

Private equity, leveraged buyouts and governance [☆]

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Available online 24 May 2007

Abstract

This paper provides an overview of the literature on private equity and leveraged buyouts, focusing on global evidence related to both governance and returns to private equity and leveraged buyouts. We distinguish between financial and real returns to this activity, where the latter refers to productivity and broader performance measures. We also outline a research agenda on this topic.

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JEL classification: G34; G32

Keywords: Management buyouts; Private equity; Total factor productivity; Financial and real returns; Corporate governance

1. Introduction

The recent resurgence of leveraged buyouts (henceforth, LBOs) and the concomitant rise of “private equity” markets in the U.S. and internationally, has been accompanied by renewed concerns about their effects (e.g. [Financial Services Authority, 2006](#)). These concerns emphasize a need to evaluate the impact of these transactions on organizations and society. Researchers

[☆] We warmly thank Michael Jensen for his contribution to the conference held at RPI in April 2006, at which the papers presented in this special issue were presented, and for his insightful comments and suggestions on an earlier version of this paper.

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typically assess the impact of such changes in ownership on firm performance by examining effects on short-run stock prices (“event studies”), long-run stock prices, returns to investors, or accounting profits of publicly-traded firms.³ This approach provides evidence on the firm-level, financial “returns” to buyouts.

On the other hand, there is considerable interest in assessing the broader impacts of buyouts and private equity. Policy decisions regarding the optimal level of buyout activity hinge mainly on their impact on economic efficiency (i.e., the “real” returns to buyouts), not on their effects on share prices or profitability (i.e., the “private” or firm level returns to buyouts). For instance, a critical policy issue concerning LBOs is whether they enhance economic efficiency. This paper reviews recent global evidence on governance and the financial and real returns to buyouts and private equity, and outlines a research agenda on this topic. In our review of the literature we discuss data limitations that have plagued efforts to analyze governance and the financial and real returns (impacts on productivity and broader performance measures) to private equity and buyout investments. To this end, we also provide an overview of the articles in this special issue, which improve our theoretical and empirical understanding of private equity, leveraged buyouts and governance. The papers in this special issue fit within three broad themes: (1) the impact of governance on leveraged buyouts returns (Nikoskelainen and Wright; Cressy et al.) and the returns to VC-led PIPEs (Dai), (2) governance in private placements (Barclay et al. and Arena and Ferris) and public to private transactions (Renneboog et al.), and (3) the determinants of governance structures in venture capital and private equity (Bernile et al.) and turnaround transactions (Cuny and Talmor). We discuss this research and provide a broad overview of related issues in this paper.

2. Financial vs. real returns to management buyouts

2.1. Financial performance of buyouts and private equity

Table 1 presents the salient characteristics of recent studies of the financial returns to LBOs. Early studies, based on share price (e.g. Kaplan, 1989; Lehn and Poulsen, 1989; Marais et al., 1989) and accounting data (e.g. Kaplan, 1989; Smith, 1990; Smart and Waldfogel, 1994), all strongly suggest that buyouts enhance financial performance. The studies summarized in Table 1 have been published since 1995 and cover both the U.S. and various European countries. Some studies consider LBOs as a homogeneous group while other studies distinguish between insider driven management buyouts (MBOs) and outsider driven management buyins (MBIs). These transactions may involve the taking private of whole listed corporations (public to private buyouts, PTPs), or buyouts involving divisions of corporations or whole private firms. In general, the studies show, using both shareholder returns data and accounting returns, and from both the level of different types of buyout and the private equity fund level, that buyouts generate significant financial returns. In the remainder of this section, we discuss these recent findings in more detail. We distinguish where studies are referring to different types of buyout.

2.1.1. Returns to shareholders

Renneboog et al. (2007-this issue) examine the magnitude and the sources of the expected shareholder gains in U.K. public to private buyout transactions (PTPs) in the second wave of buyouts from 1997–2003. These authors find that, on average, pre-transaction shareholders reap a

³ See Kaplan (1989) and Jensen (1993).

Table 1

Studies of the financial (firm-level) returns to private equity and leveraged and management buyouts and private equity: post-1995

Authors	Country	Nature of transactions	Findings
Wright, Wilson, Robbie (1996)	U.K.	Matched MBOs and non-MBOs	Profitability higher for MBOs than comparable non-MBOs for up to 5 years
Van de Gucht and Moore (1998)	U.S.	MBO, MBI, LBO	Share prices higher in aftermath of LBO
Andrade and Kaplan (1998)	U.S.	LBOs	Net effect of high leverage and distress creates value after adjusting for market returns
Halpern et al. (1999)	U.S.	MBOs and non-MBOs	The poorer the prior performance of the LBO, the higher the share premium but moderated by size of managerial equity stake; low management stake cases more likely to exit
Cotter and Peck (2001)	U.S.	LBOs	Corporate governance mechanisms substitute for debt
Goh, Gombola, Liu and Chou (2002)	U.S.	MBO, MBI, LBO	Share prices higher in aftermath of LBO
Desbrierers and Schatt (2002)	France	MBOs, MBIs	Accounting performance changes depend on vendor source of deal
Citron, Wright, Rippington and Ball (2003)	U.K.	MBOs, MBIs	Secured creditors recover on average 62% of loans in failed buyouts
Cumming and Walz (2004)	U.S., U.K., Continental Europe, other (39 countries)	MBO/MBI, LBO, and VC	Private returns to investors in relation to law quality, fund characteristics and corporate governance mechanisms
Kaplan and Schoar (2005)	U.S.	VC and Buyout Funds	Persistence in returns among top performing funds
Renneboog, Simons and Wright (2007-this issue)	U.K.	MBO/MBI	Share prices higher in aftermath of LBO mainly associated with pre-buyout undervaluation of firm, incentive alignment and increased interest tax shields
Groh and Gottschalg (2006)	U.S.	MBOs	Risk adjusted performance of U.S. buyouts significantly greater than S&P index
Nikoskelainen and Wright (2007-this issue)	U.K.	MBOs	Private returns to investors enhanced by context-dependent corporate governance mechanisms

premium of approximately 40% when the transaction is consummated. They also report that the share price reaction to the PTP announcement generates a 30% abnormal return, implying that the large premia reported in studies of the first wave of buyouts have been sustained in the recent wave of buyouts.

However, a different picture emerges when the sources of these anticipated value increases are investigated. Renneboog et al. distinguish among the following potential causes of value gains: tax benefits, incentive realignment, control reasons, free cash flow reduction, transactions cost reduction, takeover defences, undervaluation and wealth transfers. The chief sources of shareholder wealth gains appear to be undervaluation of the pre-transaction target firm, increased interest tax shields and incentive realignment. Weir et al. (2005b) also identify undervaluation as a major rationale for going private in the U.K. during this period. An expected reduction of free cash flows does not determine the premiums nor are PTPs a defensive reaction against a takeover. The U.S. evidence regarding the extent of free cash flow in PTPs relates to the first wave of LBOs and is mixed. Lehn and Poulsen (1989) found that firms going private had higher free cash flows

than firms that remained quoted. Other evidence suggests that free cash flow has no impact on the decision to go private (Opler and Titman, 1993; Halpern et al., 1999).

