

Adding by Subtracting: The Impact of Performance Feedback on Divestitures

by

Maria Elena Vidal

Business Administration
Duke University

Date: _____

Approved:

William Mitchell, Co-Supervisor

Charles Williams, Co-Supervisor

Richard Burton

Sharon Belenzon

Laurence Capron

Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor of Philosophy
in Business Administration
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ABSTRACT

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Abstract

This dissertation examines what drives firms' divestiture activity and how it impacts their performance. Divestitures is defined here as the sale, spin-off or liquidation of assets from an ongoing organization. This dissertation seeks to understand what drives firms' reconfiguration activities via divestitures, and in turn how the divestiture activity impacts the future performance in terms of survival and growth. The dissertation identifies differences in the performance of a firm relative to their prior performance as a driver for divestitures, as well as other financial constraints. Moreover, it shows that, counter-intuitively, divestitures are a tool for growth and helps strong firms continue to grow and helps them avoid becoming a target for acquisitions; whereas in the case of weak firms, divesting does not help them avoid shutting down. This dissertation argues that divestitures are tools firms use to reconfigure and reallocate their financial and managerial resources; in the case of weak firms, divestitures are a mode used primarily to free the necessary monetary funds necessary for firms to address problems and regain competitiveness, whereas for strong firms divestitures are a tool to free scarce managerial resources that can be more efficiently allocated in areas that can provide further growth. This dissertation contributes to our understanding of what drives firms divestitures and corporate strategic decisions in general, and provides

evidence that even firms coming from positions of strength can eliminate parts of the organization as a way to grow.

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1. Chapter 1: Introduction

Business divestiture, which is the sale of all or part of an operating unit by an ongoing firm, is a common part of firm reconfiguration strategy. Much of the discussion on divestitures has focused on how weak firms use divestitures to gain or regain organizational focus, decrease overcapacity, and/or address financial concerns (Flickinger, 2009; Hoskisson & Johnson, 1992; Johnson, 1996). However, evidence suggests that strong firms pursuing growth strategies also use divestitures as a mode of reconfiguration, either alone or in combination with other reconfiguration activities such as acquisitions and alliances (Capron, Mitchell, & Swaminathan, 2001; Pashley & Philippatos, 1990). To date, we have only limited understanding of how divestiture activity varies across strong and weak firms, and in turn how divestitures impact the future performance and survival of firms. This dissertation argues that divestiture activity increases with both weak and strong performance, with key differences in the nature and pressures for divestitures by weak and strong firms. Moreover, this dissertation argues that divestitures help weak firms survive and strong firms continue to grow.

I frame my studies of divestitures by drawing on the resource-based view of the firm (RBV) and performance feedback theory as they have focused on understanding how firms reconfigure their resources and how feedback triggers reconfiguration

activities, respectively. I use these appropriate lenses to shed light on how divestiture activity varies depending on firms' prior performance relative to their aspiration levels. The resource based view and its related dynamic capabilities arguments suggest that ongoing reconfiguration of resources can help firms remain competitive (Capron, Dussauge, & Mitchell, 1998; Moliterno & Wiersema, 2007). Research in this literature has examined different modes of resource reconfiguration, particularly the creation and expansion of the resource base via internal development (Capron & Mitchell, 2009), acquisitions (Capron & Mitchell, 2009; Hennart & Park, 1993; Karim & Mitchell, 2000), and alliances (Anand & Khanna, 2000; Das & Teng, 2000; Dussauge, Garrette, & Mitchell, 2000; Kale & Singh, 2007).

A smaller part of this literature also argues that divestitures are important elements of reconfiguration activities, commonly viewing divestiture as part of retrenchment strategies by struggling firms (Chakrabarti, Vidal, & Mitchell, 2011; Duhaime & Grant, 1984; Flickinger, 2009; Hoskisson, Johnson, & Moesel, 1994), but also recognizing their role in helping firms maintain positions of strength by freeing up financial and managerial resources for new activities (Capron et al., 2001). Strong firms can use divestitures to eliminate less attractive operations and/or to avoid declining stages of industry life cycles (Pashley & Philippatos, 1990). Penrose (1959) argued that a firm's growth is constrained by its managerial capacity; drawing from this argument, I

argue that divestitures help strong firms free managerial resources and, thus, help maintain their strong performance. However, the RBV, by itself, is not enough to identify how divestiture activity might vary with firm performance; therefore, I turn to performance feedback theory to extend the argument.

The performance feedback lens suggests that the extent to which a firm engages in organizational change, such as resource reconfiguration, is influenced by a firm's performance relative to its aspiration levels (Greve, 1998). Aspiration level is a reference point or set of reference points, such as comparison to a firm's historical performance and/or to the performance of peers, that firms and managers use to determine whether there is a gap between their current performance and their aspirational performance (Bromiley, 1991); performance gaps may be negative or positive. A negative performance gap occurs when a firm's performance is lower than that of relevant aspiration levels; in parallel, a positive performance gap occurs when a firm's performance exceeds an aspiration level. Most of the performance feedback discussion has focused on negative performance gaps, suggesting that firms with performance below their aspirations face both internal and external pressures, particularly related to their financial status, to engage in resource reconfiguration activities in an attempt to garner financial resources and/or increase their business effectiveness (Greve, 1998; Zuckerman, 2000).

Performance feedback pressures are also relevant for firms with positive performance gaps. A seemingly intuitive view is that firms with positive performance gaps – i.e., firms coming from positions of strength – will be risk averse and less willing to take the risk of engaging in resource reconfiguration. However, a more nuanced view, which this chapter will develop, is that firms that have positive performance gaps also face pressures to continue improving and/or maintain their superiority that may incentivize them to incur reconfiguration risks. Strong firms face external pressures from analysts, shareholders, and others that expect them to at least maintain, but preferably exceed, their already superior performance, along with additional internal pressures from executives and other stakeholders (Hopkins, 1991; Montgomery & Thomas, 1988). Combining these ideas with the resource-based logic suggests that firms with positive performance gaps will tend to use divestitures to help free managerial and other resources that can be used as strong firms attempt to maintain their superior positions.

The studies test and extend the arguments with two datasets using longitudinal analyses of publicly traded firms that operate in the pharmaceutical industry. The first chapter, which focuses on how performance feedback gaps impact the extent and nature of the divestiture activity of firms, uses a unique dataset of 101 publicly traded firms from 1999 to 2009. The second chapter builds on this data and expands it to a total of

621 firms in the same industry from 1950 to 2013. This context is particularly interesting because it is an established industry in which firms actively reconfigure their resources using a wide array of methods (e.g., internal development, licenses, alliances, acquisitions, and divestitures). Firms also vary widely in terms of their performance, which allows us to examine the extent to which performance feedback impacts the divestiture activity as part of the resource reconfiguration of firms. Finally, the time frame allows us to track all publicly available companies in the industry for over 60 years, thus providing relevant information on survival and exit. Hence, the sample provides a relevant setting to test the arguments.

This dissertation contributes to both framing literatures. First, it contributes to the resource-based literature by shedding light on the determinants of resource reconfiguration, helping us understand when firms pursue divestiture activity. The first chapter analyzes divestitures as part of a proactive reconfiguration strategy and shows that strong, profitable firms engage actively in divestitures. The second chapter analyzes the impact that divestitures have on the survival of firms, and shows that strong firms that divest are more likely to survive in the industry relative to strong firms that don't divest. It also shows that weak firms that divest are more likely to become targets for acquisition by other incumbents in the industry, whereas weak firms that do not divest are more vulnerable to dissolution. These chapters thus provide a

complementary view to the traditional “Penrose effect” (Penrose, 1959), suggesting that firms not only build on the current set of resources they own, but that they can use divestitures as a tool to free financial resources and release the managerial capacity to allow the firm to improve or maintain their performance.

Second, the work contributes to performance feedback theory by analyzing the impact of aspiration levels on organizational change at different levels of the organization. The first chapter shows that firms that have positive performance gaps engage in disruptive activities by reconfiguring their resources via divestitures. Empirically, the chapter contributes to the performance feedback literature by using multiple aspirations measures to assess aspirations (both historical and social aspirations) and by developing a set of multiple peer groups within an industry that are relevant for determining social aspirations. This dissertation examines how historical and social aspiration levels impact one type of organizational change – divestitures – in order to gain a better understanding of how firms react to positive and negative performance feedback pressures, and in turn how those strategic decisions to reconfigure the resources impact the survival and growth of firms.

Firms obtain opportunities to gain competitive advantages by having superior resources (Barney, 1991; Wernerfelt, 1984). In turn, firms can attempt to maintain or improve their competitive position by reconfiguring their resource base, where

reconfiguration includes both recombining existing resources and adding new ones (Helfat et al., 2007; Teece, Pisano, & Shuen, 1997). Extensive research has focused on reconfiguration of the resource base, particularly on the impact of acquisitions and alliances on organizational change and performance. The literature has shown that firms can develop skills to select targets for acquisitions and subsequently effectively integrate the acquired firms into the operations (Capron & Mitchell, 2007), and to select and manage strategic alliances (Anand & Khanna, 2000; Kale, Dyer, & Singh, 2002; Kale & Singh, 2007) as they undertake ongoing changes to their resource bases.

In addition, research has paid some attention to divestiture activity as a mode of reconfiguration. Divestiture activity includes selling off all (full divestiture) or portions (partial divestiture) of existing business units, including liquidating substantial sets of assets (Duhaime & Grant, 1984; Kose & Ofek, 1995). Full and partial divestitures include sell offs to other business organizations and spin offs of units into independent operation. Greater divestiture activity in a given period means undertaking more divestiture events (i.e., any given divestiture sale) and/or divesting assets with greater financial value.

The most common view of divestitures has considered them as a mode of reconfiguration aimed at retrenchment by firms with financial and/or competitive weakness. By selling off, spinning off, and/or liquidating resources firms can free

financial and managerial resources in an attempt to retrench and improve. During the late 2000s, for instance, Kodak sold off digital camera, health, light management, and other operating units as it attempted to recover from declining profitability.

Divestitures may help weak firms regain competitiveness by raising financial resources and/or reducing excess capacity that may be damaging their competitiveness (Villalonga, 2004). Moliterno and Wiersema (2007) found that divestitures are a response to poor performance, in which firms often eliminate high-valued resources, suggesting that struggling firms use divestitures as a mode to gain financial resources. By divesting, firms can free financial resources that can be used to repay debt or reinvest in new growth opportunities (Brown, James, & Mooradian, 1994). Divestitures also allow firms to regain organizational focus, such as after failed diversification strategies or expansion beyond a firm's optimal size (Hoskisson et al., 1994; Markides, 1992). In addition, firms can use divestitures to eliminate resources that are underperforming relative to the industry or to other products in the portfolio of businesses (Montgomery & Thomas, 1988). In sum, retrenchment strategies and divestitures in particular are commonly viewed as tactical responses to free resources necessary to address operational and/or financial concerns.

In addition to weak firms, divestitures can also be used by firms coming from positions of strength as part of their reconfiguration strategies aimed at achieving

ongoing growth. Managers may spin off or sell off resources to facilitate internal investments or future acquisitions, as well as to separate operating units that do not fit well together within the organization, thereby freeing resources that can be reinvested in areas with new opportunities (Pashley & Philippatos, 1990). In 2011, for instance, Cisco spun off Fibercore, a U.K.-based maker of specialty optical fibers for airliners and space exploration vehicles, well outside Cisco's core network router business; Cisco had acquired the firm as part of an earlier acquisition. More generally, Capron, Dussauge, and Mitchell (1998) showed that firms gain performance advantages when they use divestitures in combination with their acquisition activities to eliminate redundant resources.

The idea that divestiture is a useful strategy for strong firms builds on the traditional resource based view of firm growth. Penrose's (1959) central idea proposed that firms' growth is possible as the firm builds and expands on its current set of resources and, perhaps most critically, that their growth rates are constrained by the managerial capacity. This dissertation proposes a complementary view of the so called "Penrose effect" for growth by arguing that firms can use modes of reconfiguration not just for immediate expansion, but also to free resources that constrain their managerial capacity. Excelling firms, in particular, can use divestitures as a way to free financial and managerial resources to reinvest them in other areas of the organization. Rather

than using the freed resources to address immediate financial or competitive concerns, firms coming from positions of strength can reinvest the freed capacity in areas that they expect will provide profitable growth opportunities. In this way, strong firms can use divestitures as a tool to avoid or at least postpone the decline of their business and extend its life cycle by eliminating operations that may no longer be attractive to the firm because they do not offer high priority trajectories for growth.

In sum, divestitures are a mode of reconfiguration for both weak and strong firms. Weak firms can use divestitures to gain resources that can help them to survive. In parallel, divestiture can help strong firms free resources that can be invested in more fruitful areas of growth. The next chapter develops a set of core hypotheses around the mechanisms that drive divestiture activity, followed by research questions for exploratory analysis that will help further assess the mechanisms that underlie the predicted relationships between performance gaps and divestiture activity. Chapter three will develop the logic and provide hypotheses on the impact of this divestiture activity on firm growth and survival.

2. Chapter 2: The Impact of Performance Feedback on Divestitures

The performance feedback literature integrates ideas central to the behavioral theory of the firm (Cyert & March, 1963) and prospect theory (Kahneman & Tversky, 1979) to suggest mechanisms that embody behavioral responses to feedback.

Performance feedback arguments posit that managers make decisions regarding future organizational changes for their firm after comparing their organizations' performance to relevant reference points (Bromiley, 1991; Cyert & March, 1963; Kahneman & Tversky, 1979). Managers may assess the performance of their organizations relative to multiple reference points (Gooding, Goel, & Wiseman, 1996; Greve, 1998; March & Shapira, 1987). Traditionally, the focus has been on two reference points: historical aspiration levels (relative to a firm's own prior performance) and social aspiration levels (relative to a firm's peer group). The performance feedback literature suggests that firms with a negative performance gap – firms that have performance below their historical and/or social aspiration level – will engage in a search process to find a solution that they hope will improve their future performance (Cyert & March, 1963). This search process often leads the firm to engage in risky behavior (Bromiley, 1991; Kahneman & Tversky, 1979), such as disrupting their ongoing activities as they pursue organizational changes (Greve, 1998, 2011).

External and internal forces pressure managers in firms with negative performance gaps to search for solutions that may improve their performance. Analysts, shareholders, potential partners, and other external stakeholders will pressure managers as they scrutinize the organization and make recommendations that can affect multiple aspects of the firm including access and cost of capital, access to strong suppliers, risk of being acquired by another firm, and risk of liquidation (Zuckerman, 2000). In turn, senior executives and other internal stakeholders will press for substantial changes. As a firm is pressured to improve its performance, its managers become more willing to take on risks (Fiegenbaum & Thomas, 1988). Greve (1998) and others have shown that firms that are below their aspiration levels take on more risks as they aspire to shorten the gap between their current performance and their reference point.

