

CORPORATE RESTRUCTURING: BREAKUPS AND LBOs

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Abstract

This chapter surveys the empirical literature on corporate breakup transactions (divestitures, spinoffs, equity carveouts, tracking stocks), leveraged recapitalizations, and leveraged buyouts (LBOs). Many breakup transactions are a response to excessive conglomeration and reverse costly diversification discounts. The empirical evidence

shows that the typical restructuring creates substantial value for shareholders. The value-drivers include elimination of costly cross-subsidizations characterizing internal capital markets, reduction in financing costs for subsidiaries through asset securitization and increased divisional transparency, improved (and more focused) investment programs, reduction in agency costs of free cash flow, implementation of executive compensation schemes with greater pay-performance sensitivity, and increased monitoring by lenders and LBO sponsors. Buyouts after the turn of the century created value similar to LBOs of the 1980s. Recent developments include club deals (consortiums of LBO sponsors bidding together), fund-to-fund exits (LBO funds selling the portfolio firm to another LBO fund), a highly liquid (until mid-2007) leveraged loan market, and evidence of persistence in fund returns (perhaps because brand-sponsors borrow at better rates). Perhaps the greatest challenge to the restructuring literature is to achieve a modicum of integration of the analysis across transaction types. Another challenge is to produce precise estimates of the expected return from buyout investments in the presence of limited data on those portfolio companies that do not return to public status.

Keywords

restructuring, breakup, divestiture, spinoff, equity carveout, tracking stock, leveraged recapitalization, leveraged buyout, highly leveraged transaction

1. Introduction

Shocks to the corporate economic environment may give rise to severe organizational inefficiencies. For example, a vertically integrated firm may find that long-term contracts and/or spot market purchases of a key input have become more efficient. Or increased general capital market liquidity may have rendered internal capital markets a relatively costly divisional funding mechanism for conglomerates. High leverage may be optimal as financial innovations and expertise make it less expensive to manage financial distress. Financial innovations and general market liquidity may also render it optimal to securitize an entire division. The result is increased divisional managerial focus. In this chapter, we collectively refer to the transactions that implement these and other changes in asset composition, financial contracting, and ownership structure as “corporate restructurings”.

We focus the survey on garden-variety restructuring procedures used to securitize and sell off part of the firm. Takeovers—the perhaps ultimate form of corporate restructuring—are reviewed in Chapter 15 of this Handbook (Betton, Eckbo, and Thorburn, 2008). However, we include leveraged buyouts (LBOs) in which the entire firm is acquired by a financial buyer such as a buyout fund. We also deal with issues of financial distress only tangentially, as the evidence surrounding restructurings in bankruptcy are covered in Chapter 14 (Hotchkiss, John, Mooradian, and Thorburn, 2008).

It is useful to classify corporate restructurings into two broad groups: breakups and highly leveraged transactions. Breakup transactions focus primarily on the separation of company assets and therefore include divestitures, spinoffs, equity carveouts, and tracking stock. Highly leveraged transactions involve a significant increase of debt in the firm’s capital structure, either through a debt-financed special dividend in a leveraged recapitalization or in an LBO.¹

Corporate restructurings may be initiated by the firm’s top-level management, by divisional managers, or by outside sponsors like buyout funds. Occasionally, the restructuring is defensive, arising in response to a control threat from the market for corporate control. Regardless of who initiates the transaction, the parties are seeking to improve operating efficiency, increase cash flow, and, ultimately, enhance firm profitability. In breakup transactions, assets are transferred to higher-value users, while highly leveraged transactions involve optimizing capital structure, improving managerial incentives and achieving tax efficiency.

The survey is organized as follows. We begin in Section 2 with a brief discussion of the so-called diversification discount and potential costs of diversification, which motivate many breakup transactions. Sections 3 through Section 6 then detail the structure and consequences of various types of breakup transactions, including divestitures (Section 3), spin-offs (Section 4), equity carveouts (Section 5), and tracking stock (Section 6).

¹ We do not survey recapitalizations that do not involve extensive use of leverage. Examples include state privatizations (Megginson and Netter, 2001), conversions from mutual to stock companies (Masulis, 1987), and stock repurchases. Stock repurchases are reviewed in Chapter 10 of this Handbook (Kalay and Lemmon, 2008).

Next we turn to highly leveraged transactions, including leveraged recapitalizations and leveraged buyouts (LBOs). Section 9 concludes the survey.

2. Restructurings and the boundaries of the firm

2.1. Breakup transactions

The economic boundary of the firm may be defined as the point where within-firm transactions start to become more costly than arms-length (across market) transactions. There are numerous theories for why within-firm transactions may economically dominate market transactions, ranging from transactions costs (Coase, 1937) to agency costs and costs of imperfect contracting and moral hazard (Jensen and Meckling, 1976, Klein, Crawford and Alchian, 1978, Williamson, 1985, Grossman and Hart, 1985, Jensen, 1986, Hart and Moore, 1990). Alternatives outright ownership of resources include renting (long- or short-term contracts) and “spot” market transactions to ensure continued operations of the firm. These organizational alternatives have different implications for corporate taxes, firm-specific resource specialization and development of appropriable quasi-rents (which in turn lead to bargaining issues and potential for opportunistic behavior), investment decisions, risk-sharing and financing costs.

An asset such as an operating plant may have greater value as a division of a conglomerate than as a stand-alone “pure play” entity. The degree to which conglomerates generate value depends on the managerial skills and the nature of the resources required to operate efficiently within an industry. The value of using shared resources, such as managerial time and internal capital, differs across firms and industries as well as through time. As the boundaries of the firm change over time, some firms respond by undertaking expansions (mergers and acquisitions), breakups (divestitures, spinoffs) and recapitalizations (leveraged recaps and buyouts). Breakup transactions create value when synergies from conglomeration become negative, that is, when the costs of keeping the company’s assets together exceed the benefits from doing so.

As emphasized by Maksimovic and Phillips (2007) (Chapter 8 of this Handbook), the corporate finance literature on conglomeration took off with the discovery of the “conglomerate discount” by Lang and Stulz (1994) and Berger and Ofek (1995). The discount is measured as the difference between the market value of the diversified firm and the sum of the estimated values of the (nontraded) divisions. The latter are estimated using multiples from single-segment (pure play) competitors. Berger and Ofek (1995) report a diversification discount of 13 to 15% in the 1986–1991 period. Subsequent empirical work has extended and reinterpreted the early results. Maksimovic and Phillips (2007) conclude that diversified firms *predominantly* behave like value maximizers given their productivity and that internal capital markets tend to facilitate the efficient transfer of resources. However, they also point to ambiguities reflecting econometric issues of endogeneity and self-selection, as well as choice of data, at various steps of the overall test strategy.

The typical breakup transaction reviewed below is shown to generate substantial shareholder value. This evidence is consistent with both the empire-building hypothesis and the value-maximizing self-selection hypothesis for the average observed diversification discount. Whether managers of firms breaking up are value-maximizers or empire-builders, the breakup may be an optimal response to exogenous changes in the economic boundaries of the firm. Reversing costs of excessive conglomeration may be a by-product of downsizing. Diversified firms undertaking breakup transactions are, however, more likely to be facing significant diversification costs than a random sample of conglomerates. Consequently, firms busting up are prime candidates for examining the potential nature of diversification costs.

The literature provides several examples of diversification costs and how they may distort investment. Scharfstein and Stein (2000) describe conditions under which top management inefficiently allocates too much funds to divisions with poor investment opportunities (cross-subsidization). Rajan, Servaes and Zingales (2000) argue that investment choices may be distorted because top management cannot commit to future distribution of funds until a surplus has been realized. Goldman (2004) models the resource allocation inside a multidivision firm of a manager with stock-based compensation and shows that the investment incentives improve after a spinoff of a division.

Another potential cost of diversification is related to executive compensation: since the division is a private entity, it is difficult to tie divisional manager compensation directly to the underlying value of the operations under their control. Stock-based compensation policies may be critical to induce optimal investment decisions and to retain managerial talent in a competitive labor market. A separate listing of subsidiary stock resolves such compensation issues, lowering agency costs and increasing market value.²

Breakup transactions may also result because conglomeration accentuates costly information asymmetries between investors and corporate insiders. Nanda and Narayanan (1999) model a diversified firm's decision to divest a division that is undervalued by the market. Outside investors observe the aggregated (conglomerate) cash flow only, while management also observes the divisional cash flows. Without detailed divisional information, the market rationally assigns an average performance to each division. This pooling results in undervaluation of the well-performing division and overvaluation of the poorly performing division. In this situation, it may be optimal to divest the overvalued (underperforming) division in order to lower the cost of capital for the undervalued division.

A related information-based argument is that conglomerates operating in a wide range of industries are more difficult for analysts to value correctly. This is true both because analysts tend to specialize in certain industries and because divisions may be relatively opaque in terms of financial information. A breakup may lead to increased coverage by financial analysts and improved quality of the information available to investors. Liu (2005) further maintains that a breakup allows outsiders more generally to discover firm

² See Aron (1991) for a model of this effect in the context of spinoffs.

value at a lower cost. As a result, high-value firms may undertake breakups in order to separate themselves from low-value firms.

Are there too few breakups? Boot (1992) argues that self-interested managers are reluctant to sell assets because a divestiture may signal poor managerial quality. Lang, Poulsen, and Stulz (1995) also point out that managers who value control may be reluctant to sell assets in order to promote operating efficiency alone. In this situation, an active market for corporate control may be required to force more divestitures. Financial distress is another scenario which may force even non-value-maximizing managers of financially constrained firms to divest assets in order to raise capital (see also Hotchkiss, John, Mooradian and Thorburn, 2008, Chapter 14 of this Handbook).

The above arguments emphasize how breakups create value by reversing negative synergies. A divisional or asset sale may also be the result of the demand side: the assets may simply be worth more under the buyer's control. That is, the buyer may be a higher-quality manager, and the divisional resources may offer a greater potential for synergies when merged with the acquiring firm. Selling the asset at a premium may serve the interest of all parties involved. Finally, corporate breakups may be forced by direct legal actions under antitrust or bankruptcy court, or by regulatory changes changing the economic boundary of the firm.

2.2. *Highly leveraged transactions*

In a highly leveraged transaction, the focus of the restructuring is on the economic effects of the leverage increase. Whether undertaking a debt-financed dividend (leveraged recap), or a leveraged purchase of a division or the entire firm (LBO, where the firm goes private), it is the leverage increase rather than any concomitant asset restructuring that provides the main economic motivation for the transaction. As a result, LBOs tend to involve financial (as opposed to strategic) buyers, such as buyout funds.

The literature points to several possible sources of gains in leverage-increasing transactions. Under the classical trade-off theory of debt (see Frank and Goyal, 2008, Chapter 12 of this Handbook), firms move to a higher level of debt in order to capitalize on the corporate debt tax shield provided by the (U.S.) tax law. In addition to the potential for corporate tax benefits, the literature emphasizes beneficial managerial incentive and monitoring effects of higher leverage. Some highly leveraged firms may also gain a strategic advantage in product markets. On the other hand, high leverage is not for everyone: under conditions of financial distress, a debt overhang tends to prevent efficient investments (Myers, 1977).

In terms of managerial incentives, Ross (1977) presents a signaling model in which managers who face personal bankruptcy costs signal their private information about higher future expected cash flows by committing to a greater corporate debt level. In the vernacular of Jensen (1986), entrenched managers prefer to overinvest rather than pay out the firm's "free cash flow" as dividends (where free cash flow is defined as

corporate liquid funds in excess of what is required to fund all positive net present value projects). A leveraged recapitalization, where the firm increases its debt without retaining the proceeds (thus increasing leverage ratios), reduces Jensen's overinvestment problem by precommitting to disgorge future cash flows in the form of interest payment. Jensen (1986) further argues that the greater risk of financial distress associated with higher leverage also helps discipline managerial investment policies. Stulz (1990) formalizes this intuition and shows that high leverage is particularly valuable when investment opportunities are poor, even if the free cash flow is negative.

Increasing leverage also allows wealth constrained managers to hold a greater percentage of total equity after the transaction is completed. For example, in a leveraged recapitalization, the debt may be paid out as cash dividend to non-managerial stockholders and as a stock dividend (or a cash dividend that is immediately reinvested in the firm) to managers. In an LBO, the managers may roll over their equity investment, while other equity-holders are paid out, again increasing managers' fractional equity ownership. The incentive effect of such greater managerial equity ownership helps reduce manager-shareholder conflicts of interest. Garvey (1992) explores the conditions under which leverage and management equity ownership are complementary in reducing the overinvestment problem of free cash flow.³

Highly leveraged transactions may also lead to improved monitoring by banks, and by the LBO sponsor who has its own money at risk in the transaction. Jensen (1989) argues that active governance by buyout sponsors and high-powered managerial incentives, combined with the pressure from high leverage, provides an incentive structure that is superior to that of public firms with dispersed ownership and weak governance. He even suggests that the LBO organizational form may "eclipse" the traditional corporate form, a prediction that has yet to be proven (we present evidence on the frequency of LBO transactions in Section 8 below).

Moreover, highly leveraged transactions may cause wealth transfers across the firm's various constituencies. For example, bonds that lack protective covenants may become more junior in the capital structure, resulting in a bondholder loss (benefiting shareholders). It is also possible that incumbent managers participating in a leveraged buyout have inside information about the firm's future prospects, expropriating selling shareholders. Muller and Panunzi (2004) argue that the LBO sponsor may be in a position to expropriate minority shareholders by merging the firm with the raider's leveraged acquisition subsidiary. Perotti and Spier (1993) present a model in which the firm gains bargaining power in contracting renegotiations by temporarily increasing leverage. Specifically, after retiring equity through a junior debt issue, shareholders threaten to underinvest in valuable new projects unless employees concede to wage reductions. Finally, there is a growing literature linking leverage to the firm's strategic position in product markets. See the reviews of Maksimovic (1995) and Parsons and Titman (2008), Chapter 13 of this Handbook, for reviews of this literature.

³ See also Garvey (1995) for an analysis of managerial incentive effects of leverage.

We now turn to a detailed description of the empirical evidence on breakups and highly leveraged transactions. In the course of discussing the evidence, we return to several of the hypotheses outlined above.

3. Divestitures

A divestiture is the sale of a portion of the firm's assets to a third party—typically another company or a private equity fund—in a private transaction. The assets sold may be a division, segment, subsidiary, or product line. In return, the seller typically receives cash, but sometimes also securities or a combination of both. The proceeds from the sale are reinvested in the remaining business or distributed to the firm's claim holders. While eliminating some assets, the selling firm continues to exist in essentially the same form as before. Divestitures may trigger a substantial tax liability: the difference between the proceeds from the sale and the firm's tax basis in the assets is a capital gain or capital loss, which is taxed at the corporate tax rate.

3.1. Transaction volume

In 2006, U.S. corporations announced 3,375 divestitures with a total deal value of \$342 billion (*source: Mergerstat Review*). The line in Panel A of Figure 1 shows the annual number, and the bars show the total dollar volume of U.S. divestitures over the period 1980–2006. The number of transactions was relatively stable between 1980 and 1995. Since the mid-1990s, however, the divestiture activity has tripled and reached record high levels in 2005–2006.

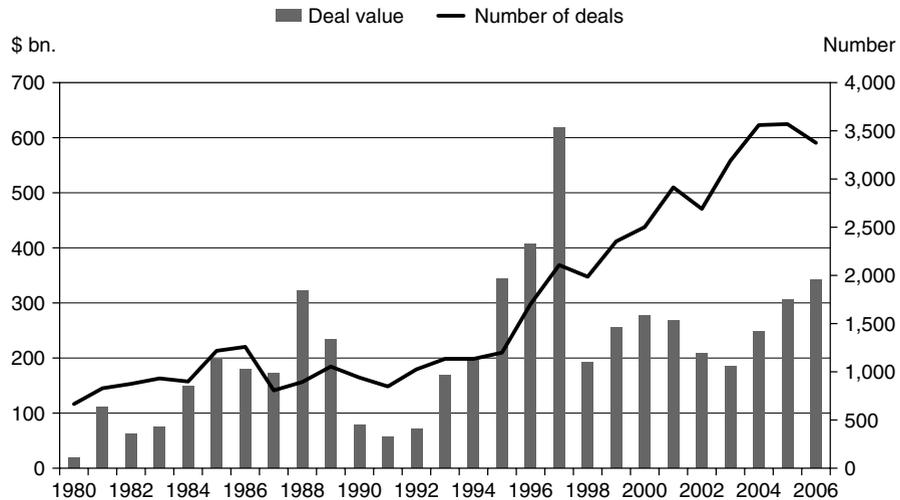
The most aggressive divester in 2006 was UTEK (26 divestitures), followed by General Electric (17), Clear Channel Communications (11), El Paso (10), and Federated Department Stores (10). Two of the sellers, General Electric and El Paso, were also among the most aggressive divesters in the previous year. In addition, General Electric was listed as the most aggressive U.S. acquirer in 2006 and 2005, with 30 and 28 acquisition announcements, respectively.

The total divestiture activity tracks closely the merger and acquisition (M&A) activity in the economy. Panel B of Figure 1 shows the annual number of U.S. divestitures as a percentage of all U.S. takeovers from 1970 and forward. While the number of divestitures increased sharply in the second half of the 1990s, it fell behind the even greater increase in M&A volume over the same period. This trend was reversed once the takeover activity slowed after the turn of the century. In 2006, divestitures made up 32% of all M&A transactions, somewhat below the annual average of 38% over the whole 1970–2006 period.

