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The analysis and conclusions of this paper are those of the authors and do not indicate concurrence by other members of the research staff, the Board of Governors, or by the Federal Reserve Banks.

LEVERAGED BUYOUTS IN THE LATE EIGHTIES: HOW BAD WERE THEY?

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by

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Abstract

This study investigates the performance of 47 large LBOs that were completed in the 1987-90 period. We find that these LBOs were not devastated in the 1990-91 recession and that banks did not experience large losses in the recession due to HLT lending. In fact, cash flow increased by 9.8 percent after adjustment for industry trends in the average LBO in our sample. While 28 percent of firms examined in this study experienced financial distress, the majority of firms have reissued publicly-held equity, allowing LBO investors to cash out. In addition, a number of firms which did experience financial distress, experienced subsequent rebounds in operating performance and are now successful in their markets.

1. Introduction

The 1980s saw the spectacular rise and fall of the leveraged buyout. While leveraged buyouts (referred to as LBOs) have been widely criticized for plundering the assets of healthy businesses, separate studies by Kaplan (1990) and Smith (1991) indicate that leveraged buyouts taking place between 1977 and 1986 significantly improved operating efficiency. Moreover, LBOs in this period had a relatively small impact on employment, research and development and maintenance expenses. This suggests that LBOs were good for the companies involved and, most likely, good for the economy as a whole.

With the dramatic rise in junk bond defaults in 1989-1991, many of which were related to unsuccessful LBOs, perceptions of the cohort of LBOs that were completed between 1987 and 1990 turned decidedly negative. The later LBOs may have been overpriced as potential acquirers outbid each other for the chance to earn fees and a slice of buyout profits (Kaplan and Stein (1993)). Or, the best LBOs may have already been completed by 1987 and the only remaining targets offered small or nonexistent gains from going private. The quality of LBO transactions may have slipped because inexperienced buyers entered the market to reap the profits earlier investors had reported, but such johnny-come-lately participants lacked the expertise to successfully carry out a leveraged buyout. Martin Fridson (1991) argues that agency problems between the dealmakers and their investors led to numerous negative net present value LBOs in the late 1980s.

This study documents change in operating performance following 47 of the largest leveraged buyouts completed between 1987 and 1990. This study extends the earlier work of Opler (1992) who analyzed a similar sample. The principal change is the sample now focuses on LBOs that took place after 1987 rather than those taking place after 1985.

Besides adding later deals, financial performance results through mid-1993 have been incorporated in order to document the effects of the 1991-92 recession on LBO performance.

Despite the increased rate of financial distress, the evidence presented here suggests that leveraged buyouts continued to create value, on balance, throughout the late 1980s. Our main findings are:

- Cash flow/sales rose by 4.2%, from one year before the median sample LBO until two years afterwards. After adjustment for industry trends, the median growth rate of cash flow to sales was 9.8 percent.

- Many of the firms in the sample were sufficiently successful to attract new equity through initial public offerings or for other public companies to acquire them. More than half of the LBOs in the sample return to public ownership within four years of being taken private, largely through initial public offerings. The rate of reversion to public status compares favorably with the experience of earlier LBOs examined by Kaplan (1991).

- Approximately 28 percent of the LBOs in the sample filed for Chapter 11 or defaulted on their debt payments by early 1993. While more common than in earlier LBOs, financial distress was the exception, not the rule in the LBOs of the late 1980s. Moreover, some of the firms that experienced financial distress eventually emerged as viable public companies. Thus, default and bankruptcy did not necessarily lead to the demise of such LBOs.

- Concerns of widespread distress among financial institutions that lent to LBOs turned out to been overly pessimistic. Banks have charged off relatively few of their LBO loans, and the exposure of the largest banks is small in relation to their total assets.

- Research and development spending fell after LBOs of the late 1980s. But because so few buyout targets had significant R&D spending, the decline is economically insignificant.

In sum, these findings indicate that LBOs in the 1987-90 period experienced operating improvements that were similar to those following earlier deals. While conclusions about change in operating performance following LBOs will depend on the sample and the performance measures used, our results suggest that LBOs of the late 1980s, like their earlier counterparts, produced substantial operating improvements and had a reasonable

chance of success.

