and costs of distress did not decrease the value of capital and, in all likelihood, increased it.

This conclusion has one immediate implication. If HLTs that defaulted earned slightly positive market-adjusted returns, it is virtually certain that HLTs overall -- those that defaulted and those that did not -- earned significantly positive market-adjusted returns.

Table 5 reports three other results. First, while total capital earns small market- and industry-adjusted returns, the division of those returns is unequal. Post-buyout capital earns average market and industry-adjusted returns of -23% and -19% respectively. Pre-buyout capital that sells to post-buyout capital earns significantly positive market- and industry-adjusted returns.

Second, post-buyout equity investors in the distressed HLTs do not fare very well. Equity investors earn nothing in eight of the HLTs and earn an average total nominal return of -7%. Adjusted for the market and the industry, the average return is -48% and -57%, respectively. The market adjustments overstate the returns to equity because they assume post-HLT equity betas equal one.

Third, post-buyout equity holders lose 90% or more of their investment in fourteen of the nineteen transactions that entered Chapter 11. The violation of absolute priority for equity holders, therefore, appears to be infrequent and small in market value terms.

5. *Evidence on the costs of financial distress.*

This section considers quantitative and qualitative evidence on the costs of financial distress.

5.1. *Quantitative estimates.*

We consider quantitative measures of the costs of financial distress. First, we measure changes in

⁸ At the same time, one can statistically reject the hypothesis that these returns are more negative than -10%.

operating performance, both absolutely and relative to industry. Second, we compare the estimated value of the firm at the time it enters distress to its value at resolution.

5.1.1 Changes in operating performance.

We follow Kaplan (1989a) and measure changes in operating performance as the percentage change in operating margins (EBITDA to sales), capital expenditure margins, and net cash flow margins (EBITDA net of capital expenditures, all divided by sales). Our results are qualitatively similar when we divide by assets.⁹ We also measure these changes relative to the industry by subtracting the changes in median operating performance for firms in the same industry.

Table 6 reports our results. Panel A of the table indicates that the distressed HLTs initially register positive operating performance. Operating margins in the first full year after the HLT (post-HLT) increase by 12.8%, nominally, and by only 1.7% adjusting for the industry. Capital expenditure margins decline as well, although these declines were likely to have been expected at the time of the HLT. The combination of these two changes leads to an increase in net cash flow margins of 52.9% and industry-adjusted 54.5%. While the industry-adjusted increase in operating margins is well below the 9% found for HLTs overall by Kaplan and Stein (1993a), the 66.3% increase in net cash flow margins compares well with the 43% they find for HLTs overall.

By the first year of distress (year 0), however, operating performance deteriorates. Compared to pre-HLT performance, operating margins have declined by 18.2% and industry-adjusted 13.3%. Net cash flow margins have increased, but only by 14.6% and industry-adjusted 28.1%. Similarly, panel B shows that operating margins decline by 16.1% and industry-adjusted 17.0% from the year before distress to the year of distress.

⁹ We prefer to use sales as a deflator rather than assets because assets are affected both by accounting changes at the time of the HLT and by subsequent asset sales.

As noted earlier, these results differ from those in Denis and Denis (1995) who find that operating income adjusted for industry performance is flat. We find no evidence that poor industry performance is responsible for financial distress. The results in year 0 (and the years after) are qualitatively similar whether we adjust for industry performance or not.

Panels B and C indicate that HLT operating and net cash flow margins continue to decline somewhat from the first year of distress until the year before distress is resolved. Immediately after the resolution of distress, however, performance rebounds. For example, panel C indicates that operating margins exceed their levels in the first year of distress (year 0).

Overall, from the year before distress to the first year after resolution, panel B shows that, operating margins decline by 7.1% and industry-adjusted 12.3%; net cash flow margins decline by 9.0% and industry-adjusted 16.7%. From the year before the HLT to the first year after resolution, operating margins decline by 14.9% and industry-adjusted 12.4%; net cash flow margins increase by 29.9% and industry-adjusted 22.0%.¹⁰

It is possible that these operating performance measures are biased in some way due to post-HLT asset sales. For example, if firms in financial distress divest less profitable divisions or assets, then the operating margins of the firms that sell assets would increase without reflecting any actual improvements to the continuing operations. This does not appear to be an important problem in our sample. When we remove the seven sample firms that undertook substantial asset sales during their distress period,¹¹ the operating results reported in Table 6 do not decline, but improve slightly.

¹⁰ Because ten firms do not have post-resolution operating results -- nine were sold and one was liquidated -- the post-resolution operating results could be biased if the ten missing firms systematically underperformed the included ones. Although we cannot reject a possible bias, we find no evidence of underperformance. The operating performance of the ten firms without post-resolution results -- from both pre-HLT to pre-resolution and from the onset of distress to pre-resolution -- are qualitatively similar to those for the twenty-one firms with post-resolution operating results.

¹¹ These seven firms undertook total post-HLT asset sales that exceeded 25% of the pre-HLT asset value, and sold at least half of these assets during the distress period.

One interpretation of the operating results is that the net costs of financial distress are 10% to 15%, corresponding to the percentage decline in operating and net cash flow margins from the year before distress to the year after resolution. This interpretation requires three assumptions. First, it assumes that a change in margins is permanent and translates into a permanent drop in cash flows to investors. In a perpetuity valuation framework, this leads to an identical percentage decline in value.

Second, it assumes that we have accurately identified the time that financial distress begins. While we believe we have done so, financial distress might have begun before a firm attempted to restructure, defaulted or saw its coverage drop below one. In the extreme, some readers have argued that financial distress for these firms began when the HLT was completed. We think this is an unreasonable assumption because none of the sample firms considered themselves distressed immediately after the HLT. After all, investors and managers chose to finance the capital structures that were put in place and, presumably would not have done the HLT if they thought they would become distressed immediately.

Nevertheless, under the assumption that financial distress began at the HLT, operating performance from before the HLT to post-resolution becomes the relevant measure of the costs of financial distress. The results over this period suggest that the net costs of financial distress are, if anything, lower. Operating margins decline by roughly the same amount over this longer period (industry-adjusted 12.4%), while net cash flow margins actually increase (industry-adjusted 22.0%).

Third, our interpretation assumes that the typical firm did not experience an adverse economic shock or economic distress (worse than that suffered by the industry). As noted earlier, it is likely that some of the decline in margins is caused by adverse economic shocks. We explicitly address this issue in section 5.1.3.¹²

In conclusion, the changes in operating performance suggest that the net costs of financial distress

¹² Again, it is important to repeat that even after these shocks, the operating margin of the typical sample firm exceeded operating margin of its industry.

are no greater than 10% to 15% of initial value and, when adverse economic shocks are accounted for, are likely even smaller.

5.1.2 *Value at resolution versus value at distress.*

Table 7 uses a value-based approach to measure the magnitude of the costs of financial distress. The table compares the estimated capital value of the distressed HLTs at the end of the year before the onset of distress -- the end of year -1 or, equivalently, the beginning of year 0, the fiscal year in which they become financially distressed -- to the capital value realized through the resolution of distress. The capital value realized from the end of the year before the onset of distress until resolution as well as the market and industry adjustments are calculated in the same way as the returns from pre-HLT to resolution in section 4.

Because most of the securities of the sample firms were not publicly-traded at the onset of distress, we must estimate capital value at the end of the fiscal year before the HLT becomes distressed. We follow Kaplan and Ruback (1995) and estimate capital value as the sum of (1) cash on hand; and (2) the product of the median industry multiple of total capital to EBITDA that year and the HLT's EBITDA. Kaplan and Ruback (1995) find that this methodology is successful in explaining a large fraction of the variation in actual HLT transaction values but underestimates the transaction values by 17%. We, nevertheless, rely on this methodology because the HLT's in their sample forecast that operating margins would increase by roughly the same 17% in the first year after the HLT. In other words, applying this methodology to EBITDA in the first post-HLT year yields estimated values that are (statistically) indistinguishable from the transaction values.¹³

¹³ Using estimated capital value at the end of the year before the onset of distress may overstate the value of the HLTs when they become distressed because the estimates use EBITDA in the year before distress. As table 6 indicates, these firms experience a decline in operating margins from the pre-distress year to the year of distress. To the extent that the decline and distress are precipitated by an adverse economic shock, our estimated capital value will not be adjusted for the shock. For this reason, we believe the results here will overstate the costs of financial distress.

The value-based results in table 7 are consistent with the operating performance results in table 6. We report the average in addition to the medians for our return results because the average is more appropriate than the median for measuring the return to an equal-weighted portfolio of HLT investments. Using the year before the onset of financial distress, the median estimates imply that the costs of financial distress are 20.7% adjusted for the industry and 24.7% adjusted for the market. The average estimated costs of financial distress, however, are smaller, at 9.7% and 9.8%, respectively, adjusted for the industry and the market. Neither of the average values differs significantly from 0. These estimates, like those for operating performance, are likely to overstate the net costs of financial distress because they include the effects of adverse economic shocks to some of the sample firms.

Table 5 provides another estimate of the net costs of financial distress. As noted in the analysis of operating performance, one might make the extreme assumption that financial distress began immediately after the HLT was completed. Under this assumption, the losses to post-HLT capital would approximate the costs of financial distress. In table 5, we estimate the median losses to post-HLT capital as 22% industry-adjusted and 25% market-adjusted; the average losses are 19% and 23%, respectively. Again, it is likely that these estimates overstate the true costs of financial distress for this sample.

There is an additional reason that both sets of estimates -- from the year before distress and from the HLT -- may overstate the costs of financial distress. For the twenty sample firms with available post-resolution stock returns, we calculated industry- and market-adjusted stock returns from post-resolution through December 1995. We find that the equities of these firms earn average cumulative market-adjusted returns of 26.7% and industry-adjusted returns of 77.9%. In other words, the sample firms do unexpectedly well after emerging from Chapter 11 or restructuring. This result is consistent with recent work by Eberhart, Aggarwal, and Altman (1997) and Alderson and Betker (1996) who study larger

samples of firms that emerge from Chapter 11.¹⁴ As Eberhart et al. note, this result is particularly striking given the extensive literature that finds that initial public offerings subsequently underperform the market.¹⁵

5.1.3 *The effect of adverse economic shocks on estimated costs of distress.*

¹⁴ Eberhart et al. control for industry and size. They do not control for book-to-market because it often is unavailable at the time of the resolution. In their view, industry matching should control for a large portion of the book-to-market effect. We obtained qualitatively similar results for our sample when we controlled for book-to-market and size. We did so by regressing post-resolution monthly returns against the market, a book-to-market factor (HML), and a size factor (SMB).

¹⁵ See Ritter (1997) for a summary of this literature.

In this section, we examine the potential effect of adverse economic shocks to our previous estimates of the costs of financial distress. Because our goal is to isolate the pure costs of financial distress, we would like to remove from our estimates the initial value loss due to a negative shock to cash flows -- i.e., we would like to eliminate firms that experienced poor business outcomes unrelated to financial distress. In an attempt to do this, we separate the sample firms into two sub-samples, based on whether they did or did not experience an adverse economic shock.¹⁶

We classify firms as having experienced a negative economic shock if they meet two conditions. First, there must be explicit qualitative evidence that the shock occurred -- either in company reports or press accounts.¹⁷ For example, the two gypsum producers in our sample and the press reported that severe weakness in the construction industry had adversely affected the gypsum business. Similarly, several retailers in the sample noted that retail demand had declined substantially. Second, there must be evidence that, indeed, a shock occurred. We consider the shock to have occurred if a firm's operating margins dropped by more than one third from the year before the onset of distress to the year after distress. This procedure classifies twelve firms as having suffered a negative shock.¹⁸

While it is unlikely that any classification scheme can perfectly distinguish the purely financially distressed from the economically distressed firms, we believe that the firms in our sample that do not face an adverse economic shock are more likely to be purely financially distressed than the sample as a whole.

¹⁶ We thank the referee for suggesting this procedure.

¹⁷ Interested readers should consult the caselets in Appendix B to this paper.

¹⁸ The firms that meet these criteria are Cherokee, Florida Steel, Harvard Ind., KDI, R.H. Macy, Mayflower, Morse Shoe, National Gypsum, Pay N' Pak, Seaman Furniture, Specialty Equipment, USG.

Similarly, the firms we identify as having suffered an adverse economic shock are more likely to have suffered some economic distress.

We acknowledge one potential criticism of this classification scheme. It is possible that there is an interaction between an adverse economic shock and costly financial distress. If this is true, then the poor performance of the firms that we identify as having suffered an adverse economic shock may have been exacerbated by the financial distress.

Panels A and B of Table 8 report statistics on the returns to pre- and post-HLT total capital, as well as the value-based costs of distress, for the “shock” and “no shock” sub-samples respectively. Panel A indicates that firms that did experience an adverse shock experience significantly negative returns to post-HLT total capital and upper bound on the costs of distress.

In contrast, panel B indicates that the firms that did not suffer shocks experienced negligible costs of financial distress. The median upper bound costs of distress are 3.4% and 8.8%, respectively, adjusted for market and industry. The average costs are, in fact, benefits, at -10.8% and -7.5%, respectively.

The median returns on post-HLT total capital are -13.7% and -20.1%, respectively, adjusted for market and industry. The average returns are at -13% and -14.3%, respectively. These returns are less negative than the returns to the overall sample. The median and average estimates in panel B are all statistically insignificant, except for of the industry-adjusted median return to post-HLT capital. (As we discussed in section 5.1.2., this is our most conservative measure because it assumes firms were distressed immediately after the HLT.)

The evidence in Table 8 strongly suggests that adverse economic shocks are responsible for a portion, potentially substantial, of the measured costs of financial distress for the entire sample. Firms that do not experience shocks have significantly lower estimated costs of distress than firms that did, both statistically and economically. In fact, the median and, particularly, average costs of distress for the “no shock” sub-sample are in all but one case statistically indistinguishable from zero.

We also repeated the operating performance analysis in table 6 on the two subsets of firms. Table 9 reports the results for operating performance from year -1 to the first post-resolution year. The results from the last pre-HLT year and from year 0 are qualitatively similar. Table 9 indicates that firms that do not experience an adverse shock show a slight improvement in median (industry-adjusted) operating margins from the last year before distress to the last distress year and to the first post-resolution year. The results are similar when measured from the last pre-HLT year. In addition, the results for net cash flow margins are similar to those for operating margins. The operating performance results, therefore, also imply minimal costs of financial distress (again, based on a perpetuity valuation).

Overall, then, when the effects of adverse economic shocks are filtered out, our estimates imply small or insignificant pure costs of financial distress.

5.2. Qualitative estimates: Operating changes after distress and Chapter 11.

In this section, we augment the quantitative estimates of the costs of financial distress with qualitative evidence of such costs. The qualitative costs include evidence of (1) irrevocable and costly reductions in capital expenditures; (2) asset sales at depressed prices; (3) undesired losses of key customers; (4) undesired losses of suppliers; (5) asset substitution; and (6) delay. Of course, as noted in Kaplan (1994a and 1994b) and Wruck (1990), financial distress also can provide benefits. Such benefits include (1) the removal of poor management; (2) operating improvements; and (3) the sale or discontinuation of poorly performing assets.

We obtain this qualitative evidence from press reports, annual reports, 10Ks, and plans of reorganization (PORs), paying special attention to management's discussion of operations and liquidity in the latter three types of documents.

Table 10 summarizes our qualitative analysis of financial distress. We find evidence of costly investment cuts, depressed asset sales, and delay which are detailed in tables 11A - 11C. Appendix B

describes the onset and outcome of distress for each company.

Table 11A indicates that all thirty-one firms in our sample curtail capital expenditures at some point. At least some of the cuts appear to be undesirable and potentially costly for seventeen of the firms.

Table 11B reports that ten firms appear to sell assets at depressed prices while nine firms may have done so. Twelve firms do not appear to sell assets at depressed prices.

Table 11C shows that fourteen firms took actions to delay the resolution of the financial distress. The delay appears to have been costly for at least nine of these firms.

We also considered whether the sample firms engage in risk shifting or asset substitution. In particular, we looked for instances in which the distressed firms made large investments in unusually risky capital expenditures, projects, or acquisitions. We found no evidence of such behavior in any of the sample firms. It is likely that the strict bond covenants associated with the HLT play a large role in this result. Nevertheless, this evidence is consistent with the results in Parrino and Weisbach (1997) that the distortions of risk shifting are inconsequential to capital structure choice.

Finally, table 10 reports that ten firms experienced difficulties with suppliers, eight firms difficulties with customers, and nine firms appear to have been hurt competitively while they were distressed.

On the benefit side, twenty-three of the financially distressed firms clearly make greater efforts to cut costs and attempt to improve operations after becoming distressed. Fifteen firms bring on a new chairman, president or CEO during the period of distress.

The analysis in table 10 also reports when the costs and benefits of financial distress are incurred. To the extent they occur, the costs are heavily concentrated in the period after the firms become distressed, but before they enter Chapter 11. There is little qualitative evidence that Chapter 11 is inefficient or even costly for our sample firms. Under the safe harbor from debt payments provided by Chapter 11, the sample firms resolve difficulties with suppliers, customers, and competitiveness in general. In a very

different study, Gilson (1997) reaches a similar conclusion.

One of the difficulties in interpreting this qualitative evidence is deciding whether the events we uncover are due to financial distress, or a consequence of some adverse performance shock, which also precipitates the onset of distress. For the case of investment cuts and asset sales, Tables 11A and 11B specify, wherever possible, whether these events are unforeseen and costly, but necessary to meet the firm's debt burden.

For cost cutting and operating improvements, we do not believe that a shock to operating cash flows was the primary cause, rather than high leverage. All the firms in the sample remain profitable throughout their period of distress. It seems unlikely, therefore, that the sample firms -- even those that experienced a negative performance shock -- would have required such belt tightening absent the debt. Other events, such as loss of key customers and suppliers, also appear directly related to uncertainty about the financial health of the firm, and its ability to make payments, rather than negative operating performance.

Finally, management changes are the one event where it is impossible to disentangle the effects of financial distress and poor operating performance, as firm disclosures and press accounts do not provide enough detail.