Divestitures will be a relevant part of the solution set for managers of firms that face negative historical or social performance gaps. In part, divestitures can free managerial time to attend to a smaller set of activities, potentially becoming more successful as a result of the greater focus. Perhaps even more importantly, divestiture helps firms raise financial resources necessary to address the competitive pressures they are facing or, at least temporarily, live off their past investments. Financial resources are particularly important in the case of below-aspiration firms. Even firms that remain profitable as they fall below historical or social aspirations often face constraints in their

access to external financing via debt and capital; stockholders, financial institutions, and analysts pay close attention to firms' performance and consider reference points in making decisions regarding their investments in those organizations. As such, firms that face negative performance gaps have incentives to reorganize by engaging in divestiture activity – including divesting more parts of their business and undertaking greater magnitude of divestiture – to free managerial and financial resources in attempts to improve their performance or, at least, put off failure.

H1: Firms with a greater negative performance gap will engage in more divestiture activity.

In parallel, performance feedback theory traditionally suggests that firms with a positive performance gap – i.e., firms whose performance is above their aspiration level – have less incentive to engage in search processes, and as such will be less likely to engage in the risks of organizational change. Strong firms, in this view, have less incentive to engage in disruptive reconfiguration activities because they may damage their superior performance. Strategic changes have inherent difficulties and risks; managers may choose to avoid changes even if they may maintain strong performance in the future (Carroll, 1984, 1993). However, as I will argue next, firms with positive

performance gaps may also face pressures just as strong as struggling firms to maintain their superior position and, in turn, undertake risky activities such as business divestitures.

Firms with superior performance, whether relative to their historical levels or compared to peers, may actually face strong pressures to maintain that level of performance. These pressures can arise from both external and internal constituents. External pressures to maintain strong performance arise because excelling firms are under considerable scrutiny by multiple stakeholders, such as market analysts, the business press, suppliers, and others who influence investment activities, partnerships, and other key business resources. Excelling firms are under continuous oversight by analysts who provide future looking expectations for the company, and failing to meet the aspirations can significantly injure the company's outlook. For example, in July 2012, Apple Inc. announced third-quarter revenues for 2012 of \$35 billion; even though their profit rose 20.5% with increased sales of iPhones (up 28%), computers (up 2%), and iPads (up 84%), analysts viewed this as a negative outcome because they had expected third-quarter revenues to be \$37 billion – and the company's stock price fell almost 5%. This example illustrates how external expectations pressure excelling companies to maintain and often exceed their current level of superiority.

These external pressures affect all firms, but public firms are particularly likely to face strong pressures due to the large amount of information they have to disclose to institutional regulatory bodies. Public firms face particularly strong external institutional pressures from security analysts, since in their role of intermediaries in public equity markets they assess public firms' performance and periodically report forecasts of the firms' stock price recommending investors to buy, sell, or hold the stocks (Benner & Ranganathan, 2012; Westphal & Clement, 2008). Public firms and their managers face sufficiently strong pressures to meet their internal aspirations and external expectations that they may even engage in financial misrepresentation as a way to maintain the appearance of superiority (Harris & Bromiley, 2007) as well as other illegal behavior (Mishina, Dykes, Block, & Pollock, 2010). Even private firms, though, face pressures from financial institutions and others who are knowledgeable about their performance. For instance, private firms have to rely mostly on the banking system to access external sources of capital and in turn need to disclose information regarding their financial standing periodically, which in turn determines the amount they can borrow from these institutions as well as the cost at which they can obtain financial resources. Thus, both public and private firms face considerable pressures from the environment to maintain their superior level of performance.

High performing firms also face internal pressures to continue performing above aspirations. In part, internal pressures from senior executives and other internal decision makers arise as a response to the external pressures. In addition, internal stakeholders commonly take substantial intrinsic pride in their superior performance and want to maintain the superiority. Managers and other employees themselves may be dissatisfied with the current performance of the firm (e.g., Ambrosini, Bowman, & Collier, 2009), or the board of directors may find that the performance of the firm may improve further under a different style of manager, thus pressuring executives and in turn the organization to maintain its superior performance.

Such internal and external forces will pressure managers of excelling firms to maintain and continue exceeding their aspirations, which will trigger incentives to engage in activities leading to organizational change. In particular, excelling firms can use divestitures as a mode to enhance subsequent growth. Given the internal and external scrutiny of excelling firms and that expectations are set based on their performance, divestitures can free financial and managerial resources that are necessary for firms to maintain their growth and superiority. Excelling firms may find their growth rates constrained by the attention capacity of management, and divestitures can be used to free managerial resources and in turn allow firms to retain this position. Divestitures can help strong firms maintain high levels of performance by freeing up

managerial and financial resources to be reinvested in more profitable areas. In the case of excelling firms, divestitures allow managers to free up capacity that can be reinvested in the search for new products or businesses or on the improvement of current products, that will ultimately lead to higher long-term growth rates for the firm.

Excelling firms can also use divestitures to simplify the organization. By divesting, excelling firms that may have become too complex can simplify their operations and avoid being undervalued by external institutional forces. Internally, managers can use divestitures to fine-tune the portfolio of businesses or products that the organization has, as the complexity may become too large for managers to efficiently manage the different businesses and may opt to focus their efforts in areas that can provide the organization with long-term growth. For example, a pharmaceutical firm may opt to divest a drug from their portfolio of businesses in an attempt to free managerial capacity as well as financial resources that can be reinvested to fund the development of new drugs that may improve the future long-term expectations of profitability for the company. Similarly, strong firms may use partial divestitures as part of the process of gaining greater clarity in their operations. General Electric, for instance, reorganized its financial services business in the early 2000s, selling off elements of that business even as it maintained a strong and growing presence in the financial services sector.

Divestitures can be used by strong firms as a tool in combination with their expansion efforts. As excelling firms expand, they will typically need to eliminate redundant resources and free up managerial capacity to tackle the expansions. Expansion and growth requires managerial attention to be focused. Acquisitions, alliances, and major internal projects all require substantial managerial due diligence as well as attention to the internal and external pressures faced when expanding. Divestitures can free up managerial attention that can be reinvested in areas of expansion, which can help the firms maintain their level of superiority.

H2: Firms with a greater positive performance gap will engage in more divestiture activity.

These hypotheses imply an intriguing comparison to firms with moderate performance: Firms whose performance-aspiration gap is only moderate may face weaker incentives to pursue reconfiguration activities than firms with substantial negative or positive aspiration gaps. Managers of moderately performing firms will face fewer internal and external pressures to reconfigure, as do managers facing threats on their firms' survival. Moreover, perhaps counter-intuitively, moderate-performance firms may face less internal and external pressures to reconfigure compared to excelling

firms, because they commonly incur less scrutiny and have lower expectations than their stronger competitors. Pursuing reconfiguration strategies by moderate-performance firms may cause disruptions that could damage their future performance, worsening the situation for firms with slightly negative aspiration gaps and potentially risking the slim superiority of firms with slightly positive gaps. Hence, the logic suggests that moderate-performance firms will tend to be less active in divestiture activity than firms at either extreme.

Firms at either extreme of performance gap, then, will tend to be more active in pursuing divestitures, but the nature of the resources being divested may vary for strong and weak firms, particularly in terms of full and partial divestitures of business units. As we noted earlier, partial divestitures are sales of portions of business units. Partial divestitures differ from full divestitures of business units in two key ways. First, partial divestitures typically generate relatively fewer resources – both financial as well as managerial – than full divestitures. Thus, partial divestitures serve as a tool to fine-tune existing operations, eliminating redundant or ill-fitting resources such as facilities and product lines, thereby freeing operations and attention for new areas of growth. Second, partial divestitures may require more time to implement than full divestitures, because firms and managers will need to disentangle the operations from the rest of an ongoing organization.

Given the differences in financial pressures that they face, we expect that strong firms will be more likely than weaker firms to pursue partial divestitures, while weaker firms will have a tendency toward full divestitures. Stronger firms typically have more time to respond to pressure than weaker firms; they are more likely, on average, to pursue partial divestitures to fulfill their needs for ongoing adaptation. Weak firms, on the other hand, typically face an urgent need to raise capital via divestitures. Their financial constraints make it difficult and costly for them to raise money in the capital markets. Hence, partial divestitures with their smaller scale and more limited immediate financial pay-off often will not suit the current needs of weak firms; instead, they will often need to pursue full divestitures, in order to gain substantial financial resources and to do so quickly. This logic leads to two complementary predictions.

H3a: Negative performance gaps will have more impact on full divestitures than on partial divestiture activity.

H3b: Positive performance gaps will have more impact on partial divestitures than on full divestiture activity.

At the same time, there is likely to be a distribution of partial and full divestitures among both strong and weak firms. Weak firms may face constraints in finding buyers for their full units and may be forced to pursue partial divestitures in order to raise financial resources quickly. In parallel, strong firms sometimes sell entire units that no longer suit their strategic goals. Therefore, H3a and H3b reflect relative tendencies rather than absolute distinctions.

In sum, I argue that firms' performance gap influences the extent of firms' divestiture activities. Firms with substantial negative performance gaps will engage in more divestitures as a way to free financial resources and reinvest them in retrenchment efforts to address competitive and financial weaknesses (H1). At the other extreme, due to the extensive scrutiny and internal and external pressures to remain superior, excelling firms will tend to actively pursue divestitures as a way to fine-tune their business portfolios and free managerial capacity to engage in new activities that offer potential for future profitability (H2). Moreover, given the different pressures these firms face, the nature of the divestiture activity will vary; excelling firms will pursue more partial divestitures compared to struggling firms (H3a), while struggling firms will be more likely to pursue full divestitures (H3b).

The argument leads to two additional research questions. The questions concern direct financial pressures versus more general aspirational pressures, as well as the

relative impact of historical and social aspirations. Addressing these questions in the empirical analysis will help shed light on the comparative mechanisms that lead to divestitures by strong and weak firms.

First, there is an open question about whether direct financial constraints or more general aspirational mechanisms drive risky behavior such as divestiture activity, particularly by struggling firms. The traditional logic of performance feedback theory suggests that aspiration gaps will directly influence divestiture activity; if so, divestiture activity would increase as performance falls. However, the effect might tend to show up in combination with complementary pressures. For weak firms, in particular, it is possible that the divestiture pressures are especially strong for firms that face immediate financial pressures, such as low liquidity. In this case, divestiture activity by struggling firms might be reflected through financial weakness, rather than arising from increasing performance gaps. Hence, the analysis will explore the relative impact of the aspirational and financial mechanisms for struggling firms.

Second, the chapter will investigate possible differences in firms' divestiture activity depending on the focus of the attention on historical versus social aspirations. Both historical and social aspirations are relevant reference points that managers consider when making strategic decisions regarding the reconfiguration activities of their firms, but it is an empirically and conceptually intriguing question to see how the

position of firms relative to these alternative aspiration points impacts decisions regarding their divestiture activity. Peer-relevant comparisons are often noisy because even close competitors typically have different portfolios of business activities, so that managers and external stakeholders face substantial ambiguity in comparing performance across firms; this might lead social aspirations to have a less impact in the reconfiguration activities of firms than historical aspirations. On the other hand, historical aspirations may not consider important environmental changes that may be reflected in the aspirations set by the current performance of relevant peers; if so, then social aspirations might be more relevant for managers when making decisions regarding their reconfiguration activities.

The next chapter builds on these predictions, and investigates the impact the divestiture activity, both independently as well as in combination with firm strength, has on the growth and survival of firms.

3. Chapter 3: The Impact of Divestitures on Survival and Growth

Divestitures are a critical mode of reconfiguration for firms. Prior literature investigating divestitures has usually to consider divestitures as a reactive strategic action to some failure by weak firms (e.g., Markides, 1992; Hoskisson and Johnson, 1992; Bergh, 1995); while more recent studies suggest that divestitures may have a more proactive role as a tool that allows to free up resources that can be reinvested in new opportunities (Capron, Mitchell & Swaminathan, 2001; Berry, 2010, Kaul, 2012) and that enables adaptation (Helfat and Eisenhardt, 2004). Divestitures are considered to lead to improvements in efficiencies, and as a mechanism to reduce potential distortions in investments within a firm (Gertner, Powers & Scharfstein, 2002), allowing firms to convert unattractive assets into financial resources that could strengthen the financial or operational position of firms (Hamilton and Chow, 1993). Moreover, divestitures might alleviate firms from potential diseconomies of scale and/or scope for both the company as well as the divested resource. However, it is still not clear the impact that divestitures from positions of weakness – low performance – or positions of strength – high performance – has on firm survival and subsequent growth. This chapter explores how divestitures can help strong firms to continue their path to grow, or help weak firms avoid being dissolved.

Firm survival and growth have been at the central focus of strategy and the Resource-Based View of the firm. Penrose (1959), in her “The Theory of Growth of the Firm”, collected and developed ideas regarding the importance of growth on the survival of firms, and proposed that firm growth is a key determinant of firm survival. The so-called “Penrose effect” (1959) argues that firms grow based on the collection of resources they own, and that their rate of growth is constrained by the capacities of the existing management. Firms, then, in order to remain competitive and survive need to make strategic decisions to enhance firm growth and thus increase their chances of survival. The extent to which firms can achieve growth, however, depends on whether they are coming from positions of weakness or strength.

3.1 Divestitures, Strength and Survival

Divestitures are a critical mode of reconfiguration for both weak and strong firms. Divestitures allows weak firms to address prior strategic mistakes, eliminate overcapacity, or refocus on the core competences of the firm (e.g., Markides, 1992), whereas strong firms can proactively use divestitures as a way to internally reallocate resources to the most profitable areas or even to tackle new opportunities. Divestitures may help weak and strong firms achieve reconfigurational goals to retrench and regain competitiveness in the market or retain their competitiveness and remain strategically

active, respectively. I argue, then, that divestitures can help improve firms' chances of survival as they allow firms to retrench or to more efficiently internally reallocate the capital, thus improving their competitive and financial position in the future periods.

Firms risk being shut down when they do not adapt to the environment and fail to meet the expectations of the market. In order to remain competitive and survive, firms need to reconfigure their resources to reallocate them to those areas that will provide the best opportunities for survival, retaining control and access of those specific resources that can let the company achieve a sustained competitive advantage in the future (Barney, 1991). In their efforts to avoid being shut down, firms can use different modes of reconfiguration to avoid inertia and adapt more rapidly to the changing environment, and thus meet the market expectations (Helfat et. al, 2007). Divestitures allow firms to eliminate resources from the firm by selling them, spinning them off or liquidating them, raising financial resources and freeing managerial capacity that can be reinvested in other or new areas of the organization. Firms, then, can use divestitures to part from resources that may no longer fit with the environment, with the direction the firm is going; divestitures can also allow firms to simply be more efficient when reallocating their resources to those areas that will provide with sustained competitive advantages, thus improving the position of the firm and reduce the chances of being dissolved. I propose:

H4: The more divestitures firms undertake, the less likely they will shut down.

