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ORGANIZARSE PARA LA VENTAJA: GESTIONAR LAS LÓGICAS DE SINERGIA Y REASIGNACIÓN DE RECURSOS EN EMPRESAS DIVERSIFICADAS

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DOCTORAL DISSERTATION

ORGANIZING FOR ADVANTAGE: MANAGING SYNERGY AND REDEPLOYMENT LOGICS IN DIVERSIFIED FIRMS

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RESUMEN

Esta tesis se compone de cinco capítulos. El primer capítulo presenta una visión general de los tres ensayos que constituyen el núcleo de esta investigación. El capítulo 2 desarrolla un marco teórico a nivel microestructural, proponiendo cómo las empresas pueden diseñar sistemas internos para gestionar la tensión entre sinergia y redistribución de recursos. Este capítulo plantea tres elementos clave: (i) una estructura de tareas híbrida que combina supervisión estratégica centralizada con ejecución descentralizada del espacio en estantería a nivel de producto, (ii) una secuenciación deliberada de tareas de marca para minimizar la disrupción de sinergias durante los cambios de recursos, y (iii) una estructura de autoridad híbrida que equilibra autonomía local con rendición de cuentas posterior. El marco contribuye a la literatura sobre redeployment al mostrar cómo pueden coexistir las lógicas de sinergia y redistribución en empresas diversificadas. El capítulo 3 ofrece un análisis empírico de cómo configuraciones macroestructurales—como el número de niveles jerárquicos y la concentración de actividades funcionales—moderan la relación entre los incentivos para redistribuir recursos y el valor de la empresa. A partir de un conjunto de datos de empresas farmacéuticas en EE. UU., los resultados indican que, aunque la volatilidad sectorial incrementa el valor mediante oportunidades de redistribución, este efecto disminuye en empresas con jerarquías profundas y funciones centralizadas. El capítulo 4 analiza cómo las lógicas internas de diversificación—sinergia y redeployment—influyen en las estrategias de divulgación por segmentos. El capítulo 5 resume los principales hallazgos, discute implicaciones directivas y plantea líneas futuras de investigación. Esta tesis aporta a la literatura al demostrar que la flexibilidad no depende solo de contar con opciones, sino de la capacidad de ejecutarlas, lo cual requiere un diseño organizativo adecuado.

ABSTRACT

This dissertation is composed of five chapters. The first chapter presents an overview of the three essays that form the core of this research. Chapter 2 develops a theoretical framework at the micro-structural level, proposing how firms can design internal systems to manage the synergy-redeployment trade-off. This chapter proposes three core design elements: (i) a hybrid task structure that combines centralized strategic brand oversight with decentralized execution of shelf space at the product level, (ii) a deliberate sequencing of brand-related tasks to reduce disruption of synergies during resource shifts, and (iii) a hybrid authority structure that allows for local autonomy while ensuring accountability through post-decision review. The framework contributes to the resource redeployment literature by clarifying how synergy and redeployment logics can coexist within diversified firms. Chapter 3 provides an empirical analysis of how macro-structural configurations—specifically the number of organizational layers and the dispersion of functional activities—moderate the relationship between inducements to redeploy resources and firm value. Using an archival dataset of U.S. pharmaceutical firms, the findings show that although industry-level volatility enhances firm value through redeployment opportunities, this effect is weakened in firms with deep hierarchies and highly concentrated functional activities. Chapter 4 shifts the focus to the external environment, examining how firms' internal diversification logics—synergy and redeployment—influence their segment disclosure strategies. Using a two-step estimation method, the chapter shows that firms oriented toward synergy tend to aggregate segments to protect resource sharing advantages, while those emphasizing redeployment disclose more segments to signal agility. Finally, Chapter 5 summarizes the findings, discusses managerial implications, and offers directions for future research. This dissertation contributes to the redeployment literature by demonstrating that flexibility comes not just from having switching or growth options, but from a firm's capacity to execute them—something that depends on its organizational design.

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CHAPTER 1

Introduction

1.1 INTRODUCTION

A central challenge in corporate diversification lies in how firms allocate their internal resources when expanding across product markets. Two primary mechanisms underpin the potential for value creation in diversification: the pursuit of synergies and the redeployment of resources. While each of these paths has been individually studied, the possibility of managing both simultaneously presents a more complex and less understood strategic tension—particularly relevant for firms engaged in related diversification where the ability to both share and reallocate resources is important for competitive advantage (Helfat and Eisenhardt, 2004; Sakhartov and Folta, 2014).

Although debates continue about whether diversification enhances firm value (e.g., Campa and Kedia, 2002; Villalonga, 2004), studies tracing back to Rumelt's (1974) foundational work show that related diversification, in particular, creates superior value. Much of this value has traditionally been attributed to synergies, which arise when businesses with similar requirements within a diversified firm simultaneously share resources across multiple product lines or businesses (e.g., Teece *et al*. 1994). By sharing resources at the same point in time, firms can realize cost efficiencies (Bailey and Friedlander, 1982; Markides and Williamson, 1994; Panzar and Willig, 1981; Teece, 1980), generating intra-temporal economies of scope (Helfat and Eisenhardt, 2004).

Most discussions about resource sharing focus on what happens at one point in time—but that misses another crucial piece of information: how resources get shifted over time.

Instead of just sharing resources in the present, firms can build what's called inter-temporal economies of scope by moving resources between markets as circumstances evolve (Helfat and Eisenhardt, 2004). By doing so, they can withdraw from markets that aren't performing well and channel those resources into newer, more promising areas, helping them stay flexible (Lieberman *et al*. 2017; Sakhartov and Folta, 2014; Wu, 2013). Given this, scholars have emphasized that the real strength of related diversification doesn't just lie in creating synergies—it's also about setting up the ability to redeploy resources effectively when needed (Helfat and Eisenhardt, 2004; Sakhartov and Folta, 2014).

The theory of relatedness argues that operating in related markets reduces the cost of reallocating resources, thereby improving the firm's ability to adapt internally when needed (Sakhartov and Folta, 2014; 2015). Nonetheless, this viewpoint overlooks the nuanced decision-making involved in resource redeployment. Even though reduced costs of moving resources make related diversification appealing, it is also important to consider inducements—performance-driven incentives that trigger the reallocation of resources (Sakhartov and Folta, 2015). For instance, there are situations where; despite facing steeper redeployment costs, firms may opt to reallocate resources into less related markets when potential benefits—such as higher expected returns, greater uncertainty, or negatively correlated markets—outweigh these costs (Sakhartov and Folta, 2015).

Another key debate in the redeployment literature is that even though relatedness can help firms tap into both synergies and redeployment, the benefits from these two strategies don't simply add up. In fact, gaining value from one can sometimes weaken the advantages of the other (Giarratana *et al*. 2021; Morandi *et al*. 2020; Sakhartov and Folta, 2014). This

tension is especially clear in firms where businesses rely on one another through a shared resource such as a common brand name (Giarratana *et al*. 2021). Imagine a firm with two products—A and B—that both benefit from a shared brand. When product A performs well, it boosts the brand's image, which in turn helps drive sales for product B. But if the firm starts shifting non-scale free resources away from product A—it can weaken that shared brand effect. Even if product B improves its performance, the overall firm benefit may shrink because the brand synergy connecting the two products starts to break down (Giarratana *et al*. 2021). In these settings, moving non-scale free resources to another business can disrupt the ongoing collaboration and resource sharing that generate synergies between businesses, making redeployment a less effective approach. This built-in tension hints that a firm's success with diversification hinges on how skilfully it manages these two often competing approaches.

It is important to recognize that while related markets might feel more stable due to familiarity, they are by no means free from volatility. Firms operating in related markets can still be hit by unexpected changes. That said, firms in related markets are usually in a stronger position to manage such turbulence. Their shared expertise and overlapping resources make it easier to respond. In contrast, firms spread across unrelated markets face a different challenge. They often operate without common resources between businesses, making those environments more unpredictable. In these situations, the ability to shift resources from one part of the business to another becomes a critical advantage (Giarratana *et al*. 2021). Flexibility is the main lever for performance. So, while redeployment can be theoretically possible even within related markets, redeployment becomes expensive due to the loss of

synergistic benefits that arise from reallocating resources (Giarratana *et al*. 2021). In unrelated markets, however, redeployment plays a much larger role. It becomes the primary way firms cope with uncertainty and capture new growth opportunities, making redeployment an attractive option (Giarratana *et al*. 2021).

Since diversified firms can gain advantages from both intra-temporal and inter-temporal economies of scope (Helfat and Eisenhardt, 2004), it is important to explore how they might support both synergy and resource redeployment without compromising one for the other. Rather than committing entirely to a synergy-driven model or focusing solely on redeployment, firms stand to benefit from embracing both approaches. Doing so allows them to capture value from sharing scale-free resources across businesses or units while remaining agile enough to reallocate non-scale free resources when market conditions shift. The challenge, however, lies in the fact that each approach relies on distinct organizational structures and systems (Folta *et al*. 2016). As a result, moving from one strategic focus to the other is not straightforward—it often involves costly and time-consuming changes to internal processes and frameworks. In many cases, firms that lean too heavily in one direction risk becoming stuck in that path. Even when the original strategy no longer fits the external environment, shifting course can be difficult.