3.2. Valuation effects

Panel A of Table 1 shows the stock price reaction of the divesting firm for 18 selected studies with announcement dates in years 1963 through 1999. The studies typically

A: Number (line) and total transaction value (bars) of divestitures



B: Divestitures as a fraction of the U.S. merger and acquisition volume

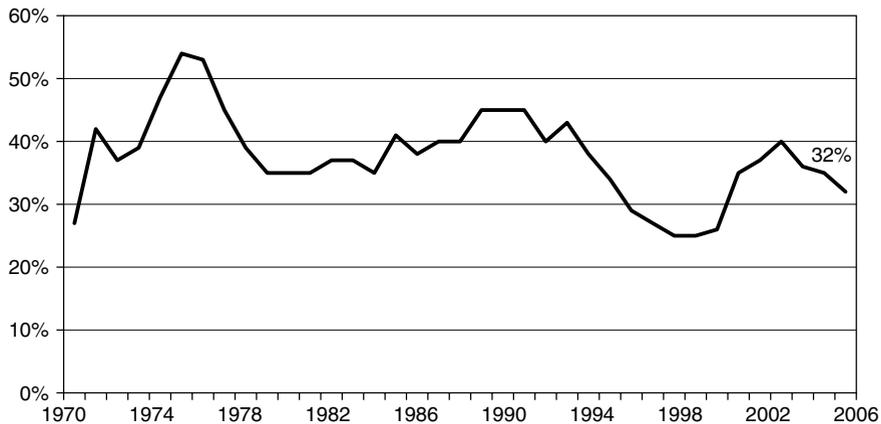


Fig. 1. Annual volume of U.S. divestitures, 1970–2006.

Source: Mergerstat Review.

report the cumulative abnormal stock return (CAR) over the two-day interval $(-1, 0)$ where day 0 is the announcement day.⁴ The average CAR for the announcements are

⁴ A typical approach is to estimate the parameters using a single-factor market model over approximately a year prior to the event: $R_{jt} = \alpha_j + \beta_j R_{mt} + \epsilon_{jt}$, where R_{jt} is the stock return of firm j and R_{mt} is the market return on day t . The abnormal return $AR_{j\tau}$ over event day τ is computed as $AR_{j\tau} = R_{j\tau} - (\hat{\alpha}_j + \hat{\beta}_j R_{m\tau})$, where $\hat{\alpha}_j$ and $\hat{\beta}_j$ are the coefficient estimates from the time-series regression. The cumulative abnormal return is $CAR(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AR_{j\tau}$, where τ_1 and τ_2 define the event window relative to the announcement day 0.

Table 1

Cumulative abnormal returns (CAR) for divestiture announcement of 3,700 sellers and 1,243 buyers in 19 selected studies, 1963–1999

Relative size is the average ratio of the sales price of the divested assets to the pre-deal total assets (TA) and market value of equity (MVE) of the seller and buyer, respectively.

Study	CAR		Relative size		Sample size	Time period	Event window
	Mean	Median	TA	MVE			
Panel A: Seller returns:							
Alexander, Benson, and Kampmeyer (1984)	0.3%				53	1964–1973	[–1,0]
Linn and Rozeff (1984)	1.6%				77		[–1,0]
Rosenfeld (1984)	2.3%				62	1969–1981	[–1,0]
Jain (1985)	0.5%				1,062	1976–1978	[–1,0]
Klein (1986)	1.1%				202	1970–1979	[–2,0]
Hite, Owers, and Rogers (1987)	1.5%		16%		114	1963–1981	[–1,0]
Hirschey, and Zaima (1989)	1.6%				170	1975–1982	[–1,0]
Hirschey, Slovin, and Zaima (1990)	1.5%			38%	75	1975–1982	[–1,0]
Afshar, Taffler, and Sudarsanam (1992)	0.7%			10%	178	1985–1986	[–1,0]
Sicherman and Pettway (1992)	0.9%			30%	278	1980–1987	[–1,0]
John and Ofek (1995)	1.5%	0.8%		39%	258	1986–1988	[–2,0]
Lang, Poulsen, and Stulz (1995)	1.4%	0.7%	11%	69%	93	1984–1989	[–1,0]
Loh, Bezjak, and Toms (1995)	1.5%				59	1980–1987	[–1,0]
Slovin, Sushka, and Ferraro (1995)	1.7%	0.7%	33%	17%	179	1980–1991	[0,1]
Hanson and Song (2000)	0.6%	0.3%		27%	326	1981–1995	[–1,1]
Mulherin and Boone (2000)	2.6%	1.6%		18%	139	1990–1999	[–1,1]
clubb and Stouraitis (2002)	1.1%	0.5%		14%	187	1984–1994	[–1,0]
Dittmar and Shivdasani (2003)	3.4%		31%		188	1983–1994	[–1,1]
Sample size weighted seller average	1.2%		25%	27%	3,700	1963–1999	
Panel B: Buyer returns:							
Jain (1985)	0.5%				304	1976–1978	[–1,0]
Hite, Owers, and Rogers (1987)	0.6%		19%		105	1963–1981	[–1,0]
Sicherman and Pettway (1992)	0.5%				278	1980–1987	[–1,0]
Datta and Iskandar-Datta (1995)	0.0%			13%	63	1982–1990	[–1,0]
John and Ofek (1995)	0.4%	–0.5%		72%	167	1986–1988	[–2,0]
Hanson and Song (2000)	0.5%	0.2%			326	1981–1995	[–1,1]
Sample size weighted buyer average	0.5%		19%	25%	1,243	1963–1995	

positive—ranging from 0.3% to 3.4% across the different samples—and almost all of the estimates are statistically significant at the 1%-level (two-sided *t*-test against zero). The sample-size-weighted average CAR for the combined sample of 3,700 divestitures is 1.2%. In sum, the evidence indicates that the average divestiture increases the value of the selling firm.

As further shown in the table, firms sell one-quarter or less of their total assets in the average transaction. Several studies find that the seller firm announcement returns are increasing in the relative size of the divested assets (Zaima and Hearsh, 1985; Klein, 1986; Mulherin and Boone, 2000). It is possible that the returns on asset sales are independent of the size of the assets, so that relatively larger assets have a greater impact on the parent firm's return. This is similar to the effect of the relative size of the target on bidder returns documented in the takeover literature and reviewed in Betton, Eckbo, and Thorburn (2008). (See Chapter 15 of this Handbook.)

Klein (1986) reports that the disclosure of the sales price is central to the market's assessment of the transaction. She finds a positive seller stock price reaction only when the price is disclosed at the initial divestiture announcement. Firms that fail to announce the transaction price have CARs close to zero. The significance of price disclosure is confirmed by Afshar, Taffler, and Sudarsanam (1992) and Sicherman and Pettway (1992). Clubb and Stouraitis (2002) find that the announcement returns tend to increase with the difference between the sales price and an estimated value of the assets in their current use. Overall, this suggests that the market's valuation of the transaction depends on the sales price relative to the value of the assets when operated by the firm.

The abnormal returns on divestiture announcements are positive also for buyers, although they are of a smaller magnitude than for sellers. For six selected studies with data for the period 1963–1995 and listed in Panel B, the average buyer announcement CAR ranges from 0.0% to 0.6%. The sample-size-weighted buyer ACAR is 0.5% for the combined sample of 1,243 divestiture announcements. Sicherman and Pettway (1992) document a size effect in the buyer's stock price reaction similar to that of sellers; that is, buyer returns tend to increase with the relative size of the acquired assets.

While both sellers and buyers appear to gain from a divestiture, most of the gains tend to accrue to the selling (divesting) firm. In each individual transaction, however, the division of the total gains depends on the relative bargaining strength of the two parties. Sicherman and Pettway (1992) use a debt downgrade prior to the asset sale as an indication of a weaker bargaining position vis-à-vis the buyer. As expected, they find significantly lower CARs for sellers whose debt was downgraded prior to the transaction.

Moreover, the value creation is conditional on the successful completion of the divestiture. Hite, Owers, and Rogers (1987) show that the seller stock price drops back to its initial level if a previously announced divestiture is canceled. In addition, announcement returns are positive for buyers completing the transaction, but insignificant for buyers in transactions that subsequently fail.

3.3. *Drivers of value creation in divestitures*

The positive announcement returns for sellers and buyers indicate that divestitures generally create value. We now turn to the evidence on the potential reasons for this value creation.

3.3.1. Increase in corporate focus

The typical divestiture involves sales of assets that are outside of the diversified firm's core business, and it results in an increased focus of the remaining operations. John and Ofek (1995) show that three-quarters of divested segments are unrelated to the seller's core business, defined as its primary four-digit Standard Industry Classification (SIC) code. Moreover, using various measures for firm focus, they find that sellers become more focused after the divestiture. Their focus measures include a sales-based Herfindahl Index across the firm's business segments, the total number of business lines reported by the firm, and whether the divested division is outside the firm's core business.

Schlingemann, Stulz, and Walkling (2002) find that firms tend to divest noncore segments that are relatively small. Maksimovic and Phillips (2001) and Kaplan and Weisback (1992) show that firms are more likely to sell peripheral assets. Kaiser and Stouraitis (2001) describe how Thorn EMI successfully raise cash by selling unrelated assets, reinvesting the proceeds in the company's core business. In sum, divested assets are typically outside the firm's core business, and the asset sales result in an increased focus of the firm's remaining operations.

John and Ofek (1995) find that the divestment announcement returns are positively related to measures capturing the increase in focus. Moreover, the operating profitability of the remaining assets increases after a divestiture, but only for the firms that become more focused. Denis and Shome (2005) show that large firms downsizing their assets become more focused and increase their operating performance. Berger and Ofek (1999) document average CARs of 7% for focusing-related announcements by diversified firms. Overall, there is substantial evidence that the value creation from divestitures is related to the resulting increase in the selling firm's focus.

3.3.2. Elimination of negative synergies

If the divested segment has negative synergies with other divisions of the diversified firms, the divestiture will create value simply by eliminating these negative synergies. Dittmar and Shivdasani (2003) examine the investment efficiency of divesting firms and find that segment sales are associated with a reduction of the diversification discount. Moreover, they document significant improvements in the investment decisions of the firm's remaining segments after the divestiture. Specifically, the investment level increases for segments that underinvest relative to single-segment firms and decreases for segments that overinvest relative to their peers. They also find that the announcement returns are higher the greater the subsequent reduction in the diversification discount and the greater the improvement in segment investments. Overall, their evidence suggests that divestitures create value by reducing costly cross-subsidization of inefficient investments in the diversified firm.

Colak and Whited (2007) reach a very different conclusion, addressing the endogeneity of breakup decisions. They confirm that firms selecting a divestiture or spin-off are different from their peers: the firms that restructure are typically larger and more diversified,

and are in relatively fast-growing industries. Controlling for these differences, they show that although spin-offs and divestitures are associated with improved investment efficiency, these improvements are not directly caused by the restructuring itself.

Kaplan and Weisback (1992) examine whether divestitures are evidence of failed acquisitions. Studying a sample of 271 large firms acquired between 1971 and 1982, they find that 44% of the targets were sold by the end of 1989. Only one-third of the divested segments are classified as failed acquisitions, however, based on accounting profitability and comments by managers and the business press. Kaplan and Weisback (1992) conclude that acquirers sell businesses that they have improved or that they once had synergies with but no longer do. See also Fluck and Lynch (1999) for a model where diversifying acquisitions are made to help finance marginally profitable projects, to subsequently be divested once the projects are profitable and can generate the necessary funds internally.

3.3.3. *Better fit with the buyer*

As discussed above, a divestiture will create value if the assets are worth more to the buyer than the value in their current use. A buyer could, for example, have substantial synergies or superior management skills. John and Ofek (1995) find that seller announcement returns are higher when the buyer has some comparative advantage in managing the assets, such as a buyer operating in the same industry as the divested division or a leveraged buyout group.

Using U.S. Bureau of Census data, Maksimovic and Phillips (2001) examine the effect of asset sales on the productivity at the plant level. They show that divestitures are more likely in business cycle upturns, when the assets are less productive than industry benchmarks, when the selling division is less efficient than the buyer, and when the firm has more efficient divisions in other industries. They conclude that most divestitures result in productivity gains by redeploying assets from relatively low-productivity sellers to higher-ability buyers.

Datta, Iskandar-Datta, and Raman (2003) also study the efficiency of the reallocation of assets in divestitures. They use Tobin's q , defined as the ratio between the market value and the replacement cost (here the book value) of the assets, as a proxy for management's capability to manage the assets. They find that the announcement returns are highest for transactions where the buyer has a relatively high q and the seller has a relatively low q , possibly because the assets are transferred to a better managed firm. Overall, the evidence suggests that divestitures create value by transferring assets to higher-valuation buyers.

3.4. *Corporate governance*

3.4.1. *Agency issues*

Although divestitures may be required to maximize shareholder wealth, some incumbent managements resist such actions. Berger and Ofek (1999) find that announcements of

focus-increasing transactions often are preceded by corporate control and incentive-altering events, including management turnover, outside shareholder pressure, changes in management compensation, and unsuccessful takeover attempts. Gillan, Kensinger, and Martin (2000) describe how Sears announced the divestiture of financial services and refocused on retail first after a long period of poor performance and coincident with substantial pressure from institutional investor activists. This suggests that the restructuring may have been postponed until it could no longer wait.

Consistent with a reluctance to sell assets, the monitoring of and incentives provided to top management are critical to the value created by a divestiture. Tehranian, Travlos, and Waagelein (1987) document significantly higher announcement returns for divesting firms that provide long-term performance plans to their top executives. Hirschey and Zaima (1989) find higher announcement returns for divestitures by companies with concentrated ownership than sales by widely held firms. Also, the returns are higher for firms where insiders are net-buyers of the firm's stock over the preceding six-month period. Hanson and Song (2000) further show that divestiture gains are increasing in the fraction of outside directors on the board and the percentage equity ownership of the management team. Pointing to the importance of banks as monitors, Hirschey, Slovin, and Zaima (1990) find some evidence of higher announcement returns for firms with bank debt. Overall, firms with better monitoring and more managerial share ownership seem to make divestitures that create more value.

The proceeds received by the divesting firm may be reinvested in the firm's remaining operations, used to retire debt, or distributed to shareholders. Lang, Poulsen, and Stulz (1995) and Kaiser and Stouraitis (2001) show that the announcement returns are positive when the proceeds are used to pay back debt, but insignificant for firms that reinvest the proceeds. Slovin, Sushka, and Ferraro (1995) also find higher announcement returns when the proceeds are paid out. This suggests that management may employ the funds inefficiently if retained by the firm.

Bates (2005) examines the payout and retention decision for 400 large asset sales between 1990 and 1998. He finds that the probability of retaining the cash proceeds increases in the divesting firm's growth opportunities, measured by its market-to-book ratio. However, firms retaining the proceeds consistently overinvest (have higher capital expenditure) relative to their industry peers. Also, the higher the equity ownership of officers and directors, the more likely it is that the sale proceeds are paid out. The evidence is again consistent with investment inefficiencies associated with retention of proceeds from asset sales.

3.4.2. *Financial distress*

Several studies indicate that asset sales are used as a way of generating cash when the firm is financially constrained. Divestiture announcements are typically preceded by a period of negative stock returns (Alexander, Benson, and Kampmeyer, 1984; Jain, 1985; Hanson and Song, 2003) and poor operating performance (Lang, Poulsen, and Stulz, 1995; Schlingemann, Stulz, and Walkling, 2002; Brown, James, and Mooradian, 1994).

Moreover, firms with high leverage are more likely to sell assets (Ofek, 1993; Kruse, 2002). Officer (2007) shows that selling firms have lower cash balances, cash flow, and bond ratings than size- and industry-matched control firms, all of which suggests that the sellers are liquidity constrained. Also, Nixon, Roenfeldt, and Sicherman (2000) find that financially distressed firms prefer a divestiture to a spin-off, which does not generate cash. In addition, Asquith, Gertner, and Scharfstein (1992), Ofek (1993) and others show that firms in financial distress frequently sell assets as part of the restructuring process.

The optimal use of proceeds from asset sales changes when the firm is in financial distress. The firm's ability to pay dividends to shareholders is typically limited by debt covenants at this point, and the choice stands between reinvestment in the business or repayment of debt. For a sample of distressed firms, Brown, James and Mooradian (1994) show that shareholder announcement returns are significantly higher when the proceeds are retained by the firm rather than used to repay debt. Also as expected, bondholder announcement returns are higher when the proceeds are used to pay off debt. They suggest that creditor influence over distressed firms may force asset sales that benefits the firm's creditors at the detriment of shareholders. Datta and Iskander-Datta (1996) find that divestitures by financially distressed firms generate positive announcement returns for bondholders but not for shareholders.

Schleifer and Vishny (1992) argue that financially distressed firms sell assets at depressed prices to lower-valuation industry outsiders because higher-valuation industry insiders are liquidity constrained. Pulvino (1998) finds that financially constrained airlines sell aircraft at lower prices than their unconstrained competitors. Moreover, Officer (2007) shows that acquisition multiples are lower when the parent firm has experienced negative abnormal stock returns over the year leading up to the sale and when the corporate loan spread above treasury rates are high. Examining firms auctioned in Swedish bankruptcy, however, Eckbo and Thorburn (2007) reject the fire-sale hypothesis: they find little evidence of fire-sale discounts when assets are sold as going-concerns.⁵

Liquidity may be a factor in the decision to sell assets. Kim (1998) documents that managers sell their most liquid assets first, before selling more illiquid assets. Moreover, Mulherin and Boone (2000) and Schlingemann, Stulz, and Walking (2002) show that breakup transactions tend to cluster in industries where the aggregate corporate transaction volume is large, that is, in industries with relatively liquid markets for corporate assets.

4. Spinoffs

In a spinoff, a public company distributes its equity ownership in a subsidiary to its shareholders. The distribution is a pro-rata dividend, and parent shareholders receive

⁵ See Chapter 14 (Hotchkiss, John, Mooradian, and Thorburn, 2008) for a more detailed review of asset restructurings by financially distressed firms.

subsidiary stock in proportion to their ownership in the parent firm. The spinoff involves a complete separation of the two firms. After the spinoff, the subsidiary becomes a publicly traded company with a unique ticker symbol and an independent board of directors. In contrast to a divestiture, a spinoff does not generate any cash proceeds for the parent company. Also, since the spinoff involves a public listing of shares, it has higher transaction costs and takes longer time than a divestiture.