2.1.2. Returns to investors

Previous research has demonstrated that buyout specialists play an important role in structuring the debt used to finance the LBO and in monitoring management in the post-LBO firm (Cotter and Peck, 2001). Buyout specialists that control a majority of the post-LBO equity tend to have less debt and thus, are less likely to experience financial distress. Buyout specialists that closely monitor managers through stronger representation on the board also tend to use less debt. Active monitoring by a buyout specialist substitutes for tighter debt terms in monitoring and motivating managers of LBOs. Groh and Gottschalg (2006) also provide evidence of the financial performance of buyouts from a sample of 199 U.S. buyout fund investments from 1984–2004. The authors compare buyout returns to a control portfolio of equally risky levered investments in the S&P 500 Index. They find a positive and statistically significant alpha for buyouts (although for less favorable evidence on the performance of private equity funds, see Phalippou and Gottschalg, 2006). The authors show that buyout investors select transactions in industries with low operating risk while successfully leveraging their investments and transferring transaction risks to lenders. Their analysis illustrates the importance of risk adjustments for operating risk and leverage risk when comparing buyout returns to index benchmarks; however, differing methods used in Phalippou and Gottschalg (2006) appear to lead to different conclusions. Further research is warranted.

Nikoskelainen and Wright (2007-this issue) examine the role of corporate governance in enhancing the real returns to exited buyouts from the investor's perspective. The authors report an average (median) return of 22.2% (–5.3%), net of market index returns, based on a sample of 321 exited buyouts in the U.K. between 1995 and 2004. Their analysis indicates that a balance of interrelated firm-level corporate governance mechanisms (including gearing, syndication, and management ownership) is critical for value increase in buyouts, and the importance of these mechanisms for enhancing returns is context-dependent in relation to the size of the transaction, among other things. The authors also show that return characteristics and the probability of a positive return are mainly related to size of the buyout target and acquisitions carried out during the holding period. Furthermore, they also find that the return characteristics between insider driven buyouts and outsider driven buyins are different.

Cressy et al. (2007-this issue) analyze a sample of 122 U.K. buyouts over the period 1995–2002. They find over the first 3 post-buyout years that operating profits of companies backed by PE firms, and particularly those backed by Independent PE firms, are greater than those of comparable non-buyout companies. Cressy et al. also find that buyouts by PE firms with industry and stage specialization perform even better.

Cumming and Walz (2004) assess the returns to buyouts from the investor's perspective in an international context (see also Cumming et al., 2004). The authors compare buyout returns to the returns to other stages of venture capital and private equity investment. Their study is based on an international sample of 5114 investments in 39 countries around the world. For the subset of the buyout data from the U.S. and the U.K. which spans the 1984–2001 period, they find an average (median) return to LBOs to be 26.1% (31.4%) and an average return to MBOs to be 21.5% (18.5%) net of market index returns (country-specific Morgan Stanley Capital International (MSCI) returns based on a sample of 259 buyouts. A noteworthy finding of this study is that the average returns to earlier stage venture capital investments are significantly greater than the average returns to buyouts, whereas the median returns to buyouts are greater than the median returns to earlier stage venture capital investments.

Cumming and Walz (2004) show that cross-sectional differences in returns for all types of venture capital private equity investments largely depend on corporate governance mechanisms. Cumming and Walz (2004) also show returns are greater in countries with stronger legal conditions (in the spirit of La Porta et al., 1998), which shows the importance of the legal environment for facilitating external corporate governance mechanisms. Cumming et al. (2006) provide consistent evidence that VC/PE backed companies are more likely to achieve IPOs in countries with a superior environment in a sample of 468 VC/PE investments from 12 Australasian countries.

The cross-country differences in returns are highlighted in Fig. 1 for a subsample of the data used in Cumming and Walz (2004). Fig. 1 shows the difference in buyout returns in the U.S. versus the U.K. Mean (median) buyout returns net of the MSCI index were 21.5% (18.5%) in the U.S. and –1.0% (13.4%) in the U.K. over 1984–2001 in the 1984–2001 period. The higher returns in the U.S. versus the U.K. are consistent with the higher legality index in the U.S., and are also attributable to the larger size of the U.S. market and other transaction-specific factors that have enhanced returns in the U.S. In particular, Cumming and Walz (2004) find that the structure of the investment enhances returns: returns are high for syndicated investments (consistent with Nikoskelainen and Wright, 2007-this issue) but lower for co-investments which suggests the capital from a follow-on fund is used to bail out the bad investments from earlier funds (consistent with Gompers and Lerner, 1999). Cumming and Walz (2004) also show that convertible securities that enable periodic cash flows back to the investor prior to exit enhance returns. Fund characteristics are equally important for returns. For instance, more established funds achieve higher returns (see also Kaplan and Schoar, 2005, for consistent evidence based on a U.S.-only sample). As well, those funds that invest in fewer projects per fund manager achieve higher returns, which is consistent with other work that shows smaller portfolio sizes per manager

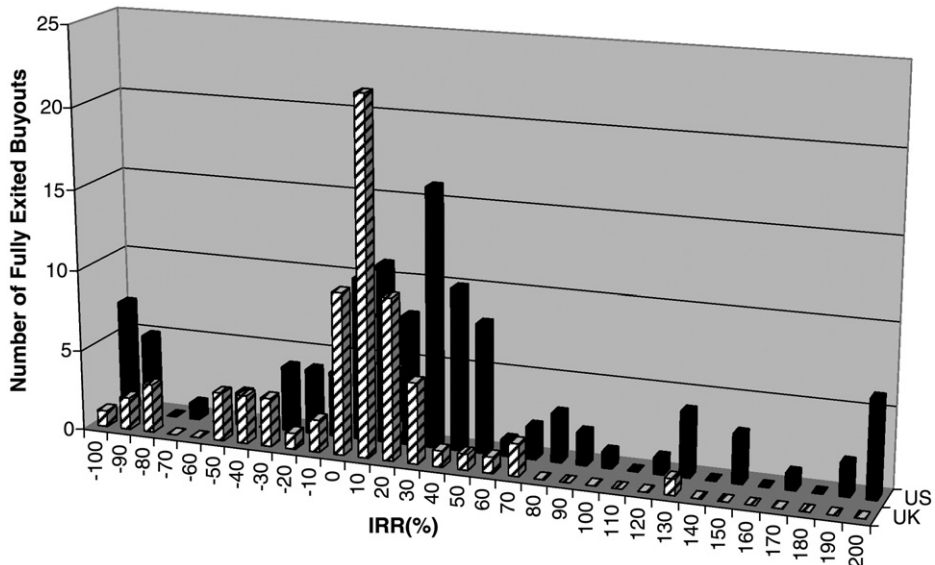


Fig. 1. Returns to buyouts in the U.S. and U.K. Notes: This figure presents a histogram of returns to buyout investments in the U.K. and the U.S. The data span 259 buyouts in the 1984–2001 U.S. and U.K. Source: derived from Cumming and Walz (2004).

implies improved screening and greater value added provided by the investor to the investee (Kannianen and Keuschnigg, 2003, 2004; Schmidt, *in press*; Cumming, 2006).