Given this, successfully achieving both synergy and redeployment advantages often requires different organizational setups, and focusing too much on one logic can make it harder to do the other well (Sakhartov and Folta, 2014). This tension happens because each strategy leans on its own set of internal routines, cost structures, and incentive systems (e.g., Helfat and Maritan, 2024; Giarratana *et al*. 2021; Zhou, 2011). For example, consider firms

that expand by tapping into scale-free resources (Levinthal and Wu, 2010). To get the most out of these resources, firms often need strong coordination systems that make it easier to share resources across different parts of the business (Henderson and Cockburn, 1994; Zhou, 2011). On the other hand, when firms grow using resources that cannot be scaled up indefinitely, i.e., non-scale free (Levinthal and Wu, 2010), they need to stay flexible and move those resources quickly to better opportunities (Brahm *et al*. 2017). Even though these two strategies pull in different directions, much of the research on resource redeployment has stayed focused on what makes the resources themselves special (e.g., Levinthal and Wu, 2010; Giarratana *et al*. 2021), while paying a lot less attention to the organizational challenges that come with actually moving them around.

Recently, more and more studies have started looking at how a firm's internal setup can either help or get in the way of moving resources around efficiently (e.g., Cattani *et al*. 2024; Helfat and Maritan, 2024; Levinthal and Wu, 2024). For instance, Helfat and Maritan (2024) suggest that deep hierarchies can slow down redeployment by causing problems like misaligned incentives, poor communication, and information distortion—all of which make it harder for a firm to respond quickly to changes in the market. While this line of research gives us a starting point for understanding how multi-business firms differ when it comes to organizing for redeployment, most of the research so far is still mostly theoretical with a specific focus on the role of routines (Helfat and Maritan, 2024) and dynamic integrative capabilities (Cattani *et al*. 2024). Moreover, even with these contributions, there is still a lot we don't know about how firms can navigate the organizational complexity that arises when they are incentivized to reallocate resources while also trying to maintain the benefits that

come from synergy. When resource redeployment pulls a firm away from an existing synergy-driven setup, the key challenge becomes how to make that move without undermining the very synergies that add value.

Furthermore, a firm's internal structure reflects the image it seeks to present to the external stakeholders. Firms that successfully strike a balance between building synergies and staying flexible internally will be better equipped to manage the trade-off between transparency and confidentiality in their segment disclosures. Their ability to both co-ordinate shared resources and remain adaptable gives them more control over what parts of the business they highlight—and what they choose to keep out of sight. In practice, this often means highlighting business segments where agility strengthens their competitive position, while keeping details vague or bundled together in areas where safeguarding synergies or sensitive advantages is more important. Getting this balance right is crucial: reveal too much, and competitors might pick up on a firm's strengths; reveal too little, and investors may start to doubt whether the firm can adjust to changing markets. Given this, segment disclosure is not merely a compliance exercise, but a strategic decision linked closely to how firms organize and present themselves.

This points to the broad research question: *how can diversified firms design their organizational structures to effectively manage the competing demands of synergy and redeployment; and strategically signal these diversification logics to the external stakeholders*. Tackling this question is what drives the core motivation behind this dissertation. Firms that can figure out how to manage these two logics—building structures that support synergies while staying flexible for redeployment—will be better equipped to

remain competitive and responsive over time—without having to alternate between distinct strategic approaches. Answering this question helps contribute to understanding how organizational structure shapes both the execution and the signaling of diversification strategy.

In this context, this dissertation takes on *three* main objectives. *First*, it aims to understand how diversified firms can structure their organizations to pursue strategic redeployment without significantly eroding the synergies that are already in place. This calls for a closer examination of the micro-structural organizational design elements that might enable diversified firms to navigate the synergy-redeployment trade-off effectively. Thus, Chapter 2 addresses an important gap in the resource redeployment literature by exploring how task and authority structures—such as the way tasks are divided and assigned, the order in which they are executed, and the distribution of decision-making authority—can help diversified firms take advantage of resource redeployment opportunities without compromising the synergies created through shared resources. Chapter 3 then moves the focus to the macro level, examining how structural features, such as the number of organizational layers and the degree of functional dispersion, influence the relationship between a firm's incentives to redeploy resources and its overall value. While all multi-business firms may have, in theory, a fundamental capability for resource redeployment, this does not automatically guarantee an *equal* degree of effectiveness in redeploying resources (Dickler *et al*. 2022; Helfat and Maritan, 2024; Levinthal and Wu, 2024). In this regard, an aspect that has received scant attention in the literature on resource redeployment is the potential *heterogeneity* among multi-business firms concerning the organizational factors

that influence resource redeployment decisions. This chapter aims to provide some initial empirical evidence suggesting that the corporate advantage associated with the internal flexibility of redeploying resources across businesses is contingent on certain types of organizational factors, thereby influencing redeployment effectiveness of multi-business firms. Therefore, this chapter aims to provide insights into the organizational factors that can enhance the ability of multi-business firms to redeploy resources more effectively, thereby reducing resource *mis*allocations and improving overall firm value. The third objective of this dissertation is to understand how diversified firms can use their internal diversification logics—synergy and redeployment—to shape how external stakeholders perceive them. This issue is explored in Chapter 4 which examines how resource redeployment and synergies arising from related diversification influence the extent of a firm's business segment disclosure. Disclosing segment-level information can sometimes work against a firm's interests—for example, by revealing insights that competitors could use to their advantage (Verrecchia, 1990). As a result, the way firms choose to disclose their business segments plays a strategic role and can significantly shape their competitive standing in the market (Cho, 2015).

To tackle these research objectives, this dissertation draws insights from three main areas: resource redeployment (e.g., Amore and Mastrogiorgio, 2022; Dickler *et al*. 2022; Giarratana *et al*. 2021; Sakhartov and Folta, 2014; 2015), organizational design (e.g., Puranam, 2018; Puranam *et al*. 2014; Puranam *et al*. 2012; Raveendran *et al*. 2016), and segment disclosure (e.g., Berger and Hann, 2003; 2007; Cho, 2015).

Work grounded in the micro-structural tradition of organizational design has shed light on some of the most fundamental challenges firms face—specifically, how to divide tasks, allocate responsibilities, and ensure that information flows effectively across different parts of the organization (Puranam *et al*. 2012; Puranam *et al*. 2014; Puranam, 2018; Raveendran *et al*. 2016). Puranam (2018) argues that these are the core problems of organizing, and that structural design choices—such as how tasks are grouped and how authority is distributed—serve as the key mechanisms through which these problems could be addressed. Yet, despite the depth of theoretical work in this area, we still know relatively little about how these mechanisms function in real-world settings—especially when internal tensions emerge. One such tension arises when a diversified firm reallocates resources in pursuit of new opportunities, but in doing so, pulls them away from areas where they currently support synergistic value. That's where this dissertation steps in. By linking ideas from organizational design to the real-world challenges diversified firms face, it helps bridge a major gap between two important streams of research.

By bringing these different literatures together, this dissertation pushes forward thinking in the diversification and resource redeployment fields, offering new insights at both a theoretical and empirical level. On the *theoretical* side, it contributes to the diversification and redeployment literature by examining how diversified firms can use micro-structural organizational design—through task partitioning, sequencing, and authority structure—to balance the competing diversification logics. This perspective offers a new way to think about how firms can leverage relatedness while managing the trade-off between synergy and redeployment. Second, this dissertation adds to the organizational design literature by

applying micro-structural principles to the real-world complexities diversified firms face. While past research has largely focused on the outcomes of organizational complexity—like increased coordination costs (e.g., Zhou, 2011; Zhou and Wan, 2017)—less is known about how that complexity (i.e., task interdependencies) actually emerges within diversified firms. By examining the tension between synergy and redeployment, this dissertation sheds light on a key source of task complexity and how appropriate task and authority structures can help firms address the synergy-redeployment trade-off effectively.

Empirically, contrary to prior research (e.g., Dickler *et al*. 2022), this dissertation suggests that diversification can lead to weaker performance in volatile environments—particularly when multi-business firms operate in closely related industries where business segments rely on shared resources. In such cases, disruptions in one area can spill over into others, reducing the benefits of internal resource redeployment (Giarratana *et al*. 2021). This interdependence presents a strategic challenge: while firms may have the flexibility to reallocate resources, doing so can risk damaging valuable synergies (Giarratana *et al*. 2021; Sakhartov and Folta, 2014). This dissertation shows that multi-business firms don't automatically offer an advantage under uncertainty. Instead, performance depends on whether a firm's internal structure supports resource reallocation without undermining synergistic advantages. Given this, the dissertation contributes to the real options theory (e.g., Amore and Mastrogiorgio, 2022; Sakhartov and Folta, 2015), and the resource redeployment literature (e.g., Dickler *et al*. 2022), by identifying two novel structural conditions. Thus, it can be argued that the true value of flexibility lies not just in having access to growth or switching options, but in a firm's ability to execute them—something that depends on having

the right organizational design, thereby challenging the common belief that multi-business firms are inherently better positioned to navigate uncertainty.