A spinoff may be structured as a tax-free transaction if it qualifies under Section 355 of the Internal Revenue Code. Among the most important requirements under Section 355 are (i) the parent must have control of the subsidiary (own at least 80% of the voting rights) prior to the distribution; (ii) the parent must distribute control (at least 80% of the votes) to shareholders and retain no practical control of the subsidiary; (iii) the spinoff must have a valid business purpose; and (iv) the parent or the subsidiary cannot be acquired within two years after the spinoff. If the spinoff qualifies under Section 355, there is no tax on the distribution of stock, at neither the parent nor the shareholder level. Most spinoffs in the United States are structured as tax-free transactions.

If a spinoff does not qualify under Section 355, however, the distribution is taxed as a property dividend. The parent recognizes a gain equal to the difference between the fair market value of the subsidiary and the parent's tax basis in the subsidiary, similar to a capital gain. This gain is taxed at the corporate tax rate. Moreover, shareholders pay a dividend tax on the fair market value of the subsidiary (the distributed subsidiary stock).

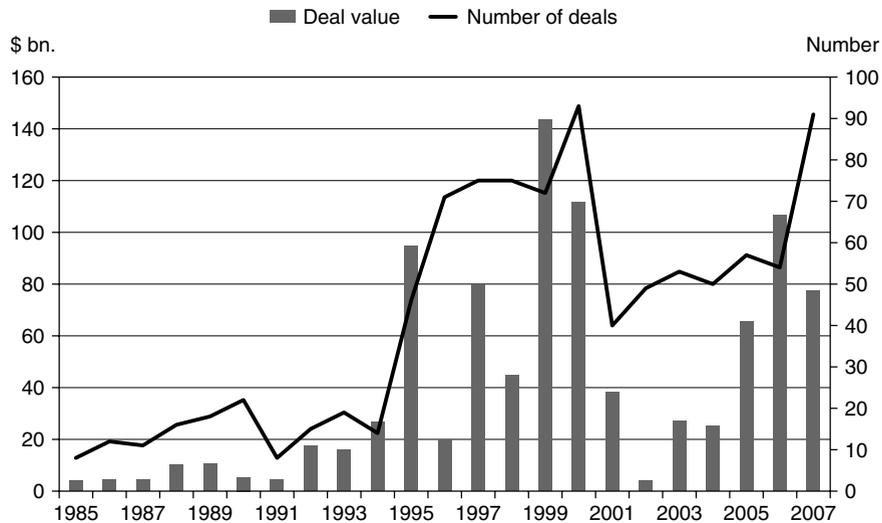
The condition under Section 355 requiring that the subsidiary is not acquired within two years of the spinoff is outside the parent company's control. Yet, a potential acquisition of the subsidiary after a tax-free spinoff would trigger an often substantial tax liability at the parent company level. To transfer the cost of this potential liability to the subsidiary and thus ultimately the acquirer, it is common practice that the subsidiary contractually commits to pay any such future tax liability of the parent, if the subsidiary is acquired within two years of the spinoff.

Maydew, Schipper, and Vincent (1999) compare 52 tax-free spinoffs with 218 divestitures in the period 1987–1995. They find that tax costs average 8% of the divested assets. They suggest that managers prefer a taxable assets sale when the sales price is high enough to offset the associated tax cost.

4.1. Transaction volume

Using data from Thompson SDC Platinum (SDC), Figure 2 plots the annual number (line) and total deal value (bars) of spinoffs announced between 1985 and 2007. As shown in Panel A, the number of U.S. spinoffs soared in the second half of the 1990s and reached a peak in year 2000 with over 90 transactions. The aggregate spinoff value peaked in 1999 with a total market capitalization of \$144 billion. While the interest for spinoffs plummeted with the burst of the internet bubble, the deal activity has recently recovered. In 2007, a total of 90 spinoffs were announced in the United States to a total value of almost \$80 billion. The largest U.S. spinoffs announced in 2006–2007

A: Number (line) and total transaction value (bars) of U.S. spinoffs



B: Number (line) and total transaction value (bars) of non-U.S. spinoffs

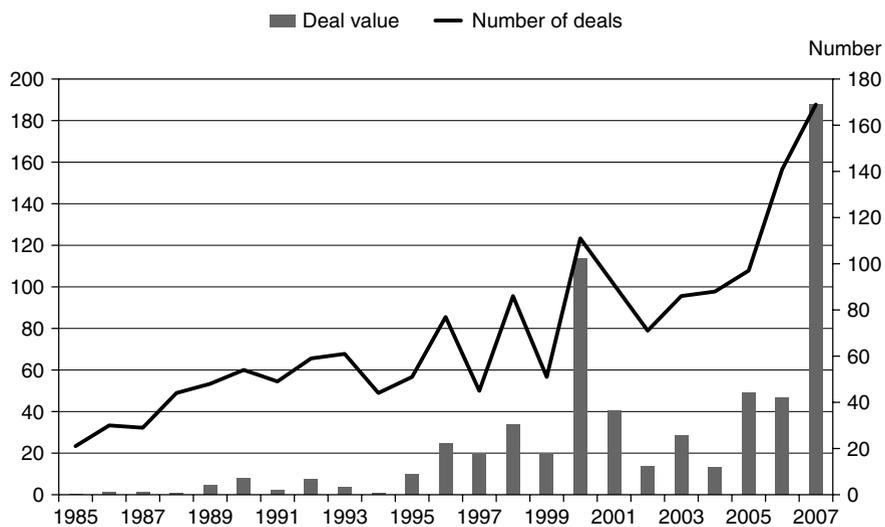


Fig. 2. Annual volume of spinoff announcements, 1985–2007.

Source: SDC

were Kraft Foods (market capitalization of \$51 billion), Tyco Healthcare Group (\$23 billion), Tyco Electronics (\$19 billion), Duke Energy Corp-Natural Gas (\$15 billion), and Discover Financial Services (\$15 billion).

Panel B shows the annual number and total deal value of non-U.S. spinoff transactions. The international volume of spinoffs has been growing relatively steadily since the mid-1990s, reaching an all-time high in 2007, with a total market value of \$188 billion across 169 transactions. Some of the largest spinoffs in 2006–2007 outside the United States include Philip Morris International, Switzerland (market value of \$108 billion); SK Corp-Petrochemical Business, South Korea (\$17 billion); HydroOGK, Russian Federation (\$12 billion); and Experian Ltd., the United Kingdom (\$11 billion).

4.2. Valuation effects

The results from 19 selected studies estimating shareholder gains from spinoff announcements are listed in Table 2. The samples contain a total of 2052 spinoffs announced between 1962 and 2000. Shareholder average cumulative abnormal returns are significantly positive and range from 1.7 to 5.6% across the various studies. The lowest average

Table 2

Cumulative abnormal returns (CAR) for 2,052 spinoffs in 19 selected studies, 1962–2000

Relative size is the ratio of the market value of equity of the spunoff subsidiary and the parent company prior to the spinoff.

Study	CAR		Relative size		Sample size	Time period	Event window
	Mean	Median	Mean	Median			
Miles and Rosenfeld (1983)	3.3%		10%		55	1963–1980	[0,1]
Hite and Owers (1983)	3.3%		7%		123	1963–1981	[−1,0]
Schipper and Smith (1983)	2.8%		20%		93	1963–1981	[−1,0]
Rosenfeld (1984)	5.6%				35	1969–1981	[−1,0]
Vijh (1994)	2.9%	2.1%	29%	18%	113	1964–1990	[−1,0]
Allen, Lummer, McConnell, and Reed (1995)	2.1%				94	1962–1991	[−1,0]
Slovin, Sushka, and Ferraro (1995)	1.3%	1.6%	33%	24%	37	1980–1991	[0,1]
Daley, Mehrotra, and Sivakumar (1997)	3.4%	1.4%			85	1975–1991	[−1,0]
Best, Best, and Agapos (1998)	3.4%				72	1979–1993	[−1,0]
Desai and Jain (1999)	3.8%		29%	18%	144	1975–1991	[−1,1]
Krishnaswami and Subramaniam (1999)	3.1%	1.9%	31%	14%	118	1979–1993	[−1,0]
Mulherin and Boone (2000)	4.5%	3.6%	22%	14%	106	1990–1999	[−1,1]
Gertner, Powers, and Scharstein (2002)	3.9%	2.2%	24%	19%	160	1982–1996	[−1,0]
Wruck and Wruck (2002)	3.6%				172	1985–1995	[−1,0]
Burch and Nanda (2003)	3.7%	3.2%	24%	20%	106	1979–1996	[−2,1]
Maxwell and Rao (2003)	3.6%	2.6%	25%	19%	80	1976–1997	[−1,0]
Seoungpil and Denis (2004)	4.0%	3.1%	25%	17%	150	1981–1988	[−1,1]
Veld and Veld-Merkoulova (2004)	1.7%	0.6%			156	1987–2000	[−1,0]
McNeil and Moore (2005)	3.5%		25%	23%	153	1980–1996	[−1,1]
Sample size weighted average	3.3%		26%	18%	2,052	1962–2000	

CAR of 1.7% is for a sample of 156 European spinoffs announced in 1987–2000 and examined by Veld and Veld-Merkoulova (2004). Combining the 19 studies, the sample-size-weighted abnormal announcement return is 3.3%.

The average CAR of 3.3% in spinoffs is higher than the 1.2% average CAR for divestitures reported above. Recall, however, that buyers also tend to experience positive announcement returns in divestitures (average CAR of 0.5%). In contrast, the total gains from a spinoff is reflected in the parent company stock. Thus, some of the difference in announcement returns between spinoffs and divestitures could be explained by buyers sharing in the value creation from the latter transaction.

Table 2 further shows that the market value of the subsidiary is about one-quarter that of its parent in the average spinoff. As for divestitures, the announcement returns for spinoffs are increasing in the relative size of the subsidiary. Miles and Rosenfeld (1983) show that shareholder CARs are on average greater in spinoffs of subsidiaries with a market value exceeding 10% of the parent company's market value compared to spinoffs of relatively small subsidiaries. In addition, Alli, Ramirez, and Yung (2001) find insignificant announcement returns for 47 spinoffs that are subsequently withdrawn, as if the market anticipates the withdrawal at the time of the announcement.

The evidence of positive announcement returns for spinoffs is compelling. Some studies also report long-term returns following spinoffs. Cusatis, Miles, and Woolridge (1983) estimate the buy-and-hold stock returns for parents and subsidiaries spun off in the 1965–1988 period. They find positive average returns for holding periods of 24 and 36 months compared with portfolios of industry and size-matched stocks. McConnell, Ozbilgin, and Wahal (2001) investigate portfolios of parents and subsidiaries in 89 spinoffs between 1989 and 1995. In contrast to the earlier work, they find little evidence of higher average buy-and-hold returns compared to portfolios matched on size and book-to-market. Also, using the Fama and French (1993) three-factor model as a benchmark, they reject the hypothesis that the portfolios of spinoff companies exhibit abnormal returns.

4.3. Drivers of value creation in spinoffs

4.3.1. Increased corporate focus

As with divestitures, a potential source of value creation in spinoffs is an increase in corporate focus resulting from the elimination of unrelated divisions. Daley, Mehrotra, and Sivakumar (1997) report that the positive announcement returns are limited to spinoffs that increase corporate focus, defined as the parent and subsidiary having different two-digit SIC industry codes. They document substantial improvements in the return on assets for parents in focus-increasing spinoffs, but not for parents where the spunoff subsidiary is in a related industry. Moreover, Desai and Jain (1999) find that focus-increasing spinoffs have significantly higher announcement returns, long-run abnormal stock returns, and improvements in operating performance than do non-focus increasing spinoffs.

Burch and Nanda (2003) estimate the change in the parent firm's diversification discount from the year prior to the year after the spinoff. They find that the diversification discount is reduced when the spinoff increases corporate focus, but not otherwise. Overall, the evidence suggests that shareholder gains in spinoffs are associated with a subsequent increase in firm focus.

4.3.2. Elimination of negative synergies

The separation of an unrelated business segment may further reduce any negative synergies that exist between the subsidiary and the rest of the firm. Gertner, Powers, and Scharstein (2002) examine whether spinoffs help eliminate value-reducing cross-subsidization in diversified firms. They show that the subsidiary's investment decisions become much more sensitive to the firm's investment opportunities after the spinoff. Specifically, the total capital expenditure decreases for firms in low Tobin's q industries and increases for firms in high q industries. These changes take place primarily for subsidiaries whose operations are unrelated to the parent's core business and in spinoffs generating higher announcement returns.

Seoungpil and Denis (2004) further find that, prior to the spinoff, parent firms trade at a discount to and invest less in their high-growth (high q) divisions than do their stand-alone peers. Following the spinoff, however, the diversification discount is eliminated and investments have increased for the high-growth segments. Also, McNeil and Moore (2005) show that subsidiary capital expenditures move toward industry levels after the spinoff, for both previously rationed and subsidized divisions. Announcement returns are greater when parent firms allocate capital in a seemingly inefficient way, defined as rationing high q and subsidizing low q spinoff divisions, as is the reduction in the diversification discount. Overall, the evidence indicates that spinoffs create value by improving the investment decisions in diversified firms.

Allen, Lummer, McConnell, and Reed (1995) propose that spinoffs provide a way to unwind unsuccessful prior acquisitions. They examine a sample of 94 spinoffs in which the spinoff entity previously had been acquired by the parent firm. Their evidence suggests that the original acquisition was value destroying: the average acquisition announcement return is negative both for the acquirer and for the target and bidder combined. Moreover, the spinoff announcement return is positive and negatively correlated to the acquisitions return; that is, the greater the anticipated loss from the acquisition, the larger the expected gain from the spinoff. While not identifying a unique source for the value creation in spinoffs, these results are consistent with the elimination of negative synergies between parent and subsidiary.

4.3.3. Wealth transfer from bondholders

A spinoff may increase shareholder value at the expense of the parent firm's creditors by reducing the total assets of the firm. Also, if the spinoff increases the volatility

of the cash flows of the two separate firms the expected payoff to debtholders will decrease, with a corresponding gain to shareholders (Galai and Masulis, 1976). MacMinn and Brockett (1995) further argue that a spinoff could transfer wealth from liability claimants by removing corporate assets from their reach. Nevertheless, the impact of a spinoff on debtholders is limited by the existence of restrictive debt covenants. Hite and Owers (1983) find insignificant bondholder abnormal returns for a sample of 31 spinoff announcements in 1963–1981, as do Schipper and Smith (1983).

In a case study of Marriott, however, Parrino (1997) documents a significant drop in the value of Marriott's bonds following its spinoff announcement. At the same time, shareholder announcement returns were positive, suggesting a wealth transfer from bondholders. Maxwell and Rao (2003) examine monthly bond return data for a sample of 80 spinoffs between 1976 and 1997. They find that parent bondholders tend to experience a price decline after the spinoff announcement. The average abnormal bond return (adjusted for the Treasury rate) in the month of the spinoff is -0.9% , and decreasing in the relative size of the spinoff subsidiary. Consistent with a bondholder loss, credit ratings are more likely to be downgraded than upgraded subsequent to the spinoff. They find, however, that the combined value of the publicly traded debt and equity increases, suggesting that a wealth transfer from bondholders could only explain part of the shareholder gains.

4.3.4. *Information asymmetries*

The aggregation of financial data across divisions may exacerbate informational asymmetries between outside investors and insiders for diversified firms. Krishnaswami and Subramaniam (1999) examine whether spinoffs reduce such information gaps, using the dispersion in analysts' forecasts and analysts' forecast error as a measure for the information asymmetry. They find that spinoffs are more common for firms with relatively high levels of information asymmetry compared to their industry rivals. The announcement returns are higher for firms with a greater degree of information asymmetry, and the information gap tends to decrease after the spinoff. Best, Best, and Agapos (1998) also find that spinoff announcement returns are increasing in financial analysts' earnings forecast errors. Overall, this suggests that one source of value creation in spinoffs is the mitigation of information asymmetries.

Analysts play an important role in producing and disseminating information about the firm. Gilson, Healy, Noe, and Palepu (2001) study changes in the coverage by financial analysts for a sample of 103 focus-increasing spinoffs and equity carveouts over the period 1990–1995. They document a 45% increase in analyst coverage in the three years following a breakup. The new analysts tend to be specialists in the subsidiary's industry. Moreover, the accuracy of the earnings forecast improves by 30 to 50%, and in particular for the industry specialists. In sum, increases in corporate focus seem to improve the information provided by analysts, in both quality and quantity.

Huson and MacKinnon (2003) further show that analysts tend to revise upwards their short-term earnings forecast in response to a spinoff. Also, idiosyncratic stock return volatility increases following a spinoff, and more so when the spinoff subsidiary is unrelated to the parent firm. They conclude that the stock price becomes more sensitive to firm-specific information, which benefits informed traders relative to uninformed traders.

4.3.5. *Clientele effects*

Previously combined into a single security, the spinoff creates the opportunity to hold the subsidiary stock separately. This expansion of investors' opportunity set increases liquidity and opportunities for investor diversification. In a sample of 113 spinoffs during 1964 to 1990, Vijh (1994) finds abnormal stock returns of 3.0% on the spinoff ex date, that is, the day that the subsidiary starts trading separately, accompanied by an increased trading volume. He attributes the positive returns to higher demand for the parent and subsidiary stocks once they have been separated.