This qualitative analysis uncovers costs and benefits of financial distress. The contribution here is to describe the frequency of different types of costs and benefits and when those costs and benefits appear to be incurred. This also should be interesting for readers who take a cynical view of the relevance of management discussions of operations in SEC filings, particularly those who believe that managers never willingly report bad news.

6. *Cross-sectional analysis.*

In this section we consider the cross-sectional determinants of the costs of financial distress. We

measure the costs of financial distress using the value-based quantitative estimates of the costs of financial distress from section 5.1.2 adjusted for industry performance. While this measure may not measure the costs of financial distress perfectly, we are not aware of any reason to believe it is biased in any particular way. Accordingly, the estimated coefficients in the regressions that follow should be unbiased. We acknowledge, however, that we may obtain insignificant results because the data are noisy, not because the relationships do not exist.

6.1 Costs of financial distress and capital structure complexity.

We first test whether costs of financial distress are related to the complexity of the HLT's capital structure. As a firm's capital structure has more securities and becomes more complex, conflicts of interest and free rider problems increase. Complexity makes it more difficult for claimants to agree on the division of the firm's assets, and, therefore, prolongs both the amount of time a firm experiences financial distress and the costs of that distress. See Gertner and Scharfstein (1991), Giammarino (1989), Haugen and Senbet (1995), and Wruck (1990). We measure complexity using the log of the number of securities in the HLT capital structure. (We use a log specification because it seems unlikely that costs increase linearly. The results, however, are similar using linear or dummy variable specifications.)

Regression (1) of table 12 indicates that costs of financial distress decline with capital structure complexity. (significant at the 5% level). This is not consistent with increased complexity increasing the costs of financial distress.

6.2 Costs of financial distress and ease of restructuring

We also consider the effect of three other variables that, in theory, affect a firm's ability to reorganize or restructure. First, we include a dummy variable for the presence of public junk bonds. Because the Trust Indenture Act makes it difficult to restructure public debt, it is possible that the presence

of public junk bonds will increase the costs of financial distress. In addition, Kaplan and Stein (1993) find that MBOs that use junk bonds are subsequently more likely to default. They argue that this potentially indicates that the junk bond market overheated if the costs of financial distress are particularly large in such transactions. Regression (2) finds that the use of junk bonds is associated with lower costs of financial distress although the coefficient is not significant. This is not supportive junk bonds being more difficult to restructure nor is it supporting of overheating.

Second, we include a variable that measures the fraction of debt which is bank debt in the year before the HLT becomes distressed. Gilson, John and Lang (1990) find that firms are more likely to resolve financial distress through private workouts the more heavily those firms rely on bank debt. Consistent with the Gilson, John, and Lang result, regression (3) indicates that a greater fraction of bank debt reduces the net costs of financial distress (significant at the 10% level). This suggests that the presence of bank debt improves a firm's ability to renegotiate or restructure.

Third, we include a dummy variable for the presence of a buyout sponsor. The presence of a buyout sponsor might be expected to reduce the costs of financial distress because they may develop expertise in restructuring and because most buyout sponsors will want to protect their reputations in order to do future HLT transactions. Regression (4) indicates that the presence of a buyout sponsor has no effect on the costs of financial distress.

6.3 Costs of financial distress and total value.

We next test whether costs of financial distress are related to the capital value of the HLT at the time of the HLT. The costs will be negatively related to total capital value if there are important fixed costs to restructuring -- for example, legal costs, creditor costs to get information on the distressed firm, etc. Alternatively, to the extent that complexity increases the costs of financial distress and that capital value is a measure of complexity, costs of financial distress will increase with capital value.

Regression (5) indicates that the costs of financial distress decrease with (the log of) HLT capital value. This result is consistent with fixed costs of financial distress and, again, not consistent with increased complexity increasing the costs of financial distress.

Because HLT capital value and capital structure complexity are highly correlated, regression (6) includes both variables in one regression. While neither of the coefficients is significant, costs of distress decrease with HLT capital value and with capital structure complexity. Again, this result is more consistent with fixed costs of distress and less consistent with complexity increasing the costs of financial distress.

6.4 Costs of financial distress and time in distress.

It is commonly argued [e.g., see Helwege (1996) and Jensen (1989 and 1991)] that the costs of financial distress increase with the time in financial distress, in default, and Chapter 11. The costs increase with time because the value of the firms is assumed to dissipate as claimants expend resources arguing over the division of the value of the company. Alternatively, Haugen and Senbet (1978) argue that claimants' bargaining may not affect overall firm value.

We empirically estimate the relation between our measures of the costs of distress and the time each firm was financially distressed. We also distinguish between firms that defaulted and those that did not for two reasons: (1) firms that default are more likely to have experienced a negative economic shock which will decrease the return to HLT capital and increase the measured costs of financial distress; and (2) financial distress is arguably more severe for firms that defaulted. Before reporting the results, it is worth noting that this regression specification is potentially flawed. It is quite possible that the time in distress is endogenous, with a longer time in distress indicating that the firm is in greater financial and operating difficulty.

Regression (7) indicates that there is no relation between the time in distress and the costs of

financial distress. This result is insensitive to different definitions of time in distress. The result in regression (7), like the earlier regressions are consistent with the bargaining surrounding claims in distress having no effect on the value of the underlying firm.

6.5 Costs of financial distress and industry performance.

Shleifer and Vishny (1992) predict that financial distress will be more costly when the distressed firm's industry performs badly because the distressed firm's assets will be relatively illiquid -- the buyers who value the distressed firm's assets the most highly will find it difficult to buy those assets.

We test this prediction by comparing our measures of industry-adjusted costs of financial distress against different quartiles of industry performance. According to Shleifer and Vishny, costs of financial distress higher when industries perform relatively poorly. We measure industry performance as the equal-weighted return to firms in the same industry over the period that costs of financial distress are calculated. In regression (8), we find no relation between industry performance and either the return to pre-HLT capital or the costs of financial distress. The results are similar when we measure industry performance relative to the overall stock market.

6.6 Quantitative costs of financial distress and qualitative costs of financial distress.

We also considered the relationship between our qualitative and quantitative measures of financial distress. We do not report these in a table. Because the qualitative variables are imprecise measures of the extent of the costs of distress, we did not expect much from these regressions and we did not get much. All of the coefficients are insignificant.

7. Summary, implications and generality of results.

7.1 Summary

This paper studies a sample of highly leveraged transactions (HLTs) that subsequently become financially distressed. First, we estimate the effects of financial distress on value. From pre-transaction to distress resolution, the sample firms experience a small increase in value. In other words, the net effect of the HLT and distress is to leave value slightly higher. This strongly suggests that HLTs overall -- those that defaulted and those that did not -- earned significantly positive market-adjusted returns.

Second, we estimate the costs of financial distress and their determinants. The sample firms have positive operating margins at the time of distress that typically exceed the median industry operating margins. Because of this, we believe that this sample is primarily financially distressed, not economically distressed. Accordingly, our estimates of the costs of distress largely represent costs of pure financial distress. Because we cannot eliminate economic distress or the effects of economic shocks completely, our estimates for the overall sample should be considered upper bounds on the costs of pure financial distress for these firms.

Consistent with some costs of distress, several firms are forced to curtail capital expenditures and a number of firms appear to sell assets at depressed prices. We find no evidence that the distressed firms engage in asset substitution of any kind.

To the extent they do occur, the costs of distress are heavily concentrated in the period after the firms become distressed, but before they enter Chapter 11. We find little evidence that Chapter 11 is inefficient or costly for our sample firms. This result is in agreement with recent work by Alderson and Betker (1995), Gertner and Picker (1992), Gilson (1997), and Maksimovic and Phillips (1996). The result also suggests that the experience of Eastern Airlines, documented in Weiss and Wruck (1996) may be more the exception than the rule.

We provide several estimates of the magnitude of the net costs of financial distress. For the entire sample, we estimate that these costs average less than 10% of firm value. Our most conservative estimates

do not exceed 25% of firm value. For the subset of firms that do not experience an adverse economic shock, we estimate the costs of financial distress to be negligible. These net costs are substantially lower than those found in previous studies of firms that are economically distressed. For example, Altman (1984) finds that cumulative earnings shortfalls in the three years before bankruptcy approximate 25% of initial stock value. Altman does not attempt to capitalize these earnings shortfalls. If he had, they would undoubtedly have been much greater than 25%.

Finally, we estimate the cross-sectional determinants of the costs of financial distress. We find that these costs decline with HLT value and the fraction of total debt owed to banks, but are not related to capital structure complexity, the presence of junk bonds, the presence of buyout sponsors, time in distress, or industry performance. These results are not consistent with increased complexity increasing the costs of financial distress. They also suggest that costs of financial distress have a fixed component.

7.2 Implications

Our estimates of the net costs of financial distress have potentially important implications for capital structure choice. Compared to estimates of the direct costs of financial distress on the order of 3% of firm value (Weiss [1990]), our estimates of the costs of financial distress for the entire sample -- an average of 10% to 20% with an upper bound of 25% -- might appear high (although they are lower than those in previous studies). This would be particularly true if there is a selection bias in which firms with low costs of financial distress are more likely to become highly leveraged.

Alternatively, the costs of financial distress are (obviously) low when we rely on our estimates of the costs of financial distress for the subset of firms that do not experience an economic shock. Furthermore, from an ex ante perspective that trades off expected costs of financial distress against the tax and incentive benefits of debt, the costs of financial distress seem low both for the non-shocked subset and for the entire sample. If the costs of financial distress are 10% (or even 25%), then the expected costs of

financial distress for most public companies are modest if not minimal because the probability of financial distress is very small for most public companies. As long as debt conveys tax benefits, a standard capital structure choice analysis, trading off tax and incentive benefits of debt against the expected costs of financial distress, would conclude that the sample firms and firms like them should have a highly leveraged capital structure. While we acknowledge the high cost interpretation, we believe this low cost of financial distress interpretation is more persuasive.

The final issue that we address is the extent to which our results generalize to mature firms. It is possible that the firms that undertook HLTs were those which, *ex ante*, expected to have low costs of financial distress. If this is true, our estimates of the costs of financial distress understate the costs of financial distress for firms in general.¹⁹

Several papers find that HLT firms do not have high research and development expenditures (R&D). Kaplan (1989a) and Hall (1990) note that HLT firms tended to be in mature industries that did not require large amount of R&D. Opler and Titman (1993) study firms that undertook LBOs in the 1980s. Over the 1985 to 1990 period that is relevant for our sample firms, they find that firms with higher R&D expenditures were less likely to undertake LBOs. Other than differences in R&D, however, they find little evidence that firms with low costs of financial distress were more likely to undertake LBOs.²⁰ A reasonable interpretation of these results is that among companies that are not R&D intensive, HLT companies are not selected in an obvious way for low costs of financial distress. Among such companies, therefore, our results are likely to generalize.

¹⁹ It is still possible that even if HLT firms are not selected for low costs of distress, that the HLT capital and governance structures are selected or designed to minimize the costs of financial distress relative to other structures.

²⁰ In our sample, we compared the costs of financial distress for HLTs that were motivated by hostile pressure with those that were not. If HLTs are specially selected, we would expect those motivated by hostile pressure to be less selected and to have higher costs of financial distress. We do not find this. In our sample, the hostile HLTs have insignificantly lower costs of financial distress.

The results in Maksimovic and Phillips (1996) also suggest that our results are general. They use plant-level data to examine the productivity and plant-closure decisions of bankrupt firms. They find little evidence of bankruptcy costs, particularly in industries that are not high growth.

There also is little evidence that HLTs were concentrated in industries with less volatile cash flows or, equivalently, low probabilities of financial distress. Kaplan and Stein (1993a) and Bernanke et al. (1990) find that the HLTs of the later 1980s (which we study here) operated in industries whose cash flows were approximately as volatile as the average industrial firm on COMPUSTAT. We performed a similar test and found that the HLTs in our sample did not operate in Value Line industries with operating margins that were less volatile than average. These findings suggest that the probability of financial distress was not particularly low for the sample HLTs.

Overall, then, we cannot conclude that our results would hold for firms in high R&D or, possibly, high growth businesses. (In fact, we believe the results are unlikely to hold for such firms.) However, among firms in more mature businesses, it seems likely that the results for our sample HLTs would hold.

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**Appendix A:
Method for Calculating Excess Returns to Investors**

This appendix describes the method used to calculate excess returns to HLT investors.

In this analysis, time is measured as follows:

 T1	 T2	 T3	 T4
Two Months Before HLT Announcement	HLT Announcement	HLT Completed	Exit Chapter 11 or Company Sold or IPO or Distress Resolved

The total capital value of the HLT company at time T equals the sum of the values of equity, long-term debt, short-term debt, and capitalized leases when the HLT is completed:

$$\begin{aligned}
 \text{TCAP}_T = & \\
 & \text{Market Value of Equity}_T + \\
 & \text{Book Value of Long-term and Short-term Debt}_T + \\
 & \text{Book Value of Capitalized Leases}_T.
 \end{aligned}$$

The total return to investors is calculated as:

$$\text{NRET} = \frac{[\text{TCAP}_{T4} + \text{Interim Payments to Capital} - \text{TCAP}_{T1}]}{\text{TCAP}_{T1}} .$$

Interim payments to capital include the annual principal, interest, dividend and lease payments made between T1 and T4. It is assumed that the interim payments are invested in a portfolio with the same systematic risk as the company as a whole. This adjustment will tend to underestimate the terminal value because such payments are made throughout the year, rather than at year-end.

The excess return earned by investors in the HLT is estimated as the difference between the total HLT return and the return on an investment of the same systematic risk over the same period:

$$\text{MXRET} = ([1 + \text{NRET}] / [1 + R_m \text{ over the same period}]) - 1,$$

where R_m is the CRSP return on the value-weighted NYSE-AMEX index.

Industry-adjusted returns are calculated in the same way as market-adjusted returns except that the industry benchmark return is the return on an equal-weighted portfolio of firms in the same Value Line industry.

IXRET =

$$([1 + \text{NRET}] / [1 + R_{\text{ind}} \text{ over the same period}]) - 1,$$

where R_{ind} is the return on the equal-weighted industry portfolio.

Both the market-adjusted and industry-adjusted methods are likely to understate the true returns earned by the HLTs because both methods assume that all of the HLT assets -- both debt and equity -- would have earned equity-like returns over the sample period.

Appendix B: Individual Company Descriptions of Financial Distress

American Standard

In 7/88, a group of investors led by Kelso acquired American Standard ("AST"), one of the largest manufacturers of plumbing products, air conditioning systems and braking systems worldwide. Kelso came in as a white knight, as AST was the target of a hostile bid from Black & Decker ("B&D"). The deal, partly financed by AST's ESOP, was viewed largely as a means for managers to entrench themselves, particularly after Kelso paid \$25MM to B&D to "go away". At the time analysts commented that the bidding had gone well beyond any reasonable estimates of value. Still, during the first two years, operating results were strong, and the Company was able to complete a flurry of asset sales, despite weakness in the economy. There was no indication that the prices obtained were unfair. However, by 1991 the soft US construction market caught up with AST, as cash flows from operations began to decline. Also, at this point capital expenditures had dropped significantly relative to pre-HLT levels, although again the consequences were not clear, since the Company had just completed a major overhaul of all operations before the buyout. In 1991, AST had to obtain a series of covenant waivers from its banks, as the Company was in danger of violating them, which would have constituted default. Also, the Company sold its railway braking business, previously part of its core operations. As a result, during 1992 and 1993 the Company underwent a series of new debt issues and exchanges, the purpose of which was to repay expensive bank debt and extend maturities, as well as avoid cash interest payments on certain subordinated issues, which were to start in 1993. This first recap was also supposed to include an IPO, which was scrapped because the price was not considered "satisfactory" by management. Finally in 1994, with US and European markets fully recovered and AST reporting strong cash flows, the Company underwent its second recap, which included a new credit facility and an IPO, which was very well received. Relative to the pre-HLT year, by time it went public AST's EBITDA / Sales had decreased 20%, while Cap. Expenditures / Sales also fell 63%, leading to an overall increase in Net Cash Flow / Sales of 39%.

Bucyrus Erie

In 2/88, Bucyrus Erie ("BE"), a leading designer, manufacturer, and marketer of surface mining machinery, completed an MBO. As early as 1985, BE had hired CS First Boston to explore alternatives, as its core mining segment was in severe decline, and eventually decided to put itself up for sale. The Company received several bids before the MBO was completed, but it appeared that management refused to consider them. Most of the MBO was financed with cash from the sale of an Aerospace division. Analysts were concerned that BE would have no more assets to sell in case of bad performance. Initially, all appeared well, and the Company even made some acquisitions in 1988 and 1989. In 1991, interest rates turned unfavorable, and the resulting higher interest payments forced BE to look for new ways to control costs and improve cash flow. By that point, negative cash flows and net losses since the MBO, along with the increased interest expense led the Company to seek a refinancing or restructuring of existing debt and the raising of new equity capital. In 1992 BE engaged in a sale and leaseback financing arrangement of its last remaining manufacturer facility. At that point, S&P remarked that the Company maintained a strong market position, however its excessive debt burden combined with volatile demand made it unlikely the firm would ever meet its obligations and turn a profit. By 1993, BE announced a financial restructuring, as part of which the Company would refrain from making interest payments. The restructuring was planned as part of a prepackaged Chapter 11, but was delayed after a major debt holder filed a suit against the Company and Goldman Sachs, an original partner in the MBO. In 2/94, a voluntary Chapter 11 petition was filed and, eventually, the suit was settled out of court and an amended plan was accepted in 12/94. Relative to the last year before its recapitalization, by the time it emerges from Ch. 11, Bucyrus Erie's EBITDA / Sales had improved 39%, while Cap. Exp. / Sales had dropped by 70%, with an overall increase in Net Cash Flow to Sales of 400% (220%, -30% and 440% industry-adjusted, respectively).