Finally, while traditional research on diversification has primarily concentrated on how firms internally manage resources and structure to drive value creation, it has largely remained centered on internal organizational processes. This dissertation introduces a fresh perspective by suggesting that diversification logics can also be actively managed externally to reinforce competitive advantage. More specifically, it shows that firms can use business segment disclosure as more than just a compliance exercise. By signaling their ability to redeploy resources, they can highlight their flexibility to the market, while at the same time keeping synergistic strengths under wraps to protect proprietary advantages. Taking this perspective, the dissertation adds to the diversification and segment disclosure literature by connecting a firm's internal strategic choices with its external communication tactics. It shows that the way firms present their diversification logics to outside stakeholders can shape market perceptions—and may play a crucial role in helping them maintain a competitive edge.

After outlining the main contributions of this dissertation, the following section offers a concise overview of each chapter to illustrate the research's overall structure and development. Chapter 2 argues that the way tasks and authority are structured play a vital role in enabling firms to pursue redeployment opportunities without undermining existing synergies. Following Puranam's (2018) framework, this chapter proposes three core design elements: (i) a hybrid task structure that combines centralized strategic brand oversight with decentralized execution of shelf space at the product level (ii) a deliberate sequencing of

brand-related tasks to reduce disruption of synergies during resource shifts, and (iii) a hybrid authority structure that allows for local autonomy while ensuring accountability through post-decision review.

The third chapter presents an empirical investigation into how macro-structural configurations—specifically, the number of organizational layers (a vertical attribute) and the dispersion of functional activities—moderate the relationship between inducements to redeploy, proxied by industry-volatility, and firm value. To explore this, the dissertation draws on an archival dataset manually compiled from the 3rd edition of the U.S. Medical and Healthcare Marketplace Guide, offering internal operational insights into firms within the U.S. pharmaceutical industry from 1983 to 1992. Using data from 212 publicly traded firms, and applying OLS panel regressions with firm-specific fixed effects and year dummies, this chapter extends prior research, by first replicating the baseline hypothesis—higher industry-level volatility in the firm's businesses positively affects firm value by increasing the value of strategic flexibility (e.g., Amore and Mastrogiorgio, 2022; Sakhartov, 2018; Sakhartov and Folta, 2014, 2015). However, this positive relationship becomes weaker in firms with more hierarchical layers and greater concentration of key functional activities across organizational layers.

Although prior research on segment disclosure has explored the tension firms face between promoting transparency (e.g., Berger and Hann, 2003) and protecting sensitive proprietary information (e.g., Bens *et al*. 2011; Botosan and Stanford, 2005; Harris, 1998), they often frame disclosure choices primarily as reactions to external market forces, i.e., as a regulatory compliance. Chapter 4 of this dissertation extends this perspective by suggesting

that disclosure strategies are also shaped by a firm's internal strategic orientation—whether it emphasizes synergy or redeployment—which itself is rooted in how the firm structures and organizes its internal operations. Specifically, it investigates how firms' pursuit of synergies and resource redeployment shapes their approach to business segment disclosure.

Using a two-stage estimation approach—first applying a probit model, followed by a non-linear least squares regression to estimate segment underreporting—this chapter posits that firms prioritizing synergies, in related product markets, report fewer segments in order to protect their synergistic benefits, thereby reducing the risk of imitation. On the other hand, firms built to focus on redeployment report more segments to showcase their redeployment flexibility, thereby discouraging potential competitors from entering the market. In the end, a firm's ability to manage what it reveals or conceals depends on how well its internal structure supports both integration and quick adaptation.

In conclusion, firms must not only structure their internal organization to effectively manage both synergy and redeployment, but also strategically communicate these diversification logics to the external stakeholders in order to attain a competitive advantage in dynamic settings.

CHAPTER 2

Between Integration and Flexibility: Rethinking Organizational Design for Synergy and Redeployment in Diversified Firms

ABSTRACT

This paper explores how diversified firms can effectively navigate the organizational tension between resource redeployment and synergy—two important but often conflicting logics of value creation. While synergy has traditionally been viewed as the primary source of performance in related diversification, recent research highlights the growing importance of flexibility in reallocating resources. Yet, there is still limited understanding of how firms manage the trade-off between these approaches. To address this gap, we present a theoretical framework grounded in micro-structural organizational design. We argue that the way tasks and authority are structured play a vital role in enabling firms to pursue redeployment opportunities without undermining existing synergies. Our framework proposes three core design elements: (i) a hybrid task structure that combines centralized strategic brand oversight with decentralized execution of shelf space at the product level (ii) a deliberate sequencing of brand-related tasks to reduce disruption during resource shifts, and (iii) a hybrid authority structure that allows for local autonomy while ensuring accountability through post-decision review. Together, these elements provide a way for firms to remain responsive to market changes while preserving the benefits of shared resources. This work contributes to the redeployment and organizational design literature by demonstrating how appropriate micro-structural organizational design choices can help diversified firms strike a balance between integration and flexibility in complex organizational environments.

Keywords: resource redeployment, synergy, hybrid-organizational form, modularity, task interdependency, task sequencing, authority structures

2.1 INTRODUCTION

A key concern in the resource redeployment literature is understanding how diversified firms manage the pressures to reallocate resources when faced with emerging strategic opportunities—often driven by changes in demand or competitive dynamics (e.g., Levinthal and Wu, 2010; Morandi *et al*. 2020; Wu, 2013). The central challenge lies in figuring out how firms can reallocate resources without undermining the synergies they have already built (Giarratana *et al*. 2021; Morandi *et al*. 2020; Sakhartov and Folta, 2014). While past research acknowledges that synergy and redeployment are both key mechanisms for creating value, it also points to the tension that often arises when firms try to pursue both at once (Giarratana *et al*. 2021; Morandi *et al*. 2020; Sakhartov and Folta, 2014). Synergies typically require the simultaneous use of scale-free resources across business units or businesses, whereas redeployment involves reallocating non-scale free resources to new opportunities (Giarratana *et al*. 2021; Helfat and Eisenhardt, 2004; Levinthal and Wu, 2010; Sakhartov and Folta, 2014). When one objective is prioritized, the other can be undermined—redeploying a resource from existing synergistic configurations, may create negative impact on established synergies, while maintaining synergies may limit a firm's agility in resource reallocation (Giarratana *et al.* 2021; Morandi *et al*. 2020; Sakhartov and Folta, 2014). This synergy-redeployment trade-off is especially relevant for diversified firms, whether they operate in closely related industries or span unrelated sectors, where business units depend on shared assets—like a unified brand—that generate reputational benefits or foster customer confidence (e.g., Giarratana *et al*. 2021). Despite growing interest to address this tension, we still know relatively little about the internal organizational structures or mechanisms that could allow firms to manage this trade-off effectively. In particular, research has yet to fully

examine how specific micro-structural design choices—such as the way firms divide and assign tasks, the order in which those tasks are carried out, and how decision-making authority is distributed—can help diversified firms take advantage of resource redeployment opportunities without compromising the synergies created through shared resources. Recognizing this gap is essential, as both redeployment and synergy serve as important sources of value in diversified firms—yet they depend on distinct, and often conflicting, organizational designs (Folta *et al*. 2016). Making changes to these structures is not only complex but also costly, which makes managing this tension particularly challenging.

Research rooted in the micro-structural perspective of organizational design has helped illuminate some of the most essential challenges firms face—namely, how to break down work into manageable tasks, assign responsibilities effectively, and keep information flowing smoothly across different parts of the organization (Puranam *et al*. 2012; Puranam *et al*. 2014; Puranam, 2018; Raveendran *et al*. 2016). Puranam (2018) frames these as the foundational issues of organizing, and suggests that design choices—such as how firms group tasks or delegate authority—are the primary tools for addressing them. Still, despite the rich theoretical groundwork, there is limited understanding of how these design mechanisms actually operate in practice, particularly when internal trade-offs arise. A common example is seen in diversified firms that shift resources to pursue emerging opportunities, even if doing so means diverting them from areas where they are currently generating synergies. This creates a form of task complexity, where different activities within the organization are closely connected—often because they rely on shared brand elements, resources, or coordinated efforts. When a firm reallocates resources from one area of the business to chase

new opportunities, it may unintentionally disrupt established interdependencies. This can throw off previously well-aligned tasks, making it more difficult to sustain coordination, consistency, and the synergies that arise from cross-product integration. While such trade-offs are common in diversified firms, the organizational design literature has yet to fully explore how different arrangements of task and authority hierarchies might help manage the tensions between maintaining synergy and enabling flexibility. This leads to an important question: how can diversified firms structure themselves to pursue strategic redeployment without eroding the synergies they already benefit from? Answering this requires a closer look at the micro-level elements of organizational design that may help firms strike this balance. By drawing on and bridging insights from both the resource redeployment and organizational design literatures, this paper fills a notable gap by asking: *how can configurations of task and authority—such as how work is divided and sequenced, and how decision rights are allocated—equip diversified firms to capitalize on redeployment opportunities while still protecting the synergies created through shared resources.*

To address this question, the paper introduces a theoretical framework aimed at helping diversified firms balance the tension between maintaining synergy and allowing for resource redeployment. The framework centers on two critical elements of organizational design: task structure and authority structure (Puranam, 2018). First, it puts forward a hybrid approach to task design, where strategic brand direction is kept centralized to preserve consistency and shared brand value, while day-to-day branding decisions—such as adjusting shelf space—are delegated to individual product teams. These teams are closer to market signals and better positioned to act quickly when performance shifts occur (Puranam 2018; Raveendran *et al*.