Abarbanell, Bushee, and Ready (2003) show that institutional investors rebalance their portfolio holdings in parents and their spinoff subsidiaries dependent on the fund's investment style and fiduciary restrictions. However, they find little evidence that such rebalancing trades lead to abnormal price pressures for parents or subsidiaries around the spinoff. Chemmanur and He (2007) examine the trading of institutional investors in 66 spinoffs between 1999 and 2004. They find large imbalances in the post-spinoff trading of parent and subsidiary stock: 46% of the trades are in the opposite direction, and trades in the same direction are heavily concentrated in one of the firms. This imbalance increases in the measure of information asymmetry and the difference in beta risk and growth rates between the parent and subsidiary. Overall, spinoffs seem to relax a trading constraint that existed prior to distribution of the subsidiary stock.

4.3.6. *Increased probability of a takeover*

The fact that it is possible after the spinoff to acquire control of the division through a stock purchase increases the probability that the division will become a future takeover target. The spinoff may also increase the probability that the parent will become a target as the parent is now a smaller and more focused firm. Cusatis, Miles, and Woolridge (1993) examine 146 tax-free spinoffs over the period 1965–1988 and show that both the parent and the spinoff subsidiary are indeed more likely to become takeover targets, compared to a set of control firms matched on size and industry. They suggest that two pure plays created by a spinoff are more attractive as targets than the combined company. Most of the takeovers occur two to three years after the spinoff, possibly to protect the tax-free status of the spinoff. Given the large premiums typically paid in control transactions, they attribute the positive abnormal stock returns at the time of the spinoff to the increased probability of being acquired.

4.4. *Corporate governance*

Self-interested managers may be reluctant to downsize assets under their control. Ahn and Walker (2007) study the importance of effective corporate governance for firms' decision to spin off a subsidiary. Their sample is 102 spinoffs between 1981 and 1997. They find that firms conducting a spinoff have greater stock ownership by outside board members, and smaller and more heterogeneous boards relative to their peers. Following the spinoff, parent firms increase their market-to-book ratios and reduce the diversification discount. They conclude that effective governance increases the likelihood of a spinoff, which is a value-increasing strategy.

Wruck and Wruck (2002) examine the management team of the spunoff subsidiary. They show that 21% of spinoff top managers are outsiders, while 48% of the insiders are parent company top managers rather than division heads. They argue that subsidiary managers lack the corporate governance expertise required when the former division becomes publicly traded. Announcement returns are highest for spunoff subsidiaries led by a parent firm's top manager and a division head, combining corporate governance and operating expertise.

In a spinoff, the parent management can design the governance structure of the subsidiary without seeking approval from shareholders. Daines and Kausner (2004) find that the charters of spunoff subsidiaries include substantially more takeover defenses than do the charters of a sample of size- and industry-matched IPO firms, where shareholders have a say on the corporate charter. Moreover, the spunoff firms tend to have more takeover protection than do their parents. Thus, it appears that managers prefer more takeover defenses than shareholders do.

Pyo (2007) find that pay-performance sensitivity increases for subsidiary CEOs after a spinoff. The higher the pay-performance sensitivity, the greater the improvements in operating performance post-spinoff. Seward and Walsh (1995) propose that the likelihood of becoming a takeover target should be higher for spunoff firms with little CEO equity incentives. They find that the takeover probability—hostile as well as friendly—increases with the CEO's stock and option ownership in the spunoff subsidiary. While not discussed by Seward and Walsh (1995), it is possible that CEOs with relatively low pay-performance sensitivity also adopt more takeover defenses in the spunoff firm.

Allen (2001) examines the post-spinoff trades of senior managers, directors, and blockholders in 193 public subsidiaries and their parents over the period 1978–1991. He finds that insiders who trade during the first year following the spinoff earn excess returns of 36% over the subsequent 12-month period. He suggests that insiders take advantage of the spinoff as an opportunity to use private information on the relative prospects of the parent and the subsidiary.

4.5. *Splitoffs*

A splitoff is similar to a spinoff in that the subsidiary becomes an independent company with a separate stock listing. The splitoff, however, involves an exchange offer, where

shareholders are offered to exchange parent company stock for subsidiary stock. Thus, the splitoff effectively resembles a stock repurchase, where the parent company buys back its own shares using subsidiary stock as consideration. As a result of the exchange offer, the ownership structure in the parent and the subsidiary are different post-splitoff (depending on the extent to which parent shareholders participate in the exchange offer). Similar to a spinoff, a splitoff does not generate any new cash to the parent company. The tax treatment is also the same as for a spinoff.

Splitoffs are rare, partly because the valuation of the subsidiary stock is critical for the exchange offer. A splitoff is therefore always preceded by an equity carveout, which helps establish the market value of the subsidiary stock. Recent transactions include McDonald's splitoff of 51% of its interest in Chipotle Mexican Grill, announced in April 2006 and valued at \$660 million; Viacom's splitoff of Blockbuster in 2004; and General Motors splitoff of Hugh Electronics in 2003.

We are unaware of any systematic empirical evidence on splitoffs—reflecting the limited number of transactions.⁶ Given the similarity with spinoffs, the research on spinoffs is likely relevant for splitoffs as well. In addition, some value may be created in splitoffs from the repurchase of parent stock, for example, by signaling that the parent stock is undervalued.

5. Equity carveouts

An equity carveout is a partial initial public offering (IPO) of the stock in a subsidiary. The subsidiary gets its own management team and a separate board of directors. It becomes subject to all financial and other reporting requirements of public companies, such as 10-K reports and proxy statements filed with the Securities and Exchange Commission (SEC).⁷

The parent company often retains a controlling interest, creating a public minority interest in the subsidiary. There are several reasons for the retention of a majority ownership of the voting rights: Retention of at least 80% allows consolidation for tax purposes and the opportunity to subsequently undertake a tax-free spinoff, while retention of 50% or more permits consolidation for accounting purposes. Allen and McConnell (1998) show that parent firms on average retain 69% (median 80%) of the subsidiary's shares, while Vijh (2002) reports a median parent ownership of 72%. Of course, since the subsidiary becomes a publicly traded company of its own, the carveout does reduce the parent's control over its former wholly owned subsidiary.

The shares offered in the IPO may be sold either by the subsidiary itself (a primary issue) or by the parent company (a secondary issue). A primary issue has no tax consequence, while a secondary issue is taxable to the parent as a capital gain. Because

⁶ For a case study, see E.I. du Pont de Nemours and Company: the Conoco splitoff (A), HBS 9-202-005.

⁷ See Hand and Skantz (1998) for an analysis of the accounting choice for equity carveouts under SAB 51. Allen (1998) describes the equity carveout strategy of Thermo Electron, which carved out 11 subsidiaries during 1983–1995.

of this difference in tax treatment, the majority of equity carveouts are primary issues. The parent company may require the proceeds or leave the proceeds in the subsidiary. The proceeds are streamed back to to the parent using the following procedure: (i) prior to the carveout, the subsidiary issues a tax-free dividend to the parent in the form of a note (debt obligation); (ii) after the carveout, the proceeds from the IPO are used to repay the note.

5.1. Transaction volume

Figure 3 shows the annual distribution of equity carveouts worldwide from 1985 to 2007, using data from SDC. Most of the carveout transactions are outside the United States. The worldwide carveout volume peaked in the first half of the 1990s, in both numbers and dollar values. The total market value of subsidiary IPOs reached \$80 billion in 1993, and there were over 500 equity carveout transactions in 1994. The late 1990s saw a second surge in the dollar volume of carveouts (\$70 billion), however, without a corresponding increase in the number of transactions. In recent years, only a handful of equity carveout transactions have taken place each year.

Most large carveouts in 2006/2007 took place outside the United States. The way SDC classifies carveouts, this transaction category also contains subsidiaries carved out by the government (state privatizations). The largest equity carveouts in 2007 include France

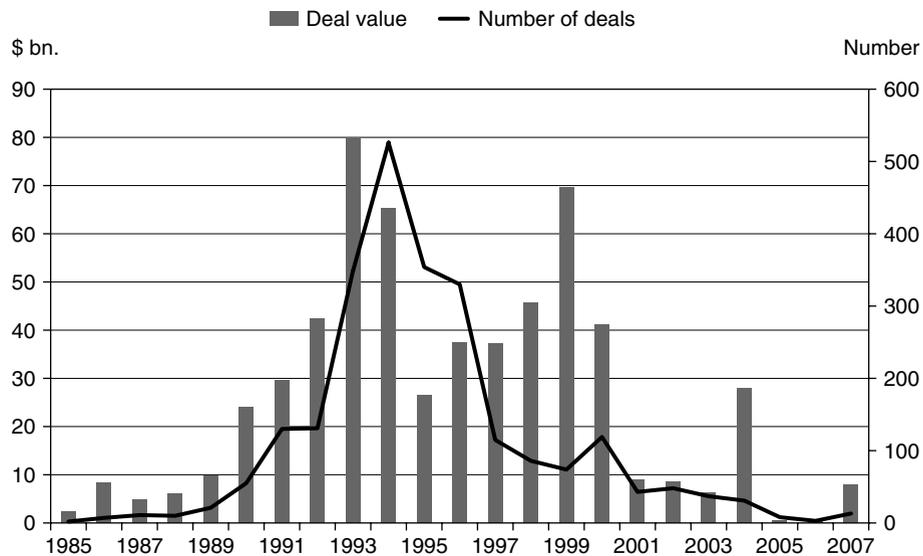


Fig. 3. Annual worldwide volume of equity carveouts, 1985–2007.

Source: SDC

Table 3

Cumulative abnormal returns for 1,050 equity carveout announcements in 8 selected studies, 1965–2002

CAR is the parent cumulative abnormal stock return over the event window relative to the announcement of the equity carveout. Relative size is the ratio of the market value of equity of the carved-out subsidiary and its parent company.

Study	CAR		Relative size		Sample size	Time period	Event window
	Mean	Median	Mean	Median			
Schipper and Smith (1986)	1.8%			8%	76	1965–1983	[–4,0]
Klein, Rosenfeld, and Beranek (1991)	2.7%				52	1966–1983	[–4,0]
Slovin, Sushka, and Ferraro (1995)	1.2%	1.5%	45%	31%	32	1980–1991	[0,1]
Allen and McConnell (1998)	2.1%		20%	14%	186	1978–1993	[–1,1]
Vijh (1999, 2002)	1.9%			18%	336	1980–1997	[–1,1]
Mulherin and Boone (2000)	2.3%	0.8%	37%	17%	125	1990–1999	[–1,1]
Hulburt (2003)	1.6%	1.1%		30%	172	1981–1994	[–1,0]
Wagner (2004)	1.7%		32%	22%	71	1984–2002	[–1,1]
Sample size weighted average	1.9%		33%		1,050	1965–2002	

Telecom SA (IPO proceeds of \$3.6 billion); China Agri-Inds Holding Ltd., Hong Kong (\$2.5 billion); Bank of Beijing, China (\$2.0 billion); Qatar Airways, Qatar; and Kiara Holding Pty Ltd., Australia.

5.2. Valuation effects

Equity carveouts are viewed favorably by the market. Table 3 shows the parent cumulative abnormal announcement stock return for eight selected studies of equity carveouts over the period 1965–2002. The average announcement return is positive and significant across all samples, ranging from 1.2 to 2.7%. The sample-size-weighted average is 1.9% for the total of 1050 cases. The announcement returns for a sample of German firms average 1.7%, which is similar to the returns for U.S. firms (Wagner, 2004). Interestingly, the positive returns found for equity carveouts are in stark contrast to announcements of seasoned equity offerings, upon which the parent stock price typically falls.⁸

The average carved-out subsidiary across the studies in Table 3 has a market value of about one-third that of its parent. As for other breakup transactions, the announcement returns are found to be increasing in the relative size of the carved-out subsidiary (Allen and McConnell, 1998; Vijh, 2002). Vijh (1999) estimates long-term (three-year) abnormal stock returns for both parent companies and the carved-out subsidiaries, and finds that these are insignificantly different from zero using a variety of benchmarks.

⁸ See Eckbo, Masulis, and Norli (2007) (Chapter 6 of this Handbook) for a review of security offerings.

5.3. *Drivers of value creation in equity carveouts*

Equity carveouts separate the subsidiary from its parent. After the carveout, transactions between the two companies must take place at arms length. As a result, many of the sources of value creation in spinoffs may also create value in carveouts.

5.3.1. *Increased focus*

Vijh (2002) examines a sample of 336 equity carveouts between 1980 and 1997. A majority of the motives offered for the carveout by the parent company involve lack of fit and focus, and a desire to restructure the operations. He shows that parents and subsidiaries in carveouts are typically in different industries, and documents that announcement returns are higher on average for carveouts of nonrelated subsidiaries.

The evidence on improvements in operating performance following carveouts is mixed. Hulburt, Miles, and Woolridge (2002) find that both parents and subsidiaries improve their operating performance relative to their industry peers in the year after the carveout. In contrast, Powers (2003) and Boone, Haushalter, and Mikkelson (2003) show that the subsidiary operating performance declines after the carveout. Boone, Haushalter, and Mikkelson (2003) find that the operating performance of the parent company improves only when it has completely divested its ownership in the subsidiary after four years.

5.3.2. *Financing subsidiary growth*

Information asymmetries between the firm and outside investors tend to increase the cost of capital (Myers and Majluf, 1984). Prior to the carveout, outside investors have access to the parent company's financial information, with information at the divisional level being less accessible. This opaqueness may increase the cost of funding divisional-level capital expenditures. Because a public listing of the subsidiary increases the quality of the financial information available to investors, Schipper and Smith (1986) suggest that equity carveouts help finance high-growth subsidiaries. Their data bears this out: in their sample, a frequently stated motive for the carveout is to enable the subsidiary to finance future growth. They also show that carved-out subsidiaries typically have higher price-earnings ratios than their parents, indicating higher growth rates.

Chen and Guo (2005) also report that parent firms prefer equity carveouts and divestitures to spinoffs when revenue growth and book-to-market ratios are high. Vijh (2002) further finds that, over a subsequent three-year period, both parents and their carved-out subsidiaries do a greater number of seasoned equity offerings than control firms matched by industry and size. In addition, the capital expenditures of the subsidiaries exceed those of their control firms. Overall, it appears that equity carveouts are used to increase financing opportunities and reduce financing costs for high-growth subsidiaries.

Michaely and Shaw (1995) document investment banking fees of 7% for carveouts and 2% for spinoffs in a sample of 61 carveouts and 30 spinoffs between 1981 and 1988.

They attribute the higher costs of carveouts to the greater scrutiny and more stringent disclosure standard associated with the continued control by the parent company. They also suggest that, because of the higher costs, carveouts are more attractive to firms with relatively low leverage that hold high-quality assets. Consistent with this, they find that larger less-leveraged parents with relatively large and low-risk subsidiaries tend to prefer a carveout to a spinoff.

5.3.3. *Wealth transfers and information asymmetries*

Carveouts have the potential for transferring wealth to shareholders from other claimholders. For example, the separation of assets from the parent possibly reduces the cash flow and collateral available to bondholders. Allen and McConnell (1998) find, however, positive excess bond returns when firms announce a carveout, thus rejecting the bondholder wealth transfer hypothesis.

Nanda (1991) models an equity carveout using the adverse selection framework of Myers and Majluf (1984). In equilibrium, only undervalued parents with overvalued subsidiaries perform carveouts. Thus, carveouts cause a positive announcement effect on average (and there are no wealth transfers).⁹ Slovin, Sushka, and Ferraro (1995) examine industry rivals of equity carveout firms. They postulate that the market's misvaluation may apply to all firms in the industry. For a sample of 32 carveouts between 1980 and 1991, they show that industry rivals of the carved-out subsidiaries experience negative announcement returns, consistent with the overvaluation argument. They also report insignificant abnormal returns to parent-company rivals. However, Hulburt, Miles, and Woolridge (2002) find negative returns for parent-company rivals as well, using a sample of 185 equity carveout announcements over the years 1981–1994. They argue this is evidence against the proposition that parents of carveouts tend to be undervalued.

Vijh (2006) examines the announcement returns to the seasoned equity offering (SEO) of 90 subsidiaries and 37 parents following equity carveouts. He documents negative returns to the issuer, but insignificant returns to the nonissuer, whether parent or subsidiary. Using a sample of equity carveouts from 1995–2002, Baltin and Brettel (2007) detect traces of market timing for the 1998–2000 “hot-market” period. Overall, the proposition that equity carveouts are designed to sell overvalued equity in the subsidiary receives mixed support.

5.3.4. *Follow-on events*

Equity carveouts appear to be a temporary organizational form. A majority of equity carveouts are followed by a subsequent event. In Schipper and Smith (1986), two-thirds of 76 carved-out subsidiaries were later reacquired by the parent (23), divested

⁹ By assuming the carveout's assets in place are sufficiently small relative to those of the parent, Nanda (1991) rules out the possibility that the parent of the carveout is also overvalued (which would result in a negative announcement effect of the carveout). Overvalued parents always prefer to issue their own shares.

entirely (17), spunoff (4), or liquidated (4). Moreover, Klein, Rosenfeld, and Beranek (1991) find that 44 of 52 carveouts (85%) are followed by a second event: 25 reacquisitions, 17 selloffs, and two spinoffs. Divestitures take place sooner than reacquisitions: three-quarters of the divestitures occur within three years of the carveout, compared to one-third of the reacquisitions. Also, the probability of a reacquisition is greater when the parent retains 80% or more of the subsidiary shares.

Klein, Rosenfeld, and Beranek (1991) argue that an equity carveout may be the first stage in a divestiture of a subsidiary. As noted above, the listing of the subsidiary's shares reduces informational asymmetries and exposes the subsidiary to the market for corporate control. Perotti and Rossetto (2007) model equity carveouts as a way for the parent to obtain information from the market on the value of the subsidiary as an independent entity. Though costly, the listing generates information about the optimal allocation of ownership of the subsidiary. Thus, the carveout improves the decision to exercise the option to sell or reacquire control, explaining the temporary nature of carveouts.