Burlington Industries

In 9/87, Burlington Industries ("BI"), one of the world's largest textile companies, was acquired in a HLT by a group led by Morgan Stanley and incumbent managers. The deal was the final tactic employed by the Company to

fight off a hostile takeover attempt, after legal remedies and a proposed recapitalization had failed. As part of the restructuring BI announced it would sell assets, reduce overhead and curtail CAPX. In 1987 and 1988, BI made a flurry of asset sales of businesses considered unessential. At the time, the Company's CAPX was severely limited by its credit agreement, but BI did not view this as a problem, since they had just completed a decade long modernization program. In 1989, BI underwent a reorganization, as part of which it raised equity from a newly formed ESOP and paid old equity holders a large dividend. Later, in 1990, the Company transferred control to the ESOP in a complicated transaction where the MBO investors exchanged their common equity for new preferred stock. At the same time, BI announced a restructuring of certain divisions, including lay-offs, closing down facilities and asset dispositions. Still, despite all these measures, in 1991, after an unsuccessful attempt to buy back and retire a large portion of its junk bonds at deep discount, the Company told bondholders it might be forced to file for bankruptcy. Shortly thereafter, BI formulated a restructuring plan that included a smaller bond buyback attempt, the sale of its core Masland subsidiary and an exchange of bonds. This program was completed in 11/91. Finally, in 1992, due to favorable interest rates and market receptivity, BI completed an IPO along with a mass retiring of high-yield debt. As of the time it went public, BI's EBITDA/Sales had improved 39% (24% industry-adjusted) relative to the pre-HLT year, and with the reduction in capital expenditures, Net Cash Flow / Sales grew an impressive 88% (67% industry-adjusted) over the same time period.

Cherokee Group

In 10/88, Cherokee Group ("Cherokee"), a manufacturer and importer of women's and men's apparel and shoes, accepted a tender offer representing the first stage of a MBO, which was completed in 5/89. The Company founder rejected the deal, but was eventually out-voted and lost the Company to his second in command. During 1990 Cherokee restructured its Menswear Division, substantially reducing overhead, then in 6/90 attempted an IPO that was eventually scrapped because of low demand for new public offerings since the beginning of the Gulf War. In 6/91, however, a successful IPO was completed and the proceeds used to pay down debt. Despite the IPO, 1991 and 1992 proved to be poor years for Cherokee, with sales plummeting due to a difficult economy in California, where a majority of the Company's stores were located. In 4/92, Cherokee tried to sell new senior subordinated debt to retire old, higher interest debt, but could not complete the offering at an acceptable interest rate. Through the end of 1992, economic conditions did not improve, and retail customers and suppliers voiced uncertainty about Cherokee's ability to restructure its debt, and consequently cut back on their dealings with the Company. On 11/92 Cherokee failed to make an interest payment on its debt, after which they began negotiations with creditors. This resulted in the adoption of a reorganization plan, mostly a debt for equity swap, that would occur in a pre-packaged bankruptcy. Cherokee emerged from Ch. 11 in 6/93. Relative to its last pre-MBO fiscal year, by the time Cherokee reorganized, EBITDA / Sales and Net Cash Flow / Sales had fallen 80% (89% industry-adjusted for both).

Florida Steel

In 11/88, a management-led team completed an MBO of Florida Steel ("FS"), a manufacturer of steel and steel products with a primary presence in the Southeastern, mid-Atlantic and Midwestern US. Analysts commented that FS was a good MBO candidate, because plants were relatively modern, allowing CAPX to be postponed or cut in the short-run. In 1989, the Company announced that it would rebuild and modernize some facilities in preparation for expansion into new markets in Florida. In 1990, however, operating income plummeted as FS was hit with a severe downward trend in average selling prices, due to an excess supply caused by slowing residential and commercial construction. 1991 proved no better and, as the result of continued dropping prices and demand, the Company implemented cost saving measures, including wage freezes and reductions, and the offering of early retirement to select employees. These measures were not enough, however, and later in 1991, the Company was in violation of covenants under its bank debt agreements. The Company conceded its outlook was bleak in the short-term, as the depression of selling prices was not expected to improve until the general economy improved. As a result, in 5/92 FS did not have sufficient cash flow to pay interest on debentures, and was forced to explore alternatives, including a sale. FS agreed to be acquired by Kyoei Steel in 6/92, effectively bailing themselves out. The deal was viewed as an excellent move for FS, since Kyoei was a respected company, the price was fair, and they promised to leave FS as an independent unit. The merger was completed in 12/92. Relative to the last year before its MBO, by 1992 Florida Steel's EBITDA / Sales had dropped 53%, and despite the decrease in capital

expenditures, Net Cash Flow / Sales had also fallen by 43% (67% and 59% industry-adjusted, respectively).

Fort Howard

In 10/88, Fort Howard ("FH") was acquired by a group of investors lead by Morgan Stanley and incumbent managers. The Company was a major producer of disposable tissue paper and plastic ("cup") products. In the first several years, the business operated as usual. The Company announced it would continue its existing modernization and capacity expansion projects. FH also decided to divest its entire cup operations, selling it off to a group lead by Morgan Stanley as well. The deal was considered sound, as the tissue and cup businesses had never blended well. Also, there was no indication that the price was unfair. Through 1990, cash flows from operations were quite strong, as the Company continued to invest in new capacity in the US and UK. In 1991, with industry over capacity and stiff price competition, revenues and operating margins plunged. At the same time, FH sought a \$160MM equity injection from its main investors, followed by new debt issuances, proceeds of which were used to retire existing debt. In 1992, due to continued market weakness, the Company was forced to pull its planned debt and common stock issues. In 1993, FH wrote off all remaining goodwill (\$2 billion), an indication that management perceived that value had been impaired. This was followed by a second set of debt issuance and retirements meant to give the Company some breathing room. Still, at the beginning of 1994 FH announced that in the absence of significantly improved results, and in light of upcoming cash interest initiations on sub. debt, the Company would soon have to seek covenant waivers and maturity extensions. By mid-1994 however, results started to improve, and following its first post-HLT positive earnings quarter, FH announced an IPO, which was executed in early 1995. Note that throughout its distress period, FH continued to invest in facility upgrades and new paper machines, and analysts agreed there was no indication that the Company's investment program or competitiveness in the market had suffered. Compared to the Pre-HLT year, EBITDA / Sales grew 15% and Capital Exp. / Sales dropped 38%, leading to a 54% overall increase in Net Cash Flow / Sales by 1994.

Fruehauf

In 12/86, a team of investors lead by members of management and Merrill Lynch completed a MBO of Fruehauf, in response to a hostile takeover offer from a group lead by New York investor A. Edelman. In the offer, existing shareholders received a package of cash and new shares of Preferred and Series B common stock, giving them a 50% equity stake in the remaining entity, with the rest controlled by the new investors. Upon completion, the investors announced plans for major asset sales to repay debt and focus the Company's operations exclusively in its core trailer and auto parts businesses. By late 1987 Fruehauf was already in violation of certain debt covenants. In 1988, results from trailer business were significantly below pre-MBO projections and Company was not generating enough cash to service debts. Meanwhile, banks were unwilling to extend new financing and Fruehauf's existing lines of credit were expiring unrenewed. As a result, Company was forced to restructure trailer business: remove management layers, sell or restructure sales branches, close down plants. In addition, capital expenditures were cut and under performing maritime business was sold. These measures however did not suffice, and, in 6/89, management was forced to divest the automotive business and eventually sell the remaining assets to Varsity Corp. at a price considered by analysts at the time to be a "great deal" for the buyer. The sale closed on 12/89. Relative to the last year before MBO, by 1989 Fruehauf's EBITDA / Sales had fallen 19% (29% industry-adjusted) and Capital Expenditures / Sales had fallen 31% (35% industry-adjusted).

Harcourt Brace Jovanovich

In 7/87, Harcourt Brace Jovanovich ("HBJ"), one of the world's largest publishers, with interests in amusement parks and insurance as well, completed a leveraged recapitalization in reaction to a hostile takeover offer by British investor Robert Maxwell. During the first post-HLT year, results were positive: revenues were up, operating costs down and asset sales ahead of schedule. In 12/88 CEO Jovanovich suddenly retired and rumors circulated that firm was having difficulty meeting debt obligations and was under pressure from banks to sell core assets. In 1989 HBJ announced the sale of its Parks division (Sea World) to Anheuser-Busch for \$1.1 billion, significantly below \$1.5 billion expected. Analysts commented Parks had lost many customers due to reduced investments in marketing and park maintenance, to generate cash for debt payments. Results from Publishing division took a dive as Company's elementary and secondary school offerings were dropped by many school districts, apparently due to lack of investment in keeping products up-to-date. Publishing also suffered top management defections. As a

result, HBJ restructured Publishing, invested in new products and marketing, and cut payroll. By 1990, results from operations had improved significantly, however HBJ stated the leverage-induced uncertainty was still causing significant difficulties: unfavorable credit terms from suppliers, difficulty hiring and retaining managers and authors, inability to renew credit facilities. By late 1990, HBJ announced its future cash flows would not suffice to meet all debt obligations without some restructuring or sale of the Company. As a result, in early 1991 HBJ agreed to be bought by General Cinema. The sale was completed in 12/91. Relative to the last year before its recapitalization, by 1991 HBJ's EBITDA / Sales had increased 10% (19% industry-adjusted) and Capital Expenditures / Sales had fallen 68% (42% industry-adjusted).

Harvard Industries

In 11/88, William Hurley, who already controlled 45% of Harvard Industries ("Harvard"), a manufacturer of auto parts supplying the OEM market, took the Company private by acquiring the remaining 55% in a tender offer approved by the Board. The Company stated it did not expect any asset sales or reductions in investments in order to meet its increased debt obligations. In fact, during 1989, capital exp. increased and the Company continued its strategy of growth by acquisitions. By 1990, however, as the auto industry went into a severe recession, client orders plummeted and the Company was unable to generate cash flows to service debt and comply with major debt covenants. As a result, Harvard sold Anchor Swan hose products business and restructured its remaining operations, by cutting salaries, tightening inventory controls and laying off workers. However, cash flow improvements were not quick enough, and in 11/90 Harvard defaulted on its debt. Unable to obtain an out-of-court restructuring with creditors, the Company filed for Chapter 11 in 4/91. During its distress period, Harvard reduced its capital expenditures, but more importantly, investments were focused on developing three new major product lines. As a result of these investments, as well as the pre-bankruptcy restructuring, the Company was able to quickly turn its operating results around, and emerged from Chapter 11 in 8/92 in much better operating condition. Compared to the last year before the buyout, by the time Harvard emerged from Ch. 11 its EBITDA / Sales had fallen 4.8% (although a 9% increase industry-adjusted) and Capital Expenditures / Sales had fallen 21% (8% industry-adjusted), leading to flat Net Cash Flow / Sales (11% increase industry-adjusted).

Hills Stores

In 12/85, Hills Stores ("Hills"), a regional discount retailer, agreed to a buyout led by management and Drexel Burnham Lambert. Through 1988, Hills aggressively expanded, opening 10-15 new stores each year, which it intended to continue into the foreseeable future. Also during 1987, the Company went public in an IPO. In 1989, Hills opened 42 more new stores, including taking over 33 former Gold Circle outlets, making the Company the dominant retail force in Ohio and upstate New York. Expansion plans were curbed in 1990, as a sluggish apparel market and the costs associated with opening the former Gold Circle stores eroded profit. Toward the end of 1990, the continued weakening of the apparel economy and disappointing sales from the newly-acquired stores resulted in a deterioration in liquidity, and in 1/91 Hills closed 28 out of its 214 stores and started working toward a restructuring plan. At the time, a Chapter 11 filing was vehemently denied but, a few weeks later, Hills failed to make a scheduled interest payment and stopped paying its suppliers for merchandise. Negotiations with the bank group proved unsuccessful and some merchandisers stopped shipping to the stores. As a result, in 2/91 Hills filed for Chapter 11. DIP financing was immediately obtained; the Company quickly closed 60 stores, shed its top management, and embarked on a remodeling process that was basically complete by its emergence from Chapter 11 in 10/93. Relative to its last pre-HLT fiscal year, 1993 EBITDA / Sales increased 6% (a 27% drop industry-adjusted), however with the increase in capital investments during Ch. 11, Net Cash Flow / Sales declined by 4% (33% industry-adjusted).

Interco

In 12/88, Interco, a furniture (Broyhill and Lane) and footwear (Florsheim and Converse) manufacturer, completed a three-step recapitalization aimed at rebuffing a hostile takeover bid by the Rales brothers. The recap included plans to divest all non-core operations, as well as Ethan Allen and Senack Shoes. Two months after completion, Interco was already in violation of some of its debt covenants, and the Company subsequently accepted a lower bid for its Londontown business because bidder could pay sooner, demonstrating its tight cash position. During 1989, a combination of disappointing sales in core segments and weaker than projected proceeds from asset

sales lead Interco to announce it would not be able to generate enough cash to satisfy debt obligations. CEO Saligman resigned and the new Chief Executive instituted a complete restructuring at Converse and Florsheim, slashed capital expenditures and increased advertising. Interco also began negotiations for a debt restructuring, and during 1990 various reorganization plans were proposed by management, while the Company stayed afloat by obtaining waivers from bankers extending principal and interest payments. However, sales in shoes and furniture worsened, making an out-of-court restructuring not viable. Interco filed for Chapter 11 in 1/91. During Ch. 11, as a result of pre-filing restructurings, operating margins improved and capital expenditures also increased, helping Interco emerge from bankruptcy in 8/92. Relative to the last year before its recapitalization, by the time it emerged from Ch. 11, Interco's EBITDA / Sales had decreased 54% (43% industry-adjusted) and Capital Exp. / Sales had fallen 27% (16% increase industry-adjusted).

KDI

In 12/88, KDI, a diversified manufacturer of swimming pools and electronic components, completed a management led buyout. The deal was controversial from the beginning because of the speed with which the Company accepted the offer, apparently without giving due consideration to others. The deal included plans to sell many of the Company's operating divisions. In 1989, KDI started to implement its planned divestitures, but due to poor conditions in the acquisitions market, the Company had difficulties completing all its dispositions. In addition, there were indications that the sales it did complete may have been at discount prices because of the need to sell quickly. In 1990, the divestiture program still had not been completed and both KDI's core industry segments were in decline, resulting in a cash flow shortfall and missed interest payments, forcing the Company into negotiations with its creditors. In 6/91, negotiations resulted in a comprehensive restructuring, including a new bank credit agreement and a debt for equity swap with senior bond holders. Relative to the pre-HLT year, EBITDA / Sales fell 77% while Net Cash Flow / Sales dropped 89% (78% and 90% industry-adjusted, respectively).

Leaseway Transportation

In 6/87, Leaseway Transportation ("LT"), a trucking and related distribution services Company, completed the final stage of a MBO led by Citicorp and the incumbent Chairman. The deal was a direct result of a proxy fight between the founding family, which controlled 30% of the Company and claimed it was being mismanaged, and the existing directors. The deal included provisions to sell some divisions. 1987 and 1988 were fairly normal operating years for LT, except for a large decrease in CAPX, which the Company justified as necessary for repaying debt. By the end of 1989, although the Company had been generating operating profits, it had incurred net losses and had accumulated a deficit, which resulted in violations of bank covenants. This led LT to announce further asset sales, including a core division, as well as plans for a restructuring of its subordinated debt. In 1990 a major customer did not renew its contract with LT and the Company missed an interest payment. This forced LT into negotiations with its senior debt providers as well, resulting in a restructuring plan proposal in 3/92. Reportedly, one of LT's main junk bond holders, Carl Icahn, threatened to block the out of court restructuring and throw the Company into Chapter 11. This finally forced the Company to file for Ch. 11 in 12/92, after having gathered a large cash reserve, while cutting capital expenditures at the same time. LT emerged from Ch 11 in 9/93, with the old junk bond holders getting 99% of the reorganized entity's equity. Relative to the last year before its recapitalization, by the time it emerged from Ch. 11, Leaseway Transportation's EBITDA / Sales had decreased 48% (36% industry-adjusted), however with the sharp drop in capital outlays, Net Cash Flow / Sales actually increased an impressive 280% (545% industry-adjusted).

R. H. Macy

In 7/86, a group of investors lead by CEO Edward Finkelstein completed an MBO of R. H. Macy ("Macy"). The immediate aftermath was positive, as Macy continued investing in store renovations and opening new locations. However, in 1988, Macy made a bid for Federated, in order to prevent it from being bought by Campeau. Although eventually losing out, Macy did acquire the Bullock's and I. Magnin chains from Federated for \$1.1 billion, which further leveraged the Company at a price analysts called "excessively rich". This acquisition coincided with a downturn in the retail industry, which by 1990 had forced Macy to engage in deep discounts to protect market share. Analysts also accused the Company of focusing on private-label products to generate more short-term cash,

to the detriment of its upscale image. Still, markdowns lead to weak profits, and the Company eventually announced plans to reduce debt and interest expense by selling more assets or equity. In October, 1990 Macy sold its finance and credit card subsidiaries to GECC, apparently under pressure from banks. Capital expenditures were slashed, as Company stopped opening new stores, while continuing to close down under performing I. Magnin locations. During 1991, Macy reversed its aggressive discount policy, increasing prices to protect profits, while sacrificing market share. Company also started the largest television ad campaign in its history and sold new equity to existing investors. Analysts commented that the Company was doing a lot better than Federated and Carter Hawley Hale. Just when it looked like Macy was starting to recover, 1991 Christmas was worst ever, and Company was unable to pay both creditors and suppliers. As banks refused to extend new credit lines and suppliers stopped shipping, Macy was forced to file for Chapter 11 in 1/92. CEO Finkelstein resigned shortly thereafter. While in Ch. 11, Macy used the protections against creditors afforded by the bankruptcy laws to reject various leases, close down several stores and utilize its cash flow to finance large investments in computerized point of sale systems and inventory controls. The Company also restructured its operations into two major divisions, consolidating personnel and facilities, and laying off workers. Eventually, these investments bore fruit, as Macy's operating results were substantially improved by the time the Company was sold to Federated in 12/94, as part of the bankruptcy reorganization. Still, relative to the last year before the MBO, by the time the Company was sold EBITDA / Sales had decreased 58% (51% industry-adjusted) and Capital Exp. / Sales had fallen 62% (51% increase industry-adjusted), leading to an overall Net Cash Flow / Sales decrease of 54% (47% industry-adjusted).