2016). Second, the paper emphasizes the importance of carefully sequencing brand-related activities—for example, strengthening brand connections between products before making resource reallocation decisions that could otherwise weaken synergy. Doing so could help avoid disruptions to cross-product synergies. Third, we suggest a hybrid authority structure where product teams have the autonomy to act without prior approval (low ex ante intervention probability), but are required to justify their decisions afterward (high ex post accountability probability) (Puranam, 2018). This structure supports responsiveness while safeguarding brand integrity by preventing resource reductions from falling below critical thresholds (Giarratana *et al*. 2021)—such as minimum shelf presence for flagship products—that could weaken brand recognition, thereby disrupting synergies. Collectively, these design choices could offer a way for firms to remain agile in their resource reallocation while still protecting the benefits of shared branding.

This framework offers three main contributions. Although most research on related diversification has emphasized synergy as the main source of performance gains, emerging work suggests that the ability to flexibly shift resources across related markets may also play a key role in driving firm value (e.g., Helfat and Eisenhardt, 2004; Sakhartov and Folta, 2014). While the idea that redeployability adds value is not new, there has been limited exploration of how it operates in conjunction with—or in tension with—synergistic strategies (Folta *et al*. 2016; Sakhartov and Folta, 2014). Prior studies have generally not drawn a clear line between these two value-creating logics, nor have they examined how their interplay affects firm outcomes. Addressing this gap, our study contributes to the redeployment literature by investigating how diversified firms can navigate the interdependence between

synergy and redeployment through the lens of organizational design. By focusing on the way tasks are partitioned and sequenced, and how decision-making authority is structured—firms can manage this trade-off between maintaining synergistic advantages and responding to changing opportunities without compromising those synergies. In doing so, our work offers a fresh perspective on how diversified firms can capture the benefits of relatedness through appropriate organizational design, and provides a foundation for distinguishing the separate, yet often overlapping, effects of synergy and redeployment.

Second, this study adds to the organizational design literature by grounding micro-structural concepts in the real-world challenges that firms encounter. While much of the existing work explores the outcomes of organizational complexity—such as increased coordination costs (e.g., Puranam, 2018; Puranam *et al*. 2012; Zhou, 2011; 2013)—it tends to offer limited insight into how that complexity actually emerges inside firms. With the exception of a few contributions, such as Zhou and Wan (2017), we still have a limited understanding of how detailed interdependencies develop through the day-to-day functioning of diversified firms. Gaining a clearer view of where this complexity originates could help pinpoint where coordination is truly necessary—and where the appropriate task and authority structures might be able to resolve it. By focusing on the tension between synergy and redeployment, this study addresses a key source of such complexity, offering new insight into how firms can better manage the organizational demands of pursuing both value-creation strategies at once by applying micro-structural organizational design choices.

Finally, our paper reinforces the idea that for firms to effectively pursue new opportunities—such as entering new markets—they must develop dynamic capabilities

(Teece *et al*. 1997). A key aspect of dynamic capability lies in a firm's ability to adjust, align, and reorganize its internal resources and processes—particularly when those systems are deeply complex and interconnected (e.g., Zhou and Wan, 2017). This involves shaping an organizational structure that can manage that complexity effectively and facilitate coordination across various business units. For instance, failing to sequence tasks properly often signals a deeper issue with cross-functional coordination, where decisions happen in isolation and broader brand implications are ignored. In contrast, when redeployment is approached through a well-ordered series of brand-related actions, it becomes a more adaptive and responsive process rather than an isolated decision. In this sense, the ability to partition and sequence tasks effectively can be seen as a form of dynamic capability that firms can cultivate to navigate complexity and change.

The rest of the chapter is organized as follows: In Section 2.2, we review the relevant literature on resource redeployment and organizational design. In Section 2.3, we propose a theoretical framework. In Section 2.4, we discuss the strategic implications, the paper's contributions, and finally we conclude.

2.2 LITERATURE REVIEW

2.2.1 Synergy versus redeployment-driven approaches to diversification

Although scholars continue to debate whether diversification itself enhances firm value (Campa and Kedia, 2002; Villalonga, 2004), research dating back to Rumelt's (1974) foundational study has increasingly shown that firms engaging in related diversification tend to generate greater value. A growing body of empirical work supports this view, indicating

that firms are more likely to pursue related forms of diversification (Montgomery and Hariharan, 1991), which are in turn associated with stronger financial metrics. But what underlies the value creation linked to related diversification? A widely accepted perspective holds that related diversified firms benefit from synergies that emerge when they concurrently allocate and utilize similar resources across different businesses (e.g., Teece *et al*. 1994; Bryce and Winter, 2009).

Synergies derived from related diversification enable firms to leverage shared resources across businesses, driving cost efficiencies and competitive advantage (Bailey and Friedlander, 1982; Markides and Williamson, 1994; Panzar and Willig, 1981; Teece, 1980; 1982). Teece (1980) introduces the concept of economies of scope, which arise when firms produce multiple products jointly, yielding cost advantages compared to producing them separately. These economies are particularly valuable when linked to proprietary knowledge or unique, indivisible assets that can be applied across product lines (Teece, 1980). This encourages firms to pursue internal diversification as a way to make fuller use of existing resources, which can lead to lower operating costs and improved efficiency (Zhou, 2011).

Along similar lines, Markides and Williamson (1994) argue that when strategic assets are shared across business units, firms stand to benefit from economies of scope—primarily through cost savings. They refer to this as the 'amortization advantage': by spreading the use of valuable resources across different markets or divisions, firms can get more out of those assets while simultaneously cutting costs and enhancing the distinctiveness of their offerings. Henderson and Cockburn (1994) add to this by pointing out the role of knowledge spillovers—where discoveries or insights from one research initiative can spark innovation

in another area. This highlights the strategic benefit of sharing capabilities across related businesses. Together, these studies capture the logic behind related diversification, where firms generate synergies by drawing on shared resources and complementary expertise.

Such efficiencies, rooted in the improved coordination of internal operations, are commonly referred to as supply-side synergies (e.g., Montgomery, 1994; Ramanujam and Varadarajan, 1989). They result from spreading fixed costs over a wider base and avoiding duplication. For example, consider a firm that manufactures both cleaning products and personal care items. Instead of using separate plants for each product, the firm might rely on a single facility to produce items like shampoo, detergent, and soap. By doing so, the firm reduces the cost of producing each item, runs operations more efficiently, thereby improves profitability—highlighting an example of supply-side synergy. While these internal efficiencies are important, demand-side synergies also offer a complementary source of value (e.g., Giarratana *et al*. 2021; Priem, 2007; Ye *et al*. 2012).

Beyond just lowering production costs, resource sharing across businesses can also increase consumer's willingness to pay (Penrose, 1959; Porter, 1987). This is because multi-business firms are often better positioned to create distinct and differentiated offerings across their businesses. Demand-side synergies arise when firms increase the value customers see in their products by using shared assets like a trusted brand (e.g., Giarratana *et al*. 2021). When these resources are used effectively across offerings, they can make products more appealing, build stronger customer loyalty, and help drive sales (Giarratana *et al*. 2021). For instance, when the same trusted brand name spans multiple product lines, the positive reputation built by one product can carry over, encouraging customers to feel more confident

about purchasing others, even if they are quite different. In this way, a scale-free resource like brand equity can generate value across a firm's entire portfolio (Giarratana *et al*. 2021). Together with supply-side efficiencies, these demand-driven advantages play a key but distinct role in showing how diversification can contribute meaningfully to a firm's overall value.

While much of the literature on related diversification emphasizes the benefits of intra-temporal economies of scope—that is, demand-side or supply-side synergies gained through the simultaneous sharing of resources across businesses—this perspective often overlooks the dynamic and temporal aspects of diversification (Helfat and Eisenhardt, 2004). A key aspect of diversification involves inter-temporal redeployment—the ability to shift resources across markets over time as external conditions evolve. Unlike intra-temporal synergies, which rely on using resources simultaneously across business units or businesses, inter-temporal economies of scope emerge when firms exit slowing markets and reallocate assets to new, more promising areas (Helfat and Eisenhardt, 2004). Penrose (1995) noted that firms often continue to grow even when demand for their core products declines. Building on that idea, Wernerfelt (1984) and Anand and Singh (1997) argue that resources from mature or declining segments can often be put to productive use in faster-growing markets. This type of gradual reconfiguration—moving resources from underperforming areas to stronger ones—reflects a broader view of diversification beyond just creating synergies (Helfat and Eisenhardt, 2004).