Gleason, Madura, and Pennathur (2006) document insignificant announcement returns for carveouts that are later reacquired. However, Klein, Rosenfeld, and Beranek (1991) show that parents experience significantly positive announcement returns when the follow-on event is a selloff, both at the initial equity carveout and at the subsequent divestiture. Moreover, the probability of becoming a target is higher for carved-out subsidiaries than for a sample of matched firms (Hulburt, 2003). This evidence is consistent with equity carveouts creating value by facilitating future corporate control events.

5.4. Agency issues

Allen and McConnell (1998) argue that some managers avoid selling off assets because their compensation (both tangible and intangible) is tied to the size of the assets they manage. When the financing of the investments require an asset sale, the preference is to sell a minority stake in a subsidiary, maintaining assets under control. For a sample of 188 equity carveouts, they find that parent firms perform relatively poorly prior to initiating a carveout: parents have lower interest coverage ratios, higher leverage, lower operating profitability, and lower return on assets than their industry rivals. In sum, the sample parents of the carveouts were poor performers and cash constrained.

Allen and McConnell (1998) also find that the stock market's reaction to the carveout announcement is determined by the use of the proceeds. Firms announcing that the proceeds will be reinvested in the firm experience insignificant announcement returns, while the average CAR is a significant 7% for firms that will use the proceeds for debt repayment or a dividend. This suggests that the stock market may be concerned with inefficient investment decisions if the firm retains the proceeds. Schipper and Smith (1986) provide further evidence on managers' reluctance to relinquish control of the subsidiary. They document that, in a majority of cases, the president or CEO of the carved-out subsidiary is also a parent company manager.

Powers (2003) suggests that managers use their inside information about the subsidiary prospects in determining what fraction of subsidiary shares to sell to the public. He shows that the subsequent improvement in subsidiary operating performance tends to increase in the size of the ownership stake retained by the parent. Similarly, Atanasov, Boone, and Haushalter (2005) show that carved-out subsidiaries tend to have lower operating performance than their peers only when parents retain less than 50% ownership. Their interpretation is very different, however. They suggest that parent managers either self-select the carveout to avoid consolidating the subsidiary's financial results, or transfer wealth from the minority shareholders in nonconsolidated subsidiaries through inter-corporate transactions *ex post*.

6. Tracking stocks

Tracking stock—also called targeted stock or letter stock—is a separate class of parent company common stock whose dividends track the performance of a given division. That is, the holders of the tracking stock are entitled to the cash flow generated by this division, hence determining the value of the stock. The diversified company retains its legal form as one consolidated entity, however, with one and the same board of directors and top management team. There is no legal separation or transfer of assets, and the parent retains control of the division. As a result, the voting rights of the tracking stock is in the parent firm and not in the tracked division. These voting rights typically vary in proportion to the market value of the underlying division, but could also be fixed at the issue of the tracking stock.

There are several ways to distribute tracking stock. It can be issued to current shareholders as a dividend or used as payment in an acquisition. The most common way, however, is to sell the tracking stock in a public offering, raising cash for the parent firm. Once the tracking stock is listed, the underlying division files separate financial statements with the SEC. Thus, tracking stock creates a type of quasi-pure play, where the tracked division files its own financial statements and has its own stock, while still being part of the diversified firm. Since tracking stock is an issue of the company's own stock, it has no tax implications.

6.1. Transaction volume

The first tracking stock was issued by General Motors (GM) in 1984 as part of the payment for Electronic Data Systems (EDS). The new stock, GM-E, allowed the selling shareholders—most notably Ross Perot, who continued in a management position—to participate in the upside of EDS, despite being part of a much larger company going forward. GM issued its second class of tracking stock, GM-H, in 1985 when acquiring Hughes Aircraft. The next company to issue tracking stock was USX, separating its steel division from its oil division (Marathon) in 1991.

In total, 32 U.S. companies have issued some 50 different tracking stocks to date, most of them in the 1990s. The market seems to have lost its appetite for tracking stock since the turn of the century. The most recent issues of tracking stock include Sprint PCS and CarMax Group in 2001, and AT&T Wireless and Disney's Go.Com in 2000. Carolina Group announced an issue in 2002 that was subsequently withdrawn. Internationally, there has been only a handful tracking stock issues, including Sony Communication Network in 2001 (Japan) and Alcatel Optronics (France) in 2000.

6.2. Valuation effects

Announcements of tracking stock are received positively by the market. D'Souza and Jacob (2000) document an average abnormal two-day announcement return of 3.7% for 37 tracking stocks issued by 14 U.S. companies between 1984 and 1999. Billett and Mauer (2000), Elder and Westra (2000), Chemmanur and Paeglis (2001), and Harper and Madura (2002) also report positive tracking stock announcement ACARs of 2 to 3%. Notice, however, that, given the limited number of tracking stock issues, these studies use largely the same data.

The evidence on the long-run performance of tracking stock is inconclusive. Examining 19 firms issuing tracking stock, Chemmanur and Paeglis (2001) find that the stock of parent firms underperform industry indexes over a subsequent three-year period, while the average subsidiary outperforms its industry index. In contrast, Billett and Vijn (2004) document negative buy-and-hold returns for subsidiaries, but insignificant long-term excess returns for parents. Clayton and Qian (2004) further report insignificant long-run stock performance for tracking stock issuers. As discussed below, however, the strongest testament to a poor performance of tracking stock is the fact that they have almost entirely disappeared from the marketplace.

6.3. Drivers of value creation in tracking stock

A tracking stock is akin to a "quasi-pure play." On the one hand, tracking stock allows the firm to retain its internal capital market, file a joint tax return, and share certain fixed costs and resources (Billett and Mauer, 2000; Danielova, 2008). On the other hand, the requirement to file separate financial statements with the SEC provides some degree of separation between a division and its parent. Also, the tracking stock makes it possible to give stock-based compensation to subsidiary managers.

Clayton and Qian (2004) examine whether the separate listings increase the demand for the parent and subsidiary stocks. They document an ex-date abnormal return of 3% for the parent company, suggesting that the quasi pure-play created by the tracking stock increases investor interest in the firm. However, Elder, Jain, and Kim (2005) fail to find any increase in the liquidity of the parent firm after the tracking stock issue. Instead, firms issuing tracking stock have relatively low stock-market liquidity and greater bid-ask spreads than comparable control firms. Overall, the evidence is inconclusive as to whether tracking stock increases investor demand to hold the diversified firm.

Logue, Seward, and Walsh (1996) argue that tracking stock is most useful for firms where the benefits of consolidation and integration outweigh the benefits from a complete separation. However, it is questionable whether tracking stock separates the divisions sufficiently to successfully create a pure-play stock. Not surprisingly, D'Souza and Jacob (2000) show that the returns of tracking stocks are more highly correlated with other common stocks of the same company than with other firms in the same four-digit SIC industry as the tracked division. We now turn to a discussion of the major failure of tracking stock.

6.4. Agency issues

Under U.S. corporate law, the board of directors has full discretion to transfer assets between wholly owned divisions (within contractual boundaries set by debt covenants). The assets underlying a tracking stock therefore lack legal protection from expropriation by the parent company.¹⁰ Toward the end of the 1990s, firms issuing tracking stock started to explicitly warn investors of the risk of expropriation. For example, in its 1999 prospectus for tracking stock in its online broker, Donaldson, Lufkin, & Jenrette (DLJ) warned of a conflict of interest: "The board of directors may make decisions that favor DLJ at the expense of DLJ direct."

There are several examples of expropriation taking place. When GM in August 1995 announced its plan to spin off its tracking stock in EDS (GM-E), it first required EDS to make a one-time contribution of \$500 million to the parent (GM). EDS shareholders challenged this payment in Delaware court—and lost: the court's decision was that the board of directors has full discretion to transfer money within the corporation—tracking stock or not. Similarly, before U.S. Steel spun off the tracking stock in its oil division Marathon in 2001, it first transferred \$900 million of debt to Marathon. Not surprisingly, the stock of the steel division soared 19% on the day of this announcement.

The poor legal protection of the assets underlying a tracking stock is likely the major reason for the near-disappearance of this security. In fact, most of the tracking stocks have been reversed over the last decade. In a press release issued on December 16, 1999, Kerry Hoggard, chairman of Fletcher Challenge Ltd., said: "It is clear the the Group's capital structure is seen as complex by investors, is perceived to raise governance issues, and has resulted in a significant structural discount being applied to all our stocks. We cannot allow this to continue, and will move as quickly as possible to a full dismantling of the target share structure."

Billett and Vijn (2004) examine 11 announcements to remove the tracking stock structure. They find significant and positive excess stock returns of 14% to the dismantling announcement. Tracking stock in its current form may very well be a phenomenon of the past.

¹⁰ Hass (1996) provides an in-depth discussion of the fiduciary duties of the company's directors as they relate to tracking stock.

7. Leveraged recapitalizations

A leveraged recapitalization (henceforth “recap”) is a significant payout to shareholders financed by new debt borrowed against the firm’s future cash flow. The company remains publicly traded, but with a substantially higher debt level. For a sample of 27 firms completing leveraged recaps over the period 1984–1988, Gupta and Rosenthal (1991) find a threefold increase in the average debt-to-total-capital ratio, from 22 of to 67%. Denis and Denis (1983) document that the median ratio of total debt to total assets increases from 45% to 86% for a sample of 39 recaps in 1984–1988. Moreover, studying 42 leveraged recaps between 1985 and 1989, Handa and Radhakrishnan (1991) report that the proposed payout averages 60% of the pre-recap market value of equity.

The cash distribution to shareholders is typically structured as a large, special, one-time dividend. Alternatively, the distribution could be in the form of a share repurchase or exchange offer. Management often forfeits the cash distribution on their shareholdings and instead takes additional stock. Consequently, leveraged recaps typically result in a substantial increase in managerial equity ownership. Handa and Radhakrishnan (1991) document that insider equity ownership increases by three times, while Gupta and Rosenthal (1991) report a doubling of the insider ownership (from 3.8 to 8.4%). In Denis and Denis (1993), the median ownership of officers, directors, and employees soars from 6 to 15%.

Prior to the widespread use of poison pills, leveraged recaps were sometimes used as a defense against a hostile takeover threat. See Denis (1990) for an analysis of leveraged recapitalizations as a takeover defense.

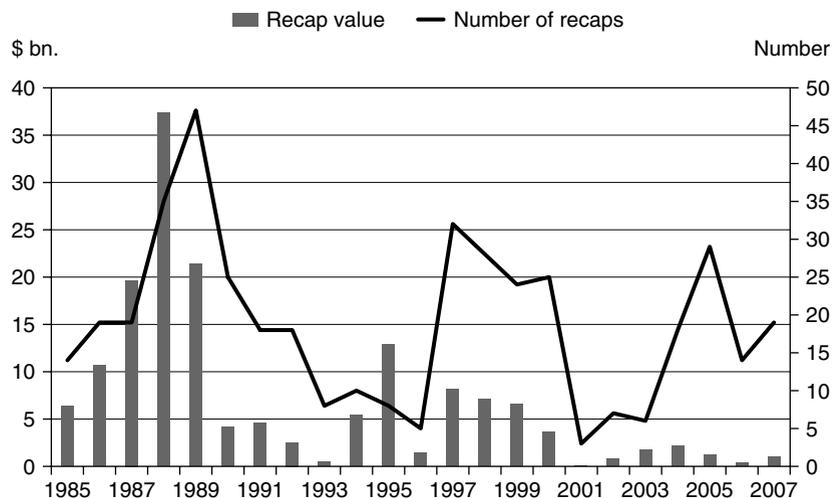
A leveraged recapitalization triggers a tax liability at the investor level. The tax depends on how the payout to shareholders is structured. For a special dividend, the amount distributed from the firm’s retained earnings is taxed as a dividend. If the special dividend exceeds the retained earnings on the firm’s balance sheet, the remaining cash distribution is a return of capital, treated as a capital gain. If the recap is structured as a share repurchase, the entire distribution is taxed as a capital gain.

The financial accounting for leveraged recapitalizations does not require any step-up of the company’s assets. As a result, if the new debt exceeds the book value of the firm’s equity, the company’s book equity becomes negative following the recap. What appears like a leveraged buyout by a private equity sponsor is sometimes structured as a recap. Recap accounting can be used if the buyer acquires less than 94.9% of the firm’s stock, and the owners of the minority interest, which must be widely held, are independent from the buyer.

7.1. Transaction volume

Figure 4 shows the annual volume of leveraged recapitalization transactions announcements from 1985 through 2007, using data from SDC. The recap volume has largely followed the ups and downs of the high-yield debt markets. As shown in Panel A, in the United States, leveraged recaps were particularly popular in the late 1980s, with a

Panel A: Number (line) and total transaction value (bars) of U.S. leveraged recapitalizations



Panel B: Number (line) and total transaction value (bars) of non-U.S. leveraged recapitalizations

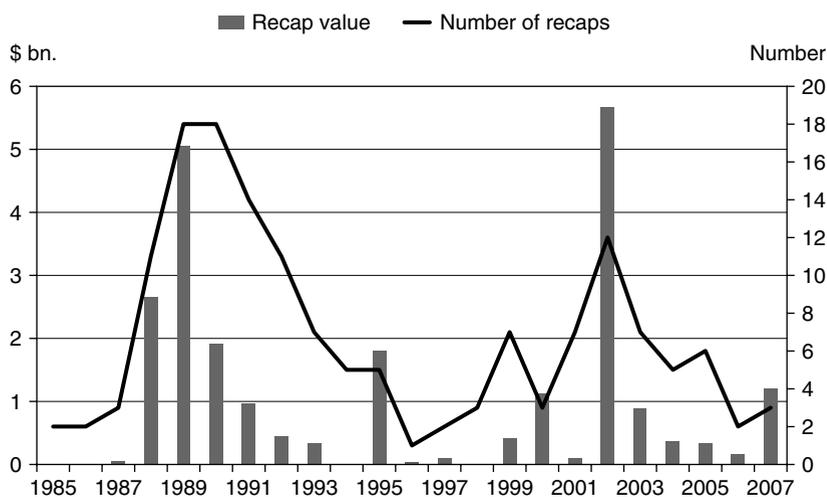


Fig. 4. Annual volume of leveraged recapitalizations, 1985–2007.

Source: SDC

peak in combined transaction value (bars) of \$37 billion in 1988 and 47 recaps (line) in 1989. There was a smaller surge in recapitalization transactions in the period 1997–2000, and then again in 2005, however, without a corresponding increase in transaction size. Panel B shows the non-U.S. volume of leveraged recapitalizations. The international

recap activity is generally lower and involves smaller amounts. Companies announcing leveraged recapitalizations in 2006–2007 include Charter Communications Inc, Palm Inc., Foster Wheeler Ltd., and Acadia Realty Trust.

7.2. *Valuation effects*

The wealth effects of leveraged recapitalizations are substantial. For a sample of 44 recaps over 1985–1990, Bae and Simet (1998) find a two-day shareholder ACAR of 5.7%. Moreover, Handa and Radhakrishnan (1991) report an average two-day abnormal return of 5.5%, and Gupta and Rosenthal (1991) find an average announcement CAR of 5.9%. Moreover, Balachandran, Faff, and Nguyen (2004) document a three-day average CAR of 4.4% for a sample of 167 leveraged recapitalizations in Australia between 1989 and 2002.

Since the leveraged recapitalization may be a response to a corporate control threat, several studies measure the returns over a longer event window. Denis and Denis (1993) use a window starting 40 days prior to initiation, defined as the first indication of a takeover or the announcement of the recap, through completion of the recap. They estimate an average abnormal return of 32% (median 26%). Kaplan and Stein (1990) compute the cumulative abnormal stock return starting 40 days prior to the recap announcement, or the day of a hostile bid if there is one, through the recap completion. They find an average CAR of 45% (median 47%) for 12 leveraged recapitalizations between 1985 and 1988.

Kaplan and Stein (1990) further estimate the change in systematic risk of the firm's securities after the leveraged recap. The increase in the equity risk is relatively modest. Using daily returns and market-model estimates, the average equity beta increases by 37% from 1.01 to 1.38 after the recapitalization. They then make two different assumptions about the change in total asset risk from the transaction. Assuming that the systematic risk of the assets (asset beta) is constant, the implied debt beta averages 0.65. However, when they assume that the entire market-adjusted premium represents a reduction in fixed costs, the implied debt beta averages 0.40. Overall, leveraged recapitalizations generate substantial shareholder wealth and appears to be associated with a surprisingly small increase in equity systematic risk.

7.3. *Drivers of value creation in leveraged recapitalizations*

As discussed earlier, the high debt in leveraged recapitalizations reduces the firm's free cash flow and hence managerial discretion over the investment decisions (Jensen, 1986). Denis and Denis (1993) examine the change in operating performance and investments for 29 completed recapitalizations between 1984 and 1988. They document large decreases in the undistributed cash flow (median –31%) and capital expenditures (median –35%), despite improvements in operating performance (median 21%) from the year prior to the year after the recap. Also, the post-recap cash flow covers only two-thirds of the pre-recap capital expenditures, forcing a reduction in the level of investments.

They further examine the market reaction for capital expenditure announcements and find a significantly negative ACAR over the five-year period prior to the recapitalization, suggesting a past pattern of overinvestment. Following the recap, the average number of announced investments drops from 1.2 to 0.3 per firm and year, with an average stock market reaction that is insignificantly different from zero. They conclude that the increased debt plays a central role in disciplining managers' investment decisions.

Consistent with these results, Wruck (1994) documents organizational and compensation changes in Sealed Air following its leveraged recapitalization in 1989. She suggests that the financial leverage was used as a tool to improve the internal control systems, which together with the high debt service created an environment that led to enormous performance improvements and value creation.