In view of evidence that portfolio size per manager is significantly related to fund returns, it is useful to assess how VC firms structure their portfolios and related financial aspects of their investments. Bernile et al. (2007-*this issue*) examine the optimal size of venture capital and private equity fund portfolios, focusing on the trade-off between larger portfolios and lower values of portfolio companies. The authors assess the structural relations between the VC's optimal portfolio structure and entrepreneurs' and VCs' productivities, their disutilities of effort, the value of a successful project and the required initial investment in a venture. They show that endogenizing the profit sharing between the parties is instrumental in analyzing the determinants of the optimal VC portfolio structure. The authors test their model using data from 42 generalist venture capital and private equity funds. They find strong support for the prediction that VC portfolio size varies non-monotonically with the size of the equity share held by the entrepreneur. Entrepreneurs' profit shares are also found to be positively related to the number of firms in the VC portfolio. Their findings thus indicate that portfolio size and profit sharing are jointly determined.

A further class of investors that need to be considered is creditors, ranging from senior secured to junior subordinated. Returns to these investors may involve either interest only or a combination of interest and the return on equity warrants (options) which are converted on exit or some other crystallization point. The returns to these investors also warrants attention when LBOs and private equity deals become distressed. Andrade and Kaplan (1998) find that for U.S. buyouts that defaulted, the leveraged buyout companies retained approximately the same value they had obtained before the buyout. During the period 1985–2005 in the U.K., there were 12,267 U.K. buyouts, of which 1431, or about 12%, had entered protection from creditors by end of 2005 (CMBOR, 2006). In U.K. buyouts that defaulted, secured creditors recovered on average 62% of their investment, and many of these companies were eventually restructured and sold as going concerns (Citron et al., 2003). Evidence on the returns to subordinated creditors in such cases is generally lacking.

2.1.3. Accounting performance

Apart from returns to investors, other evidence on buyout performance has focused on accounting measures of the firm itself. In addition to the U.S. evidence relating to the 1980s noted above, Wright et al. (1996) concluded that U.K. firms experiencing an MBO generated significantly higher increases in return on assets than comparable firms that did not experience an MBO over a period from two to five years after buyout.

In the more recently developed French market, Desbrieres and Schatt (2002) analyze a sample of 161 MBOs occurring in France during the period 1988 to 1994. The authors find that firms that were acquired outperform comparable firms in the same industry both before and after the buyout. However, in contrast to findings relating to U.S. and U.K. LBOs, the performance of French MBO firms declines after the transaction is consummated. This downturn in performance seems to be less detrimental to former subsidiaries of groups than to former family businesses, the latter forming a more important part of the French market.

One difficulty with these accounting measures is the manipulation of financial statements around the time of the buyout. DeAngelo (1986), Kaplan (1989) and Lee (1992) cast doubt on the manipulation and insider trading arguments but Wu (1997) shows earnings manipulation in 87 management buyouts during 1980–1987. Wu's findings are consistent with the view that managers manipulate earnings downwards prior to the MBO proposal. The potential benefit from earnings manipulation is estimated to be almost \$50 million on average for the sample firms.

Chou et al. (2006) provide further evidence of earnings management around security offerings. They find positive and significant discretionary current accruals coincident with offerings of reverse LBOs. In other words, managers manipulate earnings upward prior to offering stock in a reverse LBO, and this earnings manipulation has a significant effect on the post-issue performance.

Earnings manipulation impacts the market's ability to assess the quality of buyouts. Industry analysts have even been shown to have difficulty assessing the quality of buyouts. For instance, consider the 1994 restructuring of UAL Corporation (parent of United Air Lines). In this transaction, employees acquired 55% of UAL stock in exchange for \$4.9 billion in wage/benefit concessions. Gilson (2000) shows most analysts were negative or indifferent in their assessment of the deal, and some analysts even misinterpreted key terms of the deal. Further, even while UAL's stock price relative to the market and industry eventually doubled, analysts' opinions of the deal did not change.

Overall, recent evidence on buyout performance is consistent with superior risk adjusted performance relative to industry benchmarks. Buyout returns are significantly enhanced by corporate governance mechanisms such as active private equity investors and the commitment to service debt, as well as by the incentives from managerial equity ownership. However, financial performance of buyouts is difficult to measure, particularly in the case of accounting measures which have been shown to be plagued by earnings manipulation. In the next subsection, we turn to real, i.e. non-financial, measures of buyout performance.

2.2. Real effects of buyouts

A focus on the financial performance of firms involved in buyouts and private equity deals is limiting in several respects. The first drawback is that the corporation may not be the appropriate unit of analysis, since many of these transactions occur below the firm level. This is illustrated in Table 2, which presents statistics on various types of buyouts in the U.K. from the early 1980s to 2005. Although these data are for a single country, there is little reason to believe that the figures would vary substantially across countries.⁴ It is clear from the table that the majority of MBOs do not involve a transfer of ownership of an entire publicly-traded firm. Instead, the representative MBO is a divestment of a subsidiary of a large firm, or a transaction that affects only a few plants; in these cases, agency issues may relate to secondary tier management's relationship with senior management and secondary tier management's ability to explore innovative opportunities may be frustrated by the constraints of the group incentive and control system (Holmstrom, 1989; Francis and Smith, 1995). The table also shows that most buyouts involve privately-held companies where there may not be agency problems; if there are agency problems these may involve differences between family owners and owner-managers (Schulze et al., 2001; Howorth et al., 2004). The end result is that full-firm MBOs of publicly-traded companies constitute only a very small percentage of aggregate buyout activity.

Another concern relates to the use of the event study methodology to assess private returns. Many researchers have become increasingly skeptical about the "efficient markets" hypothesis, which asserts that changes in share prices following announcements of an event (e.g., a buyout) reflect changes in future real performance or economic efficiency. This is a critical issue, since market efficiency is a maintained assumption for use of this method. Alternative measures of firm financial performance based on accounting data are also problematic. As shown above,

⁴ For Continental Europe, see CMBOR, European Management Buyouts 2005.