Divestitures can help firms retrench avoid having to dissolve their operations completely; however, there might be a maximum amount of divestitures that firms can undertake to avoid failure. A threshold might exist on the positive impact that divestitures may have on avoiding failure, as selling abundant amount of resources may leave the firm with insufficient assets to efficiently allocate them, or may part from all resources that could provide growth opportunities for the future, which would put them at risk of long-term failure. This threshold of divestitures is left as an empirical question, and will be explored in the analysis and results section. I will investigate whether there is a declining monotonic or a non-monotonic effect of divestitures on the likelihood of dissolution.

Although divestitures may help firms avoid dissolution and having to shut down, they may also make the firm more likely to become targets for acquisitions. This may seem non-intuitive, but there are this prediction stems from two main factors. First, divestitures make firms more visible in the market, both about their finances as well as their operations. Second, when divesting firms shed resources and become leaner, which makes them an easier target for an acquirer to absorb. As the previous chapter showed, firm's prior performance or strength influences the divestiture activity of firms,

and in turn may condition the impact that divestitures have on the likelihood of becoming a target for acquisition. The next hypotheses will turn to the moderating effect of firm strength on the impact of divestitures on the likelihood of acquisition. Initially, though, I will develop the logic for the main effect of divestitures on the likelihood of acquisitions based on the aforementioned factors of visibility and leanness.

First, firms that divest may signal the market about their efforts to reconfigure the resource base, either from strength or weakness. By divesting, firms become more visible both in terms of their resources, and by eliminating areas no longer needed, firms signals that the remaining resources are core to the organization and suggests to potential acquirers what are their sources of competitive advantage. Incumbents in the market may be able to better interpret the divestors' operations, as the remaining areas are simplified and as information is both intentionally and unintentionally disclosed during the sale or liquidation process. By divesting, firms can simplify the ongoing organization, making the remaining operations more visible to analysts and investors, and signal "how they will allocate resources to gain competitive advantage" (Landers, 2004: 2).

Second, firms may be eliminating excess capacity, redundant resources or areas in which the firm had diversified that are no longer required or fit (Markides, 1992) in efforts to become leaner. Becoming lean has advantages; for example, following

divestitures, firms' market value tends to increase (Hite and Owers, 1983; Hite, Owers and Rogers, 1987). However, becoming leaner also makes them a target for acquisition, as the costs of integration post-acquisition for the acquiring company are reduced.

Incumbent companies searching the market for potential targets evaluate them not only on their financials – which usually become stronger post-divestiture (Hite and Owers, 1983) – but also on how costly the integration process would be. As Capron, Mitchell and Swaminathan (2001) showed, following acquisitions firms engage in divestitures as they try to eliminate redundant resources; thus, if the target has already made their operations leaner by divesting, it may focus the remaining operations and make them a more attractive target for acquisition.

Firms that divest, regardless of their performance, may likely momentarily become smaller in terms of their size. Becoming smaller may put them at risk of becoming targets for acquisition, as other incumbents in the industry may find it plausible to undertake buying such a firm. Smaller firms make easier and less costly targets for acquisition, and one might expect that the likelihood of being acquired to increase after a firm's divest – regardless of their performance (Hannan and Pilloff, 2009). Moreover, firms that have divested and become smaller may not just be attractive to the usual potential acquirers, but may put them at risk of becoming a target for similarly-

sized firms that have become slightly larger than the target, thus increasing the potential number of buyers in the industry.

Finally, firms that divest may become more valuable by virtue of eliminating unnecessary resources. Hence, the potential acquirers can offer a higher purchase price for the remaining operations of the company, thus increasing the incentives for the divestor to sell the company. This, combined with the increased visibility of the company and subsequent revaluation of the remaining operations by security analysts and other institutional players, make them attractive targets for incumbents that are looking for new opportunities for growth. Moreover, it makes shareholders attracted to the idea of selling as their payoff may be larger post-divestiture. Thus, I hypothesize the following:

H5: The more divestitures firms undertake, the more likely they are to become targets for acquisition.

Although H5 predicts a main effect of divestiture on acquisition, it is possible that the primary mechanism operates in combination with firm strength, which I will turn to below. Before doing so, however, it is important to consider the causality underlying the main effect of divestitures.

In addition to the arguments concerning visibility and leanness above about direct causal relationships between divestiture and subsequent exit by acquisition, an observed main effect might also be part of a more complicated causal process in which some firms are setting themselves up to be acquired. By divesting some units, such firms may intentionally be placing themselves in the market as potential targets. Firms that divest may do so precisely because they want to focus their efforts in becoming leaner and more attractive targets, as that may bring in the most value to stockholders investing in the firm.

In turn, now consider causality through a combination of divestiture and performance. The impact that divestiture may have on the likelihood of becoming a target for acquisition may be most direct when in combination with firm strength. That is to say, the impact of the divestiture activity on the likelihood of becoming a target for acquisition may be most direct depending on whether the divestitures are undertaken by weak or strong firms.

The impact of divestitures on firm growth and survival might differ depending on whether the divestiture is part of retrenchment strategies by weak firms, or growth strategies by strong firms. Weak firms can use divestitures in efforts to retrench and address the operational, financial or competitiveness problems they face. By divesting, weak firms can raise financial resources to repay debt and avoid defaulting on their

financial commitments or at least postponing immediate financial distress. Moreover, weak firms face pressures from internal (e.g., board of directors) and external sources (e.g., security analysts, financial institutions) that may limit firms' access to or raise their cost of capital, and by divesting they can raise financial resources without having to potentially raise their future financial commitments.

By divesting, weak firms can eliminate resources that may be causing operational inefficiencies, thus not just raising monetary resources, but also addressing competitive problems that may be driving the low performance and in turn improve their operations as they recover (Bibeault, 1982; Ketchen and Palmer, 1999). Weak firms may also benefit from divesting areas of the organization that may be driving the focus away from the core competences of the company, and free managerial attention that can be reinvested in addressing problems and tackling new opportunities. When divesting, weak firms can address immediate financial, operational and competitive concerns and help their chances of survival in future periods.

Weak firms have a short time horizon in which they need to put their retrenchment strategies into action, whereas strong firms have a larger time horizon. Strong firms also face pressures to engage in divestiture activities, as argued in the previous chapter, but they can pursue their growth strategies more proactively, as their

strength in part protects them from shutting down, and in turn their divestiture activity will not necessarily be crucial for their ultimate survival. Thus, I propose:

H6a: The weaker the firm, the more impact divestitures will have on reducing the likelihood of shutting down.

Weak firms, by divesting, may contract their boundaries, eliminate operational inefficiencies and improve their financial situation, making them likely targets for acquisition. As weak firms divest, they may reduce inefficiencies and focus the remaining operations on the core competences of the firm, making them attractive targets for companies pursuing growth strategies. As mentioned earlier, weak firms may be operationally and financially struggling, and they may divest with the objective of becoming leaner and more attractive targets for other incumbents in the industry. Weak firms may pursue retrenchment strategies to remain operational; however, remaining operational does not necessarily imply that the operations should remain independent. For weak firms, becoming targets for acquisition can provide the largest payoff to the stakeholders, rather than keep investing in operations that are weaker than other companies. As mentioned in the previous chapter, weak firms face considerable pressures to regain competitiveness, and their financial constraints trigger them to

engage in divestitures – particularly of full units – in efforts to raise monetary resources to address the immediate financial commitments and ultimately remain operational. However, divesting large parts of the organization may help them avoid immediate dissolution, but may also increase the likelihood of becoming targets as their operations become leaner and their core competences become more visible to competitors searching for targets.

Strong firms, on the other hand, also face considerable pressures from internal and external sources to remain strong and continue their growth. As mentioned in the previous chapter, strong firms tend to actively undertake divestitures as part of their growth strategies. By divesting, strong firms can free financial and managerial resources that can be reinvested in areas that can be more profitable or allow more opportunities for future growth. Complementary to the “Penrose effect” that firms grow based on the current resources they own (Penrose, 1959), I argue that by divesting strong firms can free resources that can provide further opportunities for growth, thus reducing the constraints on the growth rate due to the capacity of management. In divesting, then, firms can maintain and potentially improve their strength, reducing the constraints on growth and thus improving the rate of growth for the future of the firm. Maintaining their level of strength, in turn, will help firms remain independent and avoid becoming a target for acquisition by other incumbents. Thus, I propose:

H6b: The stronger the firm, the more impact divestitures will have on reducing the likelihood of being acquired.

Firm strength thus moderates the effect that divestitures have on the likelihood of firms becoming targets for acquisition relative to remaining independent organizations. Empirically, the analysis will determine whether the direct impact of divestitures on the likelihood of shutting down or becoming a target for acquisition is significant on its own; it is possible that the impact of divestitures appears when considered in combination with firm strength. First, divestitures may not directly help avoid dissolution; however, their impact may only be so in the case of weak firms, while also making these weak firms more desirable targets for acquisitions. Second, divestitures may not directly help firms avoid becoming a target for acquisition, but may do so only for strong firms as divestitures may be considered a part of their growth strategies. The strength of the direct impact of divestitures on the likelihood of shutting down or being acquired relative to the impact moderated by strength is left as an empirical question to be addressed in the analysis section.

In sum, I predict that divestitures are a critical tool for both retrenchment and growth, as it prevents firms from shutting down (H4). By divesting, firms also become more visible to players in the industry, and their operations become leaner, thus

reducing the post-acquisition costs of integration to acquirers; so even though they may experience positive market reactions to divesting, this may make them a likely target for acquisition (H5). However, when taking divestitures in combination with firm strength, divestitures may have different impact for weak and strong firms. Weak firms likely use divestitures as a tool for retrenchment, and as such we should see a reduction on the likelihood of shutting down; whereas strong firms can be more proactive and their chances of survival are not as strongly determined by their divestiture activity. It would be expected that divestitures would have more impact on reducing the chances of shutting down for weak firms than for stronger firms (H6a). However, when it comes to becoming a target for acquisition, weak firms that engage in divestitures may become more visible to potential acquirers and their balance sheet becomes stronger, making them a likely target for acquisitions; divesting from strength, on the other hand, may in fact prevent incumbents to acquire strong firms that are actively engaged in reconfiguration activities (H6b). The next subsection will investigate the impact of firm strength and divestiture on growth.

3.2 Divestitures, Strength and Growth

Divestitures as part of the reconfiguration strategies of firms will impact their survival, but they may also impact their growth. As mentioned earlier, divestitures are a

critical mode of reconfiguration that allows firms to free financial and managerial resources, as well as address operational inefficiencies or fix previous strategic “mistakes” that firms may have done. As such, engaging in divestitures should improve the operational and financial standing of companies, allowing them to focus their efforts in fixing problems or in tackling new opportunities for growth. Divestitures improve firms’ efficiency as these events permit the reallocation of capital and managerial attention in areas where the investment would have higher returns (Gertner, Powers & Scharfstein, 2002).

Managers of firms that engage in divestitures can focus the remaining operations on the companies’ core competencies and competitive advantage, consequently improving the resource base for future growth. Complementary to the “Penrose effect”, as discussed earlier, by divesting firms can reallocate the freed up resources in areas that can provide further growth. Divestitures can free up managerial resources that may be constraining the rate of growth of firms, and by reallocating them into either addressing operational inefficiencies or new areas of development, divestitures can lead to significant improvements in the growth outlooks for firms. Thus, I hypothesize the following:

H7: The more divestitures firms undertake, the higher the subsequent growth.

However, the impact that the divestiture activity may have on firm growth would likely differ on whether the firms are coming from positions of weakness or strength. Weak firms, as mentioned earlier, tend to have shorter horizons, as they need to address operational inefficiencies or address prior mistakes. Weak firms face pressures from internal sources to improve performance measures, and external sources may limit these firms' access and increase their cost of capital, as they become less attractive investments relative to strong firms. Moreover, the divestiture activity of weak firms is likely a part of a retrenchment reconfiguration strategy (Chakrabarti, Vidal & Mitchell, 2011), and the goal of the activity is to recover and to improve the chances of survival rather than improve growth. For example, Elan Pharmaceuticals in 2003 experienced extremely low performance, and that led to a series of sales to eliminate assets in order for the firm to recover and focus on their core competencies.

Strong firms, on the other hand, can be more proactive in their reconfiguration strategies. Strong firms, rather than being pressured to recover or to raise financial resources to avoid distress, are pressured to remain competitive and the expectations for them is to at least maintain, or ideally exceed, their rates of growth and performance. However, following the traditional views from Penrose (1959), firms' growth rate is constrained by the capacity of managers, and thus strong firms that have a strong performance will need to look for new areas to maintain the growth rate and

performance. Strong firms that divest may free financial and managerial resources and reallocate these in new areas of development or in units or products within the organization that may bring in more revenues and in turn maintain or improve the growth rates for the firm. For example, Alpharma Inc. divested their generics business in order to reinvest those monetary gains and the managerial capacity on a new area of development – a medical device designed for diabetics to measure their blood sugar – that had higher estimated growth rates and future profitability than the generics arena. Thus, I hypothesize:

H8: The stronger the firm, the more impact that divestitures will have on improving growth.

In sum, this subsection explores the impact that divestitures have on growth, suggesting that divestitures improve future growth as they free financial and managerial resources that can be reallocated into the remaining operations, or in new areas of development that may bring in further opportunities for growth (H7). Moreover, the impact that the divestiture activity will have on growth will be higher for firms coming from positions of strength (H8), as these firms are aiming their reconfiguration strategies to freeing up managerial and financial resources that can be more efficiently allocated in

proactively searching or investing in new opportunities that will help them meet or exceed the internal and external expectations.

In general, Chapter 3 sheds light on how the divestiture activity impact firm survival and growth, and how the impact that divestitures have on survival and growth differ for firms coming from positions of weakness or strength.

4. Data Summary

4.1 Overview of Sample Industry and Data Sources

The setting for the analyses is the global pharmaceutical industry. This setting is particularly relevant to test the arguments as it is a very dynamic industry in terms of the extent to which divestitures are made. It also provides a wide array of firms at various degrees of performance and with various outcomes in terms of firm survival, thus offering a rich setting to explore the arguments. Data on company financials and reconfiguration activity (i.e., divestitures and acquisitions) for firms was obtained from multiple archival sources. Information on firm financials was obtained using the database Compustat and directly from firms' annual reports. For chapter 2, data on business-segment level financials was collected to assess the impact of corporate level performance feedback on business-level operations. Initially, data on business-segment financials was collected using the Compustat Historical Segment database; however, due to a large number of missing observations, this data was then complemented by manually collecting data from the Annual Reports of all firms.

Information on the divestiture activity as well as acquisitions comes from SDC Platinum. For chapter 2, the divestitures and acquisitions were coded at the business-segment level. Each divestiture event was manually matched at the firm level as well as the business-segment level in order to understand the divestiture activity of firms at

various levels of the organization. The matching was conducted manually using publicly available sources, searching through companies' Annual Reports, press releases and in some cases the US National Library of Medicine. For chapter three, the divestiture events obtained from SDC Platinum were matched at the firm level with the company financials obtained from Compustat.

