



## Interfaces with Other Disciplines

## Private equity firm experience and buyout vendor source: What is their impact on efficiency?

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## ABSTRACT

Using a dataset comprising 88 Private Equity (PE) backed Leveraged Buyouts (LBOs) completed and exited during the period 1999–2008, this study sheds new light on the impact of buyout vendor source and PE investor experience on post-buyout efficiency during the first 3 years after the transaction. There are three main findings. First, we observe increases in post-buyout efficiency over time, although LBOs from different vendor source differ in terms of post-transaction efficiency levels and improvement trajectories. Private and divisional buyouts are more efficient than the average. Divisional buyouts show higher efficiency improvements than private and secondary buyouts. Secondary buyouts remain below the average. Second, multivariate analyses suggest a positive and significant effect of PE firm experience on post-buyout efficiency. Finally, the observed efficiency patterns seem to be convex, suggesting the major improvements happen in the first 2 years after the transaction.

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## 1. Introduction

Leveraged Buyout (LBO) transactions have attracted academic attention since their advent in the early 1980s (Lichtenberg and Siegel, 1990). An LBO typically involves: (1) the acquisition of an existing entity by a newly created acquisition vehicle, (2) increased leverage secured against future cash flows and/or firms' assets in order to facilitate the acquisition, (3) an increased concentration of equity held by managers in order to provide high-powered incentives, and (4) active monitoring of strategic decisions and financial performance via Board representation by Private Equity (PE) firms.

By improving the performance of target firms that are subject to a LBO, PE firms are able to generate capital gains upon exit (Wright and Robbie, 1998).<sup>3</sup> Two principal, non-mutually exclusive, theories have been advanced to explain post-LBO performance gains. First, increases in operating performance may be achieved through significant reductions in agency costs arising from debt bonding, management equity ownership, and active monitoring by PE investors (Jensen, 1993). Second, there may be wealth transfers from pre-LBO stakeholders, namely, employees and/or outgoing share-

holders to the LBO investors (Kaplan, 1989; Wright et al., 2009). Many studies have supported the first theory and shown that LBOs are associated with performance gains (Kaplan, 1989; Harris et al., 2005). Three remarks directly follow.

First, claimed operating performance gains should be related to post-buyout improvements in efficiency (Amess, 2003; Harris et al., 2005). Surprisingly, few studies investigate efficiency itself, although it is one of the fundamental determinants of profitability and stock prices (Lichtenberg and Siegel, 1990; Amess and Girma, 2009). Related to this is the question of when these improvements occur. In this field, the available evidence on the timing of the efficiency gains in the LBOs seems to be debatable. Lichtenberg and Siegel (1990) report that efficiency gains exist up to 3 years post-buyout. Wright et al. (1998) document the efficiency enhancements from the third to fifth year after the LBO. Using a sample of manufacturing firms, Amess (2003) shows that efficiency in LBOs compared to control firms is higher in both the two pre-transaction years and during post-transaction years. Second, although there is increased recognition that vendor source can impact post-buyout performance (Meuleman et al., 2009a; Wright et al., 2009), the impact on efficiency has received scant empirical attention. Finally, scholars have noted that PE firms accumulate experience of target selection, active monitoring, and provision of assistance in the development of target firms' businesses (Dimov and Shepherd, 2005; Cumming et al., 2007) although no previous study examines the relationship between such experience and efficiency.

In light of these remarks, we analyze the efficiency implications of LBOs with an emphasis on the effects of vendor source and PE

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<sup>3</sup> Potential exit routes include listing on a stock exchange, trade sale to a large industrial corporation, and a secondary buyout to another private equity firm.

investor past experience. We examine post-buyout efficiency levels and changes in efficiency between the year prior to the LBO and during the first 3 years after the transaction. We use a sample of LBO deals completed between 1999–2008 period and a sample of firms comparable to the buyouts prior to the transaction date. The vendor sources investigated in the study are: private, divisional, and secondary buyouts.<sup>4</sup>

Another distinctive innovation of this research is the measurement of post-transaction efficiency using the dynamic data envelopment analysis (DDEA) method (Färe and Grosskopf, 1996; Tone and Tsutsui, 2010). Rooted in the data envelopment analysis (DEA) literature, it draws on the microeconomic theory of firms' optimizing behavior. In this sense, it has stronger theoretical foundations than accounting ratios, used in the study of Meuleman et al. (2009a). Additionally, DEA requires no statistical assumptions about the nature of production technologies that convert inputs into outputs, which contrasts with other studies that use total factor productivity (Lichtenberg and Siegel, 1990; Harris et al., 2005) and stochastic frontier modeling (Amess, 2003). The current paper therefore provides a novel contribution to the literature by overcoming these limitations.