Table 2

Number and value of various types of U.K. management buyouts: 1982–2005 (in %)

Year	Full firm MBOs of public-traded companies		Full firm MBOs of privately-held companies		Divisional MBOs		Other	
	Number	Value	Number	Value	Number	Value	Number	Value
1982	2.0	46.9	8.5	6.3	58.7	27.7	30.8	19.1
1983	0.8	0.4	10.8	8.5	63.8	74.7	14.6	16.4
1984	0.4	0.2	13.1	9.5	59.8	71.8	16.7	19.5
1985	2.7	6.6	23.2	10.1	59.0	77.8	15.1	5.5
1986	7.6	18.1	20.7	10.8	59.0	59.5	12.7	11.6
1987	10.8	17.1	27.1	8.8	45.0	62.6	17.1	11.5
1988	6.6	21.3	32.3	13.1	46.8	60.0	14.3	5.6
1989	7.0	58.1	33.4	6.8	50.7	32.8	8.9	2.3
1990	3.5	12.2	30.1	16.5	47.3	58.2	17.1	13.1
1991	2.0	3.1	26.7	16.5	47.8	62.4	24.6	18.0
1992	3.3	1.9	27.6	17.7	46.8	64.7	22.3	15.7
1993	2.6	1.0	26.8	12.0	47.0	70.5	23.6	16.5
1994	1.6	6.2	34.4	22.1	45.4	51.5	18.6	20.2
1995	1.7	1.4	39.2	29.7	42.2	52.2	16.9	16.7
1996	1.2	0.9	36.9	17.2	40.8	49.5	21.1	32.4
1997	1.8	4.6	40.6	21.2	38.0	61.0	19.6	13.2
1998	4.7	18.1	40.6	18.7	39.0	46.6	15.7	16.6
1999	7.3	27.7	36.1	13.7	40.5	38.1	16.1	20.5
2000	7.6	41.4	27.1	4.3	49.2	41.7	16.1	12.6
2001	5.5	25.2	27.8	10.6	46.7	57.7	20.0	6.5
2002	3.7	17.5	29.1	15.0	39.4	36.7	17.8	30.8
2003	5.4	23.9	25.4	13.2	38.4	42.3	20.8	20.6
2004	3.1	17.4	32.0	15.9	30.1	28.8	34.8	37.9
2005	2.9	29.9	32.7	13.0	28.3	17.3	36.1	39.8

Source: Barclays/Deloitte/Center for Management Buyout Research (CMBOR, 2006) at Nottingham University.

Notes: 'Other' includes secondary buyouts, buyouts of failed firms and buyouts from the state sector. Data cover the entire buyout market, there being no lower size cut-off, and include both private equity backed and non-private equity backed deals.

accounting profits are subject to managerial manipulation, and even when they are perfectly measured, accounting profits are not perfectly correlated with real performance.

These stylized facts underscore the difficulties of gathering and interpreting pre- and post-buyout performance data. Two concerns are that there is little publicly-available data on divisions and individual plants. Note also that the entities involved in these transactions are privately-held after the MBO occurs, even in the case of a full-firm MBO involving a publicly-traded company. Interestingly, it is actually easier to collect information on the characteristics of privately-held firms in the U.K., as opposed to the U.S., due to the existence of the FAME and ONESOURCE UK Private+ databases. Both files contain similar firm-level data from corporate financial statements, as do COMPUSTAT and the British equivalent of COMPUSTAT, known as DATASTREAM.

Amess (2002, 2003) presents U.K. evidence on the effects of full-firm MBOs on productivity, based on ONESOURCE company-level data. We assert that it is inappropriate to estimate productivity using firm-level data for two reasons. First, the construction of TFP measures requires reliable and comprehensive information on capital and intermediate materials. These variables are typically not reported in financial statements and thus, are not contained in

COMPUSTAT, DATASTREAM, or ONESOURCE files. Second, the accuracy of productivity measures also depends on the accuracy of input and output price deflators, since inputs and output should be computed in constant dollars. The problem is that many large firms have plants in diverse industries, where there may be substantial variation in price changes. However, in files such as COMPUSTAT, these organizations must be classified, at the corporate level, into a single 4-digit SIC industry. As shown in [Lichtenberg and Siegel \(1991\)](#), the use of a single set of output and input deflators can introduce substantial measurement error into the calculation of TFP measures. And finally, as mentioned previously, much MBO activity occurs below the firm level.

To overcome these limitations, some authors have asserted that it is more desirable to assess the productivity of establishments or plants before and after MBOs. Plants are physical units of

Table 3

Studies of the real effects of leveraged and management buyouts and private equity

Authors	Country	Unit of analysis	Nature of transactions	Findings
Lichtenberg and Siegel (1990)	U.S.	Plant	Divisional and full-firm LBOs and MBOs of public and private companies	Plants involved in LBOs and MBOs are more productive than comparable plants before the buyout; LBOs and especially MBO plants experience a substantial increase in productivity after a buyout; employment and wages of non-production workers at plants (but not production workers) declines after an LBO or MBO; no decline in R&D investment
Wright, Thompson and Robbie (1992)	U.K.	Firm	Divisional, and full-firm MBOs of private companies	MBOs enhance new product development
Long and Ravenscraft (1993)	U.S.	Division	LBOs and MBOs	LBOs result in a reduction in R&D expenditure
Zahra (1995)	U.S.	Firm	MBOs	MBOs result in more effective use of R&D expenditure and new product development
Bruining and Wright (2002)	Holland	Firm	Divisional MBOs	MBOs result in more entrepreneurial activities such as new product and market development
Amess (2002)	U.K.	Firm	MBOs	MBOs enhance productivity
Amess (2003)	U.K.	Firm	MBOs	MBOs enhance productivity
Bruining, Boselie, Wright, and Bacon (2005)	U.K. and Holland	Firm	MBOs	MBOs lead to increases in levels of employment, training, employee empowerment, and wages: these effects were stronger in the U.K. than in the Netherlands
Amess, Brown, and Thompson (in press)	U.K.	Firm	MBOs	Employees in MBO firms have more discretion over their work practices
Harris, Siegel, and Wright (2005)	U.K.	Plant	Divisional and full-firm LBOs and MBOs of public and private companies	Plants involved in MBOs are less productive than comparable plants before the buyout; they experience a substantial increase in productivity after a buyout ; plants involved in an MBO experience a substantial reduction in employment
Amess and Wright (in press)	U.K.	Firm	MBOs and MBIs	Employment grows in MBOs but falls in MBIs after buyout

Note: Real effects comprise changes in factor productivity, changes in employment and employee relations conditions, new product development and R&D expenditure.

firms that report data on physical output and inputs, or resources consumed in production, such as labor, physical capital, and intermediate goods and materials. Such data can be used to construct indicators of productivity, which measure the efficiency of resource utilization. Table 3 presents the salient characteristics of studies of the real effects of leverage and management buyouts. To the best of our knowledge, there are no empirical studies of private equity.

The first study to estimate the impact of LBOs and MBOs on productivity was Lichtenberg and Siegel (1990). The authors analyzed data from the U.S. Census Bureau's Longitudinal Research Database (LRD), which contained data on more than 19,000 mostly large U.S. manufacturing plants for the years 1972–1988. In this paper, the authors employed a two-stage approach to assess the impact of MBOs on TFP. In the first stage, they computed residuals from within-industry (4-digit SIC) OLS regressions of Cobb–Douglas production functions of the following form (with error terms suppressed):

$$\ln Y_i = \sum_{k=1}^K \beta_k \ln X_{ki} \quad (1)$$

where Y denotes output, X represents a vector of k inputs, and i refers to a plant. The second stage equation was:

$$\text{RELPROD}_{i,t+m} = f(\text{MBO}_{it}) \quad (2)$$

where RELPROD is the productivity residual of plant i in year $t+m$; MBO is a dummy variable that equals 1 if the plant was involved in a management buyout in year t ; 0 otherwise.