Mayflower Group

In 12/86, Mayflower Group {"MG"}, a trucking and school bus contractor, completed a MBO after having fought a hostile bid from Laidlaw earlier in the year. The final price was just a few cents above Laidlaw's earlier offer, which the Company had rejected as "way too low." In the first two years after the LBO, MG implemented a cost reduction program and completed the sale of its Consumer Products Unit, while at the same time expanding operations in its core units, including hiring many new workers. Nevertheless, working capital continued to fall and in 3/89, after a failed attempt to sell the Moving and Storage division to its management, MG decided to seek outside buyers for part or all of the Company. Later that year, MG experienced an improved cash-flow position and terminated the search for a buyer. By early 1990, trouble resurfaced and MG announced plans to spin off the two remaining divisions, taking the more profitable Contract Services business public and selling the Transit division to management and employees. This plan never materialized, and in 6/91 MG was unable to make interest payments on debentures. The Company closed down some agencies and cost cutting measures were implemented, and an agreement with creditors was negotiated. MG filed for a pre-packaged bankruptcy in 1/92 and through a debt for equity swap, substantially reduced its subordinated debt, emerging from bankruptcy in 3/92. As of 1991, Mayflower's EBITDA / Sales had fallen only 2% (13% industry-adjusted), which coupled with large cuts in investments, led to an increase in Net Cash Flow / Sales of 451% (1090% industry adjusted).

Morse Shoe

In 3/88, Morse Shoe ("MS"), a footwear retailer, completed the final stage of a MBO, launched in reaction to a takeover attempt by minority investor A. Edelman. By the end of 1988, MS had completed a restructuring program that included: accelerated closing of nearly 15% of the Company's stores, discontinuance of a merchandising program, reduction of operating levels of inventory and overhead, closing and sale of a distribution facility, and termination of the Company's over funded pension plan. At the same time, MS opened about 100 new retail units, and planned on opening an additional 50 in 1989. However, these measures were not enough to counter the economic malaise the retail industry experienced in 1990, and MS was forced to skip a scheduled interest payment in 9/90. The Company had difficulty completing a restructuring in early 1991, and without the necessary bank and trade financing, MS could not adequately replenish its inventories after the holiday season. At that point, MS announced its cash from operations and other sources of financing would be inadequate to meet the short and long term funding requirements of the business, absent a Chapter 11 filing. As a result, in 1/91 MS filed for Chapter 11 relief, and in 3/91 the Company received final approval for DIP financing. MS emerged from Chapter 11 having closed 100 stores and swapped most debt for equity. Relative to the last year before its recapitalization, by the time it emerged from Ch. 11, Morse Shoe's EBITDA / Sales had declined by 34% (42%

industry-adjusted) and Capital Exp. / Sales had fallen 62% (66%), resulting in an overall drop of Net Cash Flow / Sales of 15% (25% industry-adjusted).

National Gypsum

In 4/86, National Gypsum ("NG"), a manufacturer of gypsum and wallboard with interests also in engineering and construction services, completed an MBO. The deal projected modest asset sales and continued strength in construction industry to help repay onerous new debt obligations. However in 1988, as the construction industry went into a prolonged recession, dragging down gypsum demand and prices with it, NG started having difficulties generating sufficient cash flow, and was forced to sell the American Olean tile business and other assets. By 1989 operating margins were half of pre-MBO levels and NG reported difficulty renewing its bank credit lines. The Company reacted by restructuring its gypsum division: shut down sales offices and supply centers, laid off 25% of work force, instituted TQM program. Also, despite reductions in total capital expenditures, the Company engaged in major plant modernizations with a goal of becoming the lowest-cost producer in industry. However, short-term profitability continued to fall and in 1990 a loss in an asbestos litigation case created an unexpected cash need which NG could not meet, as it had no available credit. The Company was forced to file for Ch. 11 in 10/90. Shortly thereafter, CEO Hayes resigned and new Chief Executive halted plant modernization plans, slashing capital expenditures to maintenance levels. Still, pre-bankruptcy restructurings, combined with recovery in the gypsum market, helped turn around operating results by 1992. Also, in order to settle asbestos claims, NG spun-off all gypsum-related assets into a new firm, which would be owned by pre-bankruptcy investors, with remaining assets to be held by an asbestos settlement fund. With this agreement, the new NG emerged from Ch. 11 in 7/93. Compared to the last year before the buyout, by the time NG emerged from Ch. 11 its EBITDA / Sales had fallen 75% (50% industry-adjusted) and Capital Expenditures / Sales had fallen 66% (50% industry-adjusted), leading to a net decrease in Net Cash Flow / Sales of 80% (44% industry-adjusted).

Papercraft

In 10/85, Papercraft announced it had accepted an MBO offer from a group lead by Citicorp and key managers. The Company, which manufactured primarily holiday and packaging products and household cleaning products, had just come off a record year in terms of growth, and appeared to be doing quite well. By late 1986 operating results started to suffer, due to severe competition in the company's key gift wrap and Christmas tree segments, and by late 1987 the company was forced to stop recording dividends on its preferred stock, due to limits set by debt covenants. At that point, Papercraft announced that barring a restructuring of their debt, equity injection or strong recovery in business prospects, the Company would be forced to cut capital expenditures, marketing expenses, and might have to sell off more assets than planned. During 1988, Papercraft began to sell off some assets, including a sale/leaseback of its main plant and headquarters, as well as disposing of its Canadian operations. Still, the Company could not generate enough cash to meet debt obligations, and it defaulted on all its debt in 12/88. By 1989, Papercraft was essentially selling itself off piece-meal, while attempting various debt restructurings with its bankers and subordinated debt holders. The Company did succeed in negotiating an exchange of its Sub. Debt for new First Priority Notes, but in 1990 they defaulted on those as well. At that point, Papercraft admitted that it did not expect to generate enough proceeds, whether from operations, assets sales, or otherwise, to pay back all its debt obligations. Eventually, the Company filed for Ch. 11 in 3/91, and by that point it had been reduced to only two divisions, with less than half of the Company's total pre-HLT sales. As part of the Ch. 11 settlement, Papercraft's remaining operations were transferred to a new entity, which was spun-off to the old debt holders, while the MBO investors lost everything. We were unable to obtain any operating results for the Company during its last two years in distress (1990 and 1991).

Payless Cashways

In 10/88, a group of investors lead by management completed an MBO of Payless Cashways ("Pay ess"), a large retailer of building materials and home improvement products. The deal was in reaction to an indication by an investor that he would seek a hostile takeover of the Company. At the time of closing, management did not expect any asset sales, although some under performing stores were slated to be closed. Through 1991, everything appeared to be all right. The Company's decision to focus on professional customers and its cost containment efforts lead to strong growth in sales and cash flows, and debt repayments were ahead of schedule. Payless also

stopped opening new stores, shifting its (reduced) capital expenditures toward improving existing ones. In late 1991 however, things started to decline. First, the Company had to obtain amendments to its bank covenants. Then, in 1992, Payless had to cancel a proposed recap, which was intended to retire various sub. debt issues, as well as an IPO. Following this, the Company announced that while it was currently in compliance with its covenants, if there was no refinancing forthcoming, Payless would likely be in default by 1994. Analysts commented that while the Company was performing well and generating healthy cash flows, it had been severely overleveraged in the LBO, and its inability to refinance was impairing its future value. Payless quickly obtained an extension on the maturity of the outstanding term loans, but it wasn't until 1993 that they were able to complete a full recapitalization, including an IPO and various new debt issues and revised credit agreements. The result was a substantial reduction in debt, and more importantly, short-term cash interest and principal payment relief. While in distress the Company did not open new stores, but despite its claims that this was a deliberate strategy, it is interesting to note that following the recap Payless announced its intention to open seven new stores. Relative to the pre-HLT year, EBITDA / Sales grew 11% by 1993 (9% on an industry-adjusted basis), while Cap. Expenditures / Sales fell 69% (an 8% increase industry-adjusted).

Pay N' Pak

In 3/88, Pay N' Pak, which operated a chain of stores selling building materials and home improvement products, was acquired in an MBO. The deal was a reaction to an unsolicited offer from Paul Bilzerian. At the time analysts commented the Company had not been doing well, but should not be hard to "turn around," and the offer was viewed as fair. During its first two post-HLT years, Pay N' Pak continued opening new stores, as well as a program of converting old stores into "warehouse" format. By 1990, however, things started to deteriorate, due to a soft retail environment, and the Company was forced to skip interest payments in order to purchase inventory for its key Summer season. As a result, it soon found itself in default of all its debt obligations, and unable to draw on its credit facilities. Pay N' Pak continued to negotiate a debt restructuring, but by late 1991 severe liquidity problems forced the Company into Ch. 11. Concurrent with the bankruptcy filing, Pay N' Pak announced a sweeping reorganization, which would include selling 25% of its stores, reducing work force by 29% and other cost saving measures. Pay N' Pak started selling off profitable stores to raise cash, and in mid-1992 announced further store closings and lay-offs. Finally, unable to reach an agreement with creditors on new financing, and under pressure from vendors, who were stopping shipments to the Company, Pay N' Pak announced it would liquidate itself in late 1992. The liquidation was completed in early 1993, and most unsecured trade creditors and junior debt holders were not repaid. By the time it was liquidated, EBITDA / Sales had dropped about 97% (also industry-adjusted), while CAPX / Sales had plunged 74% (76% industry-adjusted), relative to pre-MBO levels.

Plantronics

In 3/89, a group of investors including incumbent management, Citicorp and Kidder Peabody completed a buyout of Plantronics, a telecommunications equipment manufacturer. The first couple of post-HLT years were reasonably successful, with the Company completing planned non-core subsidiary divestitures in a timely fashion, resulting in a substantially decreased debt load. However, by late fiscal 1990 the Company had to negotiate with its lenders to loosen covenants on its credit agreement. Beginning in 1991, the Company initiated activities toward restructuring, including the replacement of certain executives, moving some manufacturing to Mexico, and the hiring of financial advisors. For the following three years, Plantronics' capital expenditures fell well below their previous-year projections, and the Company ended up divesting its core Data Communications group. Around the same time, the Plantronics CEO was replaced. In 1993 the Company concluded that its HLT-related goodwill had been fully impaired, and that the corresponding book value could not be justified, leading to a write-off of the entire remaining balance. At that time the Company announced that barring any concessions in negotiations with creditors, it would be forced to file for Chapter 11. Management claimed the Plantronics' distress had been caused by its not meeting HLT projections and unfavorable refinancing rates for HLT debt, and further exacerbated by its being forced to discontinue some core products and operations. In late 1993, the Company and its creditors reached an agreement on a proposed recapitalization, which was accepted and completed January, 1994. The recapitalization included an IPO and the issuing of new Senior Debt, the proceeds of which were used to retire all outstanding debt. Relative to the last year fiscal year before the HLT, in its last year of distress EBITDA/Sales and Net Cash Flow / Sales had grown 38% and 52% respectively (53% and -37% industry-adjusted), while CAPX /

Sales had plummeted 41% (13% industry-adjusted).

Republic Health

In 8/86, a group led by management completed a buyout of Republic Health (“Republic”), an owner and operator of general acute care and specialty hospitals, with 86 facilities. The deal was justified as a response to the “state of flux” and increased competition in health care, to which a private company would better be able to respond. Analysts commented that Republic was already well leveraged and were divided on whether the price paid was fair or too rich. In a bad sign, one of the original partners in the deal, McDonnell Douglas, pulled out saying the price had gotten too high. Already in its first year of post-LBO operation, Republic experienced a significant decline in cash flow from operations due to increased competition and the increased pressure on margins from new reimbursement policies of Medicare. In 6/87, the Company hired a consulting firm to review its operations and return the Company to profitability, as a result of which the Company sold four hospitals and, as part of a new strategic plan, stopped making payments on its debentures. Top management was replaced, and a comprehensive recapitalization was proposed, but the 1987 stock market crash created difficulties and negotiations with the Company’s creditors stalled. In 1988, the Company sold 13 more hospitals and revised its plans to restructure debt, receiving amendments to its Term Loan agreement that extended the maturity date from 8/92 to 8/93. During 1989 Republic sold 8 more hospitals, and in 10/89 proposed both an out-of-court recapitalization and a prepackaged bankruptcy plan. By the deadline for receipt of consents in 12/89, the Company had not received sufficient votes to consummate the recapitalization, but had enough to approve the Ch. 11 plan. As a result, in 12/89 Republic filed for Chapter 11 and the Court quickly confirmed its already approved plan, significantly reducing the Company’s outstanding debt. Republic emerged from bankruptcy in 4/90. Relative to the pre-MBO fiscal year, by its last year of distress Republic Health’s EBITDA / Sales had fallen 47% (31% industry-adjusted) and its Net Cash Flows / Sales had also declined by 36% (16% industry-adjusted).

Revco

In 12/86, a group of investors including several top managers completed a buyout of Revco, a large retail drug store chain. The deal included plans to divest all non-drug store operations, except the Odd Lot discount retail chain, and sell under performing stores, concentrating in key markets. Initially, Revco was able to complete its asset sales and cut operating costs. However, in 1987 an inventory reduction program, created to generate cash for debt repayment, led to stock imbalances and shortfalls, which required significant investments to correct. The Company did not have enough available credit to fix inventory problems and make debt payments, and suppliers stopped shipping and extending trade credit. By the time Revco obtained more credit lines, Christmas shipping had been disrupted, leading to lost customers and weak sales. In addition, proceeds from asset sales were less than expected. The Company was forced to sell Odd Lot unit and reduce investments in stores, leading to net store closings. CEO and COO resigned. Still, these measures did not have enough short-term impact to prevent a default in 6/88, followed shortly by a Chapter 11 filing. While in bankruptcy, Revco’s liquidity position increased tremendously, which together with the protections given by the court allowed the Company to reject many leases, shut down or divest hundreds of under performing stores and engage in an extensive store remodeling program, including installation of computerized point of sale scanning systems in all stores. With these changes, Revco was able to turn its operating performance around and emerge from Ch. 11 in much better competitive position. Still, relative to the pre-HLT year, by time Revco emerged from bankruptcy EBITDA / Sales had decreased 35% (33% industry-adjusted) and Capital Exp. / Sales had fallen 41% (3% increase industry-adjusted), leading to an overall Net Cash Flow / Sales decrease of 31% (235% industry-adjusted).

RJR Nabisco

In 3/89, KKR completed its hostile acquisition of RJR Nabisco, the world’s second largest manufacturer of tobacco products and a major food company, after one of the nastiest takeover contests ever. At the time, there was general consensus that the valuation was excessively high, and RJR would be hard pressed to generate enough cash to repay it. The original deal already projected \$5 billion of asset sales, to be carried out in the first two years of the buyout. However, the divestitures were completed within one year, and the prices obtained were fair by any measure. Also, operating results improved greatly, and by the end of 1989, RJR expected to issue investment grade debt shortly, to replace existing bank credit. Then, in early 1990 the Company’s debt was downgraded, and RJR

was forced to pull its announced debt issue. Also, there were \$6 billion of debt which were to have their rates reset in 1991, but with the unfavorable market conditions following the collapse of the junk market, the uncertainty surrounding the new rates on the reset notes prevented RJR from obtaining any new financing. Eventually, in late 1990 the Company was forced to recapitalize, including a \$1.7 billion equity injection from KKR, more than they had originally invested in the entire deal. The deal also involved new bank financing and the exchange of various tranches of reset notes for new notes and preferred stock. By all accounts, RJR's troubles were due to the particular nature of its capital structure, rather than business difficulties, as cash flows continued to show strong growth. Still, capital expenditures were significantly cut, and as domestic tobacco market share slipped, some analysts were concerned that the RJR could not afford the necessary investments to keep up with Philip Morris. Finally in 1991, the Company completed a second recap, which included an IPO and various tranches of debt and PERCS, which took out the old credit agreement, after which RJR was no longer classified as "highly leveraged" and the debt ratings were raised to investment grade. Note that the stock was issued at \$11.25/sh, while KKR's basis in it was about \$6.00/sh.. The recap was hailed by analysts as the crucial step in allowing RJR to compete effectively in the tobacco market and expand into emerging areas, such as China and the Middle East, where its competitors were already making inroads. By the end of 1991, EBITDA / Sales had grown 26% (21% industry-adj.) and Capital Exp. / Sales dropped 54% (20% increase industry-adjusted), leading to an overall increase in Net Cash Flows / Sales of 63% (16% industry-adjusted).

Seaman Furniture

In 2/88, a group of investors led by KKR offered to acquire Seaman Furniture ("Seaman"), a specialty retailer of furniture operating primarily in the greater New York area. The Seaman family, which controlled the Company, would remain in charge after the deal. At the time of the deal, Seaman announced it planned no asset sales, and in fact, was to continue a major expansion into the Philadelphia market. In 1988, as part of its effort to enter new markets, Seaman launched a major new advertising campaign, in addition to the opening of new stores and the buying of a warehouse. The Company acknowledged these measures would depress margins and leave the Company with limited reserves to react to adverse changes in business or economic conditions, but viewed them as essential for the long-term growth of Seaman. In 1989, an economic slowdown in the markets served by the Company caused a steep reduction in operating income and led to a missed principal debt payment. Seaman began negotiations for restructuring with its lenders, and in 11/89 an agreement was reached, including reduced indebtedness, exchange of debentures, along with a much needed capital infusion from KKR and officers. In 1990, the Seaman family members left the Company, and their stake was bought back for \$1. Despite a continuing weak economy, in 1991 Seaman aggressively expanded, opening eight new stores. However, by 1992 the unexpected decline in sales volume, operating income and cash flows in the years 1989 through 1991 finally caught up with the Company, which admitted that it could not support its current debt structure. The Company's cash flow problems resulted in vendors losing confidence, followed by a withdrawal of trade credit and other favorable contract terms. Between October and December 1991, the Company negotiated with its senior lenders, but in late 12/91 it became apparent that they would be unable to reach an agreement on a long-term restructuring plan. Without sources to fund and obtain trade credit for continuing operations, unable to make interest payments due 12/91 and facing possible cross-defaults under their subordinated debt obligations, Seaman determined that seeking bankruptcy was its only recourse. Accordingly, in 1/92 the Company filed for Chapter 11. Seaman was granted DIP financing, and the CEO was replaced. As part of its reorganization plan, Seaman would close 15 of its 38 stores, including a total withdrawal from the Philadelphia market. The Company emerged from Chapter 11 in 9/92. Relative to the pre-MBO fiscal year, by its last year of distress Seaman Furniture Company's EBITDA / Sales had fallen 96% (industry-adjusted as well) and its Capital Expenditures / Sales had shrunk to zero, resulting in a total drop in Net Cash Flow / Sales of 87% (91% industry-adjusted).

