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Vertical divestitures through equity carve-outs and spin-offs: A product markets perspective[☆]

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A B S T R A C T

Using a product markets perspective to investigate the decision to vertically disintegrate, we find that vertical divestitures are more likely in response to positive industry demand shocks, favorable industry financing conditions, and lower parent firm relative productivity and are less likely when the potential for contracting problems is high. Conditional on vertical divestitures, equity carve-outs are more likely in environments in which relationship-specific investments are more prevalent and when the need for external funds is high, while spin-offs are more likely in larger industries and in industries that experience positive demand shocks. Our examinations of announcement-period wealth effects and changes in operating performance indicate that vertical divestitures are motivated by efficiency considerations.

1. Introduction

Since the seminal work of Coase (1937), the extant literature on the structure of vertical organizations has developed several theories to explain the determinants of the vertical boundaries of a firm.[1] On the one hand, this stream of literature has argued that common ownership over successive stages of the production or distribution process can create value for the integrating firm through product market considerations such as reduced transaction costs of negotiating with suppliers or customers and improved incentives to make relationship-specific investments and facilitation of anti-competitive strategies such as foreclosure, in which vertical integration is used to raise rival costs, or collusion, in which vertical integration improves coordination between the integrated firm and its nonintegrated rivals.[2] On the other hand, researchers

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[1] See for example, Stigler (1951), Perry (1989), Chen (2005), Joskow (2005), Sappington (2006), Lafontaine and Slade (2007), Eckbo and Thorburn (2008), Acemoglu, Johnson, and Mitton (2009), and Shenoy (2008) for extensive discussions on the economic forces behind vertical integration and disintegration.

[2] Extensive research argues that vertical integration can lead to anti-competitive strategies such as foreclosure (e.g., Salinger, 1988; Hart and Tirole, 1990; Ordover, Saloner, and Salop, 1990) or collusion (e.g., Chen, 2001; Nocke and White, 2007).

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have suggested that higher organizational complexity and its resultant negative impact on firm productivity as well as a greater need for external funds may cause integrated firms to consider shrinking their boundaries.[3]

Given the trade-offs, value-maximizing managers contract the firm's vertical boundary when the potential benefits from product market considerations are dominated by the costs arising from higher organizational complexity or a greater need for financing. Further, even when a firm decides to contract its vertical boundary, the nature of the benefits and costs determines whether it chooses to partially or fully disintegrate. While the causes and consequences of vertical integration are well studied, a paucity of empirical evidence exists on vertical disintegration. In this paper, we examine whether product market and financing considerations impact the probability of occurrence of vertical divestitures; the choice of method of vertical divestitures, i.e., equity carve-outs versus spin-offs, conditional on vertical divestitures; the announcement-period wealth effects of vertical divestitures on the parent firm, parent and subsidiary rival firms, supplier firms, and customer firms; and the changes in operating performance around vertical divestitures.

Our analysis of the determinants of vertical divestitures reveals the following findings. First, the probability of vertical divestitures increases with positive subsidiary industry demand shocks as well as low parent firm relative productivity. These results are generally consistent with the neoclassical model of firm organization proposed by Maksimovic and Phillips (2002). In addition, the probability of vertical divestitures is lower if parent firms have more significant intra-firm vertical relations or if they belong to industries containing a higher proportion of vertically integrated firms. Because high vertical relatedness is indicative of contracting problems and the potential for holdup, our results suggest that vertical divestitures are less likely in environments requiring investments in relationship specific assets to be competitive. Finally, favorable industry financing conditions, particularly in subsidiary industries, instead of parent firm internal financing constraints, are more likely to influence the vertical divestiture decision.

Conditional on vertical divestitures, our analysis of the choice of the method of vertical divestitures provides insights on factors that explain partial vertical disintegrations via equity carve-outs or complete vertical disintegrations via spin-offs. We find that partial divestitures through equity carve-outs are more likely when relationship-specific investments in the subsidiary industry as measured by its research and development (R&D) intensity are higher and in the presence of explicit product market contractual agreements between the parent firm and the divested subsidiary after the divestiture. Because R&D-intensive environments and the presence of product market agreements are likely to indicate potential contracting problems, parents seem to foresee such problems and maintain an ownership stake in the subsidiary through a carve-out. These results are consistent with Fee, Hadlock, and Thomas (2006), who find that equity ownership in supplier firms by customer firms is beneficial when expropriation and holdup problems are prevalent. In addition, we find that the probability of a vertical divestiture through a carve-out is larger when the parent firm's need for external funds is higher. Further, we find that complete divestitures through spin-offs are more likely in larger industries and in industries that experience positive demand shocks. These findings support Stigler (1951), who suggests that firms in larger industries and in growing industries strive to capture benefits of specialization, which are maximized under complete vertical separation. Finally, anti-competitive rationales such as collusion and foreclosure have no bearing on the choice between equity carve-outs and spin-offs.

The undoing of the vertically integrated structure also enables us to evaluate the announcement-period wealth effects of the parent firms, as well as related product market participants such as parent and subsidiary rival firms, supplier firms, and customer firms. On the one hand, the wealth effects to parent firms are likely to be positive because divestitures can enhance efficiency by decreasing organizational complexity. On the other hand, negative parent firm wealth effects can occur because divestitures can reduce efficiency by exacerbating the holdup problem and reducing the incentives to make relationship-specific investments. The wealth effects to parent firms can also be negative due to a decreased ability to either foreclose rival firms from critical inputs or collude with them after the divestiture. Further, the effects to the parent firms are likely to spill over to all related product market participants [e.g., Eckbo (1983) and Shenoy (2008) in the context of vertical takeovers].

For the full sample of vertical divestitures as well as for both the equity carve-out and spin-off samples, we find significantly positive announcement-period abnormal returns to parent firms, parent rival firms, and supplier firms and weakly positive abnormal returns to subsidiary rival firms and customer firms. Taken together, the positive wealth effects to the parent firms, parent and subsidiary rival firms, and supplier and customer firms are inconsistent with the foreclosure or collusion rationales. The picture that emerges from our univariate wealth effects analysis is that vertical divestitures result in efficiency gains to parent firms due to enhanced focus or specialization benefits and convey information to parent and subsidiary rival firms that they too, can take advantage of these gains by changing their own organizational structures. Furthermore, some of the resulting benefits accrue to supplier and customer firms.

A potential problem with the above interpretation of our univariate results is that our hypotheses are not mutually exclusive. We, therefore, design cross-sectional tests that enhance our ability to isolate the impact of each

[3] Eckbo and Thorburn (2008), Rajan, Servaes, and Zingales (2000), and Burch and Nanda (2003) argue that higher organizational complexity can result in value destruction due to neglect of the firm's core business, inefficient cross-subsidization, power plays of divisional managers, and poorly structured incentive compensation for divisional managers. Çolak and Whited (2007) and Lang, Poulsen, and Stulz (1995) indicate that financing considerations such as the need for capital influence divestiture decisions. Maksimovic and Phillips (2001, 2002) argue that industry demand shocks and low relative firm productivity cause industry players to reevaluate ownership of assets.