Peyer and Shivdasani (2001) study the efficiency of the internal allocation of investments after leveraged recapitalizations in 22 multidivisional firms between 1982 and 1994. Prior to the recap, companies allocate investments to high q divisions. Following the recap, however, investments become less sensitive to division q and more sensitive to division cash flow. While this may indicate that the internal allocation of capital becomes less efficient, the total level of capital expenditure declines, as do the firm's diversification discount. Peyer and Shivdasani conclude that the costs of distorted divisional investments are outweighed by the benefits of lower firm-level investments. Overall, leveraged recapitalizations appear to create value by curbing managerial overinvestment and improving operating performance.

Walker (1998) suggests that the benefits from leveraged recapitalizations are transitory, examining 39 recaps between 1985 and 1989. He finds that the recap firms have higher free cash flow prior to the recap than matching firms. However, the pre-recap level of capital expenditures is not significantly different from that of its peers. Moreover, operating performance increases from year -1 to $+1$ relative to the special dividend, but reverts in the subsequent years.

A leveraged recapitalization could be used to signal management's private information about the future cash flow of the firm. Healy and Palepu (1995) describe how managers at CUC International successfully undertake a leveraged recap in 1989 to communicate their optimistic beliefs about the firm's future cash flows to investors. Balachandran, Faff, and Nguyen (2004) examine if the positive information conveyed by a recap extends to other firms in the industry. They find insignificant stock returns for competitors of firms announcing a leveraged recapitalization, suggesting that the content of any new information is unique to the recap firm.

A large fraction of the leveraged recapitalizations in the late 1980s subsequently failed. Denis and Denis (1995) report that 9 (one-third) of 27 firms completing a leveraged recap between 1985 and 1988 became financially distressed. They find that the poor operating performance of the nine distressed firms is in line with that of their industry peers. Moreover, the stock market reacts negatively to announcements of asset sales as well as to economic and regulatory events associated with the demise of the high-yield market. They conclude that the incidence of distress is not related to poorly structured transactions, but rather to unexpected macroeconomic and regulatory developments.

8. Leveraged buyouts (LBO)

A leveraged buyout is the acquisition and delisting of an entire company or a division, financed primarily with debt. The buyer is typically a private equity fund managed by an LBO sponsor—or recently sometimes a consortium of funds. The sponsor raises debt to finance the majority of the purchase price and contributes an equity investment from the fund. The equity is injected into a shell company, which simultaneously borrows the debt and acquires the target.

The sponsor relies on the company's cash flow, often supplemented by assets sales, to service the debt. The objective is to improve operating efficiency and grow revenue for a 3–5 year period before divesting the firm. Debt is paid down over time and all excess returns accrue to the equity holders. The exit may be in the form of an IPO, a sale to a strategic buyer, or a sale to another LBO fund. While an IPO typically generates a higher valuation, it could take several years for the LBO fund to entirely unwind its holdings through the public markets.

Because of the heavy debt load, a target firm is traditionally characterized by a strong predictable cash flow, supported by a history of profitability. In addition, it is often in a mature industry, with low growth and limited need for additional capital expenditures. The industry scope of leveraged buyouts has increased over time, as has the importance of international deals. Also, while the conventional LBO involves a publicly traded target company, a majority of the leverage buyouts are of private firms.

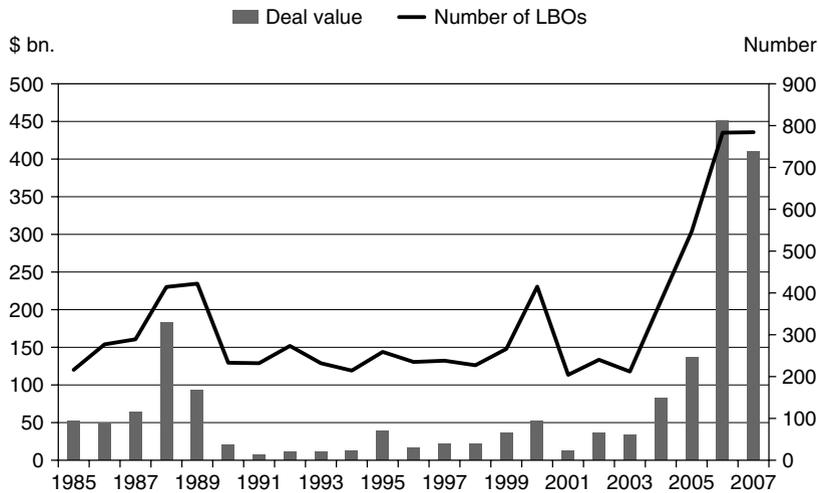
A management buyout (MBO) is a leveraged buyout of a segment, a division or a subsidiary of a large corporation in which key corporate executives play a critical role. MBOs are generally smaller than traditional LBOs and, depending on the size of the transaction, a sponsor need not be involved. In the following, MBOs are singled out only if this term is explicitly used to characterize a sample.

8.1. *Transaction volume*

The leverage buyout activity varies considerably over time. Figure 5 shows the annual number (line) and total deal value (bars) of LBOs announced between 1985 and 2007, using data from SDC. As shown in Panel A, a first surge in U.S. LBO activity occurred in the late 1980s. This is when landmark transactions such as KKR's buyouts of RJR Nabisco (worth \$25 billion) and Safeway (\$4 billion) took place. The economic recession in 1990–1991, combined with regulatory restrictions on investments in high-yield instruments, the bankruptcy of Drexel Burnham Lambert, and a reduction in new lending by commercial banks, put an abrupt end to this first wave of highly leveraged transactions.

Most of the transactions in the 1990s were LBOs of private companies and divisions. As the availability of debt financing soared in the mid-2000s, the public-to-private transaction reappeared in a second buyout boom. The total value of U.S. LBO transactions announced in 2006 and 2007 amounts to \$450 and \$410 billion, respectively. Recent large U.S. buyouts include Equity Office Properties (\$41 billion), HCA (\$33 billion),

A: Number (line) and total transaction value (bars) of U.S. leveraged buyouts



B: Number (line) and total transaction value (bars) of non-U.S. leveraged buyouts

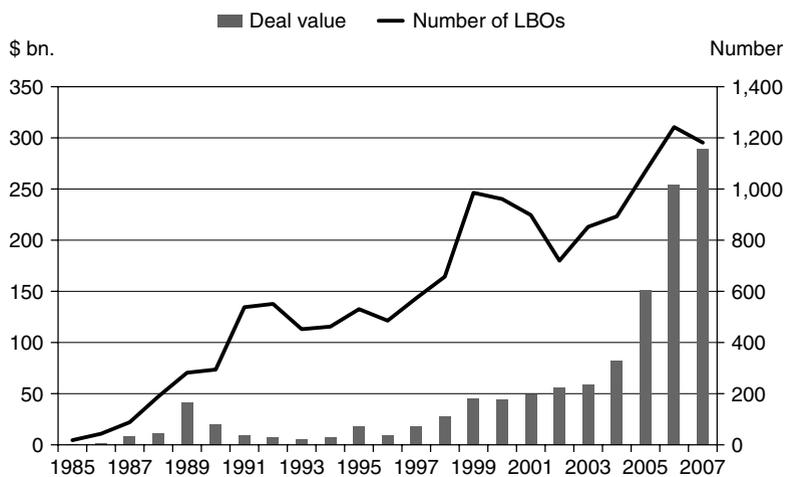


Fig. 5. Annual volume of leveraged buyouts, 1985–2007.

Source: SDC

TXU (\$32 billion), Harrah’s Entertainment (\$28 billion), Clear Channel Communications (\$27 billion), First Data (\$26 billion), SLM (\$26 billion), Kinder Morgan (\$22 billion), and Hilton Hotels (\$20 billion), to mention a few.

Panel B shows the corresponding LBO volume outside the United States. The number of non-U.S. buyouts has grown steadily since the mid-1980s, with a short dip in

transaction volume in 2002 after the burst of the Internet bubble. The international LBO volume reached a record high in 2007 with a total deal value of \$289 billion across almost 1,200 transactions. Large buyouts outside the United States announced in 2006–2007 include BCE, Canada (\$51 billion); Alliance Boots, United Kingdom (\$22 billion); BAA, Spain (\$22 billion); Altadis, Spain (\$18 billion); Thames Water, United Kingdom (\$15 billion); and Vodafone KK, Japan (\$14 billion).

Stromberg (2007) estimates the value of firms acquired in leveraged buyouts between 1970 and 2007 as a total of \$3.6 trillion, three-quarters of which represent LBOs undertaken after 2000. This second wave of large LBOs has spurred a renewed interest in leveraged buyouts in academic research. Since the financing market turmoil began in mid-2007, however, only a limited number of large buyouts have been announced in the United States and internationally.

8.2. *The LBO capital structure*

An LBO is financed with a mix of bank loans, high-yield debt, mezzanine debt, and private equity. The bank debt, which is often syndicated in the leveraged loan market, is secured and most senior in the capital structure. The interest rate is floating, generally quoted as a spread above the London Interbank Offering Rate (LIBOR). While the maturity varies with the firm's credit profile, it is commonly in the range of 5–8 years and always shorter than that of junior debt. The bank debt has to be amortized before any other claimholders are paid off. At times (but not in 2006/2007), cash sweeps are common, requiring the firm to use any excess cash flow for accelerated amortization of the bank loans.

The bank debt is typically structured as several tranches of term loans (A, B, C, and D), where the holder of Tranche A also provides a revolving credit facility. Term A, the pro-rata facility, is sold to traditional banks and is senior to the other tranches. In the second LBO wave, branches B, C, and D had minimal front-end amortization and were primarily sold to institutions and funds. The proportion leveraged bank loans in the capital structure varies, but was around 40% for U.S. buyouts closed in 2006–2007.

The remaining debt is raised from the subordinated debt markets. High-yield debt (junk bonds) is generally subordinated and/or unsecured. Interest is fixed, based on a spread to treasury bonds that varies with credit quality, and expressed as a coupon. This debt has a bullet maturity in 10 years and is as a rule callable at a premium. The high-yield bonds are typically sold to the public in a 144A offering, which requires a road show and hence takes time to close. It is therefore common practice to finance the high-yield portion through a bridge loan at deal closing, repaid within a year with the proceeds from the subsequent bond issue.

As an alternative to high-yield debt, which is publicly traded, the market for second lien loans took off in 2003. These loans are privately placed with hedge funds and Collateralized Loan Obligation (CLO) investors, and are secured in the firm's assets but subordinated to the bank loans. CLOs combine a large number of leveraged loans (first and second lien) into a pool, which itself is sliced in tranches sold to institutional

The debt multiple is the average ratio of the pro-forma total debt to adjusted EBITDA. The source is Standard & Poor's LCD.

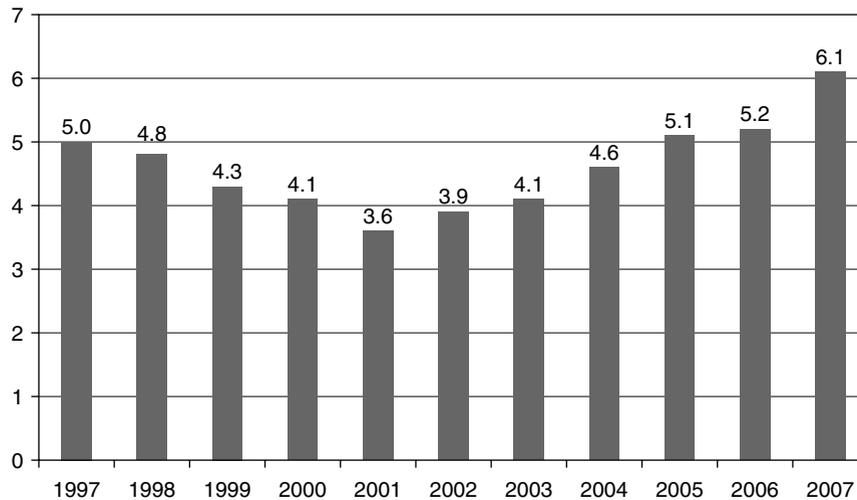


Fig. 6. Annual pro-forma debt multiples in LBOs, 1997–2007.

investors. In 2007, the total volume of second lien loans reached \$30 billion (*Source*: Standard & Poor's LCD).

Figure 6 shows annual debt multiples, defined as the pro-forma ratio of total debt to adjusted EBITDA, in LBO transactions between 1997 and 2007. Debt multiples reached a low in 2001, when the average transaction raised 3.6 times EBITDA in the debt markets. The expansion of the debt markets and aggressive lending practices in 2007 are reflected in a much higher average debt multiple of 6.1 times EBITDA. After the financial market turmoil in mid-2007, however, credit markets are constrained, and debt multiples are considerably lower again.

In periods when access to high-yield debt and bank loans is limited, sponsors resort to mezzanine financing, which replaces or is subordinated to the high-yield bonds. It is sold in a private placement to funds and institutions, thus avoiding any public filing requirements. The mezzanine is a committed financing with individually negotiated terms. It is structured as a debt contract or preferred equity, with warrants and other “equity kickers” attached to increase its total returns. All or part of the interest expense or dividend is often in the form of additional securities rather than cash, so-called pay-in-kind (PIK). The use of mezzanine financing is more widespread in Europe, where the leveraged loan markets and high-yield bond markets lag those of the United States.

Private equity is the most junior in the capital structure. It typically has voting rights but no dividends. This equity is raised from pension funds, endowments, insurance companies, and wealthy individuals into a fund managed by a private equity partnership

(the sponsor). Prominent LBO sponsors include Blackstone, Carlyle, and KKR. Most sponsors are paid a management fee of 2% on the fund's capital and receive a carried interest of 20% of the profits realized by the fund. In addition, some sponsors charge deal fees and monitoring fees to their portfolio companies. See Metrick and Yasuda (2007) for a detailed description and analysis of the fee structure in LBO funds. The capital raised for private equity is setting new record levels. In 2006, private equity funds had an inflow of \$225 billion in new capital.

Panel A of Figure 7 shows the average equity contribution in LBOs from 1987 through 2007. The source is Portfolio Management Data. The deals in the end of the 1980s were extremely highly leveraged, with an average equity portion of 8–13% of the total capital. Over the last decade, most LBO transactions have had a substantially higher fraction of equity financing, with equity constituting on average one-third of the capital structure in recent years. Managers are generally required to co-invest in the buyout equity along with the LBO fund. If a manager has been involved in a prior buyout, she is asked to roll over a portion of her equity in the target firm. If it is a first-time LBO, managers may be offered to buy equity at a discount, or receive additional stock and options conditional on certain performance goals.

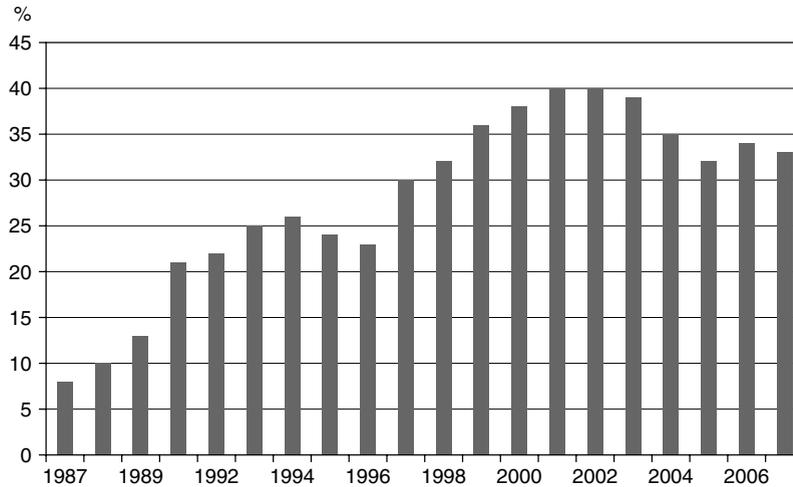
Panel B of Figure 7 shows the average price multiple in LBOs, defined as the ratio of the purchase price to the adjusted EBITDA, for the period 1997–2007. Average prices have risen from a low average multiple of 6.4 in 2001 to a high of 9.8 in 2007. The total funds raised in the buyout transaction are used for consideration to the seller as well as underwriter fees for the LBO debt (usually 1.5 to 2.5% of the principal amount) and call premiums on existing bonds.

Axelsson, Jenkinson, Stromberg, and Weisbach (2007) document the financial structure of 153 large U.S. and European buyouts between 1985 and 2006. They find that the leverage of LBO firms is unrelated to debt levels of size- and industry-matched public firms. Instead, the leverage decreases in the interest rates prevailing at the time of the buyout. Prices also decline in interest rates, but are positively related to price multiples in public markets. They conclude that LBO capital structures are largely driven by the economywide cost of borrowing rather than firm-specific factors. See also Roden and Lewellen (1995) for an analysis of the structure of the LBO financing package.