4.2 Overview of Data for Chapter 2

This chapter uses data from the global manufacturing pharmaceutical industry from 1999 to 2009. The original sample consists of 127 public firms; due to data limitations, 10 firms are eliminated from the analyses as there are not enough observations to accurately estimate all necessary variables in the time frame. The final sample, then, consists of 117 public firms operating in the pharmaceutical manufacturing industry, 60 of which engage in at least one divestiture during the study period (the analysis includes all 117 firms, divestors and non-divestors). Data on reconfiguration activities from SDC Platinum showed 1,127 divestitures and acquisitions in this time frame, which were each matched at the business-segment level as per the description earlier.

4.2.1 Variables for Chapter 2

4.2.1.1 Dependent Variables

The dependent variable aimed at measuring the divestiture activity of firms is a count of divestitures, calculated as the total number of divestiture events – sell offs, liquidations or spin-offs – each business segment conducted in a given year. A count of full divestitures and a count of partial divestitures were also created to explore if there are any underlying differences in the type of divestiture activity that firms with a negative performance gap and a positive performance gap pursue. Full divestitures in this setting entail all events that involved selling, liquidating, or spinning off a complete resource such as a unit or subsidiary of a given business segment. Partial divestitures include all events where only a portion of the unit, a product line, or a plant from an ongoing business unit were sold, liquidated, or spun off. The count of number of divestiture events is a relevant measure of divestiture activity because each event is a costly disruption of the ongoing activities for the organization, and requires attention from managers to perform the due diligence and find the potential buyers.

4.2.1.2 Main Independent Variables

I calculated two forms of aspiration levels – historical and social – as the primary independent variables. First, the historical aspiration was created following studies in the performance feedback literature by generating the average performance, measured

as return-on-assets (ROA), of the last three years for each firm (Audia & Greve, 2006; Greve, 1998; Lant, 1992). A *historical aspiration gap* variable was calculated as the absolute value of the difference between a firm's prior ROA and the historical aspiration level. Absolute values are used for simplicity in the interpretation of the coefficients, particularly for firms that have a negative performance gap.

$$\text{Historical Aspiration Gap} = \left| \text{ROA}_{t-1} - \frac{\sum_{i=t-2}^{t-4} \text{ROA}_i}{3} \right|$$

Second, a social aspiration was calculated by estimating the average performance, also measured using ROA, of the group of peers for each firm. Traditionally, the performance feedback literature has considerable ambiguity in measuring social aspirations, often using industry average performance measures as a relevant social aspiration. However, there are often substantial differences among multiple sets of firms within industries that the whole industry average does not consider, such as differences in strategic groups. This paper uses a nuanced measure of social aspirations, defining four categories of peers that are relevant for the empirical context. Firms were classified into four potential peer categories: major pharmaceutical (18% of firms in sample), generics/specialized pharmaceuticals (29%), nutraceuticals (7%), and other (46%). The classification was done by a scholar with extensive experience doing research in the pharmaceutical industry. The *social aspiration gap* was

estimated by calculating the absolute values of the difference between a firm's prior performance and the performance of the group in that same year.

Social Peer Performance Gap = $ROA_j - ROA_J$, with j being focal firm and J being the average value for the group.

A *historical negative gap dummy* was estimated by assigning the value of 1 for those firms whose prior ROA was below their historical aspiration, and 0 to those that the difference was positive. Similarly, a *social negative gap dummy* took a value of 1 for firms whose prior performance fell below the average ROA of its group of peers, and 0 for those that were above. This will assess whether there are any significant differences in the divestiture activity of firms that simply have a negative aspiration gap compared to those with a positive aspiration gap.

The analyses also included *financial slack*, measured as the log of the one-year lag of a company's total cash ratio (cash ratio is calculated as the cash and cash equivalents over current liabilities), as a way to assess whether the immediate constraint in financial resources is driving divestiture activity. Slack can serve as a buffer that contributes to survival (Sharfman, Wolf, Chase, & Tansik, 1988). As noted above, struggling firms often face financial constraints, and those firms that have less financial slack (i.e., more pressing liquidity concerns) may undertake more divestitures. Given that firms that have a negative performance gap often require new financial resources, this measure can

help us determine whether financial constraints are driving the divestiture activity or if managerial resources are more relevant to the firm.

4.2.1.3 Control Variables

The analyses included several control variables. The models included the total number of prior acquisitions (*count of acquisitions*). Prior acquisitions may lead to divestitures as a part of the post-acquisition implementation plan and as a way to reduce redundant resources. Moreover, acquisitions require managerial capacity and attention to implement effectively in the organization, and prior acquisitions likely led the firm to grow in the past that may constrain the managerial capacity. This measure can assess the idea that excelling firms are likely to divest to free managerial resources rather than to raise financial assets. *Firm size* uses the log of lagged sales to account for the idea that large firms may be more inert at engaging in organizational change relative to smaller firms. Potential differences of the availability of resources that a firm may have to divest are accounted for by including the total number of business segments (*number of segments*) a firm has, and by accounting for diversification (*diversification dummy*); diversification in this context identifies firms' investments in related or unrelated areas to the pharmaceutical industry, either in terms of horizontal (e.g., consumer products) or vertical investments (e.g., active pharmaceutical ingredients). Finally, year dummies are included to account for any temporal effects. Tables 1 to 3 show the descriptive statistics

of the main variables and control variables; Table 1 presents the descriptive statistics for all types of divestitures, Table 2 for full divestitures and Table 3 for partial divestitures.

Table 1: Descriptive Statistics of All Divestitures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Count of all divestitures	1.00											
(2) Neg. historical performance gap (abs)	-0.03	1.00										
(3) Pos. historical performance gap	-0.02	-0.02	1.00									
(4) Neg. social performance gap (abs)	-0.03	0.85	0.03	1.00								
(5) Pos. social performance gap	-0.10	-0.05	0.06	-0.06	1.00							
(6) Neg. historical aspiration dummy	0.00	0.15	-0.11	0.05	-0.07	1.00						
(7) Neg. social aspiration dummy	0.12	0.16	0.02	0.18	-0.31	0.23	1.00					
(8) Financial slack (lagged)	-0.10	-0.18	0.04	-0.19	0.02	-0.10	-0.10	1.00				
(9) Firm size (lagged)	0.28	-0.19	-0.18	-0.24	-0.23	-0.04	0.01	-0.12	1.00			
(10) Count of acquisitions (lagged)	0.30	-0.04	0.00	-0.04	-0.10	-0.01	-0.01	-0.05	0.31	1.00		
(11) Count of segments (lagged)	0.17	-0.08	-0.08	-0.09	-0.17	0.01	0.15	-0.20	0.48	0.12	1.00	
(12) Diversification dummy (lagged)	0.09	-0.11	-0.11	-0.16	-0.13	0.02	-0.07	-0.14	0.35	0.10	0.31	1.00
Mean	0.28	0.11	0.09	0.17	0.17	0.44	0.31	-0.96	6.12	0.29	5.01	0.78
Standard deviation	0.96	0.77	0.77	1.36	0.36	0.5	0.46	1.53	2.98	0.80	3.80	0.41
Minimum	0	0	0	0	0	0	0	-9.2	-6.91	0	1	0
Maximum	16	24.24	30.01	37.27	4.72	1	1	3.35	11.06	7	20	1

Table 2: Descriptive Statistics of Full Divestitures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Count of full divestitures	1.00											
(2) Neg. historical performance gap (abs)	-0.02	1.00										
(3) Pos. historical performance gap	-0.02	-0.02	1.00									
(4) Neg. social performance gap (abs)	-0.02	0.85	0.03	1.00								
(5) Pos. social performance gap	-0.09	-0.05	0.06	-0.06	1.00							
(6) Neg. historical aspiration dummy	0.00	0.15	-0.11	0.05	-0.07	1.00						
(7) Neg. social aspiration dummy	0.12	0.16	0.02	0.18	-0.31	0.23	1.00					
(8) Financial slack (lagged)	-0.09	-0.18	0.04	-0.19	0.02	-0.10	-0.10	1.00				
(9) Firm size (lagged)	0.22	-0.19	-0.18	-0.24	-0.23	-0.04	0.01	-0.12	1.00			
(10) Count of acquisitions (lagged)	0.19	-0.04	0.00	-0.04	-0.10	-0.01	-0.01	-0.05	0.31	1.00		
(11) Count of segments (lagged)	0.14	-0.08	-0.08	-0.09	-0.17	0.01	0.15	-0.20	0.48	0.12	1.00	
(12) Diversification dummy (lagged)	0.06	-0.11	-0.11	-0.16	-0.13	0.02	-0.07	-0.14	0.35	0.10	0.31	1.00
Mean	0.11	0.11	0.09	0.17	0.17	0.44	0.31	-0.96	6.12	0.29	5.01	0.78
Standard deviation	0.45	0.77	0.77	1.36	0.36	0.5	0.46	1.53	2.98	0.80	3.80	0.41
Minimum	0	0	0	0	0	0	0	-9.2	-6.91	0	1	0
Maximum	7	24.24	30.01	37.27	4.72	1	1	3.35	11.06	7	20	1

Table 3: Descriptive Statistics of Partial Divestitures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Count of full divestitures	1.00											
(2) Negative historical performance gap (abs)	-0.02	1.00										
(3) Positive historical performance gap	-0.01	-0.02	1.00									
(4) Negative social performance gap (abs)	-0.02	0.85	0.03	1.00								
(5) Positive social performance gap	-0.08	-0.05	0.06	-0.06	1.00							
(6) Negative historical aspiration dummy	0.00	0.15	-0.11	0.05	-0.07	1.00						
(7) Negative social aspiration dummy	0.08	0.16	0.02	0.18	-0.31	0.23	1.00					
(8) Financial slack (lagged)	-0.08	-0.18	0.04	-0.19	0.02	-0.10	-0.10	1.00				
(9) Firm size (lagged)	0.25	-0.19	-0.18	-0.24	-0.23	-0.04	0.01	-0.12	1.00			
(10) Count of acquisitions (lagged)	0.30	-0.04	0.00	-0.04	-0.10	-0.01	-0.01	-0.05	0.31	1.00		
(11) Count of segments (lagged)	0.15	-0.08	-0.08	-0.09	-0.17	0.01	0.15	-0.20	0.48	0.12	1.00	
(12) Diversification dummy (lagged)	0.08	-0.11	-0.11	-0.16	-0.13	0.02	-0.07	-0.14	0.35	0.10	0.31	1.00
Mean	0.16	0.11	0.09	0.17	0.17	0.44	0.31	-0.96	6.12	0.29	5.01	0.78
Standard deviation	0.67	0.77	0.77	1.36	0.36	0.5	0.46	1.53	2.98	0.80	3.80	0.41
Minimum	0	0	0	0	0	0	0	-9.2	-6.91	0	1	0
Maximum	11	24.24	30.01	37.27	4.72	1	1	3.35	11.06	7	20	1

4.2.2 Models for Chapter 2

Considering the nature of the main dependent variables, a count model was used to estimate the impact that aspiration gaps have on the divestiture activity of firms, based on a paneled Poisson model with random effects. This model is appropriate given the type of dependent variable; an insignificant dispersion parameter alpha suggested that the Poisson model was more appropriate than a negative binomial specification. The random effects model is suitable as the hypotheses assess differences across firms rather than within. A Hausman test was conducted to evaluate the consistency of the random effects model compared to the fixed effects model; the test was not significant, thus suggesting that the coefficients obtained using random effects are consistent. In the analyses, all main independent variables as well as the control variables are lagged by one year to avoid potential issues with endogeneity. The sample includes all firms, divesting as well as non-divesting companies in the industry, minimizing endogeneity stemming from sample selection.

4.3 Overview of Data for Chapter 3

This chapter, as the previous one, also uses data from the global manufacturing pharmaceutical industry. However, this chapter expands the data to include data from years 1978 to 2012. The original sample consists of 621 public firms; due to data limitations, 79 firms are eliminated from the analyses as there are either not enough observations to accurately estimate all necessary variables in the time frame or due to missing key independent variables. The final sample consists of 542 public firms operating in the pharmaceutical manufacturing industry. The analyses include all firms, regardless of whether they divested or not. Data on reconfiguration activities from SDC Platinum showed 1,171 divestitures and 1,768 acquisitions in this time frame.

4.3.1 Variables for Chapter 3

4.3.1.1 Dependent Variables

This chapter uses two main dependent variables to assess the impact of divestiture on survival and growth. The first dependent variable is a categorical variable that codes the continuation, acquisition or dissolution per company per year. The second dependent variable investigates nominal sales growth, measured as the difference in sales at a given period and the sales in the previous year. Table 4 below shows the number of firms in the sample that remained active, were acquired or shut down during the time period the data covers.

Table 4: Summary of Survival and Exit

Survival / Exit	Number of Firms
Survived	376
Acquired	222
Shut Down	56

4.3.1.2 Independent Variables

Two main independent variables are used in this chapter to test the propositions. The first independent variable is *firm strength*, measured as the two-year lag on performance; performance is measured in the analyses presented as return on assets (ROA). The second independent variable is *count of divestitures*, measured as the total number of divestiture events in the previous year. An interaction term between firm strength and divestiture (*strength x divestiture*) is created to investigate the joint impact of firm strength and divestiture on survival and growth.

4.3.1.3 Controls Variables

Several covariates are included in the models to account for alternative explanations. *Firm size* is included to account for the fact that larger firms may be less likely to be acquired; firm size is measured as sales in the previous year. To account for the idea that lack of financial liquidity may drive dissolution in firms, a lag of *financial slack* is included in the models, measured as the previous year's quick ratio (cash and

other cash equivalents over current liabilities). I also include a *headquarters dummy* to consider that firms based in the United States may be more visible in the data sources than other firms. A control for *firm age*, measured as the year in which the company was incorporated, was included as younger firms may be more likely to be acquired. Also controlled for is the *count of acquisitions* that each firm conducted in the previous year, as conducting acquisitions may positively impact the likelihood of continuation. Table 5 presents the descriptive statistics for all dependent, independent and control variables.