Thus, Sakhartov and Folta (2014) emphasize that related diversification creates value in two distinct ways: by enabling synergies across units and by allowing firms to redeploy

resources over time. However, they note that these benefits often overlap in practice, which makes it hard to pinpoint how much each contributes to overall performance on its own. As a result, it's still unclear whether the value firms gain from relatedness comes mostly from creating synergies, from redeployment flexibility, or from the way these two forces interact. According to the authors, redeployability, in particular, becomes highly beneficial under conditions of uncertainty, especially when resources can be shifted at low costs and are not scale-free (Sakhartov and Folta, 2014; 2015). Given this, how well a firm's product portfolio performs—and how much that performance fluctuates—may be shaped by the firm's ability to leverage synergies or reallocate resources, particularly depending on whether those resources are scale-free or not (Giarratana *et al*. 2021).

Giarratana *et al*. (2021) explore how reallocating resources within a firm's product portfolio affects its revenue growth (Henkel, 2009), while differentiating between the roles of scale-free and non-scale free resources (Hashai, 2015; Helfat and Eisenhardt, 2004; Sakhartov and Folta, 2014, 2015; Wu, 2013). A resource is considered scale-free when its application adds value no matter how many times its shared across different product lines—for example, technologies with broad applicability (e.g., general purpose technology; Feldman and Yoon, 2012; Thoma, 2009)—allowing firms to realize synergies (Levinthal and Wu, 2010; Lieberman *et al*. 2017; Sakhartov and Folta, 2014). Changes in the value of such shared resources—due to environmental shifts—are likely to influence all related product lines similarly, either positively or negatively (Diestre and Santalo, 2020; Giarratana *et al*. 2021; Shaver, 2006). Conversely, when a resource's use involves trade-offs, i.e., if a resource is committed to one offering, it cannot be simultaneously utilized for another within the same

portfolio, it qualifies as a non-scale free resource, aligning with the logic of redeployment (Levinthal and Wu, 2010). Thinking about resources in these terms can also shed light on how firms approach diversification (Giarratana *et al*. 2021). When diversification is driven by synergies, product lines often move in the same direction—sales tend to rise or fall together, since they're supported by shared strengths across the portfolio. But when firms follow a redeployment strategy, the story looks different. In that case, product lines compete for access to limited, non-scale-free resources (Levinthal and Wu, 2010). This competition can create trade-offs, where one product's success might come at the expense of another, leading to uneven performance across the firm's portfolio (Giarratana *et al*. 2021).

Extending this reasoning, Giarratana *et al*. (2021) argue that synergy- and redeployment-driven diversification produce distinct patterns of performance variation across a firm's product portfolio. When a firm's diversification relies heavily on scale-free resources—like brand reputation or shared expertise—disparities in growth between product lines can undermine overall firm performance. For example, if multiple products share the same brand name—a classic scale-free asset—the poor performance of one product could drag down the brand's reputation as a whole. In this case, the underperformance of a single line may weaken the brand's positive effect on stronger-performing products, ultimately reducing the benefits of brand-based synergies. However, if the firm uses non-scale free resources, performance differences among its product lines might actually contribute positively to total growth, reflecting efficient resource re-allocation (Giarratana *et al*. 2021). Given this, the connection between variability within a firm's product portfolio and its overall growth rate depends on the nature of the resources employed. Thus, fluctuations in

performance can either benefit or harm the firm, contingent upon whether it adopts a redeployment-based or synergy-driven diversification strategy (Giarratana *et al*. 2021).

Synergy—redeployment trade-off

Although relatedness has been linked to higher firm value (Rumelt, 1974), it remains unclear whether this value stems from synergy, the ability to redeploy resources, or a combination of the two (Sakhartov and Folta, 2014). While prior studies have acknowledged that the ability to reallocate resources may enhance firm value, under situations of uncertainty (Dickler *et al*. 2022), there is little research on how this mechanism works alongside synergy or adds value independently (Sakhartov and Folta, 2014). For instance, by recognizing that relatedness affects the ability to reallocate resources—not just synergy—Sakhartov and Folta (2014) demonstrate that the benefits of related diversification are closely tied to the levels of market uncertainty. The authors show that uncertainty amplifies the impact of relatedness because relatedness lowers the costs of reversing resource shifts, and uncertainty raises the likelihood that such reversals may be necessary (Sakhartov and Folta, 2014). For instance, Kuppuswamy and Villalonga (2016) discovered that the benefits of diversification tend to be more pronounced during times of economic or financial turbulence. This suggests that, because multi-business firms possess the ability to shift resources across businesses—a flexibility single-business firms lack—market volatility can increase their comparative value, assuming other factors remain constant (Dickler *et al*. 2022). In fact, when uncertainty in unrelated markets increases the strategic value of flexibility, the ability to reallocate resources may outweigh the advantages of synergy in related diversification—making unrelated diversification potentially more valuable in such contexts (Sakhartov and Folta, 2014). As a

result, traditional theories that emphasize synergy often underestimate how market uncertainty can elevate the strategic value of both related and unrelated diversification (Sakhartov and Folta, 2014).

Building on this argument, Sakhartov and Folta (2014) caution that overlooking the role of uncertainty may obscure the actual relationship between related diversification and firm value, complicating efforts to determine whether performance gains arise from shared operations, responsiveness to uncertainty, or the interplay between both. Since synergy depends on the simultaneous use of resources across markets, removing resources for redeployment can undermine the gains from synergy. Similarly, since redeployment involves shifting resources away from one market to another, the need to preserve synergy can sometimes limit a firm's flexibility to reallocate. Following this logic, synergy and redeployment are closely linked—and the way they interact plays a key role in determining how relatedness affects firm value (Sakhartov and Folta, 2014).

Along the same lines, Morandi *et al*. (2020) argue that when a firm fully reallocates resources from one business unit to another, it may sacrifice the advantages of using those resources concurrently across divisions. This kind of trade-off can prevent the firm from realizing the full value of shared resource use, making redeployment a costly move (Morandi *et al*. 2020; Sakhartov and Folta, 2014). Giarratana *et al*. (2021) build on this idea by showing how shared resources—like a strong brand name—can create meaningful synergies across products. For example, if both Product A and Product B operate under the same brand umbrella, strong performance by Product A can increase brand awareness, which in turn may drive interest and sales for Product B. However, if the firm shifts resources, such as shelf

space, from Product A to Product B, especially to the point of pulling back significantly or exiting Product A, it risks weakening those brand-driven synergies. Even smaller adjustments, like reducing support for Product A without fully exiting, can dilute the brand's influence across the portfolio if they disrupt synergistic benefits (Giarratana *et al*. 2021). Given this, synergy and redeployment shouldn't be seen as entirely separate routes to creating value. These two strategies are closely connected, and focusing too heavily on one can limit a firm's ability to fully benefit from the other (Sakhartov and Folta, 2014). Firms that learn to manage this trade-off and draw from both logics at once are likely to build a more resilient and competitive position. Thus, firms need to develop organizational mechanisms that allow both to work in tandem—encouraging integration through resource sharing, while also maintaining the flexibility to shift resources as market conditions or strategic priorities evolve.

To manage diversification effectively, firms need to build capabilities that match the types of resources shaping their strategy. When scale-free resources are the main driver, strong coordination across units becomes especially important for unlocking synergies (Giarratana *et al*. 2021; Henderson and Cockburn, 1994; Zhou, 2011). In contrast, firms leveraging non-scale free resources, which are more specialized and context-dependent, must develop agility (Brahm *et al*. 2017) to reallocate these assets where they offer the most strategic value. For such firms, a core concern lies in minimizing the cost of transferring resources—an issue shaped by both the characteristics of the resources themselves and the organization's ability to mobilize them efficiently (Giarratana *et al*. 2021). Although the benefits of both synergy and redeployment are well recognized, they rely on distinct internal

processes, cost dynamics, and incentive structures (Giarratana *et al*. 2021). Despite these insights, we still know relatively little about which organizational design choices help—or hinder—firms in using scale-free and non-scale free resources effectively, whether to support synergies or enable redeployment.

A growing body of research is beginning to shed light on how internal organizational elements—like routines and dynamic integrative capabilities—shape a firm's capacity to shift resources efficiently (e.g., Cattani *et al*. 2024; Helfat and Maritan, 2024; Levinthal and Wu, 2024). Helfat and Maritan (2024), for instance, point out that overly layered hierarchies can get in the way of effective redeployment by leading to misaligned incentives, breakdowns in communication, and distorted information flows. Because successful redeployment relies on responsiveness and adaptability, too much structural complexity can slow decision-making and reduce the firm's agility. Levinthal and Wu (2024) emphasize the benefits of nearly decomposable organizational forms—structures that give business units room to operate independently while maintaining enough corporate oversight to keep everything moving in the same direction (Puranam, 2018). These setups allow specialized units to operate on their own while still being connected enough to share knowledge and manage resources efficiently. In contrast, fully decomposable structures can leave divisions so isolated that they miss out on synergy opportunities (Puranam, 2018). Although recent research has made progress in understanding these internal dynamics, we still know relatively little about how firms can navigate the organizational complexity that arises when they are incentivized to reallocate resources. When resource redeployment pulls a firm away from an existing synergy-driven setup, the key challenge becomes how to make that move without

undermining the very synergies that add value. Our work looks at the specific organizational design strategies and mechanisms that can support firms in pursuing redeployment while minimizing disruptions to those existing synergistic benefits.

In light of these insights, the next section turns to the organizational design literature to further explore these dynamics.