They found that MBO plants had higher total factor productivity (TFP) than representative establishments in the same industry before they changed owners. However, they also reported that MBO plants experienced significant improvements in TFP after the MBO. More importantly, the authors also found that this enhancement in economic performance could not be attributed to reductions in R&D, wages, capital investment, or layoffs of blue-collar personnel.

Harris et al. (2005), analyzing longitudinal data for approximately 36,000 U.K. manufacturing establishments, extended the Lichtenberg and Siegel (1990) study in three important ways. First, the authors analyzed a considerably larger sample of MBOs, basically the entire population of U.K. manufacturing MBOs. Their final sample consisted of 979 MBOs and 4877 plants, as opposed to 48 MBOs and 399 plants in the Lichtenberg and Siegel study. This allowed them to assess the “returns” to MBOs by industry. Second, they employed more sophisticated econometric techniques (Generalized Methods of Moments estimation) and estimated a one-stage model.

Specifically, the authors employed GMM estimation of within industry (2-digit SIC), one-stage augmented Cobb–Douglas production functions. A one stage estimation procedure provides more efficient econometric estimates of the conventional arguments of the production function and other determinants of productivity (e.g. a set of MBO dummy variables) than the two-stage approach used by Lichtenberg and Siegel (1990). The authors also included more explanatory variables than in Lichtenberg and Siegel (1990) (in terms of explaining changes in productivity). Finally, they had more recent data, for the period 1994–1998.

The authors found that MBO establishments were less productive than comparable plants before the transfer of ownership. They also reported that MBO plants experienced a substantial increase in productivity after a buyout (+70.5% and +90.3% more efficient in the short and long run, respectively) and that these post-buyout productivity gains are pervasive across industries (the average manufacturing plant experienced a substantial increase in TFP in 14 out of 18 industries). The results imply that the improvement in economic performance may be due to

measures undertaken by new owners or managers to reduce the labor intensity of production, through the outsourcing of intermediate goods and materials. This evidence suggests that MBOs may be a useful mechanism for reducing agency costs and enhancing economic efficiency.

It is also important to note that there is a paucity of evidence on organizational changes associated with MBOs and other types of mergers and acquisitions. We know a lot about how MBOs affect financial and economic performance, but virtually nothing about the impact of such transactions on work-life. To fill this gap, some U.K. and European authors have amassed an extremely rich dataset to assess the effects of management buyouts on employee “empowerment” and other aspects of the work environment.

Bruining et al. (2005) report that MBOs result in an improvement in human resource management practices in the U.K. and the Netherlands. Specifically, they found that there were higher levels of employment, employee empowerment, and wages. These effects were found to be stronger in the U.K. than in Holland and emphasize the importance of understanding different institutional contexts even within Europe.

Amess, Brown, and Thompson (in press) also conducted an extensive analysis of the relationship between empowerment and supervision and MBOs. In general, they report that employees in MBO firms have more discretion over their work practices than comparable workers at non-MBO firms. Skilled employees, in particular, were found to have very low levels of supervision at MBO firms. Amess and Wright (in press) show in a panel of 1350 U.K. LBOs observed over the period 1999–2004, indicate that when LBOs are disaggregated, employment growth is 0.51 of a percentage point higher for insider-driven MBOs after the change in ownership and 0.81 of a percentage point lower for outsider-driven MBIs. These findings are consistent with the notion that MBOs lead to the exploitation of growth opportunities, resulting in higher employment growth. The same patterns do not emerge from MBIs, typically because the latter transactions involve enterprises that require considerable restructuring.

The end result is there is a general consensus that across different methodologies, measures, and time periods, regarding a key stylized fact: LBOs and especially, MBOs enhance performance and have a salient effect on work practices. More generally, the findings of the productivity studies are consistent with recent theoretical and empirical evidence (Jovanovic and Rousseau, 2002) suggesting that corporate takeovers result in the reallocation of a firm’s resources to more efficient uses and to better managers.

The development of auctions for private equity deals and the stronger emphasis on shareholder value by corporations in recent years as corporate governance has become more active, impacts potential returns and the sources of these returns. Specifically, it may be considerably more difficult to generate the financial returns realized by LBOs during the 1980s in today’s environment through financial engineering alone. While some private equity funds are persistently good performers, not all are, as evidenced by the differences in the median returns for different performance quartiles. Limited partners may need to be convinced that a private equity fund they are considering investing in has the expertise to deliver changes in strategy and product development, rather than just financial restructuring. In the U.S., the buyout and private equity concept has become more closely associated with seeking growth opportunities than with cost reduction and asset stripping (Kester and Luehrman, 1995).

This suggests a shift to buyouts involving businesses where managers who identify entrepreneurial opportunities for new products and markets become frustrated with a bureaucratic corporate structure where proposals for new ventures are rejected by corporate management because of the lack of hard information that fits into organization-level investment appraisal systems (Wright et al., 2000). These deals have included buyouts in technology-based sectors

Table 4

Recent studies of the role of owners and corporate governance of public traded companies: Pension funds, buyouts and private equity, hedge funds and private placements

Authors	Country	Nature of transactions	Findings
Wahal (1996)	U.S.	Pension fund activism	Move away from takeover-related proxy proposal targetings to governance-related proposal targetings in 1990s; No evidence of significant positive wealth effect in cases of proxy proposal targeting nor in longer term performance post-targeting period.
Eddey, Lee and Taylor (1996)	Australia	MBOs	Takeover threat strongly associated with going private
Faccio and Lasfer (2000)	U.K.	Pension fund monitoring	Occupational pension funds hold long-term stakes mainly in smaller companies; value added of funds is negligible and holdings do not lead companies to comply with corporate governance codes or to outperform industry counterparts.
Weir, Laing and Wright (2005a)	U.K.	MBO, MBIs listed corporations	Firms going private have higher CEO ownership, higher institutional blockholder ownership, more duality of CEO and Board Chair but no difference in outside directors or takeover threats compared to firms remaining listed
Evans, Poa and Rath (2005)	Australia	MBOs, acquisitions of listed corporations	Firms going private have higher liquidity, lower growth rates, lower leverage pre-buyout, and lower R&D. Managerial ownership is higher in going privates but not significantly so. FCF is not significantly different. Takeover threat less likely to be associated with going private
Weir and Wright (in press)	U.K.	MBO, MBI, acquisitions of listed corporations	Firms going private have higher CEO ownership, higher institutional blockholder ownership, more duality of CEO and Board Chair but no difference in outside directors or takeover threats compared to firms subject to traditional takeovers
Barclay, Holderness and Sheehan (2007-this issue)	U.S.	Private placements	Buyers who signal their intention to be active in the firm are greeted much more favorably by the market than those who do not. Active placements are not associated with long-run stock-price declines. With most private placements, however, there is no public interaction between the firm and the purchaser of the placement, resulting in announcement returns that are approximately zero and later turn negative. Private placements continue to be priced at substantial discounts to the exchange price.
Arena and Ferris (2007-this issue)	U.S.	Private placements	Firms with greater managerial entrenchment are more likely to bypass shareholder approval for private placement. There is a negative market reaction to this bypassing of shareholder approval.
Cumming and Que (2006)	24 Countries around the World	Hedge funds	Countries mandating private placements, as well as countries with minimum capital requirements and restrictions on the location of key service providers have hedge funds with lower Jensen's alphas, lower Sharpe ratios and lower average monthly returns.