Specialty Equipment

In 9/88, a group of investors lead by members of management, acquired Specialty Equipment ("SE") in an MBO. The Company was a manufacturer of food service equipment for primarily for restaurants, food stores and hotels. Its first post-HLT year was a good one, with SE increasing its capital outlays while staying ahead of scheduled debt repayments. However, during 1989 a slow-down in the fast food restaurant and convenience store industries, together with increased price competition, lead to severe losses. These were worsened in 1990, as the Company

defaulted on its debt, causing suppliers and customers to cut back on their dealings with SE. The Company began a reorganization, including a new cash management program, cost cutting efforts, and sales of under performing assets. However, these measures were not sufficient, and in 12/90 the Company began to seek an agreement with its Senior and Subordinated debt holders. Having obtained an agreement, in 12/91 SE filed for a pre-packaged bankruptcy, which was approved, and the Company emerged in 3/92, with old Subordinated debtors holding essentially all the equity in the reorganized entity. SE commented in its Ch. 11 POR that its Senior lenders had continued to extend credit during the default period, while the reorganization was being negotiated. They attributed this to the realization by creditors that the Company was an industry leader, with successful operations, and that it was mutually beneficial to all to make the financial restructuring as non-disruptive as possible to day-to-day operations. Between the last pre-HLT fiscal year, and the last year of distress, EBITDA / Sales and Net Cash Flows / Sales both fell 44% (62% industry-adjusted).

Southland

In 12/87 Southland, the largest convenience store operator in the world through its flagship 7-Eleven brand, underwent a MBO lead by members of the Company's founding family. The transaction was structured in two parts: 1) a tender offer for 2/3 of outstanding shares, completed in 7/87; and 2) an exchange offer for the remaining shares, to occur later in the year. The plan also called for the Company to divest all non-convenience store operations, except its 50% stake in Citgo, in order to meet its new debt obligations. However, between the first and second stages, the stock market crashed in October 1987, causing the collapse of the junk market, and with it the major source of financing for Southland's MBO. As a result, the Company was forced to significantly raise the interest rates on the junk issues, as well as providing an "equity kicker" to debt holders. The harsher terms pushed Southland's debt burden well beyond initial projections, and by 1988 the Company remarked it had been forced to cut back on store remodellings and new openings, in order to meet covenants under bank loans. Soon, Southland was forced to sell its stake in Citgo, as well as food distribution centers and store chains in various states, in order to generate cash. The Company cut back on advertising and inventories, as well as store maintenance. In late 1989, Southland announced it would not be able to meet debt obligations unless it could negotiate a significant capital restructuring. Suppliers reduced shipments and restricted Southland's trade credit. Restructuring costs were offsetting all the benefits from any operating efficiencies due to centralized purchasing and inventory control, following the MBO. By mid-1990, stores were so run down and product offerings so limited, that Southland's customers were going elsewhere, and its Japanese partner, Ito-Yokado, offered to buy 75% of the Company in order to fix up the stores and restore Southland's hurt image, which was damaging their business in Japan. The Company, faced with no alternative sources of financing, eventually filed for a pre-packaged bankruptcy in 10/90, as a result of which Southland agreed to sell 70% of its equity to Ito-Yokado and distribute 25% to its existing creditors, together with newly issued debt and warrants. The Company emerged from bankruptcy in 3/91. Relative to the pre-MBO fiscal year, by its last year of distress Southland's EBITDA / Sales had fallen 32% (same industry-adjusted) and its Capital Expenditures / Sales had fallen 94% (78% industry-adjusted).

Supermarkets General

In 10/87, a group of investors lead by Merrill Lynch and management completed a buyout of Supermarkets General ("SG"), a large supermarkets and drug store retailer in the Northeastern US, in response to a hostile bid from the Haft family. At the time analysts commented that given its excessively rich valuation and resulting leverage, SG would have to sell many assets, as well as reduce its price competitiveness to protect margins. The Company denied these suggestions. However, by 1989 results from operations, while good, were well below projections, due mainly to weak performance in Rickel home centers division and mediocre growth in customer volume overall. This led to the resignation of both the President and the CEO, exposing the internal conflicts within management over corporate strategy, with the winners supporting a more short-term focus, so as to meet debt obligations. The Company restructured Rickel, but it was not enough, and by late 1990 SG announced that in view of its stagnant results, it would be in violation of debt covenants if it could not reach a significant debt restructuring soon. In particular, the Company was concerned that the limits on capital expenditures would be tightened, preventing them from expanding at a time when their competitors were all building new stores. SG's first recapitalization involved an equity injection, a renegotiated credit agreement and the repurchase of some sub debt and preferred stock. This was merely a temporary measure though, and in 1991 SG was forced to sell its Purity Supreme division. Although

the business had been under performing, and the sale made sense, analysts believed the price had been too low, reflecting a certain urgency on the part of the Company to raise cash.. Still, the recession continued to hammer margins, and by late 1992 SG announced that it was writing off all remaining goodwill (\$600MM), and that unless it could recapitalize soon, under the terms of its existing debt agreements capital expenditures would have to be kept at a level which would lead to the long-term insolvency of the Company. As a result, in 1994 SG completed a massive recapitalization, including spin-off of Rickel, new bank credit agreement and various new public debt issues, as well as loosened covenants on remaining debt. The deal was supposed to include an IPO, but continued weakness in operating results prevented the Company from realizing a "fair value" for the stock according to management. Still, by 1994 SG's EBITDA / Sales had grown 37% (25% industry-adj.), while Cap. Exp. / Sales fell 33% (44% ind-adj.), with an overall boost to Net Cash Flows / Sales of 150% (61% industry-adjusted).

USG

In 7/88, USG, the largest producer and distributor of gypsum wallboard in the US, completed a leveraged recapitalization in order to fight off a hostile bid from a group of Texas oil men. The recap plans called for the Company to sell of many divisions and concentrate in core gypsum and ceiling products businesses, reversing its previous strategy of growth by acquisitions. Also, work force would be reduced and capital expenditures curtailed, although USG did not expect any adverse effect, since its plants were in excellent condition. Initially all went well: asset sales proceeds exceeded projections, operating costs were lowest in industry and following some plant closures, USG's capacity utilization far exceeded competitors', despite depressed gypsum market. However, by mid-1990 it became clear the gypsum market was not going to recover, and with revenues significantly below recap projections, USG was having difficulty meeting debt payments. In 12/90, the firm defaulted on its debt. In 1991, USG sold its DAP sealants division and implemented a new round of layoffs and investment cuts. A proposed exchange offer failed due to continued weak demand for gypsum products, which necessitated a more comprehensive restructuring. This was eventually achieved in late 1992, when all creditors agreed to the terms of a pre-packaged bankruptcy, filed in 3/93. USG emerged from Ch. 11 two months later. Importantly, between default date and bankruptcy filing, USG maintained unchanged relations with customers, suppliers and employees and did not sell core assets. The Company emerged from Ch.11 as the strongest competitor in the gypsum industry. Compared to the last full fiscal year before its recapitalization, by the time was in its last year of distress EBITDA / Sales had fallen 55% (14% industry-adjusted) while Capital Expenditures / Sales had been slashed by 58% (41% industry-adjusted), leading to a net decrease in Net Cash Flow / Sales of 54% (10% increase industry-adjusted).

Jim Walter

In 1/88 a group of investors lead by KKR and key members of management completed a buyout of Jim Walter ("Walter"), a builder of partially-finished and shell homes, with interests also in coal mining, manufacturing of pipes and other construction products. The Company announced plans to sell assets accounting for nearly half of pre-HLT revenues. One of the assets divested was Celotex, which had been an asbestos manufacturer until the early 1970's, and was being sued by thousands of claimants for asbestos-related damages. By late 1989, asset sales and debt payments were on schedule, when Walter was sued by Celotex asbestos litigants seeking to obtain access to Company assets as part of asbestos settlements. The suit caused the Company to halt its asset sales program, as well as prevented the mandatory reset of interest rates on various Reset Note issues. After a proposed exchange offer failed, the Company went into default and was forced to file for Ch. 11, as the cancellation of the assets sale program meant Walter could not generate enough cash to meet its debt obligations. After filing, the Company used its improved liquidity position to increase capital expenditures and never took out a DIP credit facility, indicating lack of any post-filing financial constraints. Operations proceeded normally, as Walter waited for a legal ruling on its claim that it had no liability in asbestos cases. Along the way, the Company's debt was bought by a group of investors led by Apollo, who eventually forced a reorganization plan which included a settlement with the asbestos litigants. Walter emerged from Ch. 11 in 3/95. In its last year of distress, EBITDA / Sales had grown by 24% relative the pre-HLT fiscal year, while Capital Expenditures / Sales had been reduced by 8%, leading to an overall increase in Net Cash Flow / Sales of 34% over that period.

Welbilt

In 7/88 Welbilt, a foodservice equipment manufacturer and domestic appliance distributor, accepted a buyout bid from a group of investors led by management and Kohlberg. The Company had recently been named by Forbes as one of the the 200 best managed companies in the US, and had experienced spectacular growth relative over previous decade, particularly relative to industry peers. In the first post-HLT year, Welbilt acquired the assets of a large foodservice equipment manufacturer. The acquisition was financed through an amendment in the Company's credit agreement and an equity contribution from the HLT investor group. In 1990, citing poor operating performance, the Company made a few adjustments, changing some management positions, consolidating corporate staff and relocating its headquarters, and closing its Bakery Group operations. In 1991, Welbilt's CEO was replaced. During 1992, the Company issued new senior debt, amended its credit agreement and received a further capital injection from the equity investors, buying some time before an eventual IPO. Around that time Moody's cited, in a report justifying a rating upgrade on Welbilt debt, that the Company's precarious financial condition and "thin coverage were moderated by its leading industry position and the infusion of additional equity". Finally, in November of 1993, having avoided default and with the IPO market booming, the Company announced an initial public offering that was used to retire all remaining Subordinated debt, as well as reduce Senior debt to a manageable level. By the time of its IPO in late 1993, Welbilt's EBITDA / Sales and Net Cash Flow / Sales had improved by 24% and 34% respectively, relative to the pre-HLT figures (16% and -5% industry-adjusted), and CAPX / Sales had dropped by a modest 7% (a 62% increase industry-adjusted).

Table 1

Summary information on sample of HLTs (highly leveraged transactions) comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989 which subsequently become distressed. Company name is as of HLT date. Value Line industry classification is as of HLT date or last pre-HLT classification available (always within twelve months of HLT). HLT date is month of completion. Pre-HLT and Post-HLT dates are ending months of last full fiscal year before and first full fiscal year after Company became distressed, respectively. Distress onset date is ending month of fiscal year during which Company became distressed. Distress onset is defined as first post-HLT fiscal year in which at least one of the following occurred: 1) EBITDA / Interest Expense was less than 1.0; 2) Company announced it attempted debt restructuring due to inability to meet debt obligations; 3) Company defaulted on debt; 4) Company filed for Chapter 11. Nature of distress resolution indicates whether Company underwent an out of court recapitalization but remained independent, was sold without filing for Ch. 11, reorganized under Ch. 11 and emerged independent or was sold as part of Ch. 11 proceedings. Ch. 11 date indicates filing date. Distress resolution date is either first post-recap reporting date, date of emergence from Ch. 11 or sale date.

Company	Value Line Industry Classification	Pre-HLT Date	HLT Date	Post-HLT Date	HLT Type	Distress Onset		Default Date	Ch. 11 Date	Distress Resolution	
						Date	Nature			Date	Nature
American Standard	Building Materials	12/87	7/88	12/89	MBO	12/91	Restructuring	--	--	3/95	Recap. and IPO
Bucyrus Erie	Machinery (Construct. & Mining)	12/87	2/88	12/89	MBO	12/91	Restructuring	6/93	2/94	12/94	Ch. 11
Burlington Industries	Textile	9/86	9/87	9/88	MBO	9/90	Restructuring	--	--	9/92	Recap. and IPO
Cherokee	Apparel	11/87	5/89	5/90	MBO	5/92	Restructuring	11/92	4/93	6/93	Ch. 11
Florida Steel	Steel (General)	9/87	11/88	9/89	MBO	9/91	Default	5/92	--	12/92	Recap. and Sale
Fort Howard	Paper & Forest Prods	12/87	10/88	12/89	MBO	12/90	Restructuring	--	--	6/95	Recap. and IPO
Fruehauf	Auto & Truck	12/85	12/86	12/87	MBO	12/87	Default	6/89	11/89	11/89	Sale
Harcourt Brace Jovanovich	Publishing	12/86	7/87	12/88	Recap.	12/89	Default	12/91	12/91	12/91	Sale
Harvard Industries	Auto Parts (OEM)	9/88	11/88	9/90	MBO	9/90	Default	11/90	4/91	8/92	Ch. 11
Hills Stores	Shoes	1/85	12/85	1/87	MBO	1/91	Default	1/91	2/91	10/93	Ch. 11
Interco	Shoes	2/88	12/88	2/90	Recap.	2/90	Default	6/90	1/91	8/92	Ch. 11
KDI	Electronics	12/87	12/88	12/89	MBO	12/89	Restructuring	12/90		6/91	Recap.
Leaseway Transportation	Trucking and Transport. Leasing	12/85	6/87	12/87	MBO	12/89	Restructuring	2/90	12/92	9/93	Ch. 11
R. H. Macy	Retail Stores	7/85	7/86	7/87	MBO	7/90	Default	1/92	1/92	12/94	Ch. 11 and Sale
Mayflower	Trucking and Transport. Leasing	12/85	12/86	12/87	MBO	12/90	Default	12/90	1/92	3/92	Ch. 11

Table 1 (continued)

Company	Value Line Industry Classification	Pre-HLT Date	HLT Date	Post-HLT Date	HLT Type	Distress Onset		Default Date	Ch. 11 Date	Distress Resolution	
						Date	Nature			Date	Nature
Morshe Shoe	Shoes	12/86	3/88	12/88	MBO	12/89	Default	9/90	1/91	1/92	Ch. 11
National Gypsum	Building Materials	12/85	4/86	12/87	MBO	12/88	Default	10/90	10/90	7/93	Ch. 11
Papercraft	Packaging & Containers	12/84	10/85	12/86	MBO	12/87	Restructuring	12/88	3/91	12/91	Ch. 11
Payless Cashways	Retail Building Supplies	11/87	10/88	11/89	MBO	11/91	Restructuring	--	--	11/93	Recap. and IPO
Pay N' Pak	Retail Building Supplies	2/87	3/88	2/89	MBO	2/91	Default	5/91	9/91	11/92	Liquidation
Plantronics	Telecom. Equipment	6/88	4/89	4/90	MBO	4/91	Restructuring	--	--	4/94	Recap. and IPO
Republic Health	Medical Services	12/85	8/86	8/87	MBO	8/87	Default	7/87	12/89	4/90	Ch. 11
Revco	Drug Stores	5/86	12/86	5/88	MBO	5/88	Default	6/88	7/88	6/92	Ch. 11
RJR Nabisco	Tobacco	12/88	3/89	12/90	MBO	12/89	Restructuring	--	--	12/91	Recap. and IPO
Seaman Furniture	Furniture & Home Furnishings	4/87	2/88	4/89	MBO	4/89	Default	8/89	1/92	9/92	Ch. 11
Specialty Equipment	Industrial Services	1/88	9/88	1/90	MBO	1/91	Default	12/90	12/91	3/92	Ch. 11
Southland	Grocery	12/86	12/87	12/88	MBO	12/88	Default	3/90	10/90	3/91	Ch. 11 and Sale
Supermarkets General	Grocery	1/87	10/87	1/89	MBO	1/91	Restructuring	--	--	1/94	Recap.
USG	Building Materials	12/87	7/88	12/89	Recap.	12/90	Default	12/90	3/93	5/93	Ch. 11
Jim Walter	Homebuilding	8/87	1/88	5/89	MBO	5/90	Default	12/89	12/89	3/95	Ch. 11
Welbilt	Industrial Services	12/87	8/88	12/89	MBO	12/90	Restructuring	--	--	12/93	Recap. and IPO

Table 2

Summary of pre- and post-HLT (highly leveraged transactions) leverage statistics for sample of HLTs comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989 which subsequently become distressed. Pre-HLT capitalization figures are based on last available balance sheet before announcement of HLT. Pre-HLT income statement figures (EBITDA and interest expense) are based on financial statements for fiscal year preceding year in which HLT was announced, in most cases already adjusted to exclude operations to be discontinued following HLT. Post-HLT capitalization figures are based on first available balance after HLT completion. Post-HLT income statement figures are based on financial statements for first full fiscal year following year in which HLT is completed. Total equity is defined as total compensation paid to pre-HLT shareholders, which for MBOs includes value of all cash and securities received, and for leveraged recapitalizations includes value of dividends received, both cash and securities, plus ex-dividend value of equity. Total capital is pre-HLT book value of debt, plus pre-HLT preferred stock (at liquidation preference) plus total equity. Interest expense includes both cash and non-cash components.