8.3. Value creation in LBOs

The total value created in a leveraged buyout is divided between the selling shareholders and the LBO investors. Table 4 shows the premiums paid in 1058 leveraged buyout transactions between 1973 and 2006 as reported by seven selected studies. The premium is defined as the final offer price in excess of the target stock price 20 to 60 days prior to the announcement of the bid. As shown in the table, the average premium ranges from 27 to 59% across the seven studies, with a sample-size-weighted average of 37%. The median premium ranges from 27 to 42%, with an average of 32%. It appears that premiums are generally somewhat lower in the 2000s compared to the 1980s. The exception is the

A: Average equity contribution to LBOs in % of the capital structure, 1987–2007



B: Average purchase price multiples paid by LBO firms relative to adjusted EBITDA, 1997–2007

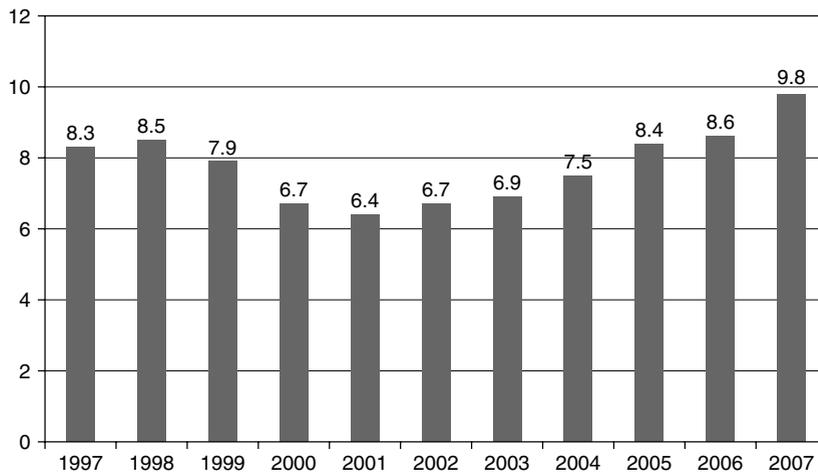


Fig. 7. Average annual % equity contribution and purchase multiples in LBOs.

Source: Portfolio Management Data.

study by Renneboog, Simons, and Wright (2007) of 177 buyouts in the United Kingdom between 1997 and 2003. They document an average premium of 40% (median 38%), which is higher than the contemporaneous LBO premiums of 27 to 29% in the United States (Billet, Jiang, and Lie, 2008; Guo, Hotchkiss, and Song, 2008).

Table 4
 Premiums paid in 1,058 leverage buyouts for 7 selected studies, 1973–2006

The premium is the ratio between the final offer price and the pre-buyout stock price less one.

Study	Premium		Type of deal	Sample size	Time period	Day of pre-buyout stock price
	Mean	Median				
DeAngelo, DeAngelo, and Rice (1984)	59%		LBO	23	1973–1980	–40
Lehn and Poulsen (1989)	36%		LBO	257	1980–1987	–20
Kaplan (1989b)	46%	42%	MBO	76	1980–1985	–40
Harlow and Howe (1993)	45%		LBO	121	1980–1989	–20
Renneboog, Simons, and Wright (2007)	40%	38%	LBO	177	1997–2003	–40
Billet, Jiang, and Lie (2008)	27%	27%	LBO	212	1990–2006	–60
Guo, Hotchkiss, and Song (2008)		29%	LBO	192	1996–2006	–20
Sample size weighted average	37%	32%		1,058	1973–2006	

Several studies find two-day average CARs of 16 to 17% for LBO announcements in the 1980s (DeAngelo, DeAngelo, and Rice, 1984; Lehn and Poulsen, 1989; Slovin, Sushka, and Bendeck, 1991; Van de Gucht and Moore, 1998). For a sample of 641 LBOs in 1980–2001, Brown, Fee, and Thomas (2007) estimate an average announcement CAR of 19%. The announcement return reflects a combination of the market's estimate of the target gains from a deal and the likelihood that the deal succeeds. Overall, the target shareholders tend to make substantial gains in leveraged buyouts.

The second part of the equation is the returns realized by the LBO investors. These returns have been difficult to estimate since the buyout targets are taken private and often do not return to public ownership. Kaplan (1989a) estimates a median market-adjusted return of 28% (mean 42%) for investors in 25 MBOs that went public after on average 2.7 years. Muscarella and Versuypens (1990) examine the equity returns for 58 LBO firms that returned to public status after on average 2.9 years. Comparing the IPO price with the LBO price, they estimate an average annualized rate of raw return of 268%. This return is, however, not significantly different from the return of a hypothetical levered portfolio of S&P500 firms.

More recently, LBO fund return data has been available through self-reporting to Venture Economics. Jones and Rhodes-Kropf (2004) examine quarterly returns of 379 LBO funds formed between 1980 and 1999, using sponsor estimates of value changes. Estimating fund performance measured against the Fama and French (1993) three-factor model, they find fund excess returns (alphas) that are insignificantly different from zero.

Ljunqvist and Richardson (2003) use proprietary data from a large institutional investor. They study the returns to investments for 54 U.S. LBO funds raised between 1981 and 1993, observing the actual cash inflows and outflows of the funds. They find that the LBO funds outperform the stock market and have positive alphas. On a risk-adjusted basis, the excess return of the typical LBO fund is 5% annually. Groh and Gottschalg (2008) also find positive excess returns in a sample of 133 U.S. buyouts over 1984–2004.

Their benchmark is a portfolio of public market equivalents matched by systematic risk and timing, and they correct for self-selection.

Kaplan and Schoar (2005) study the returns net of costs for 169 LBO funds raised between 1980 and 2001. They estimate that the median fund underperforms the stock market index, generating 80% (mean 97%) of the return on the S&P500. However, for the subset of sponsors that have been around for at least five years, the median performance exceeds the S&P500 by 50% (mean 80%). They show that this performance is persistent, and they suggest that LBO sponsors may have different skills in managing portfolio companies. Phallipou and Gottschalg (2007) examine 739 LBO funds raised in 1980–1993, assuming that unrealized assets have zero value. They find that the funds net of cost underperform the S&P500 by 3% on average and confirm the persistence in LBO fund returns.

For a sample of 50 large U.K. buyouts over the 1997–2004 period, Acharya and Kehoe (2008) report positive industry-adjusted returns over the life of the deal. The returns are positively correlated to improvements in operating margins and asset growth. In contrast, Nikoskelainen and Wright (2007) find a median return to enterprise value of –5% (average 22%), adjusted for the return of the FTSE 100 index on the London Stock Exchange. They examine a sample of 321 exited buyouts in the United Kingdom between 1995 and 2004.

Overall, the total gains from LBOs are large, manifested in the substantial premiums paid to target shareholders. However, the evidence is inconclusive as to whether selling shareholders largely capture all the gains in leveraged buyouts. Depending on the sample, the benchmark portfolio, and assumptions about the value of assets that are not liquidated, the estimates of LBO fund abnormal returns range from positive to negative.

8.4. Drivers of value creation in LBOs

8.4.1. Operating efficiency

As argued by Jensen (1986), the high leverage in buyouts may result in improved managerial investment decisions for firms with high cash flow and few growth opportunities. Lehn and Poulsen (1989) examine 263 LBOs in the 1980s. They find some evidence that firms with high levels of free cash flow are more likely to go private and that acquisition premiums increase with the target firm's cash flow. They conclude that the mitigation of agency problems associated with free cash flow are a major source of buyout gains.

Opler and Titman (1983) find that LBO targets have a combination of high cash flow and unfavorable investment opportunities (low q), and are more diversified than firms that don't become targets. In addition, buyouts are less likely for firms with high expenditures for research and development (R&D). Similarly, Long and Ravenscraft (1993) show that LBOs typically target firms with R&D expenditures below the industry average. Also, Bae and Simet (1998) find that LBO announcement returns are increasing in the free cash flow of the target firm. In contrast, Servaes (1994) finds no significant difference in the capital expenditure level between target firms in 99 going private transactions and their

industry peers. Overall, however, the evidence suggests that the potential for incentive realignment in firms with high levels of free cash flow represents an important factor in the leveraged buyout decision.

If leverage successfully curbs overinvestment, this should show in the post-buyout operating performance. Kaplan (1989a) examines the performance of 48 large management buyouts between 1980 and 1986. He shows that the firms experience substantial increases in operating income (+42%), reductions in capital expenditure, and improvements of the net cash flow (+96%) over a three-year period following the buyout. Smith (1990) also reports significant performance improvements for 58 management buyouts in 1977–1986. She finds that operating returns, measured as operating cash flow per employee and per dollar of operating assets, increase significantly from the year prior to the year after the buyout. She examines changes in accounting line items and finds no evidence that repair and maintenance expenditures are postponed or that the R&D expenditures are reduced. Instead, the higher margins are a result of adjustments in the management of working capital.

Several other studies document improved operating efficiency after buyouts. Lichtenberg and Siegel (1990) examine data from the Longitudinal Business Database (LBD) of the U.S. Bureau of the Census for 131 LBOs in the period 1981–1986, with a total of 1132 plants. They show that plant total factor productivity (TFP) increases more than the industry average in the years following a leveraged buyout. Consistent with this finding, Harris, Siegel, and Wright (2005) find an above-industry increase in TFP for U.K. MBO plants in the 1990s. Moreover, Muscarella and Versuypens (1990) examine the performance of 72 LBO firms that went public again. They show that LBO firms reduce operating costs and experience significant improvements in their operating margins. Also, while there is a dramatic increase in leverage upon completion of the LBO, the debt ratios are gradually reduced before returning to public ownership.

The evidence of improvements in operating performance is weaker for more recent transactions. Guo, Hotchkiss, and Song (2008) examine 94 U.S. public-to-private LBOs between 1990 and 2005. They find that post-buyout gains in operating performance are comparable to or slightly exceed benchmark firms matched on industry and pre-buyout characteristics. The cash flow improvements are greater for firms with higher increases in leverage and when the CEO is replaced in the buyout transaction. Moreover, the median returns to LBO investors are 25% (average 57%) adjusted for Fama-French industry portfolio returns. Interestingly, the cash flow improvements and returns to capital are strongly related. However, due to the small magnitude of the cash flow gains, they suggest that recent transactions are not largely motivated by improving the operating efficiency of underperforming firms.

There is a concern that the trimmed organization and reduced capital expenditure may hurt the long-term prospects of LBO firms. Lerner, Sorensen, and Stromberg (2008) study a sample of 495 LBO firms that filed at least one successful patent application in the period 1986–2005. They show that firms continue to pursue high-impact patents after going private, concentrating their innovations in areas of historical core strengths. They

conclude that leveraged buyouts promote a beneficial refocusing of the firm's patent portfolios.

Overall, the results suggest that leveraged buyouts target firms with free cash flow, where the leverage could help improve investment decisions by reducing managers' discretionary funds. There is convincing evidence of post-buyout improvements in operating performance and plant productivity. Also, while total capital expenditures decline, critical investments in R&D seem to continue.

8.4.2. *Employment*

It appears that improvements in operating efficiency are associated with employee layoffs. Kaplan (1989a) finds that the median firm reduces its employee count by 12% relative to the industry from the year prior to the year after the buyout. Muscarella and Versuypens (1990) show that the average employment declines by 0.6% for LBO firms that subsequently went public. This job creation is in the bottom 10% of COMPUSTAT firms. Lichtenberg and Siegel (1990) report that white-collar compensation and employment decline in the years following the buyout. Moreover, for a sample of 33 LBOs in 1980–1984, Liebeskind, Wiersema, and Hansen (1992) report that LBO firms downsize the operations more than comparable firms in terms of number of employees, plants, and total revenues. In addition, there is some evidence that buyouts in the United Kingdom lead to modest declines in employment (Wright, Thompson, and Robbie, 1992; Amess and Wright, (2007)).¹¹

More recent evidence, however, suggests that the decline in LBO employment in existing facilities is outweighed by additional employment in new establishments, defined as new plants, offices, and retail outlets. Davis, Haltiwanger, Jarmin, Lerner, and Miranda (2008) examine LBD data for 5000 U.S. targets acquired in private equity transactions between 1980 and 1995. Consistent with previous work, they find that employment drops more in target establishments than in control firms following the buyout. However, the LBO firms create substantially more jobs in new establishments than their peers. They conclude that the private equity sponsors push the target firm to expand in new, higher-value directions. Overall, while LBO firms appear to trim their workforce to improve efficiency in existing production facilities, they also create additional job opportunities through new establishments.

8.4.3. *Corporate governance*

Highly leveraged transactions lead to increased monitoring by banks and the LBO sponsor (who has its own money at stake). Jensen (1989) argues that the combination of active governance by buyout sponsors, high-powered managerial incentives, and

¹¹ Perotti and Spier (1993) present a strategic model of temporarily high leverage. They show how shareholders, by retiring equity through a junior debt issue, can credibly threaten to underinvest in valuable new projects unless employees concede to wage reductions.

pressures from high leverage, provide a corporate governance system and incentive structure that is superior to that of widely held public firms. He predicts that the LBO organization eventually will eclipse the traditional, widely held public companies to become the dominant organizational form. While this has not yet happened, there is little doubt that the LBO organization carries with it a relatively efficient governance structure.

A central governance characteristic of leveraged buyouts is a meaningful management equity participation. Kaplan (1989a) shows that the median equity ownership of the top management team increases from 6 to 23% for 76 MBOs in the 1980s. Moreover, Muscarella and Versuypens (1990) report that the most highly paid officer owns 18% of the LBO firm's equity prior to an IPO exit.

The equity ownership of the top management team is also substantial in more recent samples. Kaplan and Stromberg (2008) study 45 LBOs from 1996 to 2004. They find a median equity ownership of 6% for the CEO and 16% for the management team. Nikoskelainen and Wright (2007) report an average equity ownership of 37% (median 35%) for 321 U.K. buyouts over the 1995–2004 period. Acharya and Kehoe (2008) examine a sample of 59 large buyouts in the United Kingdom between 1997 and 2004. They document an equity ownership including options of 3% for the CEO and 13% for the top management team as a whole. In sum, leveraged buyouts provide significant equity-based incentives to top management that help align managerial incentives with shareholders' interests.

Furthermore, the concentration of ownership provides LBO sponsors with a strong incentive to monitor the firm closely. Baker and Wruck (1989) describe the organizational changes at O.M. Scott after its leveraged buyout in 1986. The board had five members, of which one was a manager and three represented the buyout sponsor. All board members owned stock. The board met quarterly, and an executive committee monthly. More importantly, one of the private equity partners served as a liaison between the LBO sponsor and the firm's managers. The operating partner, which functioned as an advisor and a consultant, spent several weeks at O.M. Scott after the buyout closed and was thereafter in telephone contact with the CEO daily. Baker and Wruck (1989) conclude that the close monitoring by the LBO sponsor, combined with the restrictions imposed by the high leverage and significant managerial shareholdings and bonus plans, led to a substantial improvement in O.M. Scott's operating performance and investment policies.¹²

The evidence suggests that LBO sponsors are also active monitors in more recent transactions. Cornelli and Karakas (2008) examine the board structure for 88 U.K. buyouts sponsored by a private equity firm over the 1998–2003 period. They find that, on average, the board size decreases by 15%, from 6.5 to 5.5 directors after the buyout. Moreover, outside directors are replaced by individuals representing the LBO sponsor, who controls on average 40% of the board seats. Also, the CEO is replaced in half of the buyout transactions.

¹² See also Denis (1994) for an analysis of the organizational changes at Safeway after its leveraged buyout in 1986.

Acharya and Kehoe (2008) show that LBO sponsors on average own 77% of the equity in their portfolio companies. The average sponsor holds 45% of the seats on a board with eight members that meet monthly. The sponsor engages through weekly, often informal, meetings with management over the due diligence phase and the first three months after closing. They also report that two-thirds of the LBO firm's top management is replaced within 100 days of the deal. In sum, buyout sponsors play an important role through active monitoring of the LBO firm.

Cressy, Munari, and Malipiero (2007) compare the operating performance of private equity-backed LBOs with that of comparable nonbuyout private firms matched on industry and size. Their sample is 122 U.K. buyouts in 1995–2002. They find a higher post-buyout operating profitability for the LBO firms, and particularly when the sponsor specializes in the target firm industry.

While the monitoring by LBO sponsors is an important governance mechanism in leveraged buyouts, managers sometime undertake MBOs without the involvement of a private equity sponsor. Fidrmuc, Roosenboom, and van Dijk (2008) examine the choice between an MBO and a sponsor-backed buyout across 129 U.K. leveraged buyouts in 1997–2003 and where management stayed in control. They find that MBO targets have lower market-to-book ratios, more cash on hand, and greater managerial ownership. They suggest that managers invite LBO sponsors when they need help to complete a deal, and they conclude that MBOs and sponsor-backed LBOs are complementary transactions.

Cotter and Peck (2001) analyze how the equity ownership of the LBO firm interacts with the structure of the buyout debt. Their sample is 64 LBO firms in 1984–1989, of which a buyout specialist owns majority control in 40 firms (63%). They find that firms controlled by an LBO sponsor use less short-term and/or senior bank debt to finance the transaction. Moreover, the LBO firm's operating performance increases with the use of senior debt only in deals where no buyout specialist is involved. They suggest that bank debt, having more restrictive covenants, and debt with shorter maturity, and thus higher debt service, both help motivate and monitor management in the absence of an active buyout specialist. See also Grinstein (2006) for an analysis of how the debt structure is used to commit investors to disciplinary actions against management.

In sum, leveraged buyouts are characterized by powerful corporate governance structures. First, management owns a substantial portion of the equity. Second, the ownership is concentrated with an LBO sponsor who actively monitors management. Third, the high leverage puts additional pressure to generate cash flow. Together, these mechanisms provide compelling incentives for managers to improve the efficiency of the LBO firm.

8.4.4. *Wealth transfers from debtholders*

If the pre-buyout bonds lack protective covenants, the LBO firm may issue more senior debt. Bonds that lack protective covenants become more junior in the capital structure, resulting in a reduction in the value of those bonds. Thus, it is possible that some of the buyout gains represent wealth transfers from target firm debtholders. Marais, Schipper,

and Smith (1989) examine a sample of leveraged buyouts between 1974 and 1985. They find positive average CARs for convertible securities and preferred stock, most of which are redeemed as part of the buyout. A majority of the nonconvertible debt claims remain outstanding without renegotiation after the buyout. This debt typically lacks covenants restricting additional borrowing with higher seniority, and there are pervasive downgradings of public debt following successful buyout proposals, suggesting bondholder losses.