The observed operating improvements are also substantially larger than those observed in another study of LBOs of the late 1980s undertaken by Long and Ravenscraft (1993). Long and Ravenscraft find that the LBOs of 1986 and 1987 actually experienced declines in performance. Differences between their results and those obtained here may owe to differences in the samples examined. Specifically, they included many smaller deals and also used an unusual source of financial data to observe changes in financial values after LBOs.

2. Performance measurement and sample

2.1 Sample

This study documents change in operating performance following 47 of the largest leveraged buyouts completed between 1987 and 1990. All but one of the twenty largest LBOs completed during this period are included in the study.[1] The sample includes all firms that 1) went private in an LBO listed by *Forbes* in its 1988-1991 "400 Largest Private U.S. Firms" and 2) had sufficient public data to measure pre- and post-LBO operating performance. Because these large LBOs have the most impact on the economy they are naturally of great interest.

2.2 Definition of operating performance

The main measure of operating performance used in this study is the operating profit margin, as reported in corporate annual reports and COMPUSTAT. This is defined as

[1] Montgomery Wards is not examined because pre-buyout financials are unavailable.

operating income, or net sales minus cost of goods sold and selling, general and administrative expenses (EBITDA), divided by sales. This measures cash flow before depreciation, interest and taxes. The benefit of using this cash flow measure is that accounting changes resulting from a leveraged buyout are minimized.[2] Using this measure may also understate operating improvements insofar as LBOs may improve firm's asset utilization measured by the sales/assets ratio.

3. Changes in performance after LBOs

3.1 Impact of LBOs on the profit margin

Table 1 shows the change in operating performance for the 47 LBOs in the sample one year and two years after the buyout. The median change in profitability is shown for two time frames (year -1 to +1 and year -1 to +2).[3] Operating cash flow to sales typically rose by 4.2 percent from one year before until two years afterwards. After adjustment for industry trends, the median change in operating profit margin was 9.8 percent by the second post-LBO year. This indicates that most LBOs of the late 1980s were followed by operating improvements relative to other firms in the economy.

Table 2 shows the individual firms in the sample and the percentage change in their profitability from one year before until one year after deal completion. The firms are ordered by the year of their LBO and by growth rate within each cohort year. The

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[2]In addition, by looking at accounting changes relative to sales instead of assets means that the effects of asset write-ups on observed performance are minimized.

[3]Results for short horizon time frames (one and two years) also appear to hold over longer periods. Profitability grew by four percent among the 19 firms in this study for which profitability numbers were available four years after the buyout. This suggests that improved profit margins in LBOs are often permanent.

results for the individual firms in Table 2 exhibit sizeable variance. Some firms such as Joy Technologies and International Controls did very well in the first year after being taken private, while others such as Dyncorp, Edgcomb, and TWA ran into serious operating difficulties. About two-thirds of the companies in Table 2 increased their profit margins in the first post-buyout year, and nearly half raised their profit margins by 10 percent or more. Adjusting for industry performance affects the magnitude of the profits considerably but generally does not change the qualitative results -- firms that did poorly in an absolute sense tended to do poorly compared to their competitors too. The growth rates are fairly similar across the year cohorts, suggesting that there was no trend in profit margin gains over time.

Some of the companies that did very well in their first post-buyout year, such as Best Products and Insilco, eventually ended up in bankruptcy, while others that started out poorly, such as Arkansas Best and Horace Mann Educators, never experienced financial distress and successfully completed IPOs. An obvious explanation for this result is that LBOs that filed for bankruptcy did not become as profitable as the LBO sponsors had envisioned when they determined the offer price for the target and the new capital structure. In contrast, firms that did poorly in their first year may have had ample buffers for bad years built into the LBO plans.