Table 4 (continued)

Authors	Country	Nature of transactions	Findings
Dai (2007-this issue)	U.S.	Venture capital, hedge fund investments in listed corporations	VCs typically gain substantial ownership stakes, request board seats and retain their holdings after the PIPE. Hedge funds rarely join the board of directors and typically cash-out their investment shortly after the PIPE. The share price performance of VC-invested firms is greater than for hedge-fund invested firms in both the short term and the long term. However, the valuation effect of having a VC investor in a PIPE seems to derive from a certification effect rather than a monitoring effect.

(Robbie et al., 1999). For private equity firms to play an important role in supporting these entrepreneurial buyouts may require them to hire executives with greater product market and strategic expertise to be able to assess the investment initially and to monitor it subsequently. Lower levels of debt may be necessary to enable the buyout firm to implement identified opportunities for strategic innovation.

“Busted tech” or turnaround buyouts, where owner–managers may already have the skill set and the incentives to pursue strategic innovations and/or where there may have been little monitoring over management, also offer opportunities for strategic shifts that were not feasible prior to the change in ownership (Wright et al., 2001; Cuny and Talmor, 2007-this issue). The opportunity for a buyout may arise when the firm encounters difficulties, either through liquidity problems or poor execution of the business plan due to a lack of technological expertise. In this case, a buyout may constitute a mechanism for providing superior governance expertise relating to an innovative opportunity. In the U.S., U.K. and the Netherlands, respectively, Zahra (1995), Wright et al. (1992) and Bruining and Wright (2002) find that buyouts are followed by significant increases in new product development and other aspects of corporate entrepreneurship. Bruining and Wright (2002) observe important roles for the private equity funders in keeping added value strategies on track, assisting in new ventures and broadening market focus, and in having the knowledge to be able to assess invest in product development. Cuny and Talmor (2007-this issue) provide a theory of turnarounds and show conditions under which it is efficient to replace management and syndicate with other private equity funds.

3. Alternative governance mechanisms

Our review of recent empirical evidence indicates that buyouts and private equity transactions appear to be associated with incentive and governance mechanisms that enhance performance. An ongoing debate concerns whether the gains resulting from the implementation of new governance mechanisms after buyouts can be obtained without actually taking the firm private (Jensen et al., 2006).

The nature of investors in listed corporations may have internal governance implications (Table 4). Studies suggest that pension fund activism does not substitute for the market for corporate control and is not associated with enhanced firm performance (Wahal, 1996; Faccio and Lasfer, 2000). The development of corporate governance codes (Keasey, Thompson and Wright, 2005) may lead to at least a *prima facie* convergence of internal governance mechanisms across firms. Improved internal governance may reduce the need for external governance in the form of

hostile takeovers or for PTPs. As internal governance improves, agency problems may be reduced and it becomes more difficult for managers to protect their own interests by rejecting an outside bid. [Weir et al. \(2005a\)](#) show that, before they go private, PTPs tend to separate the functions of CEO and Chair of the board less often than those firms remaining public (in contrast to suggestions by the Combined Corporate Governance Code) but do not have fewer outside directors. The authors also show that companies going private have higher CEO and outside blockholders than firms remaining public.

[Weir and Wright \(in press\)](#) report that PTPs have higher duality of CEO and board Chair than traditional acquisitions of corporations. The authors also report that public-to-private buyouts had lower valuations than traditional acquisition of listed corporations by other corporations, indicating managerial private information, and greater board ownership suggesting that outside bidders have been deterred from bidding for the firms because of the potential difficulties involved in dealing with significant board ownership. Australian PTP evidence indicates that insider ownership is not significantly higher in PTPs than for traditional acquisitions of listed corporations ([Evans et al., 2005](#)).

The papers in this issue identify governance aspects of three particular investors in listed corporations: those that acquire ownership through private placements, venture capital firms and hedge funds.

Based on rich and comprehensive data on private placements, [Barclay et al. \(2007-this issue\)](#) report that buyers who signal their intention to be active in the firm are greeted much more favorably by the market than those who do not. The authors also find that active placements are not associated with long-run stock-price declines. With most private placements, however, there is no public interaction between the firm and the purchaser of the placement, resulting in announcement returns that are approximately zero and later turn negative. Barclay, Holderness, and Sheehan also confirm that private placements continue to be priced at substantial discounts to the exchange price.

For the vast majority of firms, there is little or no evidence that purchasers of private placements position themselves to monitor management through directorships or other corporate offices, much less that they do, in fact, monitor management. Except for the active purchasers, firm value declines after the placements, which is inconsistent with certification that the firm is undervalued. Their findings suggest that for many firms, the discounts compensate the block purchasers for the consequences of their passivity. Their findings stand in contrast to those for large-percentage shareholders who obtain their blocks through negotiated trades with other shareholders and who typically become active in firm affairs, often disagree publicly with management, and facilitate acquisitions of the firms. The representative private placement seem to involve passive buyers who often do not serve as monitors of management or certify firm value.

In a similar vein, [Arena and Ferris \(2007-this issue\)](#) also investigate the influence of managerial entrenchment on private placements from the period 1995–2000, involving numerous U.S. firms. The authors report that firms with greater managerial entrenchment are more likely to bypass shareholder approval. More importantly, they find that there is a negative market reaction to this bypassing of shareholder approval. In related work, activism by hedge funds has been shown to increase value in the US in recent work by [Brav et al. \(2006\)](#) (see also [Zur and Klein, 2006](#)).

Consistent with [Barclay et al. \(2007-this issue\)](#) and [Arena and Ferris \(2007-this issue\)](#), [Cumming and Que \(2006\)](#) find evidence that hedge funds in countries which restrict hedge fund sales to institutional investors via private placements have lower Jensen's alphas, lower Sharpe ratios and lower monthly returns. Cumming and Que's hedge fund sample comprises 2937 hedge funds from 24 countries for the period 2003–2005.

Dai (2007-this issue) also report that the identity and nature of the investor matter. She examines the emerging phenomenon of private investments in public firms (PIPEs) with a particular focus on whether and to what extent venture capital and hedge fund investors add value. The author reports that VCs typically gain substantial ownership stakes, request board seats and retain their holdings after the PIPE. In contrast, she finds that hedge funds rarely join the board of directors and typically cash-out their investment shortly after the PIPE. Importantly, she also finds that the share price performance of VC-invested firms is greater than for hedge-fund invested firms in both the short term and the long term. However, she suggests that the valuation effect of having a VC investor in a PIPE seems to derive from a certification effect rather than a monitoring effect as the additional board seats requested by VC investors are negatively related to CARs and the improvement in performance following VC investment is not significantly different from those cases where hedge funds invest.