Asquith and Wizman (1990) investigate the one-month return for 199 bonds of LBO targets in the 1980s. They find an average abnormal return of -1% across all bonds. However, these losses are concentrated to bonds with no covenant protection (mean return of -3%). Bonds with strong covenant protection have insignificant returns. Overall, the losses to bondholders are small compared to the total gains accruing to shareholders in the same LBO. Warga and Welch (1993) document an average risk-adjusted LBO announcement return of -7% for 36 bonds. The bondholder losses, however, constitute at most 6% of the shareholder gains. They too conclude that bondholder expropriation is a minor source of gains in leveraged buyouts. See also Billet, Jiang and Lie (2008) for an examination of bond returns in leveraged buyouts. They suggest that bondholder wealth expropriation has declined with the increased use of change-in-control covenants.

Ippolito and James (1992) propose that LBOs could extract wealth from other stakeholders as well. They examine the termination of pension plans in 169 buyouts in the 1980s. They find that the incidence of pension terminations doubles following LBO announcements. However, many of these terminations are affiliated with plant closings or an adaption to terms offered by the competitors of the LBO firm. Brown, Fee, and Thomas (2007) examine the effect of leveraged buyouts on the firms' suppliers, using a sample of 157 suppliers of firms undertaking LBOs in 1990–2001. They document an average announcement CAR of -1.3% for the suppliers. Moreover, the negative returns are concentrated to suppliers with substantial relation-specific investments. Thus, some of the LBO gains may come from the financial leverage as a commitment device in negotiations with suppliers and other stakeholders.

Another group of stake holders in the buyout transaction are the LBO bank lenders. Kracaw and Zenner (1996) examine the wealth effects of highly leveraged transactions on the stock prices of lead banks of the leveraged-loan syndicate. They find significantly positive average CARs of 0.5% when the transaction is announced and another 0.4% when the bank financing is agreed upon. Moreover, the bank stock returns are increasing in the size of the highly leveraged transaction. In all, bank lenders are expected to make profits on financing highly leveraged transactions and not the opposite.

Demiroglu and James (2007) investigate whether brand-sponsors borrow at better terms. Examining a sample of 181 LBOs completed between 1997 and 2007, they find that buyouts sponsored by high-reputation partnerships pay narrower loan spreads, have fewer and less restrictive loan covenants, and borrow more at a lower cost from institutional loan markets. In addition, sponsor reputation is positively related to the amount of leverage used to finance the buyout. Moreover, Ivashina and Kovner (2008) study 1582 leveraged loans financing private equity sponsored LBOs between 1993 and 2005.

They show that transaction loan spreads decline in the sponsor's relationship (past business) with the bank and the potential for future bank business. In sum, larger LBO sponsors can borrow at better terms. It is possible that this competitive advantage could help explain the persistence in returns across LBO sponsors documented by Kaplan and Schoar (2005).

8.4.5. *Wealth transfers from target shareholders*

While managers have a fiduciary duty to negotiate fair value in a buyout transaction, as acquirers of shares, they stand to gain from a low transaction value. By understating the true value of the target shares, they expropriate wealth from outside shareholders in the buyout. DeAngelo (1986) examines the accounting choices of 64 NYSE firms proposing an MBO during 1973–1982. Using a variety of tests, she fails to find any evidence that managers systematically understate earnings in the period leading up to the buyout. Perry and Williams (1994) employ a different methodology and a larger sample of 175 MBOs. In contrast, they find evidence of manipulation of the discretionary accruals that lowers the earnings in the year preceding the buyout announcement.

Kaplan (1989b) compares the financial forecasts that firms present at the time of a management buyout to subsequent performance. He finds that the actual post-buyout performance generally lags the forecast, rejecting the notion that managers capitalize on inside information in the MBO. Lee (1992) studies a sample of withdrawn MBO proposals to determine whether managers' proposals reveal information beyond the gains from the completed transaction. He finds that stock prices drop back to their pre-bid level after the withdrawal of the MBO proposal unless another bidder appears. He suggests that the wealth creation in LBOs primarily results from efficiency gains associated with the completed transaction rather than wealth transfers from pre-buyout shareholders. Moreover, Ofek (1994) finds that stock prices drop back to their pre-buyout level after MBO offers are canceled or rejected by the target boards. Also, there is no subsequent improvement in the operating performance of these firms. Overall, the evidence at large suggests that buyout gains come from other sources than expropriation of selling shareholders.

A relatively new practice is the so called club deals, where two or more private equity firms jointly sponsor an LBO. The equity portion in recent mega-deals may be too large for a single fund to finance on its own. However, a concern with these deals is that LBO sponsors may collude to limit competition, hence reducing the price paid to target shareholders. Indeed, the U.S. Department of Justice launched an inquiry in late 2006 into the effect of such private equity consortiums on takeover competition.

Officer, Ozbas, and Sensory (2008) examine the collusion argument for a sample of 53 club deals and 133 single-sponsor LBOs completed between 1984 and 2007. Using target abnormal return estimates, they find that club deals are associated with significantly lower premiums than single-sponsor deals. Guo, Hotchkies, and Song (2008) show that club deals are associated with higher returns on the capital invested in the LBO. However, they also find higher returns for target shareholders, rejecting the proposal of lower prices. Boone and Mulherin (2008) examine 70 club deals and 94 single-sponsor deals

over the 2003–2007 period. Based on SEC filings, they show that the level of takeover competition is significantly higher for both types of LBO bidders compared to a control sample of takeovers. Moreover, target abnormal returns are largely the same across the different bidder categories. In sum, there is little evidence that club deals limit bidder competition in LBOs.

Outside investors may play an active role in the buyout, protecting target shareholder interests. Peck (1996) examines block trades in 111 MBO bids between 1984 and 1987. She finds that acquisitions of equity blocks increase around MBO offers, peaking three months prior to the offer. The participation of these blockholders increases the probability that the MBO proposal fails and a rival bidder acquires the firm. For a sample of 196 LBOs in 1990–2006, Huang (2008) finds significant increases in hedge fund holdings prior to the bid. He shows that the initial buyout premium increases with the level of hedge fund ownership in the target. Thus, outside investors seem to play an important role in increasing target returns.

8.4.6. Taxes

Interest expenses are deductible and therefore reduce the firm's cost of capital. In the 1980s, management could also choose to step up the value of the assets after the buyout, increasing depreciation deductions. Kaplan (1989b) estimates the value of potential tax benefits created in MBOs using a range of assumptions about the marginal tax advantage to debt and the debt retirement schedule. Depending on the assumptions, the median value of the tax benefits from interest deductions range from 13 to 130% of the premium paid to pre-buyout shareholders, or 5 to 53% of the market value of equity two months prior to the buyout. He finds a strong positive correlation between the total tax deductions and the premium, and suggests that taxes are an important source of gains in leveraged buyouts.

See also Schipper and Smith (1991) and Newbould, Chatfield, and Anderson (1992) for further analysis of tax deductions in leveraged buyouts. Jensen, Kaplan, and Stiglin (1989) estimate that leveraged buyouts have a positive overall effect on the tax revenue of the U.S. Treasury. Simulations of the net effect of leveraged buyout activity for the U.S. Treasury are found in Chatfield and Newbould (1996).

8.5. Industry effects

Slovin, Sushka, and Bendeck (1991) propose that leveraged buyout announcements convey private information about the future prospects of the industry. Examining the stock price reaction of 940 industry rivals of 128 buyouts in the 1980s, they find a significant and positive rival average announcement CAR of 1.3%. The rival returns are greater for rivals that are smaller in size than the target firm. Phallipou and Gottschalg (2008) argue that LBO announcements signal the existence of an industrywide agency problem, encouraging industry rivals to improve their governance structure too. They document an increase in rival firm options awards, director share ownership, and CEO

turnover following LBO activity. It is not clear, however, whether their results are specific to rivals in industries with LBO activity or reflect a general trend in corporate governance.

One of the potential costs with high leverage is that it reduces financial flexibility and makes the LBO firm vulnerable to price competition by rival firms. Chevalier (1995b) examines how a leveraged buyout affects the pricing behavior of the LBO firm and its rivals in a local market, using data from the supermarket industry. She shows that prices rise when rival firms are also highly leveraged and LBO firms have higher prices than their competitors. However, prices fall when rival firms have relatively low debt levels and a single competitor controls a large market share. She finds that these low prices increase the probability that the LBO firm will exit, and suggests that rivals attempt to prey on LBO chains.

Phillips (1995) examines how financial leverage interacts with product market decisions for four different industries where a major player initiated a leveraged buyout. In three of the industries, characterized by difficult entry and high leverage of rival firms, prices increase and industry output declines with the average industry debt ratio. In the fourth industry, characterized by low leverage of rivals and low barriers to entry, prices fall and industry output increases with the industry debt ratio.

Overall, the evidence indicates that firms' leverage decisions affect industry pricing and output. See also Dasgupta and Titman (1998) for an equilibrium model explaining the interaction between capital structure and product markets, Fulghieri and Nagarajan (1996) for a model on the strategic role of high leverage for deterring entry in monopolistic markets, and Chevalier (1995a) for further evidence. Also, Parsons and Titman (2007) (Chapter 13 of this Handbook) discuss empirical studies on the interactions between leverage and corporate strategy.

8.6. *Organizational longevity and exit*

Are leveraged buyouts a transitory structure or a sustainable corporate form that lasts over a longer period of time? Jensen (1989) argues that the organizational form of a leveraged buyout is superior to public ownership for firms in low-growth industries, predicting long-lived LBO companies. In contrast, Rappaport (1990) claims that the lack of financial flexibility will ultimately harm the buyout firm and foresees a prompt return to the public equity markets. Kaplan (1991) examines 183 large leveraged buyouts completed between 1979 and 1986. He finds that the median LBO target remains in private ownership for seven years. Moreover, 45% of the LBO firms return to public ownership at some point. In a sample of 72 reversed IPOs, that is, LBOs that subsequently went public, Muscarella and Versuypene (1990) report that the average firm remains private for three years.

Stromberg (2007) studies holding periods and exits for 21,000 buyout transactions in 1970–2007. Of these buyouts 17,000 (80%) were backed by a financial sponsor. Given the large number of transactions in the 2000s, only 40% of the firms in his sample have exited. He finds that 39% of the exits are in the form of a sale to a strategic buyer. One quarter of the exits are a secondary buyout, that is, a sale to another LBO fund—an exit

form that has increased in importance over the last decade. IPOs account for 13% of the exits. Moreover, despite the significant leverage used in buyouts, only 6% of exiting firms file for bankruptcy or initiates a financial restructuring. Stromberg (2007) further shows that the median firm stays in LBO ownership for nine years, and only 8% of the firms are sold within two years of the buyout. Overall, the evidence suggests that leveraged buyouts are a long-term organizational form for many firms.

Van de Gucht and Moore (1998) use a hazard model to estimate the probability that an LBO firm returns to public ownership for a sample of 343 LBOs over 1980–1992. They show that 27% of the firms reverse through an IPO after 3.5 years on average. Another 9% of the firms are sold to a publicly held company. Almost half of the firms remain private, and 12% file for bankruptcy. Moreover, the likelihood for an IPO is higher when the industry average market-to-book ratio is rising.

Degeorge and Zeckhauser (1993) study the decision to exit a buyout through a public offering for 62 reverse LBOs in the 1980s. They find that the IPO coincides with a peak in the buyout firm's operating performance. The stock of the reverse LBOs outperform comparison firms, however, suggesting that the market anticipates the subsequent decline in operating profitability. They conclude that LBO firms choose to go public when their performance is strong. Holthausen and Larcker (1996) further show that the accounting performance of LBO firms exceeds that of its industry rivals at the time of the IPO and for the following four years. See Liu (2006), Cao and Lerner (2006), and Cao (2008) for additional evidence on reverse LBOs.

Halpern, Kieschnick, and Rotenberg (1999) conjecture that there are two types of targets in leveraged buyouts. One is the classical public target with little managerial equity and high free cash flow. The other is a target that performs poorly because the manager has too much of her wealth invested in the firm and hence is suboptimally risk-averse. Examining 126 LBOs in 1981–1986, they find that their sample clusters into two groups. The first group has low prior managerial equity and takeover premiums that decrease in managerial equity. Moreover, the buyout is led by an outside sponsor, and the LBO firm is typically sold in an IPO or to a strategic buyer. The second group has high managerial equity and takeover premiums that increase in managerial equity. These buyouts are led by managers, and the LBO firm tends to remain private. In addition, managers in this group typically increase their ownership fraction but decrease the dollar investment in the LBO firm. The authors suggest that a partition into these two different types of target firms better describes the LBO population.

Why did so many deals fail in the early 1990s? Bruner and Eades (1992) examine the failure of Revco in 1988, only 19 months after its leveraged buyout. They simulate the ex-ante probability of survival, based on historical and predicted cash flows at the time of the deal. They conclude that the company was overleveraged from the closing of the deal, with little probability of successfully servicing its debt. Kaplan and Stein (1993) contend that the buyout market overheated toward the end of the 1980s, resulting in many poorly structured transactions. They find higher price multiples and leverage ratios, increased use of junk bonds with few restrictive covenants, and more money paid up-front to managers and investment banks.

9. Conclusions

In this chapter, we review the extant literature on corporate breakup transactions and highly leveraged transactions. For each individual transaction, we survey techniques, transaction volume, valuation effects and potential sources of restructuring gains. Corporate breakup transactions are optimal when the separation of the diversified firm's divisions increases firm value. The breakup transactions range from divestitures and spinoffs, which entirely separates a subsidiary from its parent, to equity carveouts and tracking stock, which preserves some parent control. The highly leveraged transactions result in the firm taking on substantial additional debt in its capital structure. This happens in leveraged recapitalizations and in leveraged buyouts.

A divestiture is a sale of a division or subsidiary in a private transaction. Asset sales generate cash to the parent firm on the one hand, but trigger a capital gains tax on the other. The average parent firm experiences an abnormal stock return of 1% and the average buyer a CAR of 0.5% when a divestiture is announced. These valuation effects have several explanations: (i) most divestitures involve divisions that are unrelated to the parent firm, increasing the corporate focus of the diversified firm; (ii) the parent firm's investment decisions tend to improve after the divestiture; and (iii) assets are often transferred to a higher valuation buyer. Moreover, it appears that managers are reluctant to sell assets, managers in firms with better corporate governance make better divestment decisions, and the retention of proceeds is associated with inefficient investments.

A spinoff is the separation of a subsidiary through a distribution of the stock to parent shareholders. Spinoffs can be completed without any tax implications, but also do not generate any cash to the parent. The parent stock price increases by 3% on average at the announcement of a spinoff. The value creation comes from: (i) increased corporate focus; (ii) elimination of cross-subsidization leading to improved investment decisions; (iii) reduced information asymmetries; and (iv) a higher probability of becoming a target. Investors rebalance their portfolios when the parent and subsidiary stocks start trading separately. Moreover, parent managers design the subsidiary corporate charter to include more takeover defenses compared to the parent firm itself as well as other IPO firms.

An equity carveout is a partial IPO of the subsidiary, where the parent typically retains a controlling stake. It generates cash (the IPO proceeds) but no tax. The average parent firm experiences an abnormal stock return of 2% at the announcement of an equity carveout. The gains in equity carveouts are attributed to: (i) an increase in corporate focus; and (ii) a reduction of the financing costs for high-growth subsidiaries. Equity carveouts are a temporary organizational form, and most carveouts are subsequently reacquired or sold off. It is possible that the carveout generates information about the value of the subsidiary as an independent company, improving the decision to exercise the option to sell out or buy back the subsidiary.

Tracking stock is a separate class of common stock in the parent company, tracking the performance of a given division. The tracking stock generates cash if it is offered to the public and has no tax implication. The average parent CAR is 3% on the announcement of a tracking stock issue. These announcement returns are, however, difficult to explain

beyond an initial market infatuation with yet another breakup transaction. The tracking stock is a “quasi-pure” play in that it requires separate divisional SEC filings, but has voting rights in the parent. In fact, tracking stock trades like its corporate sibling divisions rather than its industry. It lends itself for expropriation since the corporate board, without legal remedy, can transfer funds from the tracked division to the rest of the company. As a result of such expropriation, most tracking stock issues have been dissolved.

A leveraged recapitalization is a large special dividend financed by debt, substantially increasing the firm’s leverage. The average abnormal stock return is 5% on the announcement of a leveraged recapitalization and 20 to 30% through closing of the transaction. The gains in leveraged recapitalizations are attributed primarily to the incentive effects of debt: recap firms substantially cut their capital expenditures and increase operating profitability.

A leveraged buyout is an acquisition by private investors financed primarily by debt. Premiums paid to target shareholders in LBOs average 37%, and announcement CARs average 16–17%. The LBO gains are attributed to several sources: (i) improved investment and operating efficiencies; (ii) increased equity-based incentives to management; and (iii) strong monitoring by the LBO sponsor. Buyouts of the 2000s seem to have somewhat less improvements in operating efficiency, but in general create value similar to LBOs of the 1980s. Recent developments include club deals (consortiums of LBO sponsors bidding together), fund-to-fund exits (LBO funds selling the portfolio firm to another LBO fund), a highly liquid (until mid-2007) leveraged loan market, and evidence of persistence in fund returns (perhaps because brand-sponsors borrow at better rates).

In this survey, we have focused on the individual transactions and their associated empirical evidence. This is also how most of the literature progresses. A major drawback of this approach is the resulting lack of analysis of alternatives. That is, when a company self-selects a divestiture, what were reasonable alternative strategies? In what sense was divestiture superior to, say, a spinoff or an equity carveout? In what sense was going private via an LBO superior to a leveraged recapitalization? Are there systematic differences between public to private LBO transactions and private-to-private restructurings? Ideally, one would use a theoretical model to structure the answers to these types of questions. Perhaps the greatest challenge to the restructuring literature is to achieve a modicum of integration of the analysis across transaction types. Also, it is difficult to evaluate the expected return from buyout investments with only limited data on portfolio companies that do not return to public status within the sample period. We expect these issues to be resolved as both theories and data become more readily available in the future.

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