Table 5: Descriptive Statistics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) No exit – survival	1.00											
(2) Exit via acquisition	-0.89	1.00										
(3) Exit via dissolution	-0.44	-0.02	1.00									
(4) Sales growth	0.01	-0.01	-0.01	1.00								
(5) Performance (ROA, 2-year lag)	0.02	0.01	-0.07	0.12	1.00							
(6) Count of divestitures (1-year lag)	0.00	0.02	-0.03	0.27	0.15	1.00						
(7) Performance x Divestitures	0.04	-0.04	-0.01	0.15	0.24	0.09	1.00					
(8) Firm size (sales, 1-year lag)	0.03	-0.02	-0.03	0.37	0.22	0.54	0.28	1.00				
(9) Financial slack	0.01	0.00	-0.03	-0.06	-0.12	-0.08	-0.05	-0.11	1.00			
(10) Headquarters dummy (US)	-0.03	0.02	0.02	-0.07	-0.14	-0.13	-0.04	-0.14	0.04	1.00		
(11) Firm age (from actual birth)	-0.04	0.03	0.03	-0.20	-0.34	-0.24	-0.18	-0.41	0.15	-0.12	1.00	
(12) Count of acquisitions (1-year lag)	0.00	0.01	-0.02	0.23	0.24	0.49	0.22	0.55	-0.11	-0.11	-0.30	1.00
Mean	0.95	0.04	0.01	119.7	-0.25	0.20	-0.01	1.36	4.21	0.83	1982	0.30
Standard deviation	0.22	0.20	0.10	875.0	0.40	0.68	0.18	5.45	8.24	0.38	27.3	0.92
Minimum	0	0	0	-3E+4	-1	0	-3	0	0	0	1830	0
Maximum	1	1	1	18559	1	10	1.70	67.8	144	1	2010	13

4.3.2 Models for Chapter 3

Considering the nature of the main dependent variables, several specifications were used. The analysis of the dependent variable looking at firm survival vs. exit via acquisitions vs. exit via dissolution was analyzed using a multinomial logit with random effects. This model allows seeing the impact of the covariates on differences in patterns of exit relative to survival, which is the omitted model in the analyses. For the models analyzing the nominal growth of firms, a paneled ordinary least square regression with year fixed effects is used; robust standard errors clustered by firm are also employed in these models. In all the analyses, the main independent variables as well as the control variables are lagged by one year, except for firm strength that is presented as a two-year lag, to avoid potential issues with endogeneity. The sample includes all firms, divesting as well as non-divesting companies in the industry, thus minimizing endogeneity stemming from sample selection.

5. Data Analyses

5.1 Analyses for Chapter 2

Table 6 below provides results for hypothesis 1. These models analyze the difference across firms with negative aspiration gaps. The models initially suggest that there is no significant difference in the number of divestitures across firms with negative aspiration gaps, thus appearing to reject hypothesis 1. This result indicates that the divestiture activity does not increase as struggling firms become increasingly less profitable, regardless of whether the firms are performing below historical levels (Models 2, 5, and 8) or below their peers (Models 3, 6, and 9).

Further examination of Table 6, however, shows that the amount of financial slack that firms have available significantly impact the number of divestitures that firms with a negative historical performance gap use, particularly when divesting full resources. For firms with a negative historical performance gap, the findings indicate that the larger the financial constraints (i.e., the lower the financial slack available), the larger the number of divestitures these firms will pursue (Model 2). Intriguingly, financial liquidity is not relevant for firms with negative social performance gaps (Models 3, 6, and 9).

The financial slack result, which reflects the first research question concerning underlying mechanisms, suggests that conceptualizing weak firms only in terms of

negative aspiration gaps does not capture all the incentives necessary to engage in divestiture activity. However, when financial constraints arise, firms with negative aspiration gaps often respond by engaging in divestitures, likely because the performance pressures make it difficult or costly to raise new capital in the form of debt or equity. Further examination of this shows that when not including financial slack in the models, negative performance gaps is a strong and significant factor associated with an increase in the divestiture activity of firms; however, this effect is entirely washed out when considering financial constraints, thus the latter is the underlying mechanism driving divestitures for firms that have negative performance gaps.

Table 6: Divestiture Activity by Firms with Negative Performance Gaps (Paneled Poisson with Random Effects)

DV: Count of divestitures	All divestitures			Full divestitures			Partial divestitures		
	(1) Controls	(2) Historical	(3) Social	(4) Controls	(5) Historical	(6) Social	(7) Controls	(8) Historical	(9) Social
Negative performance gap (abs) [H1: +]		0.083 (0.077)	-0.162 (0.220)		0.087 (0.074)	-0.036 (0.133)		0.063 (0.112)	-0.476 (0.663)
Financial slack	-0.173** (0.080)	-0.168** (0.082)	-0.118 (0.110)	-0.213** (0.091)	-0.204** (0.095)	-0.061 (0.111)	-0.149 (0.107)	-0.147 (0.107)	-0.205 (0.139)
Count of acquisitions (lagged)	0.371*** (0.081)	0.371*** (0.082)	0.509*** (0.070)	0.236*** (0.086)	0.236*** (0.086)	0.369*** (0.072)	0.446*** (0.113)	0.446*** (0.113)	0.599*** (0.089)
Firm size (lagged)	0.522*** (0.062)	0.525*** (0.063)	0.357*** (0.061)	0.502*** (0.088)	0.508*** (0.090)	0.364*** (0.088)	0.524*** (0.071)	0.526*** (0.072)	0.323*** (0.083)
Count of segments	0.003 (0.030)	0.003 (0.030)	0.035 (0.028)	0.031 (0.034)	0.031 (0.034)	0.039 (0.028)	-0.019 (0.035)	-0.019 (0.035)	0.035 (0.030)
Diversification	-0.913 (0.556)	-0.902 (0.551)	-1.280*** (0.325)	-1.320** (0.629)	-1.309** (0.622)	-1.462*** (0.421)	-0.494 (0.641)	-0.489 (0.640)	-0.963** (0.459)
Constant	-6.149*** (0.613)	-6.191*** (0.623)	-3.748*** (0.587)	-6.996*** (0.893)	-7.057*** (0.906)	-4.257*** (0.768)	-6.920*** (0.757)	-6.943*** (0.771)	-5.327*** (1.096)
Year dummies	Yes								
Observations	946	946	636	946	946	636	946	946	636
Number of firms	101	101	84	101	101	84	101	101	84

Robust standard errors in parentheses, clustered by firm

*** p<0.01, **p<0.05, *p<0.10

Table 7: Divestiture Activity by Firms with Positive Performance Gaps (Paneled Poisson with Random Effects)

DV: Count of divestitures	All divestitures			Full divestitures			Partial divestitures		
	(1) Controls	(2) Historical	(3) Social	(4) Controls	(5) Historical	(6) Social	(7) Controls	(8) Historical	(9) Social
Positive performance gap [H2: +]		0.148*** (0.037)	-0.338 (0.636)		-0.134 (0.202)	-1.378 (1.274)		0.242*** (0.049)	0.061 (0.512)
Financial slack	-0.084 (0.094)	-0.080 (0.095)	-0.072 (0.104)	-0.140 (0.105)	-0.141 (0.105)	-0.179 (0.123)	-0.050 (0.113)	-0.048 (0.115)	0.022 (0.103)
Count of acquisitions	0.492*** (0.068)	0.487*** (0.067)	0.451*** (0.079)	0.333*** (0.096)	0.334*** (0.096)	0.306*** (0.102)	0.553*** (0.057)	0.547*** (0.057)	0.495*** (0.073)
Firm size (lagged)	0.242*** (0.061)	0.254*** (0.062)	0.345*** (0.071)	0.206*** (0.070)	0.201*** (0.072)	0.271** (0.110)	0.276*** (0.080)	0.298*** (0.081)	0.417*** (0.078)
Count of segments	0.021 (0.024)	0.020 (0.024)	-0.041** (0.018)	0.008 (0.032)	0.008 (0.032)	-0.083** (0.041)	0.040 (0.026)	0.038 (0.025)	-0.019 (0.028)
Diversification	0.072 (0.444)	0.107 (0.449)	0.420 (0.531)	-0.266 (0.479)	-0.278 (0.481)	-0.212 (0.506)	0.626 (0.543)	0.731 (0.562)	1.039 (0.710)
Constant	-3.794*** (0.738)	-3.958*** (0.735)	-5.265*** (0.831)	-3.978*** (0.726)	-3.917*** (0.763)	-5.210*** (1.172)	-5.871*** (1.121)	-6.189*** (1.063)	-6.962*** (0.954)
Year dummies	Yes								
Observations	993	993	1,412	993	993	1,412	993	993	1,412
Number of firms	101	101	103	101	101	103	101	101	103

Robust standard errors in parentheses, clustered by firm

*** p<0.01, **p<0.05, *p<0.10

Table 7 reports results for firms with positive aspiration gaps, testing hypothesis 2. The results indicate that the greater the positive historical aspiration gap of firms, the larger the number of divestitures they use as part of their resource reconfiguration activities (Model 2). Historical aspirations, then, seem to be a critical driver of divestiture activity for strong firms. In the case of social aspirations, there is no statistical difference in the number of divestiture events that firms conduct, regardless of how large their aspiration gap is (Model 3). This null result is consistent across different types of divestitures – partial and full (Models 6 and 9). Thus, hypothesis 2 is partially supported –the positive social aspiration gap does not impact their divestiture activity, while the greater the positive historical aspiration gap, the more divestitures firms pursue.

An important nuance arises when we turn to financial slack in Table 7. Constraints based on financial slack do not affect the number of divestitures for firms with positive aspiration gaps, whether historical or social; this result suggests that financial resources are not as relevant for excelling firms, unlike their impact on struggling firms with negative historical gaps. This most likely arises because strong firms that face liquidity pressures are able to raise new funds through debt or equity, and are not significantly affected by their financial constraints when choosing a divestiture strategy.

Tables 6 and 7 also report differences in the nature of the divestiture activity for firms with negative performance gaps and positive performance gaps, respectively, shedding light on hypotheses 3a and 3b. Firms with negative historical performance gaps tend to divest a larger number of full resources (Table 6, Models 5 and 8), again primarily driven by financial constraints rather than pure aspirations. There seem to be no difference in the impact of negative social aspirations on the divestiture activity of full or partial resources, neither as an isolated mechanism nor in combination with financial constraints. Thus, this provides partial support for hypothesis 3a, suggesting that firms struggling relative to their historical performance will pursue full divestitures rather than partial divestitures when they also face financial constraints.

Firms with positive performance gaps also show differences in the nature of the resources divested (Table 7, Models 5 and 8). The overall divestiture activity of strong firms is driven primarily by the divestiture of partial resources (Table 7, Model 8) rather than full resources (Table 7, Model 5), providing strong support to hypothesis 3b. Firms that excel relative to historical aspirations, rather than eliminate full resources, seem to be more fine-grained in the nature of their reconfiguration activities and divest portions of their operating units. This result suggests that excelling firms tend to fine-tune the portfolio of businesses and resources in attempts to free managerial capacity.

There are substantial differences in the nature of the divestiture activity pursued by firms that have a negative aspiration gap compared to those that have a positive aspiration gap. Struggling firms are more prone to engage in full divestitures in their efforts to retrench, even though they may pursue some partial divestitures in combination. On the other hand, excelling firms are more prone to use partial divestitures as a tool to free managerial resources and fine-tune the portfolio of businesses. This result reinforces the relative importance of freeing managerial resources in the case of excelling firms, whereas struggling firms are more responsive to the need for financial resources.

The results also provide intriguing implications concerning the two empirical questions that arose at the end of the background and hypothesis section. First, as noted above, the impact of negative performance gaps tends to arise in combination with financial liquidity constraints, rather than independently. Pressures stemming from negative aspiration gaps appear to derive through immediate financial challenges, while pressures stemming from positive aspiration gaps arise independent of financial pressure. Quite simply, excelling firms face direct pressure to maintain their superiority, leading to strong incentives for ongoing reconfiguration, including divestitures.

Second, there are differences in the impact of historical and social aspiration gaps, with the results suggesting that historical aspiration gaps are more relevant in

determining the divestiture activities compared to social gaps, even when using nuanced measures of peer-relevant groups. This difference may be caused by the focus of attention of the internal and external sources leading to organizational change and divestitures. Internal forces are likely to evaluate the performance of the firms relative to their historical outcomes rather than compare it to the competition. Similarly, external forces may pay more attention to changes within a firm rather than across the relevant peer group. For example, market analysts are likely to assign more weight to the firms' performance relative to their historical aspirations, while peer-relevant aspirations may become less relevant as organizations are quite complex and may operate in different arenas. Other external institutions, such as banks, are likely to pay more attention and analyze the financial statements of firms and decide the corresponding lending rates at which a firm may borrow capital, regardless of the firm's relative standing to their peer group. As such, historical aspirations may be a more significant trigger to organizational change and divestitures than diversions from social aspirations.

The control variables also provide useful insight regarding divestiture activity (Tables 6 and 7). Prior acquisitions for firms with a positive or negative aspiration gap also influence the number of divestitures they undertake. The impact of prior acquisitions for firms with negative aspiration gaps might arise if part of the lower

performance stems from struggles with acquisition integration. The impact of prior acquisitions for firms with positive performance gaps, meanwhile, suggests that strong firms may use divestitures as a complementary tool to free managerial resources as they implement acquisitions as part of their growth strategy. Taken in combination, these results suggest that firms with positive historical aspiration gaps tend to divest in order to free managerial resources rather than for financial constraints, providing support to the complementary Penrosian argument of divestitures being used as a mechanism to free managerial capacity for future growth.

Firm size is significantly positively associated with the number of divestitures that negative and positive aspiration firms engage in, including the total number of divestitures as well as when examining only full and partial divestitures. This suggests that larger firms tend to pursue more divestitures compared to smaller organizations. The number of business segments firms have, however, does not impact the number of divestitures they pursue. Existing diversification leads to fewer full divestitures by firms with negative aspiration gaps (Table 6, Models 4-6); i.e., non-diversified firms that have a negative aspiration gap divest more than diversified firms with negative gaps. This comparison suggests that diversification may provide some buffer for firms when their performance falls below social or historical aspirations.

5.1.1 Sensitivity Analyses for Chapter 2

Several sensitivity analyses assess the robustness of the results. First, there may be differences in the divestiture activity depending simply on whether a negative or positive aspiration gap exists, independent of its magnitude. In particular, managers may face the pressures to retrench just by simply being below their aspirations, regardless of how far below their aspirations they are. A “state” effect of the simple presence of a negative performance gap was tested for as a robustness check. Historical performance had no impact: there was no significant difference between firms with negative historical performance gap and those with a positive historical performance gap (Table 8; Models 2, 5, and 8). By contrast, firms that have a negative performance aspiration gap relative to peers engage in more divestitures than those firms with performance above their peers (Table 8; Models 3, 6, and 9). This result lends further nuance in support of Hypothesis 1.

The main analyses suggested that there was very weak support for the impact of negative historical aspiration gap on divestitures, together with a strong impact of financial slack; the results on Table 8 expand our understanding by showing that being below the social aspiration gap lead to firms to engage in more divestitures, particularly of full divestitures, with no impact stemming from financial liquidity constraints. This provides complementary support to H1, which predicted that weaker firms would

undertake more divestitures; this results show that, regardless of the extent to which firms are below their peers, this triggers a need to engage in more divestitures, regardless of the financial pressures. Moreover, the results indicate that simply having a negative social aspiration, regardless of the extent of it, will have a higher impact on full divestitures than on partial divestitures, thus providing further support for H3a.