Company	Total Equity (\$MM)	Total Capital (\$MM)	Book Value of Debt / Total Capital		EBITDA / Interest Expense	
			Pre-HLT	Post-HLT	Pre-HLT	Post-HLT
American Standard	2,431	2,846	0.15	1.02	14.24	1.47
Bucyrus Erie	289	319	0.09	0.33	1.47	0.97
Burlington Industries	2,447	2,851	0.14	1.04	9.48	1.28
Cherokee	380	387	0.02	0.47	29.40	1.21
Florida Steel	306	381	0.20	1.06	8.71	2.08
Fort Howard	3,569	4,050	0.12	0.91	14.36	1.05
Fruehauf	947	1,555	0.39	1.08	3.70	1.20
Harcourt Brace Jovanovich	2,541	3,353	0.24	0.97	9.37	1.12
Harvard Industries	229	392	0.41	0.83	2.89	0.38
Hills Stores	717	873	0.18	0.85	13.70	1.88
Interco	2,908	3,492	0.17	0.90	9.56	0.55
KDI	184	242	0.24	1.08	7.50	0.57
Leaseway Transportation	600	1,000	0.40	0.63	4.90	2.47
R. H. Macy	3,518	4,829	0.27	0.86	5.52	1.47
Mayflower	249	363	0.31	0.92	8.97	1.63
Morshe Shoe	258	342	0.25	1.08	3.80	0.79
National Gypsum	1,571	1,698	0.07	0.89	19.43	1.41
Papercraft	262	269	0.03	0.86	NA	0.76
Payless Cashways	963	1,251	0.23	0.91	7.51	1.08
Pay N' Pak	213	298	0.29	1.01	2.39	1.17
Plantronics	153	174	0.12	0.99	34.33	0.81
Republic Health	359	858	0.58	0.95	1.91	0.56
Revco	1,249	1,554	0.20	1.07	7.42	0.67
RJR Nabisco	24,561	30,102	0.18	0.97	6.29	1.32
Seaman Furniture	337	355	0.05	0.98	19.84	0.47
Specialty Equipment	326	427	0.24	0.97	4.06	1.16
Southland	3,810	5,307	0.28	0.91	6.93	0.77
Supermarkets General	1,828	2,037	0.10	0.93	10.34	1.18
USG	2,175	3,026	0.28	1.04	8.39	1.35
Jim Walter	2,408	3,250	0.26	1.06	4.70	0.99
Welbilt	213	254	0.16	0.74	9.38	1.27
Median	717	1,000	0.20	0.95	7.95	1.16
Mean	2,000	2,520	0.21	0.91	9.68	1.13
Std. Dev.	4,349	5,335	0.12	0.17	7.62	0.47

Table 3

Summary of potential sources of financial distress and estimated impact of each source on cash flows for a sample of HLTs comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989 which subsequently become distressed. Year $t = 0$ denotes fiscal year in which Company experienced onset of distress (see Table 1). Industry medians are based on universe of firms in same Value Line industry classification as Company. Financial data on industry comparables is obtained from COMPUSTAT. Change in LIBOR is calculated as nominal increase in 3-month LIBOR at fiscal year end. Portion of distress due to a source = (cash shortfall due to source / sum of cash shortfall due to all sources). Cash shortfall due to industry performance calculated as amount by which cash flow (EBITDA - Interest Expense) would improve if Company had same operating performance relative to industry median in year $t = 0$, but industry median had same EBITDA / Sales as in year $t = -1$. Cash shortfall due to firm performance calculated as amount by which cash flow would improve if Company had same EBITDA / Sales as industry median in year $t = 0$. Cash shortfall due to leverage calculated as amount by which cash flow would improve if Company had same Interest Expense / Assets as industry median in year $t = 0$. Cash shortfall due to short-term rate changes calculated as amount by which cash flow would improve if Company had paid interest on floating rate debt (proxied by bank debt) at same rate as in year $t = -1$.

Company	EBITDA / Sales ($t=0$)		Interest Expense / Assets ($t=0$)		Change from $t=-1$ to $t=0$		Portion of Distress due to			
	Company	Industry Median	Company	Industry Median	Ind. Median EBITDA / Sales	LIBOR	Industry Performance	Firm Performance	Leverage	Short-Term Rate Changes
American Standard	9.8%	5.9%	8.5%	3.1%	-33.9%	-3.36	0.97	-0.75	0.96	-0.18
Bucyrus Erie	10.7%	5.5%	12.4%	1.1%	-13.8%	-3.36	0.28	-0.84	1.56	0.00
Burlington Industries	10.2%	9.2%	12.6%	3.5%	-4.1%	-0.76	0.06	-0.14	1.12	-0.04
Cherokee	10.7%	7.7%	12.6%	3.2%	-5.9%	-1.24	0.09	-0.38	1.32	-0.02
Florida Steel	9.3%	7.6%	7.4%	2.2%	-31.1%	-2.53	0.59	-0.25	0.77	-0.11
Fort Howard	39.9%	16.3%	11.7%	2.6%	-13.6%	-0.57	0.59	-2.22	2.68	-0.05
Fruehauf	6.4%	7.7%	5.7%	1.7%	59.6%	1.69	-0.84	0.47	1.31	0.06
Harcourt Brace Jovanovich	8.4%	12.8%	13.3%	1.7%	-20.5%	-1.05	0.07	0.15	0.78	0.00
Harvard Industries	3.0%	10.1%	9.5%	3.1%	-13.1%	-0.76	0.04	0.55	0.42	-0.01
Hills Stores	5.7%	7.5%	14.7%	2.3%	-7.2%	-0.99	0.07	0.27	0.67	-0.01
Interco	10.1%	8.1%	26.4%	2.9%	37.0%	-1.43	-0.25	-0.19	1.50	-0.06
KDI	8.2%	8.8%	11.4%	1.6%	5.2%	-1.05	-0.03	0.05	1.04	-0.05
Leaseway Transportation	11.0%	10.2%	8.6%	4.6%	-5.2%	-1.05	0.27	-0.34	1.18	-0.11
R. H. Macy	9.9%	7.3%	11.1%	3.0%	-1.5%	-0.95	0.03	-0.54	1.52	-0.02
Mayflower	6.3%	11.1%	8.3%	4.4%	8.7%	-0.57	-0.08	0.77	0.31	0.00
Morshe Shoe	8.5%	8.1%	14.8%	2.9%	37.0%	-1.05	-0.55	-0.11	1.69	-0.03
National Gypsum	11.7%	8.5%	10.1%	2.1%	-17.2%	1.45	0.24	-0.32	1.08	0.00
Papercraft	12.8%	12.5%	13.1%	1.7%	-0.5%	1.69	0.00	-0.02	0.97	0.05
Payless Cashways	8.2%	5.0%	10.5%	1.6%	-17.0%	-3.11	0.47	-0.91	1.53	-0.09
Pay N' Pak	6.1%	6.0%	9.3%	1.9%	-2.9%	-1.76	0.04	-0.04	1.08	-0.08
Plantronics	17.1%	13.7%	16.4%	6.5%	0.0%	-2.36	0.00	-0.41	1.58	-0.17
Republic Health	11.4%	16.5%	14.2%	4.5%	-1.3%	0.98	0.01	0.26	0.71	0.02
Revco	4.0%	5.7%	7.8%	2.4%	7.3%	0.16	-0.05	0.31	0.74	0.00
RJR Nabisco	24.6%	5.3%	8.1%	4.1%	-11.3%	-1.05	-0.58	3.55	-2.09	0.11
Seaman Furniture	7.6%	10.6%	11.4%	2.0%	-8.6%	3.02	0.04	0.15	0.67	0.14
Specialty Equipment	15.5%	14.8%	11.1%	2.1%	12.8%	-0.99	-0.17	-0.07	1.31	-0.07
Southland	5.4%	5.4%	11.5%	2.7%	-3.1%	1.45	0.03	0.00	0.92	0.06
Supermarkets General	5.4%	5.7%	10.0%	2.7%	0.2%	-0.99	0.00	0.11	0.92	-0.02
USG	15.1%	8.9%	17.0%	2.5%	4.8%	-0.57	-0.13	-1.11	2.28	-0.04
Jim Walter	27.8%	12.8%	11.6%	6.5%	20.2%	-1.24	0.62	2.00	-1.68	0.06
Welbilt	7.2%	14.8%	11.6%	2.1%	12.8%	-0.57	-0.06	0.56	0.52	-0.02
Median	9.8%	8.5%	11.4%	2.6%	-2.9%	-0.99	0.03	-0.04	1.04	-0.02
Mean	11.2%	9.4%	11.7%	2.9%	-0.2%	-0.74	0.06	0.02	0.95	-0.02
Std. Dev.	7.5%	3.4%	3.8%	1.3%	19.3%	1.50	0.36	0.96	0.91	0.07

Table 4

Summary of pro-forma EBITDA/Interest coverage ratios, estimated by eliminating impact of potential sources of financial distress for a sample of HLTs comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989 which subsequently become distressed. Year $t = 0$ denotes fiscal year in which Company experienced onset of distress (see Table 1). Industry medians are based on universe of firms in same Value Line industry classification as Company. Financial data on industry comparables is obtained from COMPUSTAT. Change in LIBOR is calculated as nominal increase in 3-month LIBOR at fiscal year end. Pro-forma coverage due to a source = (pro-forma EBITDA due to source / pro-forma Interest Expense due to source). Pro-forma EBITDA due to industry performance calculated as EBITDA Company would have reported if it had same operating performance relative to industry median in year $t = 0$, but industry median had same EBITDA / Sales as in year $t = -1$. Pro-forma EBITDA due to firm performance calculated as EBITDA Company would have reported if it had same EBITDA / Sales as industry median in year $t = 0$. Pro-Forma interest expense due to leverage calculated as interest expense Company would have reported if it had same Interest Expense / Assets as industry median in year $t = 0$. Pro-forma interest expense due to short-term rate changes calculated as interest expense Company would have reported if it had paid interest (proxied by 3-month LIBOR) on floating rate debt (proxied by total bank debt outstanding) at same rate as in year $t = -1$. Pro-forma EBITDA if EBITDA / Sales margin as of $t=-1$ calculated as EBITDA Company would have reported if it had same EBITDA / Sales margin as in last pre-distress fiscal year (Year -1).

Company	EBITDA / Interest Expense (t=0)	Pro-forma Coverage due to				Pro-forma Coverage if EBITDA/Sales Margin as of t=-1
		Industry Performance	Firm Performance	Firm Leverage	Change in Short-Term Rates	
American Standard	1.27	1.92	0.76	3.52	1.14	1.37
Bucyrus Erie	1.02	1.18	0.53	11.97	1.02	0.97
Burlington Industries	0.89	0.93	0.80	3.18	0.87	1.08
Cherokee	0.77	0.82	0.56	3.02	0.76	1.03
Florida Steel	1.17	1.70	0.95	3.87	1.06	1.68
Fort Howard	1.09	1.26	0.44	4.78	1.07	1.11
Fruehauf	1.20	0.75	1.45	4.01	1.23	0.52
Harcourt Brace Jovanovich	0.32	0.40	0.49	2.51	0.32	0.76
Harvard Industries	0.38	0.44	1.26	1.18	0.37	1.09
Hills Stores	1.08	1.16	1.41	6.79	1.07	1.42
Interco	0.55	0.40	0.44	4.95	0.53	0.52
KDI	0.57	0.54	0.61	4.02	0.55	0.74
Leaseway Transportation	1.93	2.04	1.80	3.63	1.85	1.84
R. H. Macy	1.00	1.02	0.74	3.76	1.00	1.34
Mayflower	1.54	1.42	2.73	2.91	1.54	2.01
Morshe Shoe	0.97	0.71	0.92	4.86	0.96	0.78
National Gypsum	0.87	1.06	0.64	4.31	0.87	1.37
Papercraft	0.73	0.73	0.71	5.61	0.76	0.76
Payless Cashways	1.27	1.53	0.76	8.48	1.21	1.29
Pay N' Pak	1.01	1.04	0.98	4.91	0.96	1.50
Plantronics	0.78	0.78	0.63	1.96	0.73	0.74
Republic Health	0.56	0.57	0.81	1.76	0.57	1.03
Revco	0.67	0.62	0.96	2.21	0.67	0.99
RJR Nabisco	1.07	1.21	0.23	2.11	1.04	0.93
Seaman Furniture	0.47	0.51	0.65	2.67	0.57	0.68
Specialty Equipment	0.91	0.80	0.86	4.83	0.87	1.08
Southland	0.77	0.80	0.77	3.28	0.81	0.36
Supermarkets General	1.35	1.35	1.44	4.99	1.32	1.26
USG	1.02	0.97	0.60	6.85	1.00	1.19
Jim Walter	0.98	0.81	0.45	1.76	0.96	0.94
Welbilt	0.84	0.75	1.72	4.68	0.82	1.32
Median	0.97	0.82	0.76	3.87	0.96	1.08
Mean	0.94	0.98	0.91	4.17	0.92	1.09
Std. Dev.	0.34	0.43	0.51	2.18	0.32	0.38

Table 5

Nominal, market-adjusted and industry-adjusted returns generated by a sample of HLTs comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989 which subsequently become distressed. Returns on pre-HLT capital denote returns to total capital invested from two months before announcement of any HLT to date of distress resolution. Returns on post-HLT total capital denote returns to total capital invested in HLT from HLT date to date of distress resolution. Returns on post-HLT equity denote returns to total equity invested in HLT from HLT date to date of distress resolution. Pre-HLT total capital is defined as book value of debt + preferred stock (at liquidation preference) + market value of equity, two months before announcement of HLT. Post-HLT total capital is defined as book value of debt + preferred stock (at liquidation preference) + total equity invested, at HLT date. Nominal returns on capital = (sum of all payments to capital) / total capital. Payments to capital include cash interest and debt principal repaid, dividends paid, equity repurchased, and total value received by capital at distress resolution, net of proceeds from new equity and debt issues. Nominal returns on equity = (sum of all payments to HLT equity) / HLT equity. Payments to HLT equity include dividends paid, equity repurchased and total value realized by equity at distress resolution. Market-adjusted and industry-adjusted returns are calculated similarly to nominal returns, except that payments to total capital and to equity are adjusted for the return over the same period on, respectively: (1) the CRSP value-weighted portfolio of NYSE, AMEX and NASDAQ stock, and (2) an equally-weighted portfolio of stocks in each Company's Value Line industry sector.

Company	Returns on Pre-HLT Total Capital			Returns on Post-HLT Total Capital			Returns on Post-HLT Equity		
	Nominal	Market-Adjusted	Industry-Adjusted	Nominal	Market-Adjusted	Industry-Adjusted	Nominal	Market-Adjusted	Industry-Adjusted
American Standard	353%	114%	134%	101%	16%	48%	410%	141%	213%
Bucyrus Erie	29%	18%	20%	13%	-48%	-41%	-73%	-87%	-84%
Burlington Industries	143%	93%	92%	39%	17%	12%	139%	87%	76%
Cherokee	100%	16%	56%	16%	-20%	14%	-69%	-81%	-69%
Florida Steel	82%	15%	17%	24%	-21%	-24%	-61%	-78%	-80%
Fort Howard	125%	13%	23%	57%	-15%	-9%	2%	-56%	-55%
Fruehauf	45%	2%	12%	0%	-18%	-20%	-61%	-74%	-70%
Harcourt Brace Jovanovich	44%	8%	28%	-19%	-35%	-23%	-94%	-96%	-95%
Harvard Industries	44%	-9%	-5%	-2%	-38%	-41%	-90%	-94%	-95%
Hills Stores	85%	-7%	-24%	65%	-11%	-26%	16%	-18%	-29%
Interco	28%	-12%	-28%	-17%	-39%	-47%	-100%	-100%	-100%
KDI	11%	-17%	5%	-26%	-43%	-33%	-100%	-100%	-100%
Leaseway Transportation	27%	-17%	-11%	11%	-12%	-17%	-98%	-99%	-99%
R. H. Macy	88%	-22%	-14%	51%	-23%	1%	-100%	-100%	-100%
Mayflower	37%	-5%	1%	22%	-18%	-3%	-81%	-91%	-89%
Morshe Shoe	1%	-37%	-52%	-33%	-54%	-60%	-95%	-97%	-98%
National Gypsum	109%	18%	26%	1%	-27%	-19%	-93%	-94%	-93%
Papercraft	4%	-40%	-52%	-17%	-46%	-54%	-100%	-100%	-100%
Payless Cashways	180%	49%	53%	86%	6%	-1%	19%	-40%	-48%
Pay N' Pak	21%	-13%	-15%	-22%	-47%	-47%	-100%	-100%	-100%
Plantronics	183%	64%	-5%	113%	42%	-20%	776%	413%	65%
Republic Health	3%	-36%	-25%	-16%	-37%	-34%	-98%	-98%	-98%
Revco	14%	-24%	-5%	-19%	-49%	-44%	-100%	-100%	-100%
RJR Nabisco	164%	67%	20%	46%	14%	-4%	126%	40%	-36%
Seaman Furniture	-72%	-79%	-66%	-75%	-85%	-74%	-100%	-100%	-100%
Specialty Equipment	7%	-35%	-14%	-18%	-45%	-24%	-100%	-100%	-100%
Southland	62%	28%	4%	18%	1%	-13%	-90%	-92%	-94%
Supermarkets General	NA	NA	NA	NA	NA	NA	NA	NA	NA
USG	54%	12%	28%	1%	-34%	-19%	-97%	-98%	-98%
Jim Walter	89%	21%	42%	37%	-26%	-31%	-4%	-58%	-63%
Welbilt	184%	60%	128%	108%	9%	66%	193%	34%	116%
Median	50%	5%	4%	12%	-25%	-22%	-90%	-93%	-93%
Mean	75%	8%	12%	18%	-23%	-19%	-7%	-48%	-57%
Std. Dev.	82%	42%	46%	45%	27%	29%	187%	106%	76%

Table 6

Summary statistics on median growth in operating, capital expenditures and net cash flow margins for a sample of HLTs comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989 which subsequently become distressed. Nominal and industry-adjusted median growth calculations are adjusted for negative base-year values by defining individual Company and industry base-year variables as $\max[\text{variable}(\text{base-year}), 0.01]$. Pre-HLT is last full year before fiscal year in which HLT was announced. Post-HLT is first full fiscal year after completion of HLT. Year $t = 0$ denotes fiscal year in which Company experienced onset of distress (for actual dates corresponding to these events for each Company, see Table 1). Pre-resolution is last full fiscal year before distress resolution. Post-resolution is first full fiscal year after distress resolution. Industry adjusted growth is given by nominal growth less growth in median industry variable over same period. Industry medians are based on universe of firms in same Value Line industry classification as Company. Financial data on industry comparables is obtained from COMPUSTAT. Figures in parenthesis indicate number of observations used to calculate median growth, which might be less than full sample size (10) due to unavailability of firm or industry data for certain years.