3.2. *Impact of LBOs on research and development*

Critics of leveraged buyouts argue that they cause firms to focus on short-term performance and ignore valuable long-term investments in research and development. Past studies (e.g. those of Kaplan and Smith) have found that few LBO firms engage in significant R&D spending. Similarly, most firms in this study do not report R&D

expenses because it is negligible relative to sales. Of the 47 firms examined in this study, only nine reported any R&D expenses at all. Among these firms, R&D expenditures fell by a total of $30 million from one year before until one year after the buyout. This decline is small, but because buyout targets have such low R&D to begin with, it is large in percentage terms. The median ratio of R&D expense to sales of the nine firms with any R&D spending fell by 20.5 percent -- a statistically insignificant amount given the sample size.

4. The financial health of the late-1980s LBOs

4.1. Outcomes as a measure of transaction success

While most of the LBOs in our sample experienced improved profit margins, the success of an LBO must also be measured in terms of how well the firm compared to the expectations of the LBO investors. The pattern of improving operating earnings shown above indicates that late 1980s LBO targets did offer gains from going public and that the sponsors has sufficient knowledge, on balance, to tap hidden profits. This evidence says little, however, about whether later stage LBOs were overpriced or whether less experienced LBO investors were able to design the appropriate capital structure for their acquisitions. From the equity investors' point of view, an LBO is only successful when profit margins are sufficient to pay off the bondholders and offer a reasonable return on the equity investment.

There are essentially three paths that an LBO can follow upon going private: 1) the company can remain private and continue to service its debt; 2) the investors can cash out or increase the liquidity of their equity stake through an initial public offering or sale to another investor; or 3) the debt will overwhelm the cash flow of the firm,

leading to default and possibly bankruptcy. Because of the scarcity of data on the value of the equity investments in LBOs, little is revealed about the relative value of an LBO that follows the first path. LBOs that take the two last paths, however, provide more information about whether the LBO met the sponsors' goals. In the case of default, the equity is usually worthless and bondholders become the new owners of the firm. Thus, default and bankruptcy are clear indicators that an LBO failed to meet expectations. Initial public offerings, likewise, are a clear signal of positive returns to the equityholders in the LBO. An LBO investor will only pursue an IPO if the expected price of the shares in the public stock market is high enough to realize a strong gain. Otherwise, the LBO investor will refrain from attempting an IPO until the return becomes more attractive.

In this section, we document the number of firms in the sample that encountered financial distress and the number that were able to return to public status. These two indicators are measures of the success of the LBOs in the eyes of the equity investors in the LBOs.

4.2. *Financial Distress*

While we know the number of distressed firms is greater than in the early 1980s (there were almost no large LBOs that defaulted before 1987), just how common was the incidence of default? Table 3 lists the firms that encountered financial distress after going private and those that did not. We define financial distress as default on a bond or bankruptcy. Just under 28 percent of the sample experienced financial distress, a large fraction by historical standards but not so large as to seriously question the ex ante profitability of the late 1980s LBOs.

All but one of the financially distressed firms encountered problems after the

economy slowed in 1989. The fact that highly leveraged firms in the late 1980s defaulted more frequently than their counterparts earlier in the decade may reflect the fact that the later cohort was more exposed to the business cycle and more prone to misforecasting future revenue streams.

4.3. *Tapping the IPO market*

The initial public offerings market has been particularly active since the Spring of 1991, making for an environment in which investors have been quite receptive to reverse LBOs. Table 4 shows that many firms which went private in the 1987-90 period have since returned to public ownership. Indeed, 28 of the 47 firms are now public again, of which 19 completed initial public offerings. The remaining 9 firms were either acquired by public companies (5) or issued stock to their bondholders after emerging from bankruptcy (4).

This experience compares favorably to that of earlier LBOs reported by Kaplan (1991). Both the firms in Kaplan's sample and our sample encountered a receptive IPO market within a few years of going private (Kaplan's LBOs experienced hot IPO markets in 1983 and 1986-1987). In Kaplan's sample, 38 percent of firms undertaking LBOs between 1979 and 1986 had gone public (or were purchased by public companies) by 1991. In contrast, fully 60 percent of the LBOs in our sample return to public status by mid-1993. The firms in our sample were more likely to return to public ownership than those in Kaplan's sample, despite a shorter average timespan since going private.