Table 8: Impact of Existence of Negative Aspiration Gap on Divestitures (Paneled Poisson with Random Effects)

DV: Count of divestitures	All divestitures			Full divestitures			Partial divestitures		
	(1) Controls	(2) Historical	(3) Social	(4) Controls	(5) Historical	(6) Social	(7) Controls	(8) Historical	(9) Social
Neg. performance gap dummy		-0.084 (0.118)	0.506*** (0.173)		-0.144 (0.153)	0.633*** (0.211)		0.024 (0.181)	0.361* (0.215)
Financial slack	-0.112 (0.079)	-0.119 (0.078)	-0.077 (0.076)	-0.161* (0.088)	-0.172** (0.086)	-0.122 (0.088)	-0.084 (0.090)	-0.082 (0.090)	-0.052 (0.087)
Count of acquisitions	0.429*** (0.050)	0.428*** (0.049)	0.443*** (0.050)	0.279*** (0.061)	0.279*** (0.061)	0.305*** (0.062)	0.505*** (0.054)	0.506*** (0.054)	0.512*** (0.052)
Firm size (lagged)	0.351*** (0.051)	0.352*** (0.051)	0.356*** (0.049)	0.318*** (0.064)	0.319*** (0.064)	0.325*** (0.061)	0.379*** (0.060)	0.379*** (0.060)	0.385*** (0.059)
Count of segments	0.011 (0.023)	0.011 (0.023)	-0.004 (0.020)	0.013 (0.027)	0.012 (0.028)	-0.010 (0.022)	0.013 (0.025)	0.013 (0.025)	0.004 (0.025)
Diversification	-0.277 (0.427)	-0.284 (0.427)	-0.251 (0.376)	-0.623 (0.469)	-0.633 (0.468)	-0.617 (0.407)	0.147 (0.476)	0.149 (0.474)	0.176 (0.442)
Constant	-4.727*** (0.561)	-4.686*** (0.574)	-4.907*** (0.535)	-5.129*** (0.631)	-5.059*** (0.650)	-5.340*** (0.590)	-6.198*** (0.744)	-6.212*** (0.764)	-6.334*** (0.728)
Year dummies	Yes								
Observations	1,939	1,939	2,048	1,939	1,939	2,048	1,939	1,939	2,048
Number of firms	113	113	117	113	113	117	113	113	117

Robust standard errors in parentheses, clustered by firm

*** p<0.01, **p<0.05, *p<0.10

Second, the analysis assessed several other controls. Business-segment prior performance measured as segment operating-return-on-sales (OROS) was included to account for the firm eliminating resources from poor-performing units. Firm-level profitability (lag ROA), particularly for unprofitable firms, also might drive divestitures. The log of segment assets in the previous year was also included as a measure of segment size to account for differences in the divestiture activity that may come from dominant segments. Firm-level R&D intensity in the previous year was also included in robustness checks, because there may be differences across firms that are more research intensive and can develop blockbuster drugs. Changes in the executive team may also lead to larger number of divestitures, because a new team may have been brought in to change the organizational focus; thus, a control for CEO change is included. The results of these models including additional controls were similar to the ones reported here. The sample size drops substantially in several of the models, however, owing to constraints in the availability of data, so the reported results do not include them.

Third, alternative specifications were used to corroborate the robustness of the models. To corroborate that the results were not driven by the specification, a paneled Ordinary Least Squares specifications was used to test the hypotheses, finding consistent results; the results for these model specifications are reported on Tables 9, 10 and 11. Additionally, analyses using a divestiture dummy (1 if a segment engaged in

divestiture activity, 0 if not) were estimated and a paneled logistic regression was specified to test the likelihood of firms to divest, regardless of how many divestitures they engaged in. Both sets of analyses provide similar results to those reported in this paper using the paneled Poisson specification.

Table 9: Paneled Ordinary Least Squares (OLS) with Random Effects for Firms with Negative Aspiration Gap

DV: Count of divestitures	All divestitures			Full divestitures			Partial divestitures		
	(1) Controls	(2) Historical	(3) Social	(4) Controls	(5) Historical	(6) Social	(7) Controls	(8) Historical	(9) Social
Neg. performance gap (abs) [H1: +]		0.013 (0.014)	0.008 (0.010)		0.003 (0.007)	0.003 (0.005)		0.012 (0.010)	0.003 (0.006)
Financial slack	-0.034** (0.017)	-0.032* (0.017)	-0.026 (0.028)	-0.015** (0.008)	-0.015* (0.008)	-0.005 (0.012)	-0.019* (0.011)	-0.017 (0.010)	-0.026 (0.020)
Count of acquisitions (lagged)	0.149*** (0.042)	0.149*** (0.042)	0.321*** (0.107)	0.047* (0.028)	0.047* (0.028)	0.073*** (0.026)	0.177*** (0.044)	0.177** (0.044)	0.258*** (0.111)
Firm size (lagged)	0.070** (0.013)	0.071*** (0.014)	0.048*** (0.015)	0.029*** (0.007)	0.030*** (0.008)	0.024*** (0.006)	0.037*** (0.008)	0.038*** (0.008)	0.020* (0.012)
Count of segments	0.018 (0.021)	0.017 (0.021)	-0.044* (0.025)	0.009 (0.013)	0.009 (0.013)	0.021** (0.008)	0.002 (0.010)	0.001 (0.010)	0.022 (0.017)
Diversification	-0.120 (0.083)	-0.116 (0.082)	-0.218** (0.108)	-0.092* (0.055)	-0.092* (0.055)	-0.158** (0.072)	-0.009 (0.044)	-0.006 (0.045)	-0.060 (0.054)
Constant	-0.399*** (0.101)	-0.410*** (0.103)	-0.220*** (0.121)	-0.139** (0.055)	-0.141*** (0.055)	-0.001 (0.066)	-0.231*** (0.059)	-0.240*** (0.060)	-0.276*** (0.121)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	946	946	636	946	946	636	946	946	636
Number of firms	101	101	84	101	101	84	101	101	84

Robust standard errors in parentheses, clustered by firm

*** p<0.01, **p<0.05, *p<0.10

Table 10: Panel Ordinary Least Squared Regression with Random Effects for Firms with Positive Aspiration Gap

DV: Count of divestitures	All divestitures			Full divestitures			Partial divestitures		
	(1) Controls	(2) Historical	(3) Social	(4) Controls	(5) Historical	(6) Social	(7) Controls	(8) Historical	(9) Social
Pos. performance gap [H2: +]		0.015*	-0.009		0.002	-0.013		0.016**	0.006
		(0.008)	(0.027)		(0.004)	(0.010)		(0.008)	(0.020)
Financial slack	-0.029	-0.029	-0.019	-0.018**	-0.018*	-0.016*	-0.013	-0.017	-0.005
	(0.018)	(0.018)	(0.014)	(0.010)	(0.010)	(0.008)	(0.013)	(0.013)	(0.007)
Count of acquisitions (lagged)	0.282***	0.281***	0.224***	0.045*	0.056*	0.045	0.254***	0.251**	0.174***
	(0.081)	(0.081)	(0.042)	(0.030)	(0.030)	(0.029)	(0.068)	(0.068)	(0.025)
Firm size (lagged)	0.036***	0.038***	0.054***	0.021***	0.021***	0.022***	0.014	0.016***	0.031***
	(0.012)	(0.013)	(0.011)	(0.006)	(0.006)	(0.006)	(0.011)	(0.012)	(0.007)
Count of segments	0.025	0.025	-0.010*	0.003	0.003	-0.010**	0.021*	0.021*	-0.002
	(0.016)	(0.016)	(0.007)	(0.005)	(0.005)	(0.003)	(0.012)	(0.012)	(0.005)
Diversification	-0.028	-0.025	-0.037	-0.025	-0.025	-0.004	0.001	0.005	0.037
	(0.056)	(0.056)	(0.054)	(0.031)	(0.031)	(0.024)	(0.034)	(0.035)	(0.033)
Constant	-0.178	-0.196	-0.288***	-0.034	-0.036	-0.088*	-0.197**	-0.219**	-0.193***
	(0.130)	(0.133)	(0.082)	(0.060)	(0.062)	(0.046)	(0.083)	(0.085)	(0.048)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	993	993	1,412	993	993	1,412	993	993	1,412
Number of firms	101	101	103	101	101	103	101	101	103

Robust standard errors in parentheses, clustered by firm

*** p<0.01, **p<0.05, *p<0.10

Table 11: Paneled Ordinary Least Square (OLS) Regression with Random Effects on Existence of Negative Gap

DV: Count of divestitures	All divestitures			Full divestitures			Partial divestitures		
	(1) Controls	(2) Historical	(3) Social	(4) Controls	(5) Historical	(6) Social	(7) Controls	(8) Historical	(9) Social
Neg. performance gap dummy		0.017 (0.028)	-0.142*** (0.043)		0.001 (0.014)	0.062*** (0.023)		0.004 (0.029)	0.078** (0.034)
Financial slack	-0.027** (0.013)	-0.026* (0.013)	-0.022* (0.011)	-0.013* (0.007)	-0.013* (0.007)	-0.010* (0.006)	-0.017 (0.010)	-0.016 (0.010)	-0.014* (0.008)
Count of acquisitions (lagged)	0.190*** (0.045)	0.190*** (0.046)	0.183*** (0.044)	0.037 (0.025)	0.037 (0.025)	0.037 (0.024)	0.224*** (0.039)	0.224*** (0.039)	0.216*** (0.038)
Firm size (lagged)	0.051** (0.009)	0.051*** (0.010)	0.053*** (0.009)	0.025*** (0.005)	0.025*** (0.005)	0.026*** (0.005)	0.025*** (0.007)	0.025*** (0.007)	0.025*** (0.006)
Count of segments	0.023 (0.018)	0.023 (0.018)	0.019 (0.016)	0.006 (0.009)	0.006 (0.009)	0.005 (0.005)	0.011 (0.010)	0.011 (0.010)	0.009 (0.009)
Diversification	-0.074 (0.059)	-0.074 (0.059)	-0.059 (0.049)	-0.063* (0.037)	-0.063* (0.037)	-0.054* (0.031)	0.001 (0.036)	0.001 (0.036)	0.006 (0.030)
Constant	-0.281*** (0.081)	-0.291*** (0.085)	-0.324*** (0.082)	-0.081* (0.041)	-0.081* (0.044)	-0.105*** (0.039)	-0.219** (0.058)	-0.221** (0.060)	-0.236*** (0.062)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,939	1,939	2,048	1,939	1,939	2,048	1,939	1,939	2,048
Number of firms	113	113	117	113	113	117	113	113	117

Robust standard errors in parentheses, clustered by firm

*** p<0.01, **p<0.05, *p<0.10

Fourth, the analysis assessed alternative measures of historical and peer performance. For the historical performance gaps, the alternative measures included using (1) Return-on-Sales (ROS) as a measure of performance to estimate the historical gap; (2) a 2-year-window instead of a 3-year historical average using both ROA and ROS as measures of performance. The results were similar to those reported here. For the social performance gaps, the analysis assessed overall industry average performance using ROA as the relevant social performance measure, rather than the subfield-level peer comparisons. Table 12 below provides results for the overall social aspiration performance. The results are similar to those with peer performance comparisons based on the four sub-fields.

Fifth, as noted earlier, sensitivity analysis assessed the total value of firms' divestiture activity. Using a paneled Ordinary Least Square regression with random effects was used as a specification, the results were consistent with the ones presented here using count as a measure of divestiture activity (Tables 9 to 11). Because firms are not required to release information on the value of the transaction, this measure understates the actual value of the divestiture activity, so that the reported analysis focuses on divestiture count.

Table 12: Impact of Industry-Level Social Aspiration Gaps on Divestiture Activity

DV: Count of divestitures	All divestitures			Full divestitures			Partial divestitures		
	(1) Controls	(2) Negative	(3) Positive	(4) Controls	(5) Negative	(6) Positive	(7) Controls	(8) Negative	(9) Positive
Social performance gap (abs)		-0.942 (5.272)	11.342 (13.719)		2.015 (7.218)	29.929 (21.937)		-8.397 (7.250)	-0.587 (12.583)
Financial slack	-0.096 (0.120)	-0.019 (0.129)	-0.075 (0.128)	-0.254* (0.136)	0.101 (0.157)	-0.221 (0.161)	0.081 (0.136)	-0.148 (0.153)	0.106 (0.117)
Count of acquisitions (lagged)	0.485*** (0.093)	0.456*** (0.100)	0.417*** (0.082)	0.355 (0.156)	0.225 (0.168)	0.255* (0.138)	0.559*** (0.083)	0.529*** (0.078)	0.472*** (0.074)
Firm size (lagged)	0.317** (0.074)	0.160** (0.080)	0.411*** (0.072)	0.289*** (0.078)	0.104 (0.129)	0.360*** (0.079)	0.352*** (0.097)	0.224*** (0.094)	0.491*** (0.088)
Count of segments	-0.014 (0.027)	0.078*** (0.027)	-0.039 (0.024)	-0.041 (0.040)	0.103*** (0.037)	-0.109*** (0.045)	0.013 (0.034)	0.075*** (0.024)	-0.014 (0.029)
Diversification	0.262 (0.582)	-0.065 (0.551)	0.187 (0.563)	-0.151* (0.616)	-0.271 (0.701)	-0.240 (0.591)	1.649* (0.988)	0.019 (0.624)	0.955 (0.762)
Constant	-4.833*** (0.724)	-3.081*** (0.864)	-5.906*** (1.122)	-4.991*** (0.742)	-3.677*** (1.339)	-6.600*** (1.545)	-7.286*** (1.225)	-3.909** (0.894)	-7.477*** (1.259)
Year dummies	Yes	Yes	Yes						
Observations	628	365	873	628	365	873	628	365	873
Number of firms	97	81	97	97	81	97	97	81	97

Robust standard errors in parentheses, clustered by firm

*** p<0.01, **p<0.05, *p<0.10

5.2 Analyses for Chapter 3

Tables 13, 14 and 15 provide results for the tests of the set of hypotheses presented in Chapter 3. Table 13 provides results of the multinomial logistic regression model, where the dependent variable indicates whether the firm continued, was acquired or shut down in a given time period. The omitted model for this regression is *survival*, and thus the models presented compare acquired and shut down to the omitted variable. Models 1 and 2 of Table 13 show the impact of firm strength on survival. Model 1 indicates that firm strength positively impacts survival over shutting down; this suggests that stronger firms are less likely to shut down their operations, as tends to be expected. However, Model 2 shows that firm strength has no impact in determining whether firms are more likely to survive relative to becoming targets for acquisition.