4. Unresolved issues and future research

There is ample scope for additional research on private equity and buyouts. First, it would be useful to examine the productivity impact of different types of buyouts. For instance, there is some debate about the pre-buyout agency cost problems in private firms. On the one hand, private firms could have lower agency costs than publicly-traded firms, since they are usually owned and managed by a small, concentrated group of shareholders (e.g., a founder and his family). On the other hand, there is recognition that some family firms have diverse ownership and control structures that can introduce agency problems (Schulze et al., 2001; Morck and Yeung, 2003; Howorth et al., 2004; Scholes et al., in press). Thus, further research could examine whether there are differences in the productivity effects of public to private and private to private buyouts. As well, there is the phenomenon of the “reverse” buyout (Degeorge and Zeckhauser, 1993), which occurs when an MBO goes public again. While we have evidence that private to public buyouts yield improvements in financial and accounting performance, these improvements appear to decline over time (Holthausen and Larcker, 1996). Studies also reveal that IPOs of MBOs backed by more reputable private equity firms perform better than those backed by less prestigious private equity firms (Jelic et al., 2005). It might also be useful to analyze productivity before and after reverse MBOs.

Second, additional studies should consider the effect of different institutional contexts on the types of private equity investor that dominate and the consequent implications for the longevity of investment and performance. For example, in the U.S., private equity investors in buyouts tend to be limited partners, while in Europe, private equity firms that are divisions of banks and insurance companies play a more important role. These different private equity investors may have varying investment time horizons and differences in their balance of general monitoring and specific sector skills. Hedge funds have also emerged recently as players in the buyout market. These funds have traditionally been less actively involved in their investments than private equity investors. They also require greater liquidity and have shorter time horizons than private equity firms.

Hedge funds may trigger restructuring and focus on cost reduction over the relatively shorter term. If this is the case, it raises doubt regarding the ability of hedge funds to generate long-run value in the buyout firms that they invest in. Another concern is whether hedge funds will seek to exit quickly when one of their buyout investments becomes financially distressed or whether they will become actively involved in restructuring. Different types of hedge funds may emerge with different mandates and a focus on different types of buyouts. Such funds may begin to recruit executives with private equity expertise. Further research, then, is needed to analyze the different

buyout market segments occupied by private equity firms and hedge funds, the different involvement of these types of investors in their deals and the performance impacts.

Third, there is a need to understand the human capital expertise that successful private equity firms require. There appears to be a need to broaden the traditional financial skills base of private equity executives to include more product and operations expertise. To the best of our knowledge, there have been no systematic studies of the relationship between human capital factors and financial or economic returns. As a related matter, while there has been some debate about the role of insider information and the manipulation of earnings in buyouts (e.g. [Marais et al., 1989](#); [Smith, 1990](#); [DeAngelo, 1986](#)), integrity in such transactions has yet to be examined in theoretical or empirical work (see [Jensen, 2006](#), for seminal work on topic).

Fourth, further research is needed on the debt financing aspects of private equity deals. The first wave of LBOs in the U.S. was associated with concerns about excessive leverage ([Kaplan and Stein, 1993](#)). Similarly, while the percentage of debt in buyout deals peaked in the late 1980s in the U.K. and sharply declined in the early 1990s, this has recently increased. In the average deal transacted in 2005, debt represented 51% of the purchase price ([Fig. 2](#)). This rise has prompted regulatory concerns about conflicts of interest between different classes of finance providers as well as the likelihood of collapse of large private equity deals and the impact on lenders, purchasers of the debt and orderly markets ([FSA, 2006](#)).

Relatedly, the buyout market has always been marked by innovation in financial instruments and funding structures. It is important to note that the current wave of transactions is no exception. The emergence of second-lien bonds and loans, typically with fewer covenants than first-lien debt but sharing collateral with senior debt providers, introduces the possibility of longer maturities and more attractive interest rates. Unfortunately, such debt instruments may limit future finance options by creating conflicts of interest between first- and second lien providers. Vertical strip financing, where finance providers invest both in equity and debt-like instruments is one mechanism to help resolve some of these conflicts ([Jensen, 1993](#)). At present, the trend seems to be away from vertical strip financing. For example, a separation of mezzanine (subordinated) debt and senior secured debt providers, with some subordinated debt not including equity options.

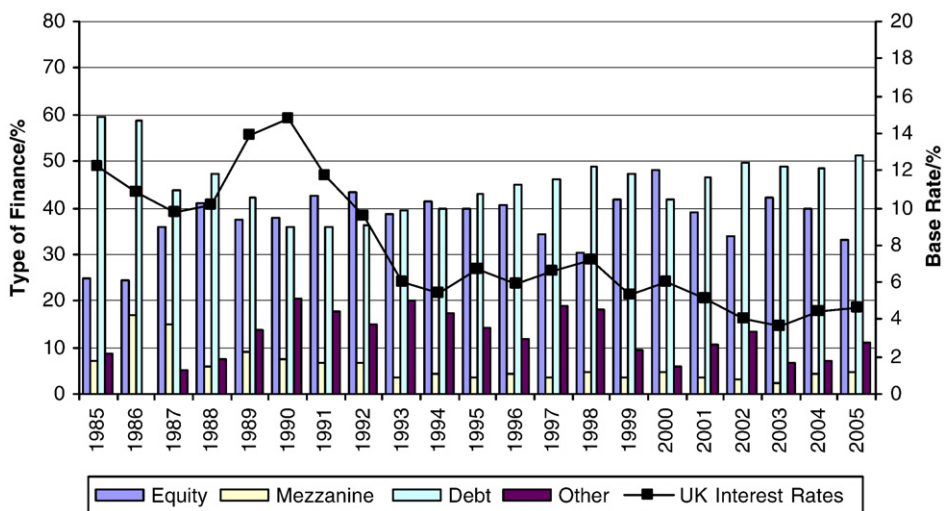


Fig. 2. Average buyout structures and U.K. interest rates. Source: CMBOR/Barclays Private Equity/Deloitte.

Further research is required to scrutinize the changing nature of vertical strip financing and its effects.