Another way to compare the two samples is to compare the hazard rate of returning to public ownership or the cumulative survival rate of remaining private. The hazard rate, shown in Table 5, is the number of firms (n) that return to public ownership

after x years of remaining private divided by the number of firms that could possibly have returned to public status that many years after the LBO (R). The latter concept, R, is also called the "risk set" and in this sample includes all the LBOs that have existed long enough to be in the set and have not yet gone public. For example, an LBO that was completed in 1990 and is still private is not in the risk set for year 5 because 5 years have not elapsed since the LBO. The cumulative survival rate is the percentage of firms that are still private x years after the LBO.

Table 5 shows that most of the firms in the sample went public -- the cumulative survival rate is only 27 percent by year 6. The table also indicates that they returned to public ownership rather quickly -- the hazard rate, n/R, is close to 20 percent in years 2 through 4. Kaplan (1991) presents similar data on the hazard rates and cumulative survival rates for earlier LBOs. The hazard rate for Kaplan's sample never rises above 14 percent in any given year. Four years from the date of the LBO, 62 percent of the Kaplan sample is still private, whereas only 49 percent of our sample is still private. Within 6 years of going private over 70 percent of the late 1980s LBOs have returned to public ownership, while less than half of Kaplan's earlier LBOs had done so within 6 years.

Interestingly, several firms which encountered financial distress also eventually went public or were purchased by third parties (e.g. Charter Medical, Edgcomb, Revco and Southland). This experience is consistent with the view that financial distress, while costly, need not permantly damage firms' business prospects. Consider, for example, the case of Charter Medical, an operator of psychiatric and general hospitals, was taken private in a $1.6 billion management-led buyout in September 1988.

4.4 *Bankruptcy need not be fatal: The case of Charter Medical*

Over the five years prior to its 1988 LBO, Charter Medical's net psychiatric revenues grew at an annual compound rate of 36 percent. With expectations of further strong growth in its industry, Charter Medical continued to build psychiatric hospitals after the buyout, expanding its stock from 68 in 1988 to 89 by 1991. A severe decline in Medicare expenditures on mental health and substance abuse programs, however, combined with increasing corporate efforts to trim escalating health insurance premia, led to a 10 percent drop in occupancy rates and shorter average stays in its psychiatric hospitals in 1990. Consequently, EBITDA fell from over $280 million in 1989 to only $113 million in 1990. In February 1991, the company defaulted on its debt obligations and began asset sales to maintain liquidity. Charter Medical filed a prepackaged bankruptcy plan in June 1992, which was confirmed a month later. Since then, EBITDA has rebounded to $280 million (annualized), despite a reduction in the number of psychiatric hospitals. While the LBO clearly fell short of the mark, profit margins have increased sharply since the buyout and the market value of Charter Medical today is fairly close to the price paid for the company in 1988, despite an industry-wide decline in demand. Thus, even this LBO that ended up in bankruptcy appears not have been a complete failure.

5. Did LBOs destabilize the financial system?

Many observers have expressed concern that the high levels of debt incurred in the LBOs of the late 1980s could cause a series of defaults that would seriously undermine the stability of the financial system (Bernanke, Campbell and Whited (1989), Friedman (1989), Greenspan (1991) and Reich (1989)). These worries prompted regulators to require banks

to separately classify loans made in leveraged buyouts as highly leveraged transaction (HLT) loans. The recession of 1990-1991 has now tested concerns about the destabilizing effects of leveraged buyouts. Contrary to well-publicized predictions, problems in major bank's HLT portfolios have not prompted financial instability. One of the reasons for this experience becomes clear in Table 6. The table summarizes the HLT loan exposure of the largest U.S. banks as of December 31, 1991 (the last year in which HLT exposure was required). Many major banks such as Citicorp and Chemical carried large dollar amounts of HLT loans ($3.7 and $5.5 billion, respectively). But, on average, the major banks had only 3.11% of their assets in HLT loans. Banks list the amount of loans with some delayed payments as non-performing. The average major bank listed 10.59% of its HLT loans as non-performing at the end of 1991. Clearly, most of the money lent by banks in LBOs has been repaid on schedule. Many non-performing loans continued to be partly paid off or rescheduled. Thus, relatively few HLT loans have been charged off.[4] The average amount of HLT debt charged off in 1991 was fairly low—slightly over three percent. Contrary to fears expressed by some, this indicates that the banking system did not suffer greatly from lending in leveraged buyouts. Given the high fees and interest charged in many LBO loans, it appears that many banks may have made profits on their HLT portfolios.[5]

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[4]Many major banks have Charge-Off Committees to determine when to undertake charge-offs. Typically charge-offs are taken when a loan has a probability of repayment less than 50% or when it is sold at a discount to another investor.