Table 13: Impact of Strength and Divestitures on Survival (Multinomial Logit with Random Effects)

DV omitted: Survival	(1) v. Shut down	(2) v. Acquired	(3) v. Shut down	(4) v. Acquired	(5) v. Shut down	(6) v. Acquired	(7) v. Shut down	(8) v. Acquired
Firm strength	-0.760** (0.363)	0.097 (0.178)			-0.776** (0.362)	0.111 (0.177)	-0.743** (0.363)	0.190 (0.183)
Count of divestitures			-0.582 (0.636)	0.254*** (0.112)	-0.640 (0.637)	0.256** (0.112)	-1.473 (1.441)	0.199* (0.121)
Strength x Divestitures							-1.381 (1.737)	-0.602** (0.280)
Firm size	-6.675** (2.875)	-0.062** (0.025)	-9.751** (3.983)	-0.082*** (0.027)	-6.483** (2.830)	-0.082*** (0.028)	-6.423** (2.824)	-0.070*** (0.025)
Financial slack	-0.138** (0.057)	0.003 (0.010)	-0.139** (0.056)	0.003 (0.010)	-0.135** (0.056)	0.003 (0.010)	-0.135** (0.057)	0.003 (0.010)
Headquarters dummy	0.528 (0.490)	0.290 (0.214)	0.617 (0.483)	0.307 (0.214)	0.509 (0.491)	0.323 (0.216)	0.507 (0.492)	0.329 (0.216)
Firm age (log)	-0.065 (0.192)	0.217* (0.076)	-0.078 (0.195)	0.142* (0.073)	-0.057 (0.192)	0.128* (0.076)	-0.059 (0.192)	0.124 (0.076)
Count of acquisitions	0.230 (0.222)	0.164** (0.069)	0.251 (0.223)	0.113 (0.076)	0.283 (0.223)	0.107 (0.076)	0.316 (0.252)	0.128 (0.078)
Constant	-4.407*** (0.583)	-3.673*** (0.256)	-4.033*** (0.594)	-3.763*** (0.251)	-4.396*** (0.582)	-3.719*** (0.258)	-4.378*** (0.578)	-3.715*** (0.257)
Observations	5,513	5,513	5,513	5,513	5,513	5,513	5,513	5,513
No. of firms	542	542	542	542	542	542	542	542

Robust standard errors in parentheses, clustered by firm. *** p<0.001, ** p<0.05, * p<0.01

Models 3 and 4 of Table 13 assess the impact that divestiture activity has on survival. Model 3 shows that the more firms divest, it reduces the likelihood of shutting down, but does not do so significantly; thus, Hypothesis 4 is only directionally supported. Model 4 provides evidence that the more firms divest, it increases the likelihood of being acquired over continuing operating as an independent firm, thus providing strong support for Hypothesis 5. These results combined suggest that divestitures do not significantly help firms from shutting down, but increases the likelihood of becoming a target for acquisition to other firms in the market. Models 5 and 6 include both strength and the divestiture activity on firm survival, providing consistent results to the previous models that include them independently. Model 5 indicates that firm strength decreases the likelihood of shutting down, thus improving the chances of survival, whereas it has no impact on the likelihood of surviving vis a vis becoming a target for acquisition. For the count of divestitures, things are consistent as well, with Model 5 indicating that the more divestitures firms undertake does not significantly help reduce the likelihood of shutting down (thus providing no support for H4). However, the more divestitures firms pursue increase the likelihood of becoming a target for acquisition (Model 6), thus providing consistent support to hypothesis 5.

Models 7 and 8 include the interaction term between strength and the count of divestitures. Model 7 shows consistent results for firm strength and for the count of

divestitures on the likelihood of shutting down, and it shows that for weaker firms, the impact of divestitures does not significantly reduce the likelihood of shutting down, thus only providing directional support for Hypothesis 6a. Figure 1 below graphically shows the impact of strength and divesting on the likelihood of shutting down. The figure provides support to the idea that divestitures do not help weak firms avoid dissolution, but also highlights the fact the likelihood of shutting down is extremely diminished for very strong firms that undertake a large number of divestitures.

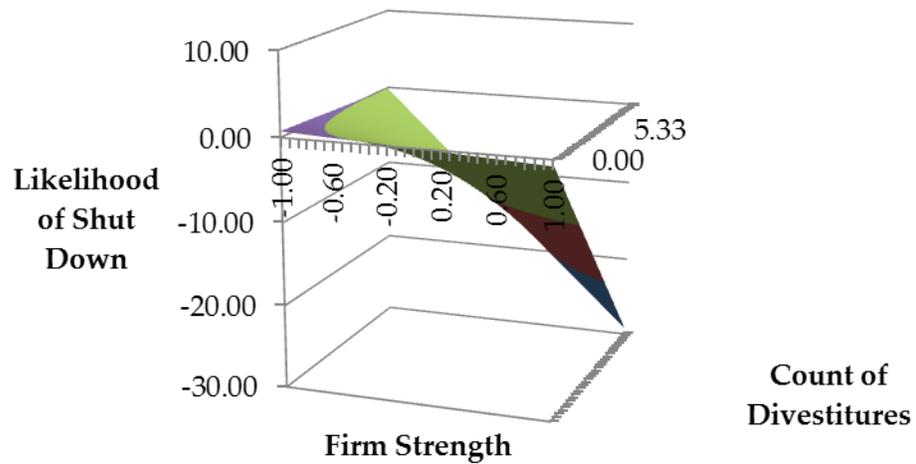


Figure 1: Impact of Strength and Divestitures on Likelihood of Shutting Down

Model 8 assesses the impact of the joint effect of strength and divestitures on the likelihood of acquisition, indicating that the stronger the firm, the impact of divestitures

reduces the likelihood of becoming a target for acquisition, thus providing strong support for Hypothesis 6b. Figure 2 below also shows the likelihood of becoming a target for acquisition diminishes for strong firms that divest; however, it increases considerably for weak firms that divest. These two results combined suggest that divesting from weakness does not improve the likelihood of survival for firms, but rather increases the odds of becoming a target for acquisition. Divesting from strength, on the other hand, does seem to alleviate the pressures of becoming a target for acquisition and helps firms to continue operating in the market. In sum, then, these results indicate that divestitures improve the chances of survival for strong firms, but does not seem to have a significant impact on helping weak firms remain operational.

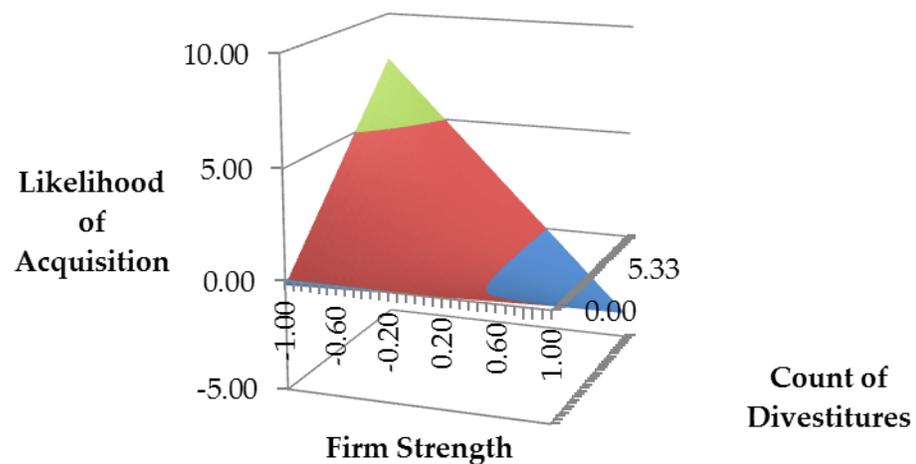


Figure 2: Impact of Firm Strength and Divestitures on Likelihood of Acquisition

Table 13 provides additional insight on the drivers of survival for firms. Firm size improves the likelihood of survival, both relative to shutting down and being acquired. This suggests that bigger firms are more likely to continue their operations, whereas smaller firms are at higher risk of becoming targets for acquisitions or dissolving. Financial slack increases the likelihood of firms shutting down, suggesting that financial constraints drive firm exit via dissolution, but does not prevent from becoming a target for acquisition. Headquarters location – whether they are located in the United States or not – does not impact firm survival relative to becoming a target or to shutting down. Firm age has no impact on firm survival relative to shutting down, however older firms are slightly more likely to become a target for acquisition. The count of acquisitions variable provides interesting insights; having conducted more acquisitions in the past does not improve the likelihood of survival relative to shutting down, and only slightly improves the chances of becoming a target for acquisition in the absence of firm strength (Model 2).

Table 14 presented in the next page provides the results for the impact of strength and divestitures on firm growth. Models 1 through 4 show random effect models with year effects, whereas models 5 to 8 shows firm-year fixed effects models. Model 1 indicates that stronger firms tend to have higher subsequent growth. Model 2 shows that the more divestitures firms undertake, the higher the subsequent growth in

sales they experience, thus providing support for Hypothesis 7. Model 3 provides continuing support when including both strength and count of divestitures in the model.

Table 14: Impact of Strength and Divestiture on Growth (Paneled Ordinary Least Square with Random Effects)

DV: Sale growth	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Firm strength	62.280** (20.640)		63.220*** (21.050)	42.060*** (13.650)	29.030 (19.370)		42.490* (25.380)	10.030 (13.850)
Count of divestitures		118.400* (64.570)	118.600* (64.62)	137.500* (66.140)		118.500* (67.440)	119.600* (67.900)	128.900* (68.920)
Strength x Divestitures				265.300** (133.600)				294.600** (144.100)
Firm size	50.700*** (9.872)	45.330*** (10.670)	45.110*** (10.690)	43.100** (11.090)	17.560 (16.740)	12.620 (16.670)	12.620 (16.660)	10.550 (16.830)
Financial slack	-0.444 (0.271)	-0.525* (0.282)	-0.372 (0.252)	-0.353 (0.254)	1.366** (0.628)	1.330** (0.609)	1.208** (0.577)	1.264** (0.587)
Headquarters dummy	-49.680* (27.200)	-49.650** (24.620)	-38.340 (24.890)	-39.850* (23.90)				
Firm age	-2.226* (1.233)	-2.338* (1.228)	-2.144* (1.198)	-2.082* (1.173)				
Count of acquisitions	24.940 (28.650)	5.712 (34.440)	1.967 (35.210)	-3.061 (36.410)	-12.470 (38.180)	-30.710 (44.380)	-31.390 (44.620)	-37.880 (46.070)
Year/Firm dummies	Yes/No	Yes/No	Yes/No	Yes/No	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Constant	4,528* (2,476)	4,722* (2,458)	4,352* (2,400)	4,232* (2,350)	205.1*** (54.250)	174.9*** (49.080)	191.6*** (52.580)	195.6*** (52.740)
Observations	5,513	5,513	5,513	5,513	5,513	5,513	5,513	5,513
Number of firms	542	542	542	542	542	542	542	542

Robust standard errors in parentheses, clustered by firm. *** p<0.001, ** p<0.05, * p<0.01

Model 4 on Table 14 builds up to include the joint effect of strength and divestitures on growth, and shows that the stronger the firm, the higher the impact that divestitures have on growth, thus providing strong support for Hypothesis 8. This result indicates that firms coming from positions of strength that divest experience a higher subsequent growth in their sales relative to weaker firms, suggesting that divestitures are used by strong firms as part of their reconfiguration strategies aimed at growth. These results are consistent when looking at the firm-year fixed effects models (Models 5 to 8); however, the impact of firm strength disappears, suggesting that firm strength improves growth when compared across firms rather than within firm.

Considering the results for hypotheses 7 and 8 combined, they suggest that, counter-intuitively, eliminating resources from a firm seems to improve their subsequent growth, and particularly so for firms coming from a position of strength. Figure 3 below shows the impact of strength and divestitures on firm growth graphically, and it makes apparent the considerable magnitude of the divestiture by strong firms on their subsequent growth. This provides evidence that divestitures are used not just as a tool for retrenchment as they have been conventionally considered, but they are also a tool for growth and may allow firms to internally reallocate financial and managerial resources more efficiently and reinvesting them in areas and resources that can provide higher subsequent growth.

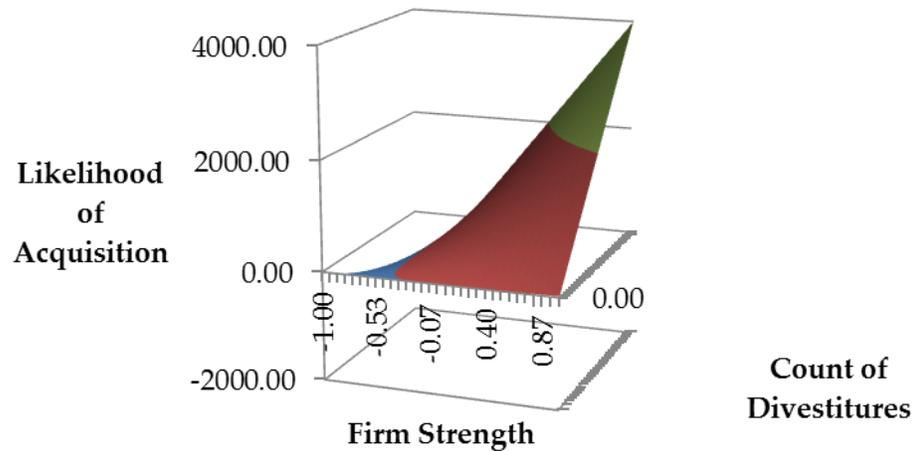


Figure 3: Impact of Strength and Divestitures on Growth

The control variables provide further insight on the drivers for subsequent growth. As prior literature has suggested, larger firms tend to grow more, as they have a larger set of resources from which to generate revenues. Financial constraints across firms do not impact the future growth of firms; however, as firms manage to have higher financial slack in previous years, their subsequent growth improves. This may suggest that firms may be reinvesting their financial resources within the firm in areas that are leading to higher growth. Interestingly though, contrary to what would be expected, prior acquisitions do not impact the future growth of firms.

5.2.1 Sensitivity Analyses for Chapter 3

Several sensitivity analyses assess the robustness of the results shown in Chapter 3. First, the impact of divestitures on survival could depend on the number of events that these firms make. Undertaking a small number of divestitures may help, whereas engaging in a large number of events may in fact make firms more vulnerable to being taken over as they become smaller and at higher risk of becoming a target. Engaging in a large number of divestitures may help firms free enough financial and managerial resources to avoid shutting down. I developed two alternative measures of divestitures: *few divestitures* for firms that engaged in up to 3 divestiture events in a year, and *many divestitures* for firms that pursued 4 or more divestitures per year. Table 15 below shows the results from sensitivity analyses. Models 1 through 4 provide results for new split measures of divestitures and the interacted measures with firm strength. Model 1 shows that engaging in many divestitures helps firms from dissolution, whereas conducting few divestitures has not impact, thus providing further support for H4.

Table 15: Sensitivity Analyses

DV omitted: Survival	(1)	(2)	(3)	(4)
	v. Shut down	v. Acquired	v. Shut down	v. Acquired
Firm strength	-0.776** (0.362)	0.111 (0.177)	-0.742** (0.363)	0.204 (0.183)
Few divestitures	-0.640 (0.637)	0.252 (0.167)	-1.480 (1.441)	0.098 (0.192)
Many divestitures	-1.512*** (0.433)	0.259** (0.109)	-1.423 (0.509)	0.229* (0.125)
Strength x Few			-1.391 (1.738)	-0.743* (0.328)
Strength x Many			0.533 (1.215)	-0.226 (0.707)
Firm size	-6.482** (2.830)	-0.083*** (0.027)	-6.422** (2.824)	-0.070*** (0.025)
Financial slack	-0.135** (0.056)	0.003 (0.010)	-0.135** (0.057)	0.003 (0.010)
Headquarters dummy	0.509 (0.491)	0.323 (0.216)	0.507 (0.492)	0.328 (0.216)
Firm age (log)	-0.057 (0.192)	0.129* (0.076)	-0.058 (0.192)	0.129* (0.076)
Count of acquisitions	0.283 (0.223)	0.107 (0.077)	0.316 (0.252)	0.134* (0.078)
Constant	-4.396*** (0.582)	-3.719*** (0.258)	-4.378*** (0.578)	-3.715*** (0.256)
Observations	5,513	5,513	5,513	5,513
No. of firms	542	542	542	542

Robust standard errors in parentheses, clustered by firm. *** p<0.001, ** p<0.05, * p<0.01

By contrast, Model 2 indicates that undertaking many divestitures improves the odds of firms becoming targets for acquisition, providing further support for H5. This

result combined with the one from Model 1 suggest that firms that engage in a large number of divestitures can improve their odds of shutting down, but also increases the risk of becoming a target for acquisition. Moreover, engaging in only a few divestitures does not significantly help or hurt the odds of survival.