Our efficiency measurement also differs from recent longitudinal applications of DEA, which use the window and panel regression analyses of static cross-sectional DEA scores (Bozec and Dia, 2007), or the Malmquist indices (Färe et al., 1994; Odeck, 2009; Chang et al., 2009). Investigations of efficiency using DEA in banking and fund industries can be found in Gregoriou et al. (2005), Staub et al. (2010), and Lamb and Tee (2012). However, static scores fail to recognize the continuity in a firm's operations over time. Dynamic DEA solves this problem and provides more accurate efficiency measurements. To the best of our knowledge, this paper is the first to analyze LBO efficiency from the perspective of the best practices frontier using DDEA. The approach adopted provides further insights into the efficiency effects of LBOs than earlier studies.

Our contributions are threefold. First, we extend prior empirical research by showing that improvements in efficiency following an LBO transaction are positively related to PE investor accumulated experience. Second, we add to understanding of the heterogeneity of LBOs as our evidence indicates that the "divisional" vendor source has the strongest positive and significant impact on post-buyout efficiency. Buyouts coming from private family firms have a very limited effect compared to those from the "divisional" vendor source. The impact of secondary buyouts, however, is found to be statistically insignificant. Third, we extend efficiency analyses of LBOs and enhance the range of application of DEA methods to the novel setting of the LBO industry, in which the comprehensive measurement of post-transaction efficiency improvements is particularly relevant because of debate about the source, timing and nature of gains in LBOs.

The remainder of the paper is organized as follows. Section 2 provides a detailed discussion of the context and reasons to expect efficiency improvements in LBOs and in divisional buyouts in particular. Section 3 details the methodology implemented and data used. Section 4 presents and discusses the empirical results. Finally, we conclude in Section 5.

## 2. PE and LBOs: context and efficiency implications

### 2.1. LBO governance and its consequences

The typical LBO is characterized as increasing peak tier managers' equity holdings and increasing leverage in order to facilitate

the transaction (Thompson and Wright, 1995). If an LBO is assisted by PE involvement, the PE investors will normally have representation on the Board of Directors. These features of an LBO are expected to improve corporate governance and overcome the agency costs that arise with the separation of ownership and control (Jensen, 1993; Thompson and Wright, 1995). Owners and managers interests are realigned by increasing managers' ownership stake. Additionally, high debt levels force management team to generate cash flow and to avoid unprofitable expenditures in order to service the debt (Kaplan, 1989). Finally, the active role of the PE firm guarantees proper monitoring of target firm performance and input into strategic decisions. These features of the LBO governance structure are argued to lead to improved operating performance and consequently in the value of firms subject to an LBO. Numerous studies using accounting and stock market performance measures document considerable improvements in operating performance after the transaction (see Jensen (1993); Thompson and Wright (1995) for the early US/UK evidence, and Cumming et al. (2007) for reviews of later investigations).

According to Lichtenberg and Siegel (1990), both stock prices and operating performance are affected by efficiency. Therefore, because of the involvement of the PE firm, we can expect efficiency improvements after the buyout transaction. Additionally, these improvements are expected to be higher in buyouts than in their comparable peers. Formally:

**H 1.** LBOs will show improvements in efficiency after the transaction and these improvements will be higher in LBOs than in their comparable peers.

We also hypothesize on two aspects of an LBO that can impact on post-buyout performance. First, different ownership structures impact on levels of efficiency. Therefore, pre-buyout ownership structure will impact on post-buyout efficiency. The pre-buyout ownership structure is referred to as the vendor source (Meuleman et al., 2009a). Second, post-buyout efficiency will be related to the PE investor's accumulated experience. These two issues are discussed in the following two sections.

### 2.2. Vendor source

Different ownership and control regimes impact levels of efficiency. Therefore, the pre-buyout ownership structure will impact on the opportunities for improvements in efficiency after a LBO. We focus on the role of vendor source with respect to buyouts of divisions of larger corporations, of private family firms and of secondary buyouts as these account for the vast majority of LBO deals (CMBOR, 2010) and involve different conceptual expectations about the effects on efficiency that have hitherto been neglected.

Divisional buyouts involve the sale of a division, subsidiary, or other operating unit of a parent firm to members of the management team of a parent or subunit (Hite and Vetsuypens, 1989; Meuleman et al., 2009a). They may be initiated where incumbent management perceives opportunities for performance improvements. The latter are possible because parental control systems in large organizations may impose some element of regular budgetary targets and reporting of management accounts (Wright et al., 2000a). However, shortcomings in parental control arising from lack of fit of parent-wide systems with the contingent context of the division, and inability of the parent to devote sufficient attention to or understand distant divisions (in terms of geography and products) in large complex organizations (Wright and Thompson, 1987) create the potential for efficiency improvements. Post-buyout, more appropriate control systems are likely to be introduced by management and PE firms to ensure that performance is at a level commensurate with finance servicing commitments.

<sup>4</sup> This is representative of the overall population of the buyouts and consistent with the sample used by Meuleman et al. (2009a). See Section 3 for further discussion.

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