[5]While banks typically do not disclose the profitability of their loan positions several institutions reported making a profit on their HLT portfolios (e.g. Security Pacific, PNC and Mellon Bank Corp) in 1991 annual reports. This experience is consistent with banker's reluctance to view their HLT portfolios as major problem areas (Bleakley (1991)).

6. Impact of the 1990-91 recession on LBOs

Firms with high leverage are especially vulnerable to economic downturns because of the possible adverse consequences of financial distress. Existing studies suggest that financial distress can be very costly for some firms (Altman (1983), Lang and Stulz (1992) and Opler and Titman (1993)). Some suggest that LBO firms will have problems with stakeholders such as employers and customers when financial troubles mount (Fox and Marcus (1992)). These possible costs of financial distress may mean that firms which have the misfortune of undertaking an LBO shortly before a recession will perform particularly poorly.[6] This argument can be tested by comparing the performance of LBOs completed in 1989 with earlier LBOs in the sample. Firms that went private in 1989 bore the brunt of the recession in their second LBO outyear (1991). The median growth in the operating margin of the 12 firms in the 1989 cohort was 4.4 percent (year -1 to year +2). The growth rate for the 29 firms that went private in 1987 or 1988 was essentially the same -- 4.2 percent. This suggests that last recession did not exact a heavy toll on operating performance as was feared.

7. Conclusion

This study investigates the performance of 47 large LBOs that were completed at the end of the 1980s. We find that these LBOs were not devastated in the 1990-91 recession and that banks did not experience large losses in the recession due to HLT lending. In fact, cash flow increased by 9.8 percent after adjustment for industry trends in the average

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[6]Jensen (1989) has argued that financial methods used to finance LBOs such as LBO sponsors and strip financing may reduce the costs of financial distress in these transactions.

LBO in our sample. All told, the LBOs examined in this study were followed by increases in operating cash flow of approximately $800 million, suggesting that these transactions yielded significant efficiency gains for investors. The strong operating improvements at firms taken private later in the 1980s is evidence against two theories of the "bad cohort" - the idea that all the good targets were already taken private and the theory that later participants in the buyout market were lacking the expertise of LBO pioneers. It does appear, however, that many later deals were overpriced relative to pre-LBO cash flows (Kaplan and Stein (1993)).

This improvement in operating profits is comparable to that observed in samples of earlier LBOs. Kaplan (1990), for example, finds that operating cash flow to sales rises by 11.9 percent in the two years after 34 LBOs from the 1980-86 period. Similar rises in operating cash flow have been documented by Kitching (1989), Muscarella and Vetsuypens (1990), Smith (1991) and Kaplan and Stein (1993). The improvement of 4.2 percent in raw profitability observed in this study is somewhat lower than that observed in these earlier studies. However, the improvement observed after industry adjustment is comparable to previous findings. This suggests that the somewhat weaker performance observed after later LBOs reflects the slowdown in the economy. Overall, the results in this study suggest that later LBOs did not result in smaller efficiency gains. This pattern is not consistent with the argument that changes in the LBO market after 1986 dried up the supply of profitable LBO opportunities.

Table 1

Impact of LBOs completed in the 1987-1990 period on profit margins. The profit margin is income before interest, taxes, depreciation and amortization divided by sales. Changes are shown relative to the date of the leveraged buyout (year 0).