Models 3 and 4 show results of the joint impact of firm strength and few or many divestitures. Model 3 indicates that divesting either few or many resources bears no significant impact on reducing the likelihood of shutting down. Model 4, however, shows that strong firms that engage in a few divestitures improve their likelihood of remaining as a standalone company and thus avoid becoming a target for acquisition, thus providing further support for H6b.

6. Conclusion and Discussion

This dissertation identifies different mechanisms and motivations that firms use for divestiture, and the subsequent impact of divestitures on firm survival and growth. The second chapter of this dissertation investigates the impact of aspirational mechanisms on firms' divestiture activity. The third chapter expands the arguments to assess how the divestiture activity of firms can in turn improve or restrict the likelihood of survival of firms relative to becoming a target for acquisition or shutting down, and how divestitures can also improve the growth rates of firms.

6.1 The Impact of Performance Feedback on Divestitures

The second chapter shows that, congruent with the existing literature, weak firms divest to retrench in the face of financial weakness, but it also extends the existing literature by showing how strong firms divest to free managerial resources to help maintain their superiority. Additionally, I identify different mechanisms driving the divestiture activity of firms facing different types of aspiration gaps and financial constraints.

The work contributes to both framing literatures. For the performance feedback lens, the work offers insights about how aspiration gaps affect firms' behavior regarding corporate decisions to reallocate resources when firms face weaknesses or have achieved

strong positions. For the dynamic resource-based view, the work shapes our understanding of the antecedents that drive resource reconfiguration, offering insights about factors that shape firms' resource allocation strategies. By combining these two lenses, the paper brings a richer understanding to the phenomenon of resource divestiture, providing a more positive, strategic view of the phenomenon than the negative, reactive perspective that is often associated with arguments about divestiture activity.

This chapter extends the findings from the performance feedback literature by showing that pure aspirational mechanisms might not be sufficient to trigger organizational change, but they might do so in combination with additional mechanisms such as financial liquidity constraints. Moreover, the findings of this chapter also extend the performance feedback literature by providing evidence that firms that have positive performance gaps, contrary to the traditional thoughts stemming from this literature, have strong incentives to engage in organizational change as they are pressured to remain superior. Empirically, this chapter contributes to the literature by developing a nuance measure of social aspiration that utilizes the average performance of the strategic group in which firms operates in, rather than the more traditional industry average.

The second chapter also contributes to the resource based view literature by providing initial evidence that divestitures, even though they are traditionally viewed as

a mode of reconfiguration aimed at retrenching and contracting the boundaries of the firm, is a mode also used by strong firms. This chapter provides a stepping-stone to understand the role of divestitures as a mode of reconfiguration aimed at growth rather than retrench. It provides insights regarding what triggers reconfiguration activities for weak and strong firms, and how they impact not just the number of divestiture events they pursue, but also the nature of the resources firms opt to divest.

For firms with negative aspirations gaps, two key mechanisms are relevant. First, financial slack becomes a strong determinant of the number of divestitures that firms with negative historical gaps engage in, regardless of how much the firms are struggling in terms of their performance. This suggests that financial distress is the focus of attention of managers when their historical performance falls below aspirations, triggering incentives to use divestitures as a means to free financial resources in order to address the financial challenges. Second, firms with negative historical performance gaps tend to divest full resources from the organization, which likely arises from the need to gain substantial financial resources quickly, while also freeing managerial attention for reinvestment in retrenchment efforts.

Firms with positive performance gaps behave differently with divestitures, with respect to both mechanisms. First, financial constraints have little or no direct impact, likely because high performance firms that require financial resources can raise the

funds in capital and debt markets. Second, firms that are excelling relative to historical aspirations appear to use divestitures as a tool to fine-tune their businesses, tending to divest partial resources rather than full resources. In doing so, strong firms appear to proactively reconfigure their businesses, eliminating business activities that may drain the attention and capacity of managers, thereby creating opportunities to reinvest the managerial resources in new areas of growth. One such area, as the results indicate, could be to focus the attention in the implementation and future growth stemming from prior acquisitions. Historically excelling firms, then, appear to not just use divestitures actively, but do so as a proactive mode of ongoing reconfiguration that frees attention that can be focused on areas of the organization that could contribute to the firm's future growth, as is explored in chapter three.

Taken in combination, these results show that divestitures are a mode of reconfiguration used for different purposes by strong and weak firms. Firms that are coming from a position of strength and are seeking to remain superior need to free managerial capacity and readjust the organization by fine-tuning their resources as they face pressures from the environment to remain superior. On the other hand, struggling firms tend to eliminate full resources from the organizations when pressed by financial constraints, in efforts to rapidly retrench and regain competitiveness.

This chapter shows that the strategic decisions managers make depend on their aspirations, but that these decisions vary depending on whether the historical or the social aspirations are the focus of attention. Historical aspirations seem to have a stronger impact than social aspirations on the managers' decisions to engage in reconfiguration activities via divestitures. This suggests that retrenchment activities, and divestitures as a tool for growth, are primarily driven by internal and external pressures that impact the organization relative to their previous position rather than compared to its relevant group of peers.

6.2 Impact of Divestitures on Survival and Growth

The third chapter focuses on the impact that divestiture activity has on survival and growth. Traditionally, divestitures have been considered as a mode of reconfiguration primarily used by weak firms attempting to retrench their operations as they respond to operational or competitive concerns. This chapter shows that divestitures are not just a mode of reconfiguration used by firms that may risk shutting down their operations, but are also used as part of firms' growth reconfiguration strategies. Firms coming from positions of strength in fact may divest as a way to remain active in the industry and avoid becoming a target for acquisition.

The work contributes to the dynamic resource based view literature. This chapter offers insights about how divestitures undertaken by firms coming from positions of weakness or strength affect firms' survival and growth. This work extends the traditional views in this literature, going back to the ideas of Penrose (1959) that firms' growth rates are constrained by the capacity of management, and argues that by divesting firms can free managerial capacity that may in turn relax the constraints on growth. This chapter provides a richer understanding on how divestitures affect firms' survival and growth, and provides insights that divestitures are not a mere tool for retrenchment, but in fact they play a critical role in helping strong firms avoid becoming a target for acquisition, as well as freeing necessary resources to reinvest in new areas of growth.

Firms coming from positions of weakness may use divestitures as part of their efforts to retrench, as has traditionally been assumed. This chapter shows that, contrary to common belief that by divesting weak firms may avoid having to shut down, divestitures may not necessarily help weak firms survive but rather help strong firms avoid becoming a target for acquisition. Additionally, this chapter shows evidence that strong firms that undertake divestitures improve their subsequent growth rates, thus suggesting that by divesting strong firms can proactively reallocate their resources more

efficiently – both financial as well as managerial – and thus relax their constraints on growth and improve their odds of surviving and remaining an independent unit.

This chapter shows that the survival and growth of firms are impacted by a combination of whether they are coming from positions of strength or weakness, and the divestiture activity they undertake as part of their reconfiguration strategies. Firm strength improves the likelihood of surviving relative to shutting down operations; however, divesting from weakness does not seem to improve those odds. Firms that divest – regardless of their level of strength – seem to improve the odds of becoming a target for acquisition, likely due to the fact that their operations become leaner and they are a more visible target for incumbents. However, divesting from strength reduces the likelihood of becoming a target, thus suggesting that strong firms that divest do so in their efforts of remaining independent and improve their subsequent growth. This suggests that divestitures may not necessarily help firms that are trying to retrench, but they are a critical mode of reconfiguration for firms pursuing growth, as they both improve the likelihood of remaining independent as well as relaxing their constraints on future growth rates.

6.3 Performance Feedback, Divestitures, Survival and Growth

Chapters two and three combined provide valuable insights as to what triggers firms' divestiture activity, and the subsequent impact of undertaking this activity on firm survival and growth. Combined, these two chapters contribute to the performance feedback literature by shedding light on how firms that are coming from positions of strength have incentives to remain superior and thus engage in organizational change via divestitures, and in turn how the divestiture activity can help or hurt the future survival and growth of the firm.

These chapters also contribute to the dynamic resource based literature by analyzing the triggers for divestitures and its subsequent impact on growth and survival. This literature has traditionally focused on the impact of reconfiguration activities on firm performance, and by drawing from the performance feedback lens this dissertation provides a richer understanding of what triggers reconfiguration activities and in turn how those activities may have different impacts on survival and growth depending on the type of reconfiguration firms are aiming to achieve.

This dissertation contributes to the field and to our understanding of business divestitures as a tool for retrenchment as well as a tool for growth. Contrary to common belief that divestitures will tend to contract the boundaries of the organization, they

seem to improve the allocation of resources particularly for firms coming from positions of strength. This suggests that complementary to the traditional “Penrose effect” (1959), firms can relax their constraints on growth determined by the capacity of management by eliminating parts of the organization and reinvesting those free managerial and financial resources in areas that will provide higher subsequent growth, and thus helping strong remain independent.

6.4 Limitations and Future Work

The dissertation has limitations that provide a basis for ongoing research. First, the dissertation analyzes a single industry – global pharmaceutical; future work in this project will collect data on other industries in order to determine the generalizability of the results.

Second, the dissertation is limited to understanding the impact of performance feedback and financial strength on divestitures, yet there be other drivers that could trigger the divestiture activity of firms. Future work will investigate other triggers to the divestiture activity of firms. Work with Charlie Williams investigates how industry-level changes can trigger divestiture; in particular, we investigate how diversified firms are more likely to divest businesses when there are changes in the level of industry co-location. In this investigation we argue that the costs of monitoring and processing

information from businesses increases when the industries become more concentrated, making it harder for diversified firms to collect and manage the “sticky” knowledge. To study this, we use a dataset from multiple archival sources that includes firms operating in multiple industries within the manufacturing industries, and track changes in the geographic concentration and co-location of industries, as well as entry and divestiture by diversified firms. This project will help to have a better understanding of alternative triggers to firm divestiture.

Along these lines, additional projects are focused in understanding how not just financial performance gaps, but also technological ones impact the decisions of managers to undertake divestitures as well as other modes of reconfiguration. This research will explore how both technological and financial aspirations jointly shape the decisions to engage in divestitures as part of firms’ overall reconfiguration strategy, arguing that technological gaps will drive firms’ needs for reconfiguration activities.

There is a need to expand our understanding of more overarching resource reconfiguration strategies. Ongoing work in this area will include other aspects of resource reconfiguration, particularly considering how firms’ divestiture activities are contingent on acquisitions and other reconfiguration events that firms undertake concurrently or in sequence. For example, technological needs may require firms to undertake an acquisition, but as part of their growth strategy they may choose to divest

to more efficiently reallocate the resources and raise the monetary funds necessary to make the acquisition possible.

Overall, this dissertation highlights the importance of divestiture activity for both strong and weak firms. The arguments and results provide a basis to pursue further research on firm reconfiguration strategy and performance over time.

Appendix A

This appendix provides further detail on the data collection and merger process. As mentioned in the data overview for Chapter 2, two main areas of data were necessary to test the predictions: firm and segment level financials, and data on the divestiture activity.

For the firm and segment level financials, preliminary efforts were made to download data from Compustat Historical Segment Database. However, after reviewing sources various considerable inconsistencies as well as large amounts of missing data on reported segments led to me hand collect the data from the original source. Annual reports for the 127 companies in the original sample from 1997 to 2009 were downloaded from the Securities and Exchange Commission (SEC) or directly from companies' websites when the information was not available via SEC. These reports gave us access to both the firm level and segment level financials that were necessary to create the main independent variables and controls for the first empirical chapter.

Second, data for all divestitures – as well as acquisitions – was obtained from SDC Platinum. The 127 firms were searched in this database and information on 2,009 acquisitions and divestitures events was obtained. Given the nature of the research question and predictions, the events had to be matched not just at the firm level but also at the segment level.

Each divestiture and acquisition event was then matched to the operating segments identified when collecting the data on financials. Manually, using the synopsis of the events, the assets divested were identified and then for a first cut the Annual Report for the corresponding year would be searched to determine from which business segment the asset was being divested or acquired. In certain cases, the type of asset divested or acquired was not very clear, such as in the case of specific drugs. In those cases, the drug or compound was researched using the U.S. National Library of Medicine to identify the specific purpose of the drug and obtain additional information that would help assess to which operating segment the divestiture or acquisition occurred. Similarly, LexisNexis was also consulted to obtain additional information regarding the events and resources that were being acquired or divested.

This matched dataset provides a unique large-scale view of divestitures and acquisitions inside the organization, and helps us track not just how corporate-level mechanisms influence managers' decisions to acquire and divest, but it allows us to see the specific operating areas where the events are taking place.

The overall dataset, then, includes 2,770 firm-segment-year observations with a total of 2,009 events announced in between 1999 and 2009 – 998 divestitures and 1,011 acquisitions.

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Biography

Maria Elena Vidal was born in Barquisimeto, Venezuela on June 30th, 1983. At age 3, Elena moved to Santiago, Chile where she attended her primary and secondary education. Elena attended Universidad del Desarrollo in Santiago to pursue her Bachelor in Sciences of Administration and Business Engineering degree, and then continued to obtain a Masters in Management Sciences. All degrees were received on December of 2005. Elena joined the Ph.D. program in Strategy at the Fuqua School of Business in July 2007; during her doctoral studies, she conducted research that focused mainly on the drivers and consequences of corporate strategic decisions of firms; she is a co-author in one publication titled “Business Transformation in Heterogeneous Environments: The Impact of Market Development and Firm Strength on Retrenchment and Growth Reconfiguration” along with Prof. Abhirup Chakrabarti at McGill University and Will Mitchell at Duke University. Elena obtained a National Award in Chile for academic excellence in the national aptitudes test in Chile. She was also the recipient of the Universidad del Desarrollo Scholarship from 2001 to 2005. She also won Academic Scholarships for achieving the best academic performance of her class for years 2001, 2002, and 2004, and graduated top of her class in 2005. After working as a research assistant at Universidad de Chile, Elena joined Duke University to start her Ph.D. in Business Administration. During her doctoral studies, Elena obtained three

scholarships – one granted by the Graduate School at Duke University, and two granted by the Government of Chile - the *Presidente de la República de Chile* and the *Beca Chile*.

Elena is a member of the Strategic Management Society and the Academy of Management Society.