2.2.2 Organizational design

The field of organizational design has evolved through four distinct schools of thought. The classical view emphasized efficiency through hierarchies, formal rules, and task specialization (Chandler, 1990). The Carnegie School introduced a behavioral lens, highlighting decision-making under bounded rationality (Simon, 1947; March and Simon, 1958). A third, macro-structural approach examined how formal structures—centralization, formalization, and hierarchy—align with environmental demands (Miles *et al*. 1978; Donaldson, 1995; Siggelkow, 2002). Most recently, the micro-structural perspective has framed organizations as complex adaptive systems, composed of modular, repeatable elements that can be reconfigured in response to changing conditions, while tackling the fundamental challenges of task division and coordination (Simon, 1962; Miller and Page, 2009; Puranam *et al*. 2014). By emphasizing local interactions, modular structures, and continuous feedback, it enables firms to respond dynamically to complexity without relying solely on top-down control (Ethiraj and Levinthal, 2004; Csaszar and Siggelkow, 2010).

Organizations are structured systems made up of individuals and groups (i.e., teams[1], business units, departments)—that differ in preferences, interests, and knowledge but must coordinate to achieve shared objectives (March and Simon, 1993). Scholars describe them as systems with defined boundaries, multiple actors, overarching goals, and distinct individual contributions (Etzioni, 1964; Obel and Burton, 1984; Scott, 1998; Stinchcombe, 1965). Coordination among these agents—whether individuals, groups, or non-human entities—is essential, and while organizational boundaries may shift or be informal, they help distinguish internal dynamics from the external environment. Even though organizations aim for collective outcomes, they may drift from the initial intentions of individual members or groups over time (Puranam, 2018). Yet, for a system to function as an organization, it must still demonstrate goal-oriented behavior. Due to bounded rationality, differing priorities, and cognitive limitations, perfect alignment across agents or groups is unlikely, making coordination and conflict resolution ongoing design concerns (Puranam, 2018). Scholars have long emphasized two fundamental and interconnected design challenges: how to allocate tasks across agents or groups and how to align their efforts toward shared outcomes (Lawrence and Lorsch, 1967; March and Simon, 1958; Mintzberg, 1979; Obel and Burton, 1984). Puranam *et al*. (2014) argue that organizing centers on solving four core problems: dividing tasks and assigning them to individuals or groups (the division of labor), and managing rewards and information flow to align efforts (the integration of effort)—issues also emphasized by Galbraith (1973), March and Simon (1958), and Porter *et al*. (1975). This micro-structural view simplifies organizational analysis by highlighting basic, recurring

[1] We refer to teams as structural micro-units, such as group of agents, who need to coordinate to create value across businesses.

patterns of coordination—known as micro-structures—that underpin even the most complex designs, allowing organizations to be understood through their essential building blocks (Puranam *et al*. 2014).

Within the micro-structural view of organizational design, teams are often treated as small-scale organizations, where members collaborate toward shared goals and operate as part of a larger system (Puranam, 2018). In multi-business firms, this concept extends to include divisions, departments, or business units that interact to pursue overarching corporate objectives. Insights from team research offer valuable contributions to this perspective. Foundational work shows that organizations divide and allocate tasks across units due to individuals' cognitive limitations (March & Simon, 1958), the need for adaptation to varied environments (Lawrence & Lorsch, 1967), and the complexity of task interdependencies requiring coordination (Thompson, 1967). Yet, even in well-aligned teams, coordination and knowledge flow can break down (Puranam, 2018). A notable gap in the micro-structural literature is its limited attention to the coordination challenges that emerge when business units face misaligned objectives, siloed communication, or uneven distributions of influence and authority (Puranam, 2018). These issues become especially pressing in multi-business firms, where the simultaneous pursuit of synergy and redeployment requires navigating two often competing strategic aims. In such settings, it becomes essential to examine how tasks are structured and how cross-unit relationships are managed—highlighting the need for deeper inquiry into the micro-structural elements of organizational design.

This study takes a closer look at how micro-structural organizational design choices—including how tasks are divided and allocated, the sequencing of tasks, and how authority is

structured—enable a diversified firm to respond to opportunities for resource redeployment while simultaneously reducing the risk of undermining existing synergies. Using a micro-structural lens makes it possible to see how these design elements support different strategic goals. Some setups help coordinate tightly linked activities that drive synergy, while others create more loosely connected structures that make it easier to shift resources when needed. While traditional macro-structural approaches often view the organization as a unified whole (Burns and Stalker, 1994; Mintzberg, 1979), they may miss the internal variation and interaction across sub-units. By focusing on the finer details of organizational design, the micro-structural perspective offers a more precise understanding of how structural choices support distinct diversification paths. The following sections explore each of these design elements in greater detail.

Before moving forward, we clarify that this study adopts a unit-level perspective, focusing on how work is structured across internal groups—such as business units, divisions, or departments—rather than on individual decision-making. The goal is to understand how micro-structural organizational design choices—such as task division, task allocation, task sequencing, and authority structures—shape a diversified firm's ability to address the synergy-redeployment trade-off.

Division of labor

The way work is divided and assigned—that is, the design of the division of labor—influences the interdependence between units, which can shape how they coordinate and make decisions within the organization (Kamijo and Nakama, 2023). In organizations, dividing labor involves breaking down overarching goals into smaller, manageable tasks and

assigning them to teams in ways that support broader objectives (Puranam, 2018; Puranam *et al*. 2014). This process requires "architectural knowledge", or the ability to understand both the components of a system and how they fit together (Baldwin, 2010). Task division refers to structuring these goals into interconnected sub-tasks, while task allocation concerns assigning those tasks to the right teams based on skill, fit, or strategic need (Newell and Simon, 1972; Puranam *et al*. 2014). Although traditional allocation relies on formal roles and specialization to boost efficiency (Smith, 1776), organizations may also adopt flexible structures to reduce coordination costs, promote cross-functional learning, or assign responsibility for entire outcomes rather than isolated steps (Hackman and Oldham, 1976).

While division of labor can promote efficiency and productivity through specialization, it also has potential downsides. As noted by Puranam (2018), a key outcome of dividing labor is the creation of interdependence—not only among tasks, but also among the groups responsible for carrying them out. Once work is distributed, progress often depends on the timely and accurate completion of others' contributions. This interdependence can take several forms: one task may serve as a prerequisite for another, while the outputs of separate tasks may either enhance each other or serve as alternatives (Milgrom and Roberts, 1990; Thompson, 1967). In addition, multiple tasks may compete for access to shared and potentially limited resources, creating further coordination challenges (Obel and Burton, 1984). Despite its importance, the deliberate structuring of task division and allocation remains underexplored (von Hippel, 1990; Puranam, 2018; Raveendran *et al*. 2016).

Some form of task clustering is necessary simply because no single individual can handle all tasks—especially when the number of tasks exceeds the number of people

(Raveendran *et al*. 2016). Due to bounded rationality and limited cognitive capacity (Simon, 1945), grouping related tasks and assigning them to specific individuals or groups helps manage attention and mental workload (Baldwin and Clark, 2000; Ethiraj and Levinthal, 2004; Rivkin and Siggelkow, 2003; Sanchez and Mahoney, 1996). By focusing on a specific set of tasks, each agent or group can concentrate on understanding and coordinating the interdependencies within their assigned cluster—even if this comes at the cost of overlooking how their work connects with tasks outside their cluster (Puranam, 2018; Raveendran *et al*. 2016). This principle underlies the concept of modularization—organizing tasks into independent modules to reduce complexity and decentralize decision-making (Baldwin and Clark, 2000; Ethiraj and Levinthal, 2004).

Modularization is a strategy firms use to manage complexity in systems made up of many interdependent parts (Sanchez and Mahoney, 1996; Baldwin and Clark, 2000; Ethiraj and Levinthal, 2004). It works by grouping related tasks or components into separate clusters, cutting down the need to constantly manage their connections with other parts of the system. While this setup can make it easier to improve each cluster on its own, it sometimes comes with trade-offs. Specifically, focusing too much on local improvements can hurt overall system performance, as coordination across different clusters may suffer. An effective modularization strikes a balance—it minimizes the negative effects of ignoring cross-cluster dependencies while maximizing the benefits of focusing attention on the most interrelated elements within each cluster. Thus, identifying an effective modularization means locating groups of tasks that are highly interdependent within the group but largely independent from tasks in other groups (Puranam, 2018; Raveendran *et al*. 2016; Zhou, 2013). Figuring out

how to group tasks that are highly interconnected internally but largely independent from others is cognitively complex, even in smaller task systems. Because optimal clustering requires detailed knowledge of task relationships—something most managers lack—managers often rely on simple mental shortcuts, leading to a few common patterns of task grouping that appear repeatedly in organizational settings, i.e., object-based and activity-based task division (Raveendran *et al*. 2016).