Fifth, the resurgence of club deals has enabled syndicates of private equity firms, albeit smaller than in the 1980s, to bid for very large buyouts that would otherwise be too risky to fund on their own.⁵ In addition to this risk-spreading rationale, they may bring together the diverse specialist skills required to restructure and regenerate a particular deal (Wright and Lockett, 2003). Despite the presence of “drag along” and similar provisions, coordination may be problematical when restructuring of distressed buyouts is required (Citron et al., 2006). Research is required to examine governance in syndicated private equity transactions, particularly in under-performing and distressed cases. Studies on the links between private equity and (subordinated and senior) debt providers in buyouts are limited (Cotter and Peck, 2001) and further work is needed that considers this vertical aspect of syndication, for example to examine patterns of (repeat) syndication, the influence of reputation effects on the nature and success of different syndications, differences in the financial terms in different syndications and their association with deal outturn, the nature of incentives for private equity and lender executives, and coordination of restructurings in case of distress. Andrade and Kaplan’s (1998) study showed that the distress costs of highly leveraged LBOs in the U.S. were low. Distress regimes vary across institutional environments (Armour and Cumming, 2006). As private equity firms internationalize, different distress regimes may impact both where they undertake deals but also the returns they and the debt providers who invest alongside them earn. Research is thus warranted in an international context that examines distress costs in failed private equity transactions.

A further dimension of syndicated or club deals concerns their potential impact upon competition in the market and hence the price paid for private equity deals. The U.S. DoJ has begun to turn its attention to a number of auction based buyouts, especially PTPs, going back to 2003 because of potential collusion in club deals. Attention focuses on the possibility that rival firms have been encouraged not to bid for a particular deal during an auction process in order that the bid price remains low; in return the non bidding firms would then be offered a stake in the target after terms have been agreed. Limited empirical evidence is available but Meuleman and Wright (2007) examine the relationship between industry concentration and the prices that private equity firms pay to acquire investment targets using data from the population of 988 U.K. buyout targets in the period 1993 to 2002. Their results indicate that higher levels of market concentration are associated with lower prices when using total transaction value and transaction-value-to-EBIT as dependent variables. The development of networks of private equity firms may be expected to reduce competitive rivalry, increase tacit collusion and hence lower prices. However, Meuleman and Wright (2007) find some evidence that the density of networks is associated with higher transaction values and insignificantly associated with transaction-value-to-EBIT multiples paid.

Some of the largest U.S. private equity firms now seem to be countering the possibility of increased government scrutiny with the recent formation of their own trade association, the Private Equity Council (PEC) which includes prominent private equity firms such as KKR, the Blackstone Group, the Carlyle Group and Bain Capital, as an advocate of the PE industry. The behavior of PE firms needs to be considered in the wider context of the market for corporate control and corporate governance. The ability of syndicates of PE firms to bid for larger listed

⁵ For example, in the years 1985–89, when the U.K. market was immature, the top ten buyouts were funded by, on average, ten equity providers, eleven debt providers, and two mezzanine providers. However, in the ten largest buyouts over the period 2001–2005, there were, on average, three equity providers, four debt providers, and one mezzanine provider.

corporations may add to the market for corporate control where other more traditional corporate bidders may be absent or find it difficult to acquire control. As noted above, U.K. evidence indicates that PTPs have higher duality of CEO and board Chair than traditional acquisitions of corporations and are associated with lower valuations and greater board ownership (Weir and Wright, *in press*). The potential downsides from possible collusion by syndicates may therefore need to be weighed against the performance benefits to be derived from the improved corporate governance and incentives mechanisms they introduce. Further research is required to examine these effects in syndicated private equity deals compared to other private equity transaction involving single firms or traditional acquisitions.

Sixth, as traditional forms of exit have become more difficult, secondary buyouts, refinancings and partial sales have become a frequent mechanism for private equity firms to cash-out part of their investments while at the same time keeping control of their portfolio companies. In a secondary buyout, an initial buyout deal is refinanced with a new ownership structure including, typically, a new set of private equity financiers while the original financiers and possibly some of the management exit. As shown in Table 2, such deals account for a large proportion of the value of the U.K. market and they are also increasingly common across Europe. Moreover, as buyout markets mature, we also observe tertiary and fourth time around deals (CMBOR, 2006). The changes and ownership and financing that occur each time, may be a means of enabling buyouts to achieve the new optimal long term organizational form as argued by Jensen (1993). However, these transactions raise important and challenging unresolved issues relating to performance evaluation. In particular, if the original private equity financiers were effective, how likely is it that further performance gains can be achieved?

For the incoming investors, an important issue is: will managers be buyers or sellers in the deal and what will be the impact on performance? Furthermore, when management increases its equity stake, there may be a corresponding reduction in control by the private equity firm. This may result in management embarking on risky growth strategies with little monitoring. While there are anecdotal examples of the effects of secondary buyouts (Robbie and Wright, 1990) and Nikoskelainen and Wright (2007-*this issue*) provide initial evidence that returns to exiting by secondary buyout are lower than for IPOs and sales to corporate buyers, we need additional studies that compare the performance of first time with secondary buyouts. Such findings may be of particular relevance to limited partners who may be asked by private equity firms to invest again in the same deal through a subsequent fund, and presumably at a higher price than the first time around.

With respect to exit through refinancing, in the U.K., for example, in 2005 total refinancings accounted for almost a third of the total value realized, compared to a little over a tenth in 1997 (CMBOR, 2006). Exiting through refinancing may involve either the private equity firm having the business borrow more and then paying themselves special dividends from the borrowings or engaging in a sale and leaseback of property assets to a third party and transferring the proceeds from the sale to the PE firm in the form of a dividend. This raises major issues regarding conflicts of interest with other equity holders, especially if paid in the form of fees to the buyout sponsor as seems to have been the case in the U.S. A partial sale of the portfolio company provides another means of realizing part of the initial investment without losing control. These partial sales made up just under a third of the total value realized in the U.K. in 2001, when the value of the FTSE 100 fell sharply, but have since become less frequent and now account for less than 10% of the total. The effect of these forms of exit on returns to private equity investments have yet to be analyzed.

Seventh, further research could make use of different types of data. The unit of analysis in most private equity and MBO research has been the firm. Additional empirical studies should also be

based on data at the plant/establishment level, or even at the individual employee level. A new class of datasets has emerged (Siegel et al., 2005) that link establishment data (from the economic census) to voluminous information on workers at these establishments (from the decennial census). These linked, longitudinal employer–employee data could be used to assess the relationship between buyout activity and additional real variables, such as workforce diversity and relative compensation (Siegel et al., *in press*). Such data could also provide important insights into the impacts of different types of private equity firms on real returns that would complement evidence of their effects on financial returns. Currently, most private equity and buyout research involves hand-collecting datasets. Thus, there is ample room for improving the breadth and depth of the available data, especially if information on these financial transactions can be linked to these rich longitudinal employer–employee datasets.

Finally, there is ample scope for additional research on the international buyout market. Our review of the global evidence suggests differences in the nature and determinants of the performance of private equity funds and of different types of LBOs in different countries. Further work could assess the extent to which there is a global market for buyouts (see also Megginson, 2004, for a similar analysis of the international venture capital market). Cross-country research can involve comparing the efficiency of buyouts in different countries as well as cross-border transactions. It would also be interesting to assess whether there are differences in the efficiency effects of domestic and foreign MBOs both with respect to those that are divested by foreign or domestically owned corporations, and with respect to their financing by foreign or domestic private equity funds. The effect of legal and institutional conditions and public policy towards private equity markets may also be better understood with additional research on international comparisons on the efficiency of buyout transactions.

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