	Year -1 to Year +1	Year -1 to Year +2
Median Change	7.3%	4.2%
Median Industry-Adjusted Change	3.4%	9.8%
Number of LBOs	47	41

Table 2

Change in profit margin from one year prior until one year after LBO. The profit margin is income before interest, taxes, depreciation and amortization divided by sales. Adjusted growth in margin is the growth in margin less the median 3-digit industry growth in margin over the same period.

Firm	Year of LBO	Sales (millions)	3-digit SIC Code	Growth in profit margin	Adjusted growth in margin
Southland	1987	$8,348	541	-21%	-34%
Revco Drug Stores	1987	$2,490	591	-12%	-21%
Burlington Industries	1987	$2,043	220	-1%	12%
Tracor	1987	NA	372	0%	13%
Pay N Pak	1987	$498	521	3%	1%
Borg Warner	1987	$2,340	738	18%	31%
Owens-Illinois	1987	$3,647	322	30%	-26%
International Controls	1987	$693	371	275%	281%
Joy Technologies	1987	$553	353	6041%	5962%
DynCorp	1988	$717	874	-64%	-81%
TWA	1988	$4,606	451	-50%	-42%
Stop & Shop	1988	$4,990	541	-23%	-30%
Tops Markets	1988	$1,150	541	-7%	-14%
Arkansas Best	1988	$849	421	-5%	-2%
Foodmaker	1988	$1,119	581	-5%	-2%
Essex Group	1988	$992	335	-1%	-23%
Fort Howard Co	1988	$1,151	262	2%	-5%
Harvard Industries	1988	$758	323	2%	14%
American Standard	1988	$3,637	343	7%	-1%
AFG Industries	1988	$584	321	10%	-1%
Payless Cashways	1988	$2,226	521	14%	36%
Bell & Howell	1988	$612	357	18%	41%
Charter Medical	1988	$1,285	806	19%	3%
Supermarkets General	1988	$6,298	541	20%	12%
Musicland Stores	1988	$836	573	27%	32%
Hillsborough Holdings	1988	$1,226	308	32%	41%
Florida Steel	1988	$534	331	34%	29%
Insilco Corp	1988	$767	358	43%	59%
IBC Holdings	1988	$1,093	519	44%	67%
Farm Fresh	1988	$735	541	46%	39%
York Holdings	1988	$1,449	358	72%	88%
Best Products	1988	$2,095	539	188%	210%
Edgcomb	1989	$270	505	-129%	-108%
NWA	1989	$3,430	451	-107%	-16%
Alco Health Services	1989	$2,564	512	-28%	-15%
Silgan Holdings	1989	$658	341	-23%	-21%
Horace Mann Educators	1989	$629	633	-14%	-56%
Mayfair Supermarket	1989	$506	541	-2%	0%
Hospital Corp of America	1989	$4,631	806	3%	9%
RJR/Nabisco	1989	$13,879	211	26%	22%
Chicago & Northwestern	1989	$961	401	43%	45%
Super Rite Foods	1989	$415	514	45%	4%
Cullum Cos	1989	$1,100	541	50%	53%
Envirodyne Industries	1989	$516	308	58%	57%
Kash n' Karry	1989	$1,039	541	79%	81%
Gulfstream Aerospace	1990	$824	372	-48%	-47%

Table 3

Financial viability of leveraged buyouts completed between 1987 and 1990 in June 1993. Year of buyout shown in parentheses.

No Financial Distress Experienced	Financial Distress Experienced
Borg Warner (1987)	Chapter 11
Burlington Industries (1987)	Pay N Pak (1987)
International Controls (1987)	Revco Drug Stores (1987)
Joy Technologies (1987)	Southland (1987)
Owens-Illinois (1987)	Tracor (1987)
AFG Industries (1988)	Best Products (1988)
American Standard (1988)	Charter Medical (1988)
Arkansas Best (1988)	Harvard Industries (1988)
Bell & Howell (1988)	Hillsborough Hldgs (1988)
DynCorp (1988)	Insilco (1988)
Essex Group (1988)	TWA (1988)
Farm Fresh (1988)	Envirodyne (1989)
Foodmaker (1988)	
Fort Howard Corp (1988)	Workout
IBC Holdings (1988)	Florida Steel (1988)
Musicland Stores (1988)	Edgcomb (1989)
Payless Cashways (1988)	
Stop & Shop (1988)	
Supermarkets General (1988)	
Tops Markets (1988)	
York Holdings (1988)	
Alco Health Services (1989)	
Chicago & Northwestern (1989)	
Cullum Cos (1989)	
Horace Mann Educators (1989)	
Hospital Corp of America (1989)	
Kash n' Karry Food (1989)	
Mayfair Supermarkets (1989)	
NWA (1989)	
RJR/Nabisco (1989)	
Silgan Holdings (1989)	
Super Rite Foods (1989)	
General Instrument (1990)	
Gulfstream Aerospace (1990)	
Total Firms: 34	**Total Firms: 13**