Organizations typically organize work using two overarching principles: grouping by activity or by object (Raveendran *et al*. 2016). An activity-based structure brings together tasks that involve similar processes—such as all marketing or production-related activities—regardless of which product or service they support. In contrast, an object-based structure assigns end-to-end responsibility for a specific product, service, or customer segment to a dedicated team, which then handles all related tasks from beginning to end. The underlying distinction between these two approaches lies in how tasks are grouped. In object-based division, tasks are organized around specific outputs or "intermediate products" that teams are responsible for delivering. These outputs have value on their own—even before the final product is completed—because they make it easier to assemble, modify, or reuse parts of the overall system (Simon, 1996). In contrast, activity-based division groups tasks by the type of work being done, regardless of which product it's for. Here, the focus is on the similarity in the process—not the product. While both approaches involve the same set of tasks, they differ in how those tasks are bundled: object-based grouping is about what is being produced, while activity-based grouping is about how it is being produced (Puranam, 2018; Raveendran *et al*. 2016).

These two methods of organizing work—based on either outputs or activities—closely align with a firms' broader structural choices. When agents are grouped according to specific products, services, or customer segments, the organization typically adopts a divisional structure. In contrast, when agents are organized by their roles or functions—such as marketing, R&D or production—the firm is likely operating under a functional structure (Puranam, 2018). This distinction or task grouping becomes particularly significant for diversified firms, where coordinating complex, interrelated tasks across multiple units or product lines poses a key organizational challenge. According to Kamijo and Nakama (2023), in a functional design, each team works on similar tasks, but their work has to fit together with other teams to create the final product—so there is more dependency between units. On the contrary, in a divisional design, each team does a mix of different tasks needed to produce a full output independently of other units—reducing dependency between units (Kamijo and Nakama, 2023).

Simon (1962; 1996) describes nearly decomposable systems as those where tasks are tightly interdependent within clusters but loosely connected across them, allowing for internal cohesion and external modularity. Such structures enhance manageability but come with trade-offs. While they support adaptability, they can also result in fragmented decision making, and locally optimal—but globally inefficient—solutions (Marengo and Dosi, 2005). In contrast, weakly decomposable structures involve strong interdependence across clusters, limiting the ability to separate or reorganize tasks. At the other extreme, fully decomposable systems—where subsystems operate in complete isolation—remain largely theoretical, as

most organizations require some level of cross-unit coordination to function effectively (Puranam, 2018; Raveendran *et al*. 2016; Simon, 1996).

Dividing work based on activities is always possible. Even if no natural groupings exist, each individual task can still be assigned to someone separately—so a purely activity-based division is always a viable option. However, as previously stated, being able to choose between activity-based and object-based division of labor depends on the nature of both the final product and the underlying task structure (Raveendran *et al*. 2016). For instance, when tasks are organized so that each group can carry out its work independently of the others—that is, the work is strongly decomposable—then each group can either be viewed as focusing on its own product (object), or as handling a full set of related tasks (activity). In this situation, both ways of organizing the work end up looking the same, so there is no meaningful decision to make between the two (Raveendran *et al*. 2016). According to Raveendran *et al*. (2016), this choice only emerges under specific conditions: when the final product can be broken down into distinct components (decomposability), but the underlying task structure itself involves tight interdependencies that make separation difficult and require constant coordination (non-decomposability). When both these conditions hold—a decomposable product but a non-decomposable task structure—organizations face a genuine trade-off, i.e., group tasks based on activities or based on objects (Puranam, 2018; Raveendran *et al*. 2016). To sum up, when the product is non-decomposable, object-based task division cannot be used. In case of decomposable tasks, there is no meaningful difference between activity or object-based structures. It is only when product is decomposable but tasks are non-decomposable, tasks can be divided by both product and activity (Raveendran *et al*. 2016).

In the context of a diversified firm, divisional structures often signal that the firm's business is decomposable at the corporate level. That is because each division focuses on a distinct product line—something it can develop and manage largely on its own. But it is important to draw a distinction here: this kind of decomposability isn't about breaking down a single product into separate parts. Rather, it is about breaking up the firm's portfolio of businesses into individual product-market segments. Take Johnson and Johnson, for instance. It runs separate businesses in pharmaceuticals, medical devices, and consumer health. Each of these areas has its own research, supply chain, customer base, brand management, and competitive strategy. They function with a good deal of independence, and the success of one does not hinge heavily on the others. This setup—where internal coordination is strong within each division, but weak across divisions—is exactly what Simon (1996) described as a decomposable system. Therefore, when divisions operate autonomously and focus on standalone outputs, a divisional structure reflects a decomposable business model—not of a single product, but of the firm's overall operations. That said, this isn't always the case. Some firms may appear divisional on the surface, but in reality, their divisions are tightly linked—they might rely on shared resources, shared technology platforms, or draw from the same customer insights. In those situations, the firm may still call itself divisional, but the work is deeply interconnected beneath the surface. That makes it a weakly decomposable system, and managing it purely through a product-based structure can create friction and coordination issues.

The strategic choice between activity and object-based task division reflects a trade-off between the efficiency gained through specialization (Mintzberg, 1979, Simon, 1996) and

the responsiveness to product-specific needs (Puranam, 2018; Raveendran *et al*. 2016). Specialization often emerges more naturally in activity-based structures, where repeated performance of similar tasks enables workers to build expertise, minimize inefficiencies, and improve processes over time (Mintzberg, 1979; Simon, 1962; Smith, 1776). While this supports the case for activity-based task division, the choice is not always clear cut. In some cases, object-based structures—where a single individual or team handles all tasks related to a specific product—offer advantages by enhancing attention to internal task interdependencies and allowing for local customization (Puranam, 2018; Raveendran *et al*. 2016). However, this comes at the cost of reduced coordination across products and potentially suboptimal global outcomes, as decisions are based on localized information (Marengo and Dosi, 2005). When neither approach offers a clear advantage, firms often turn to more flexible designs. Hybrid structures, such as matrix organizations, allow coordination across both functional and product dimensions, balancing specialization with responsiveness (Nickerson and Zenger, 2004, Puranam, 2018). Alternatively, firms may shift between activity-based and object-based configurations at different stages—for instance, using functional specialization during early R&D and switching to object-based structures for product launch (Gulati and Puranam, 2009; Puranam, 2018). These adaptive strategies are particularly valuable in dynamic environments, where the benefits of specialization and customization vary across tasks and over time (Puranam, 2018).

Once tasks are divided, task allocation is about figuring out who should handle which tasks after the work has been broken down. In most organizations, this happens by setting up specific roles and assigning teams to them based on what they are good at. Sometimes that

means focusing on a narrow set of tasks over and over (specialization), while other times it means handling a wider range of responsibilities. What is key is that someone in a position of authority—like a team leader—decides who does what (Puranam *et al*. 2014).

Integration of effort

Organizations function as goal-driven systems that rely on collaboration across groups to achieve coordinated outcomes (Simon, 1947). Effective collaboration requires both cooperation and coordination, especially when tasks are interdependent—an inherent outcome of dividing responsibilities across units (Puranam, 2018). When collaboration is well-structured to address external demands, integration is achieved (Lawrence and Lorsch, 1967), however, breakdown in integration often lead to internal friction or conflict. These failures typically arise from two core issues: lack of motivation—such as misaligned interests—and limited information flow, which hampers coordination (Gulati *et al*. 2005; He and Puranam, 2021). As groups rely on each other's' outputs, these interdependencies heighten the importance of well-aligned incentives and efficient communication mechanisms (Puranam *et al*. 2012). For instance, whether groups collaborate depends largely on the structure of incentives—what the authors call incentive breadth (Puranam *et al*. 2012). Narrow incentives, which reward individual output, reduce the need for coordination, while broader incentives tied to collective outcomes promote interdependence between groups. Thus, even when tasks are interconnected, groups may act independently unless rewards encourage joint effort (Puranam, 2018; Puranam *et al*. 2012).

Alongside well-designed incentive systems, successful integration of effort requires groups to engage in behaviors—such as information sharing or adjusting behavior—that

enhance organizational performance based on how tasks are divided (Puranam *et al*. 2014). This view aligns with the foundational concept of integration as coordinated collaboration among interdependent units (Lawrence and Lorsch, 1967). Puranam (2018) outlines that one of the key sources of integration breakdowns within organizations is due to coordination failures. Coordination failures arise when agents or groups must rely on epistemic interdependence—that is, anticipating the actions of others to align their own behavior (Puranam *et al*. 2012). Even when motivation is not in question, integration can fail when there is epistemic interdependence but individuals or groups lack the predictive knowledge needed to synchronize efforts (Puranam, 2018; Puranam *et al*. 2012). In such cases, a pure coordination failure exists, driven solely by the absence of reliable expectations about other's behavior (Puranam, 2018). Thus, the key challenge is to ensure that teams have the right information to align their actions effectively (Puranam *et al*. 2012).

Traditionally, according to March and Simon (1958), there are two fundamental ways to address this problem. First, reduce the need for information by designing tasks and allocating responsibilities in such a way that coordination happens automatically if everyone follows clear rules or procedures. For instance, using directives, schedules, or standardized processes can ensure that agent's or group's actions align without the need for constant communication. As long as the predefined structure is followed, combined efforts will be coordinated (Puranam *et al*. 2014). Second, by increasing the flow of information, communication channels can be improved. This means providing opportunities for richer, more dynamic interactions—like face-to-face meetings, collaborative platforms, or electronic communication—so that groups can share real-time information, clarify

uncertainties, and adapt their actions accordingly. These types of information exchanges can contribute to developing a better understanding of one another's actions and expectations (i.e., predictive knowledge) (Puranam, 2018).