Panel A:

	Pre- HLT to					
	Post-HLT	0	+1	+2	Pre-Resolution	Post-Resolution
<u>EBITDA / Sales</u>						
Nominal Growth	12.8%	-18.2%	-34.4%	-19.0%	-27.2%	-14.9%
	(31)	(31)	(30)	(27)	(30)	(21)
Industry Adjusted Growth	1.7%	-13.3%	-22.6%	-6.7%	-10.9%	-12.4%
	(31)	(31)	(30)	(27)	(30)	(21)
<u>CAPX / Sales</u>						
Nominal Growth	-44.8%	-47.6%	-55.8%	-54.5%	-58.6%	-44.1%
	(31)	(31)	(30)	(27)	(30)	(20)
Industry Adjusted Growth	-40.7%	-44.4%	-34.2%	-25.8%	-37.8%	-14.2%
	(31)	(31)	(30)	(27)	(30)	(20)
<u>NCF / Sales</u>						
Nominal Growth	52.9%	14.6%	-33.4%	0.3%	-0.2%	29.9%
	(31)	(31)	(30)	(27)	(30)	(20)
Industry Adjusted Growth	54.5%	28.1%	-31.3%	11.2%	-3.2%	22.0%
	(31)	(31)	(30)	(27)	(30)	(20)

Panel B:

	Year -1 to					
	0	+1	+2	Pre-Resolution	Post-Resolution	
<u>EBITDA / Sales</u>						
Nominal Growth	-16.1%	-29.6%	-14.7%	-22.9%	-7.1%	
	(31)	(30)	(27)	(30)	(21)	
Industry Adjusted Growth	-17.0%	-24.2%	-8.6%	-16.9%	-12.3%	
	(31)	(30)	(27)	(30)	(21)	
<u>CAPX / Sales</u>						
Nominal Growth	-12.6%	-25.2%	-16.6%	-21.9%	2.9%	
	(31)	(30)	(27)	(30)	(20)	
Industry Adjusted Growth	-10.6%	-14.6%	-7.3%	-9.8%	11.0%	
	(31)	(30)	(27)	(30)	(20)	
<u>NCF / Sales</u>						
Nominal Growth	-17.0%	-34.4%	-18.1%	-30.2%	-9.0%	
	(31)	(30)	(27)	(30)	(20)	
Industry Adjusted Growth	-8.8%	-36.7%	-34.9%	-44.7%	-16.7%	
	(31)	(30)	(27)	(30)	(20)	

Panel C:

	Year 0 to				
	+1	+2	Pre-Resolution	Post-Resolution	
<u>EBITDA / Sales</u>					
Nominal Growth	-15.0%	-11.4%	-18.5%	3.3%	
	(30)	(27)	(30)	(21)	
Industry Adjusted Growth	-10.8%	-5.4%	-22.8%	14.7%	
	(30)	(27)	(30)	(21)	
<u>CAPX / Sales</u>					
Nominal Growth	-15.9%	5.7%	-11.4%	3.1%	
	(30)	(27)	(30)	(20)	
Industry Adjusted Growth	-5.1%	6.1%	8.7%	28.6%	
	(30)	(27)	(30)	(20)	
<u>NCF / Sales</u>					
Nominal Growth	-23.3%	-16.1%	-18.2%	-6.7%	
	(30)	(27)	(30)	(20)	
Industry Adjusted Growth	-48.7%	-25.0%	-49.6%	-21.7%	
	(30)	(27)	(30)	(20)	

Table 7

Estimated upper bound on costs of distress for a sample of HLTs comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989 which subsequently become distressed. Pre-distress figures correspond to last fiscal year before distress onset (t=-1 in Table 6). Total capital is defined as sum of book value of total debt (long-term and short-term), preferred stock (at liquidation preference) and market value of equity. Net capital is total capital less cash and short-term investments. Industry medians are based on universe of firms in same Value Line industry classification as Company. Financial data on industry comparables is obtained from COMPUSTAT. Estimated pre-distress value of total capital for each Company is calculated as [product of median industry (net capital / EBITDA) and Company EBITDA] plus Company cash balances at t=-1. Value of total capital realized during distress is the present value of all payments to capital made from distress onset up to resolution (inclusive), discounted back to t=-1. Payments to capital include cash interest and debt principal repaid, dividends paid, equity repurchased, and total value received by capital at distress resolution, net of proceeds from new equity and debt issues. Market-adjusted value realized is calculated by discounting payments to capital by the rate of return earned on the CRSP value-weighted portfolio of NYSE, AMEX and NASDAQ stocks during the distress period. Industry-adjusted value realized is calculated by discounting payments to capital by the rate of return earned on an equally-weighted portfolio of stocks in each Company's Value Line industry sector. Upper bound on costs of distress is estimated as difference between value of total pre-distress capital (t=-1) and total capital realized during distress.

Company	Pre-Distress (t=-1)			Value of Total Capital Realized During Distress		Market-Adjusted Costs of Financial Distress		Industry-Adjusted Costs of Financial Distress	
	EBITDA (\$MM)	Ind. Median (Net Capital / EBITDA)	Est. Value of Total Capital (\$MM)	Market-Adjusted (\$MM)	Industry-Adjusted (\$MM)	Nominal (\$MM)	% of Total Capital t=-1	Nominal (\$MM)	% of Total Capital t=-1
American Standard	384	6.4	2,529	2,975	2,784	-446	-17.6%	-255	-10.1%
Bucyrus Erie	23	9.1	244	87	82	157	64.4%	162	66.5%
Burlington Industries	270	5.2	1,479	2,195	2,504	-716	-48.4%	-1,024	-69.2%
Cherokee	34	5.4	181	108	145	73	40.4%	36	19.7%
Florida Steel	71	5.2	375	249	232	126	33.6%	143	38.2%
Fort Howard	430	4.9	2,105	3,575	3,602	-1,470	-69.9%	-1,497	-71.1%
Fruehauf	118	6.6	852	670	714	182	21.4%	139	16.3%
Harcourt Brace Jovanovich	355	7.9	2,802	1,965	2,482	837	29.9%	321	11.4%
Harvard Industries	66	5.4	370	325	280	45	12.3%	90	24.4%
Hills Stores	157	6.0	956	549	567	407	42.6%	389	40.7%
Interco	193	6.2	1,273	1,708	1,569	-435	-34.2%	-296	-23.2%
KDI	33	6.8	233	155	183	78	33.4%	50	21.7%
Leaseway Transportation	124	4.6	579	376	573	203	35.1%	6	1.0%
R. H. Macy	923	6.8	6,286	5,035	5,680	1,251	19.9%	606	9.6%
Mayflower	55	4.7	275	185	187	90	32.8%	88	32.1%
Morshe Shoe	37	6.2	237	119	99	118	49.7%	138	58.3%
National Gypsum	253	5.5	1,410	735	766	675	47.9%	644	45.7%
Papercraft	23	4.6	109	123	110	-14	-12.6%	-1	-1.2%
Payless Cashways	187	6.3	1,212	1,339	1,128	-127	-10.5%	84	6.9%
Pay N' Pak	42	7.1	301	103	110	199	65.9%	191	63.4%
Plantronics	17	7.7	144	211	101	-67	-46.3%	43	29.8%
Republic Health	73	8.7	641	544	573	97	15.1%	68	10.6%
Revco	159	8.0	1,315	958	923	357	27.1%	392	29.8%
RJR Nabisco	3,642	7.9	30,122	28,497	20,475	1,625	5.4%	9,647	32.0%
Seaman Furniture	29	5.5	179	60	103	119	66.4%	76	42.4%
Specialty Equipment	61	8.6	526	246	280	279	53.1%	246	46.7%
Southland	205	5.8	1,212	3,836	3,609	-2,624	-216.6%	-2,398	-197.9%
Supermarkets General	316	7.8	2,480	NA	NA	NA	NA	NA	NA
USG	388	7.0	2,781	1,785	2,127	996	35.8%	654	23.5%
Jim Walter	380	7.8	3,099	2,546	2,498	553	17.8%	600	19.4%
Welbilt	37	8.6	323	319	409	4	1.3%	-85	-26.4%
Median	141	6.4	904	549	573	118	24.3%	89	20.7%
Mean	302	6.5	2,210	2,112	1,879	86	9.8%	309	9.7%

Std. Dev.	659	1.3	5,434	5,246	3,841	766	55.1%	1,872	51.0%
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Table 8

Estimated costs of financial distress for firms that did and did not incur an adverse economic shock, for a sample of HLTs comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989, and which subsequently become distressed. A firm is classified as suffering from an adverse economic shock if its EBITDA margin decreases by more than one third between the last year before distress onset and first year after distress onset, and there is qualitative evidence of such a shock based on company reports and press accounts. Estimated returns to pre-HLT and post-HLT capital come from Table 5. Estimated upper bounds on the costs of distress are from Table 7.

	<u>Returns on Pre-HLT Total Capital</u>		<u>Returns on Post-HLT Total Capital</u>		<u>Upper Bound on Costs of Distress</u>	
	<u>Market-Adjusted</u>	<u>Industry-Adjusted</u>	<u>Market-Adjusted</u>	<u>Industry-Adjusted</u>	<u>Market-Adjusted</u>	<u>Industry-Adjusted</u>
Panel A: Adverse Economic Shock ⁽¹⁾						
Median	-11.1%	-1.7%	-36.0% ***	-24.1% **	38.1% ***	35.1% ***
Mean	-13.0%	-2.7%	-37.8% **	-27.3%	40.9% **	35.5% **
Std. Dev.	28.4%	33.6%	19.0%	25.6%	16.6%	16.4%
# > 0	4	6	0	2	12	12
N	12	12	12	12	12	12
Panel B: No Adverse Economic Shock ⁽²⁾						
Median	15.4%	16.2%	-13.7%	-20.1% ***	3.4%	8.8%
Mean	22.2%	22.6%	-13.0%	-14.3%	-10.8%	-7.5%
Std. Dev.	43.8%	51.7%	26.6%	31.2%	62.2%	59.0%
# > 0	12	11	7	3	10	11
N	18	18	18	18	18	18

(1) Panel A firms are Cherokee, Florida Steel, Harvard Ind., KDI, R. H. Macy, Mayflower, Morse Shoe, National Gypsum, Pay N' Pak, Seaman Furniture, Specialty Equipment, USG.

(2) Panel B firms are American Standard, Bucyrus Erie, Burlington Ind., Fort Howard, Fruehauf, Harcourt Brace Jovanovich, Hills Stores, Interco, Leaseway Transportation, Papercraft, Payless Cashways, Plantronics, Republic Health, Revco, RJR Nabisco, Southland, Jim Walter, Welbilt.

Table 9

Summary statistics on median growth in operating, capital expenditures and net cash flow margins for firms that did and did not incur an adverse economic shock, for a sample of HLTs comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989, and which subsequently become distressed. A firm is classified as suffering from an adverse economic shock if its EBITDA margin decreases by more than one third between the last year before distress onset and first year after distress onset, and there is qualitative evidence of such a shock based on company reports and press accounts. Nominal and industry-adjusted median growth calculations are adjusted for negative base-year values by defining individual Company and industry base-year variables as $\max[\text{variable}(\text{base-year}), 0.01]$. Year $t = 0$ denotes fiscal year in which Company experienced onset of distress (for actual dates corresponding to these events for each Company, see Table 1). Pre-resolution is last full fiscal year before distress resolution. Post-resolution is first full fiscal year after distress resolution. Industry adjusted growth is given by nominal growth less growth in median industry variable over same period. Industry medians are based on universe of firms in same Value Line industry classification as company. Financial data on industry comparables is obtained from COMPUSTAT. Figures in parenthesis indicate number of observations used to calculate median growth, which might be less than full sample size due to unavailability of firm or industry data for certain years.

Panel A: Adverse Economic Shock

	Year -1 to			<u>Pre-Resolution</u>	<u>Post-Resolution</u>
	<u>0</u>	<u>+1</u>	<u>+2</u>		
<u>EBITDA / Sales</u>					
Nominal Growth	-25.0%	-57.1%	-47.9%	-57.8%	-45.6%
	(12)	(12)	(8)	(12)	(8)
Industry Adjusted Growth	-23.3%	-53.2%	-53.2%	-56.9%	-68.3%
	(12)	(12)	(8)	(12)	(8)
<u>CAPX / Sales</u>					
Nominal Growth	-5.0%	-20.4%	-22.9%	-34.1%	-10.1%
	(12)	(12)	(8)	(12)	(8)
Industry Adjusted Growth	-6.2%	-12.5%	-11.2%	-12.7%	-33.2%
	(12)	(12)	(8)	(12)	(8)
<u>NCF / Sales</u>					
Nominal Growth	-29.5%	-76.3%	-51.5%	-62.9%	-85.4%
	(12)	(12)	(8)	(12)	(8)
Industry Adjusted Growth	-20.5%	-72.3%	-78.7%	-67.0%	-65.7%
	(12)	(12)	(8)	(12)	(8)

Panel B: No Adverse Economic Shock

	Year -1 to			<u>Pre-Resolution</u>	<u>Post-Resolution</u>
	<u>0</u>	<u>+1</u>	<u>+2</u>		
<u>EBITDA / Sales</u>					
Nominal Growth	-1.4%	-5.1%	-7.4%	-1.6%	3.3%
	(19)	(18)	(19)	(18)	(13)
Industry Adjusted Growth	5.3%	7.0%	9.3%	4.4%	5.6%
	(19)	(18)	(19)	(18)	(13)
<u>CAPX / Sales</u>					
Nominal Growth	-25.3%	-34.1%	1.5%	-15.0%	9.4%
	(19)	(18)	(19)	(18)	(12)
Industry Adjusted Growth	-10.6%	-17.7%	3.0%	5.0%	18.9%
	(19)	(18)	(19)	(18)	(12)
<u>NCF / Sales</u>					
Nominal Growth	-0.7%	3.7%	-14.4%	-7.4%	-3.3%
	(19)	(18)	(19)	(18)	(12)
Industry Adjusted Growth	18.0%	-11.0%	-18.7%	-2.8%	26.0%
	(19)	(18)	(19)	(18)	(12)

Table 10
Qualitative measures of costs of financial distress

Qualitative measures of costs of financial distress for a sample of highly leveraged transactions completed between 1980 and 1989 which subsequently become distressed.

	Pre-Distress	Distress to Chapter 11 / Resolution	Chapter 11 to Resolution	Pre-Distress to Resolution
Costs of Distress:				
Investment:				
Evidence of cuts	16	28	6	31
Evidence of unexpected / costly cuts	3	16	6	17
Asset Sales:				
Evidence of desperation asset sales?	3	20	4	22
Proceeds less than expected?	N. A.	9	1	10
Delay?	N.A.	12	3	14
Asset Substitution?	0	0	0	0
Difficulties with customers?	0	8	0	8
Difficulties with suppliers?	0	9	1	10
Lose competitiveness?	0	7	2	9
Benefits of Distress:				
Costs cut / operations improved?	N.A.	20	8	23
Management changed?	N.A.	12	6	15

Table 11A
Evidence of Investment Cuts

Company	Timing of Investment Cuts	Costly?
American Standard	All Periods	No
Bucyrus Erie	All Periods	No. The company not only made some acquisitions, but also the industry as a whole was depressed and with excess demand, making new investments unnecessary
Burlington Industries	All Periods	No. The company explicitly stated it had recently completed a modernization project for all it's facilities, and therefore capital expenditures were expected to fall
Cherokee	All Periods	Yes. The company mentioned it was having unforeseen asset sales because of restrictive debt covenants and inability to generate enough cash flow from operations
Florida Steel	Distress to Chapter 11 / Resolution	Yes
Fort Howard	Pre-Distress	No
Fruehauf	Distress to Chapter 11 / Resolution	Uncertain. Capital expenditures reduced to half of pre-HLT levels, but still invested in new factory
Harcourt Brace Jovanovich	Distress to Chapter 11 / Resolution	Yes. Failure to invest in new school book offerings and maintain parks lead to loss of customers and lower than expected sale price for latter
Harvard Industries	Distress to Chapter 11 / Resolution and Chapter 11 to Resolution	Uncertain. Capital expenditures cut significantly both pre- and post-Chapter 11 filing, but successfully developed three new product lines to carry Company into the future
Hills Stores	Distress to Chapter 11 / Resolution	Yes. The company said it was unable to spend enough to grow at it's desired rate, forcing them to abandon expansion plans
Interco	Distress to Chapter 11 / Resolution	No
KDI	Distress to Chapter 11 / Resolution	No. Some of the companies industry sectors were depressed and with excess demand, making new investments unnecessary
Leaseway Transportation	All Periods	Yes. The company claimed it was cutting capital expenditures to make up for shortfalls in operating cash flows to pay back debt
R. H. Macy	Distress to Chapter 11 / Resolution and Chapter 11 to Resolution	Yes. Company cuts back on new store openings. However, particularly after Ch.11, investment in store modernization and computerization of sales and inventory control increases
Mayflower	All Periods	No. In fact, during the pre-distress period the company maintained a modest assets and workforce expansion program

Table 11A (continued)

Company	Timing of Investment Cuts	Costly?
Morshe Shoe	All Periods	No. Company continued opening new stores throughout, although not as many as before the HLT
National Gypsum	All Periods	Yes. Although pre-Ch. 11 reductions do not appear costly, with the Company actually announcing investments in new plants, most capital outlays are cut to maintenance levels following Ch. 11 filing
Papercraft	Distress to Chapter 11 / Resolution	Yes. The company claimed it was cutting capital expenditures to make up for shortfalls in operating cash flows to pay back debt
Payless Cashways	All Periods	Yes. Company did not open any new stores throughout, although after IPO Payless announced plans to open 7 new stores
Pay N' Pak	All Periods	No. The company explicitly stated it had made major plant overhauls in pre-HLT period, and therefore post-HLT capital expenditures were expected to fall
Plantronics	Distress to Chapter 11 / Resolution	Yes. Company explicitly stated that it had been forced to discontinue products expected to provide significant contributions to revenue and growth
Republic Health	Chapter 11 to Resolution	No. In fact, the company made acquisitions both during distress and in Ch. 11
Revco	All Periods	Yes. From distress onset to Ch. 11 filing, Revco had to curtail new store openings and remodelings, pending reorganization. However, after filing, Company went on extensive store renovation program
RJR Nabisco	All Periods	No. Company denied any impact of cuts in capital expenditures, but analysts attributed RJR's loss of share in US tobacco market to it
Seaman Furniture	Distress to Chapter 11 / Resolution and Chapter 11 to Resolution	Yes. The company eventually was forced to pull out of the Philadelphia market, which had been part of its core expansion strategy, because it could not afford to make the necessary investments
Specialty Equipment	Distress to Chapter 11 / Resolution	Yes. The company claimed it was cutting capital expenditures to make up for shortfalls in operating cash flows to pay back debt
Southland	All Periods	Yes. Southland had to reduce investment in store maintenance and advertising, leading to lost customers and eventual sale of Company
Supermarkets General	All Periods	Yes. In distress, Company was forced to sell assets and eventually recapitalize in order to afford necessary investments to remain competitive
USG	All Periods	No. Although capital expenditures were significantly below pre-HLT levels, USG expected no adverse impact because plants were in excellent condition
Jim Walter	Pre-Distress	No.
Welbilt	Distress to Chapter 11 / Resolution	No.