Table 4

Status of leveraged buyouts completed between 1987 and 1990 in June 1993. Year of transaction initiation is shown in parentheses.

Private equity only in 1993	Public equity by 1993
International Controls (1987)	Borg Warner (1987)
Pay N' Pak (1987)	Burlington Industries (1987)
American Standard (1988)	Joy Technologies (1987)
Bell & Howell (1988)	Owens-Illinois (1987)
Best Products (1988)	Revco Drug Stores (1987)[a]
DynCorp (1988)	Southland (1987)[a,b]
Essex Group (1988)	Tracor (1987)[a]
Farm Fresh (1988)	AFG Industries (1988)
Fort Howard Corp. (1988)	Arkansas Best (1988)
Harvard Industries (1988)	Charter Medical (1988)[a]
Hillsborough Holdings (1988)	Florida Steel (1988)[b]
Insilco (1988)	Foodmaker (1988)
Supermarkets General (1987)	IBC Holdings (1988)
TWA (1988)	Musicland Stores (1988)
Alco Health Services (1989)	Payless Cashways (1988)
Envirodyne (1989)	Stop & Shop (1988)
Kash N' Karry Foods (1989)	Tops Markets (1988)
NWA (1989)	York Holdings (1988)
Silgan Holdings (1989)	Chicago & Northwestern (1989)
	Cullum Cos (1989)[b]
	Edgcomb (1989)[b]
	Horace Mann Educators (1989)
	Hospital Corp. of America (1989)
	Mayfair Supermarkets (1989)
	RJR/Nabisco (1989)
	Super Rite Foods (1989)
	General Instruments (1990)
	Gulfstream Aerospace (1990)
Total Firms: 19	**Total Firms: 28**

[a] Firm issued equity after filing for bankruptcy.
[b] Firm was sold to another public company (Ito-Yokado has a majority interest in Southland).

Table 5

Rates at which LBOs returned to public ownership between one and six years after transaction initiation.. Censored firms are buyouts that are still private x years after the buyout and for which data on year x + 1 are unavailable (e.g., 1988 buyouts become censored in year 6 - 1994).

Year x	Number of LBOs Private at beginning of year x	Number of LBOs that went public in year x	Censored firms	Cumulative survival rate	Hazard rate
1	47	1	0	97.9	2.1
2	46	9	0	78.7	19.6
3	37	7	0	63.8	18.9
4	30	7	5	48.9	23.3
5	18	3	12	40.8	16.7
6	3	1	2	27.2	33.3

Table 6

Highly leveraged transaction (HLT) loan exposure and performance among large U.S. financial institutions as of December 31, 1991.