Table 11B
Evidence of Desperation Asset Sales

Company	Timing of Desperation Asset Sales	Costly?
American Standard	Pre-Distress	Uncertain. Company unexpectedly sold its railway braking products division, which until then had appeared as part of core automotive ops.
Bucyrus Erie	Distress to Chapter 11 / Resolution	Yes. The company did a sale/leaseback of its only manufacturing facility, with an implied interest cost of 27%, which was later judged by the court to be excessive.
Burlington Industries	Distress to Chapter 11 / Resolution	Uncertain. The Company sold one of its core subsidiaries to raise cash, but there was no information on the pricing or other consequences of the transaction
Cherokee	None	No.
Florida Steel	None	No.
Fort Howard	Pre-Distress	No. Company sold core cup business, but by all accounts decision made good business sense and price was fair
Fruehauf	Distress to Chapter 11 / Resolution	Yes. Company had to sell more assets than initially forecast, and eventually sell itself off piecemeal. Automotive business sold at price described by analysts as "great deal" for acquirer
Harcourt Brace Jovanovich	Distress to Chapter 11 / Resolution	Yes. Company forced to sell core Parks division at price (\$1.1bn) substantially below expectations (\$1.5bn). Still, eventual Company sale price described by analysts as fair
Harvard Industries	Distress to Chapter 11 / Resolution	Uncertain. Sale of Anchor Swan hose products business not part of original HLT plans, but no indication price was below fair value
Hills Stores	None	No.
Interco	Distress to Chapter 11 / Resolution	Yes. Company sold Londontown to lower bidder because it could pay sooner. Also, lower than projected proceeds from asset sales lead to further, unplanned divestitures
KDI	Distress to Chapter 11 / Resolution	Yes. Not only was the company unable to sell many of the assets it hoped to, but there was evidence that some subsidiaries were sold at low prices, to generate quick cash
Leaseway Transportation	Distress to Chapter 11 / Resolution	Uncertain. The company sold businesses to raise cash, after it entered distress, but there's no information on the performance of the businesses sold or the fairness of the price
R. H. Macy	Distress to Chapter 11 / Resolution	Uncertain. Company sold Finance and Credit subsidiaries to GECC to lower debt, but no indication price was below fair level
Mayflower	None	No.

Table 11B (continued)

Company	Timing of Desperation Asset Sales	Costly?
Morshe Shoe	None.	No.
National Gypsum	Distress to Chapter 11 / Resolution and Chapter 11 to Resolution	Yes. Although there is no indication that pre-Ch. 11 unplanned asset sales (e.g., tile business) were below fair value, the post-bankruptcy asbestos settlement which lead to the loss of all assets of Austin construction services subsidiary was costly to investors
Papercraft	Distress to Chapter 11 / Resolution	Yes. The company was forced to liquidate some divisions that could not attract buyers, while many other unforeseen divestitures were made before the reorganization
Payless Cashways	None	No.
Pay N' Pak	Distress to Chapter 11 / Resolution and Chapter 11 to Resolution	Yes. Post-distress the company started selling off stores, including lucrative ones. Eventually they liquidated in Ch. 7 because of inability to obtain financing or trade credit
Plantronics	Distress to Chapter 11 / Resolution	Uncertain. Company said it had been forced to sell businesses expected to contribute to growth, but there was no evidence price realized in sale was low
Republic Health	Distress to Chapter 11 / Resolution and Chapter 11 to Resolution	Uncertain. Company was also making acquisitions at the time, so it's unlikely it was forced to sell assets at a discount
Revco	Distress to Chapter 11 / Resolution and Chapter 11 to Resolution	Uncertain. In pre-Ch. 11 period Revco sold it's Odd Lot unit, which had been part of core post-HLT operations. During Ch. 11, Company sold hundreds of stores. Still, no indication the assets were sold at less than fair value
RJR Nabisco	All Periods	No. All asset sales were required by LBO financing and prices were fair
Seaman Furniture	None	No.
Specialty Equipment	Distress to Chapter 11 / Resolution	Uncertain. The company unexpectedly sold assets to raise cash, but they were underperforming, and there is no information on the fairness of the price
Southland	Distress to Chapter 11 / Resolution	Yes. Southland was forced to sell 50% stake in Citgo and eventually sell itself to Japanese partner at a price described by analysts as a "steal" for the buyer
Supermarkets General	Distress to Chapter 11 / Resolution	Yes. Sold Purity Supreme unit, previously part of core operations, at a price considered below fair value, in order to make debt payments
USG	None	No.
Jim Walter	None	No.
Welbilt	Distress to Chapter 11 / Resolution	No. Company sold core Bakery group, but no evidence price was unfair

**Table 11C
Evidence of Delay**

Company	Timing of Delay	Costly?
American Standard	None	No.
Bucyrus Erie	Distress to Chapter 11 / Resolution	Yes. Management and major debt holders fought over distribution of post-reorg. equity, delaying the filing of the pre-packaged Ch. 11 and the exit from distress
Burlington Industries	None	No.
Cherokee	None	No.
Florida Steel	None	No.
Fort Howard	Distress to Chapter 11 / Resolution	Uncertain. Company pulled first attempted IPO, which would relieve debt burden, because management was not pleased with price
Fruehauf	Distress to Chapter 11 / Resolution	Yes. Company first received acquisition bid by Varsity in 12/88, which was later called off. Board then proposed a recapitalization, which was eventually replaced by new, less generous offer from Varsity in 12/89
Harcourt Brace Jovanovich	Distress to Chapter 11 / Resolution	Yes. First bid by General Cinema was rejected by bondholders because shareholders were excessively rewarded. Later proposal, which was approved, included less payouts to equity, to the benefit of creditors
Harvard Industries	None	No.
Hills Stores	Distress to Chapter 11 / Resolution	Yes. Despite being in default and practically insolvent, the company allowed its trade credit to go unpaid before filing for Ch. 11, causing suppliers to stop shipping and hurting business.
Interco	None	No.
KDI	None	No.
Leaseway Transportation	Distress to Chapter 11 / Resolution	Yes. Company not only resisted going into Ch. 11, but it started hoarding cash, despite making costly investment cuts at the same time
R. H. Macy	Distress to Chapter 11 / Resolution and Chapter 11 to Resolution	Yes. Macy delayed Ch. 11 filing as long as possible, by getting covenants waivers and equity injections, repurchasing debt and even a last minute buyout bid from major equity holder. While in bankruptcy, management delayed proposing reorganization for over 2 years, and when it did, the proposal included a very low enterprise value, in an attempt to give senior creditors full recovery and avoid Federated takeover
Mayflower	None	No.

Table 11C (continued)

Company	Timing of Delay	Costly?
Morshe Shoe	None	No.
National Gypsum	None	No.
Papercraft	Distress to Chapter 11 / Resolution	Yes. The company attempted many restructurings and desperation asset sales, even though it acknowledged early on that it was insolvent
Payless Cashways	Distress to Chapter 11 / Resolution	Uncertain. Company pulled first attempted IPO, which would relieve debt burden, because management was not pleased with price
Pay N' Pak	None	No.
Plantronics	None	No.
Republic Health	None	No.
Revco	Chapter 11 to Resolution	Yes. Revco turned down buyout offers from Bass and Eckerd while in bankruptcy. Also, management took nearly three years to file reorganization plan, and eventually paid Eckerd to drop out of bankruptcy bidding
RJR Nabisco	None	No.
Seaman Furniture	Distress to Chapter 11 / Resolution	Uncertain. The company attempted a myriad of exchange offers, capital infusions and restructurings before finally filing for Ch. 11
Specialty Equipment	None	No.
Southland	None	No.
Supermarkets General	Distress to Chapter 11 / Resolution	Yes. Company cancelled an attempted IPO because price was not satisfactory. Also disappointed many analysts by holding on to money losing Rickel division for many years before spinning it off, despite continued losses and pressure from creditors
USG	Distress to Chapter 11 / Resolution	Uncertain. Company proposed reorganization plans which were turned down by bondholders. Likely delayed to avoid settling with asbestos litigants. No indication delay was costly.
Jim Walter	Chapter 11 to Resolution	Uncertain. Management delayed proposing reorganization plans, and when it did, they were rejected by debt holders, mainly due to Company's refusal to settle with asbestos litigants. Walter clearly held off on reaching agreement with creditors in the hope of obtaining favorable ruling in asbestos suits. No indication delay was costly.
Welbilt	None	No.

Table 12

Returns on pre-HLT capital and costs of financial distress as a function of industry performance, transaction value, and time in distress for a sample of HLTs completed between 1980 and 1989 which subsequently become distressed. Industry-adjusted costs of financial distress are defined in table 7. . Number of securities is the number of different debt and preferred stock securities in the post-HLT capital structure. HLT value is the capital value of the HLT when the HLT is completed. Junk bonds equal one if the firm issued public non-investment grade bonds to finance the HLT. Bank debt to total debt is as measured in the year before financial distress. Buyout equals one if a buyout partnership sponsored the HLT. Default equals one if the firm defaulted on its debt. Time in distress is the number of months between the onset of distress and the resolution of that distress. Industry returns dummy variables equal 1 if industry return was in given quartile over pre-HLT to resolution for return on pre-HLT capital regressions and from the onset of distress until resolution for the costs of distress regression. Significant at the 1% level ***; at the 5% level **; and at the 10% level *.

	Industry-adjusted costs of financial distress.											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)				
Constant	0.644 [0.265]	0.245 [0.181]	0.391 [0.194]	0.096 [0.134]	1.231 [0.483]	1.120 [0.522]	-0.154 [0.192]	0.187 [0.181]				
Log Number Securities	-0.351** [0.160]						-0.150 [0.249]					
Junk Bonds		-0.202 [0.211]										
Bank Debt / Total Debt			-0.811* [0.474]									
Buyout Sponsor				0.002 [0.190]								
Log HLT Value					-0.163** [0.068]	-0.114 [0.107]						
Default								0.270 [0.275]				
Time in Distress							0.002 [0.007]					
Industry Return Top Quartile												-0.101 [0.270]
Third Quartile												-0.324 [0.256]
Second Quartile												0.086 [0.265]
Adj. R ²	0.12	0.00	0.06	-0.04	0.14	0.12	0.01	-0.00				
N obs.	30	30	30	30	30	30	30	30				

Table 8-B

Estimated costs of financial distress for firms that did and did not incur an adverse economic shock, for a sample of HLTs comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989, and which subsequently become distressed. A firm is classified as suffering from an adverse economic shock if there is qualitative evidence of such a shock based on company reports and press accounts. Estimated returns to pre-HLT and post-HLT capital come from Table 5. Estimated upper bounds on the costs of distress are from Table 7. Significant at the 1% level ***; at the 5% level **; and at the 10% level *.

	<u>Returns on Pre-HLT Total Capital</u>		<u>Returns on Post-HLT Total Capital</u>		<u>Upper Bound on Costs of Distress</u>	
	<u>Market-Adjusted</u>	<u>Industry-Adjusted</u>	<u>Market-Adjusted</u>	<u>Industry-Adjusted</u>	<u>Market-Adjusted</u>	<u>Industry-Adjusted</u>
Panel A: Adverse Economic Shock ⁽¹⁾						
Median	-7.4%	1.5%	-26.6% ***	-24.3% ***	33.6% ***	24.4% ***
Mean	-3.2%	6.9%	-31.1% ***	-22.3% ***	28.3% ***	24.4% ***
Std. Dev.	39.6%	45.5%	21.4%	28.3%	32.6%	30.9%
# > 0	7	9	1	3	15	15
N	17	17	17	17	17	17
Panel B: No Adverse Economic Shock ⁽²⁾						
Median	18.2%	12.1%	-12.1%	-19.7% ***	1.3%	6.9%
Mean	22.9% **	19.7%	-12.2%	-15.8% *	-14.2%	-9.6%
Std. Dev.	41.2%	48.3%	29.6%	31.4%	69.4%	65.6%
# > 0	9	8	6	2	7	8
N	13	13	13	13	13	13

(1) Panel A firms are American Standard, Cherokee, Florida Steel, Fort Howard, Harvard Ind., Hills Stores, KDI, R. H. Macy, Mayflower, Morse Shoe, National Gypsum, Pay N' Pak, Republic Health, Seaman Furniture, Specialty Equipment, USG, Jim Walter.

(2) Panel B firms are Bucyrus Erie, Burlington Ind., Fruehauf, Harcourt Brace Jovanovich, Interco, Leaseway Transportation, Papercraft, Payless Cashways, Plantronics, Revco, RJR Nabisco, Southland, Welbilt.

Table 9 - B

Summary statistics on median growth in operating, capital expenditures and net cash flow margins for firms that did and did not incur an adverse economic shock, for a sample of HLTs comprising both MBOs (management buyouts) and leveraged recapitalizations completed between 1980 and 1989, and which subsequently become distressed. A firm is classified as suffering from an adverse economic shock if there is qualitative evidence of such a shock based on company reports and press accounts. Nominal and industry-adjusted median growth calculations are adjusted for negative base-year values by defining individual Company and industry base-year variables as $\max[\text{variable}(\text{base-year}), 0.01]$. Year $t = 0$ denotes fiscal year in which Company experienced onset of distress (for actual dates corresponding to these events for each Company, see Table 1). Pre-resolution is last full fiscal year before distress resolution. Post-resolution is first full fiscal year after distress resolution. Industry adjusted growth is given by nominal growth less growth in median industry variable over same period. Industry medians are based on universe of firms in same Value Line industry classification as company. Financial data on industry comparables is obtained from COMPUSTAT. Figures in parenthesis indicate number of observations used to calculate median growth, which might be less than full sample size due to unavailability of firm or industry data for certain years.

Panel A: Adverse Economic Shock

	Year -1 to			<u>Pre-Resolution</u>	<u>Post-Resolution</u>
	<u>0</u>	<u>+1</u>	<u>+2</u>		
<u>EBITDA / Sales</u>					
Nominal Growth	-24.2%	-55.3%	-37.0%	-47.6%	-31.6%
	(17)	(16)	(13)	(17)	(10)
Industry Adjusted Growth	-19.6%	-36.7%	-19.9%	-30.9%	-49.7%
	(17)	(16)	(13)	(17)	(10)
<u>CAPX / Sales</u>					
Nominal Growth	-12.6%	-25.2%	-22.5%	-29.8%	-10.1%
	(17)	(16)	(13)	(17)	(10)
Industry Adjusted Growth	-19.1%	-15.8%	-7.3%	-12.3%	-15.8%
	(17)	(16)	(13)	(17)	(10)
<u>NCF / Sales</u>					
Nominal Growth	-22.0%	-56.5%	-49.1%	-49.1%	-52.9%
	(17)	(16)	(13)	(17)	(10)
Industry Adjusted Growth	-15.2%	-63.3%	-42.3%	-61.5%	-42.5%
	(17)	(16)	(13)	(17)	(10)

Panel B: No Adverse Economic Shock

	Year -1 to			<u>Pre-Resolution</u>	<u>Post-Resolution</u>
	<u>0</u>	<u>+1</u>	<u>+2</u>		
<u>EBITDA / Sales</u>					
Nominal Growth	4.8%	-1.5%	-0.7%	1.7%	11.0%
	(14)	(14)	(14)	(13)	(11)
Industry Adjusted Growth	6.0%	7.0%	9.0%	8.7%	5.6%
	(14)	(14)	(14)	(13)	(11)
<u>CAPX / Sales</u>					
Nominal Growth	-16.8%	-32.2%	-7.6%	-13.4%	9.4%
	(14)	(14)	(14)	(13)	(10)
Industry Adjusted Growth	-0.1%	-12.6%	-6.0%	10.4%	18.9%
	(14)	(14)	(14)	(13)	(10)
<u>NCF / Sales</u>					
Nominal Growth	-0.9%	6.4%	3.7%	-2.9%	-1.7%
	(14)	(14)	(14)	(13)	(10)
Industry Adjusted Growth	20.1%	-22.0%	-9.6%	-5.2%	31.2%
	(14)	(14)	(14)	(13)	(10)