Bank	Assets 1991	HLTs 1991	Nonperforming Fraction	Charge-offs Fraction	HLT Exposure
Citicorp	216,922	3,700	25.19%	3.70%	1.71%
Chemical Banking	138,930	5,500	13.38%	4.24%	3.96%
BankAmerica	115,509	1,795	19.00%	1.17%	1.55%
Nationsbank Corp	110,319	3,200	5.66%	1.25%	2.90%
JP Morgan	103,468	1,390	2.88%	NA	1.34%
Chase Manhattan	98,197	3,193	6.30%	2.07%	3.25%
Security Pacific	76,411	3,300	11.94%	3.08%	4.32%
Bankers Trust	63,959	2,300	26.04%	3.00%	3.60%
Wells Fargo	53,547	2,300	10.09%	5.57%	4.30%
First Chicago	48,963	2,700	3.67%	2.85%	5.51%
First Interstate Bancorp	48,922	433	11.32%	5.64%	0.89%
Banc One	46,293	407	3.93%	0.47%	0.88%
First Union Corp	46,085	1,169	9.58%	1.28%	2.54%
Fleet Norstar	45,445	638	7.21%	0.11%	1.40%
PNC Financial	44,892	1,672	4.90%	2.96%	3.72%
Norwest Corp	40,293	125	8.80%	0.00%	0.31%
Bank of New York	39,426	3,240	5.40%	5.37%	8.22%
Suntrust	32,797	363	0.00%	0.00%	1.11%
Barnett Banks	32,721	100	32.00%	14.00%	0.31%
Bank of Boston Corp	32,700	2,600	5.96%	1.92%	7.95%
First Fidelity Bancorp	30,215	381	10.47%	6.46%	1.26%
NBD Bancorp	29,513	247	23.08%	2.39%	0.84%
Mellon Bank Corp	29,355	1,405	1.99%	1.42%	4.79%
Continental Bank	24,008	1,682	12.78%	5.29%	7.01%
Average	66,892	2,027	10.59%	3.08%	3.11%

REFERENCES

Altman, Edward, 1983, A further investigation of the bankruptcy cost question, *Journal of Finance* 39, 1067-1089.

Bernanke, Ben, John Y. Campbell, and Toni M. Whited, 1989, U.S. corporate leverage: developments in 1987 and 1988, *Brookings Papers on Economic Activity* 1, 255-278.

Bleakley, Fred D., 1991, Big banks may be hit by significant losses from buy-out loans, *Wall Street Journal*, January 4, A1, A8.

Fox, Isaac and Alfred Marcus, 1992, The causes and consequences of leveraged managed buyouts, *Academy of Management Review* 17, 62-85.

Friedman, Benjamin, 1989, Tread carefully on takeovers, *New York Journal of Commerce*, April, 27.

Fridson, Martin, 1991, Agency costs: A key to spotting tomorrow's troubled deals, *High Yield Quarterly*, June, Merrill Lynch, New York, NY.

Greenspan, Alan, 1989, Testimony before the Senate Finance Committee Hearings on LBOs and Corporate Debt, Reprinted in the *Journal of Applied Corporate Finance*, Spring 1989, 31-34.

Jensen, Michael, 1989, The eclipse of the public corporation, *Harvard Business Review*, September-October, 61-75.

Kaplan, Steven N., 1990, The effects of management buyouts on operating performance and value, *Journal of Financial Economics* 24, 217-254.

Kaplan, Steven N., 1991, The staying power of leveraged buyouts, *Journal of Financial Economics* 29, 287-313.

Kaplan, Steven N. and Jeremy C. Stein, 1993, The evolution of buyout pricing and financial structure in the 1980s, *Quarterly Journal of Economics*, 313-357.

Lang, Larry H. P. and Rene M. Stulz, 1992, Contagion and competitive intra-industry effects of bankruptcy announcements: An empirical analysis, *Journal of Financial Economics* 32, 45-60.

Long, William F. and David J. Ravenscraft, 1993, Decade of debt: Lessons from LBOs in the 1980s, in Margaret M. Blair (ed.), *The Deal Decade*, Brookings Institution, Washington D.C.

Muscarella, Chris and Michel Vetsuypens, 1990, Efficiency and Organizational Structure: A Study of Reverse LBOs, *Journal of Finance* 45, 1389-1414.

Opler, Tim C., 1992, Operating performance in leveraged buyouts: Evidence from 1985-89, *Financial Management* 21, 27-34.

Opler, Tim C. and Sheridan Titman, 1993, The indirect costs of financial distress, Manuscript, Southern Methodist University, Dallas, TX.

Reich, Robert, 1989, America pays the price, *New York Times Magazine*, January 29, 32-40.

Smith, Abbie, 1991, Capital ownership structure and performance: The case of management buyouts, *Journal of Financial Economics* 27, 143-165.

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