Additionally, epistemic interdependence theory suggests another path to enhancing integration—rather than solely focusing on developing predictive knowledge, firms can also lower the degree of interdependence among groups. According to Srikanth and Puranam (2014), coordination failure that arises due to epistemic interdependence, highlights the importance of managing uncertainty (i.e., deciding without full knowledge of what others will do) and aligning timing (i.e., agents or groups may need to act simultaneously or in sequence). For instance, activities that originally require simultaneous execution can be reconfigured into a sequence, allowing each agent to complete their part without relying on the precise timing or behavior of others (Malone and Crowston, 1994). In such cases, the need for real-time coordination is removed, effectively eliminating epistemic interdependence. Another method involves shifting from broad performance measurement—where outcomes depend on multiple agents—to narrower systems where individual contributions can be assessed independently. This can be achieved by using sophisticated measurement tools (Zenger and Hesterly, 1997) or by implementing explicit design rules and standardized interfaces that clearly separate tasks and responsibilities (Baldwin and Clark, 2000). A common structural solution to reduce interdependence is modularization, which involves clustering related tasks into relatively autonomous units. This approach minimizes unnecessary interaction between components and helps manage complexity, especially when interdependencies are difficult to trace or only partially understood (Sanchez and Mahoney,

1996; Baldwin and Clark, 2000; Ethiraj and Levinthal, 2004). However, this can sometimes compromise overall system performance if critical cross-module dependencies are ignored. When interdependencies are well mapped (i.e., it is well understood how the output of one unit affects another), detailed rules can guide interactions across modules, ensuring system-wide coordination while allowing teams to function with greater autonomy (Baldwin and Clark, 2000). Thus, embedding these structural principles into how performance and incentives are managed enables groups to behave as if they are working independently, even within interconnected systems—thus embedding coordination into the system's design itself.

Authority versus task hierarchy

According to Puranam *et al*. (2014), a "solution" refers to the firm's ability to match the right elements together in a way that makes the system work—breaking down big goals into manageable tasks, assigning those tasks to the right team, keeping them motivated with appropriate rewards, and ensuring they have the information they need to perform well. If an organization can do all of that, it has a functional solution to the core challenges of organizing. But not all solutions are equally effective—some do a better job of helping the organization reach its goals (Puranam *et al*. 2014). In most for-profit firms, the way they handle key organizational challenges—like breaking down work, assigning it to the right teams, motivating them, and making sure information flows—relies heavily on '*formal authority*' (Puranam, 2018; Puranam *et al*. 2014). According to Puranam (2018), authority in organizations plays three distinct but often overlapping roles. First, there is the authority to design, which involves making the big structural decisions that shape how the organization operates—such as how tasks are divided, who is responsible for what, how teams are

motivated, and how information is shared. It is essentially about setting up the system itself. Second, there is the authority to direct, which is the day-to-day role of guiding work—assigning tasks, giving instructions, and making sure things run smoothly. Finally, there is the authority to resolve disputes, which comes into play when something goes wrong (Puranam, 2018). While authority brings structure and helps things run smoothly, it can also feel restrictive—undermining autonomy (Puranam, 2018). At its core, Puranam defines authority is an asymmetric relationship: A has influence over B, but not the other way round. It is a clear top-down dynamic, where one person leads and the other follows (Puranam, 2018).

According to Puranam (2018), authority is not just about formal reporting lines—it is also about how much real decision-making freedom subordinates actually have. Even when a manager appears to delegate authority to team members, their autonomy still depends on how often the manager steps in to influence decisions, either before or after they are made (Puranam, 2018). This influence can be thought of in terms of two key probabilities: ex ante intervention probability (*pa*) and ex post accountability probability (*pp*). Ex ante intervention probability (*pa*) is the likelihood that the manager will intervene before a decision is carried out. Ex post accountability probability (*pp*) is the likelihood that the manager will review or evaluate a decision after it has been implemented. When both '*pa*' and '*pp*' equal 1, authority is fully centralized, i.e., the manager gives instructions before action and verifies afterward. At the other extreme, when both '*pa*' and '*pp*' are zero, the manager neither gives directions nor follows up. This means full decentralization of authority: the subordinate independently decides what to do, how to do it, and carries it out without oversight (Puranam, 2018).

Given this, managers can exercise authority in different ways, depending on how often they step in before or after their team makes decisions. When a manager always gives instructions in advance but does not follow up afterward, they are relying on top-down direction. In this case, the subordinate is expected to follow orders, but might not be held accountable for the result—that is *control through instruction*, not through evaluation. On the other hand, if the manager does not interfere before the action but always checks afterward, then authority is exercised through accountability. The subordinate has the freedom to decide, but knows they will need to explain their choices or outcomes later, i.e., *control through evaluation* (Puranam, 2018). Thus, Puranam (2018) argues that delegation does not have to mean handing over full decision-making power. Even when a manager gives detailed instructions but chooses not to follow up or evaluate what happens, they are still relinquishing control over the outcome—which, in a broader sense, is a form of delegation too (Puranam, 2018). Therefore, depending on the goal, firm can choose different mixes of these controls to balance direction and accountability.

In a similar vein, according to Puranam (2018), authority does not always work in a rigid, all-or-nothing way—it can be conditional. Sometimes, a manager might give subordinates the freedom to decide but only steps in when they strongly disagree. In those situations, the organization can shift between centralized or decentralized depending on how often the manager intervenes and how burdensome that intervention is for the team. If vetoes are rare and come with minimal disruption, subordinates feel like they genuinely have decision-making power. But if they happen often or carry heavy consequences, even a system that looks decentralized on paper will feel tightly controlled in practice. This kind of flexible,

case-by-case use of authority offers a more realistic picture of how power actually works inside organizations (Puranam, 2018).

In this vein, Puranam (2018) emphasizes the idea of *conditional decentralization*—also known as "*authority by exception*"—as a flexible approach to managing decision-making. In this setup, subordinates are given the space to make joint decisions on their own. However, if they cannot reach an agreement, the manager steps in to make the final call. It is a practical blend of decentralization and centralization, especially useful when team member's tasks are interconnected and coordination is essential. Most of the time, the team operates independently, and the manager stays out of it. But when there is a deadlock, the manager acts as a central authority to keep things moving.

Given this, authority is framed as a mechanism for addressing the core organizational challenges, such as how tasks are allocated, how agents are motivated, and how coordination is achieved. Building on this foundation, Puranam (2018) shifts focus to how authority is structured and distributed, particularly through hierarchies. While hierarchies are one common way of organizing authority, Puranam (2018) emphasizes that they are not the only option, and importantly, not always aligned with the sequence in which tasks must be performed. Puranam (2018) offers a refined way to look at administrative hierarchies—those structures where the actual work happens only at the bottom level. The key idea is that this model illustrates a sharp divide between two kinds of hierarchies within organizations. First, there is the *task hierarchy*, which lays out the logical sequence of steps needed to complete a job. Then there is the *authority hierarchy*, which defines who reports to whom and who holds decision-making power. What is interesting about this model is that it treats these two

hierarchies as completely separate. This way of thinking forces us to see that doing the work and managing the work are not the same thing (Puranam, 2018).

Given this, tasks, too, can be arranged in a hierarchy based on when and how they depend on each other. Thus, hierarchies are not limited to the relationship between managers and subordinates—they also exist in the way tasks are ordered (Puranam, 2018). Some tasks have to be done before others, or provide inputs that enable later steps. This ordering creates a task hierarchy that are built on time-based interdependencies. For example, Task A must be done before Task B, and Task B must be done before Task C. This forms a clear sequence: A→B→C. These relationships follow specific rules, such that, they are (i) asymmetric: if A must be done before B, then B cannot be done before A. (ii) They are also transitive: if A comes before B and B comes before C, then A must come before C. In this way, a task hierarchy works similarly to an authority structure, but instead of organizing people, it organizes workflows (Puranam, 2018).

In a task hierarchy, any task can be divided into smaller steps or sub-tasks. How many pieces it can be broken into—the span—depends on two things: first, how clearly the task is understood, (the better it is understood, the more precisely it can be divided); and second, weighing the upside of specialization against the downside of having too many moving parts to manage. When it is possible to have a solid grasp of the task and to coordinate between pieces, breaking it into smaller parts can make things more efficient. But if managing all those parts becomes too complex, trying to break the task down too much can backfire (Puranam, 2018).

So, while this kind of detailed breakdown can boost efficiency early on by allowing teams to specialize and focus, it also increases the need for coordination (Puranam, 2018). According to Puranam (2018), with every added layer in the task hierarchy, more connections and interdependencies that require communication and oversight are introduced. Over time, the cost of managing all these moving parts can start to outweigh the benefits of having broken the work down in the first place. There is a point where adding more layers and sub-tasks no longer makes the system more productive—it actually slows things down (Puranam, 2018). Puranam (2018) emphasize that this trade-off shapes the structure of the task hierarchy itself. For instance, in a 'non-separated hierarchy'—where tasks are deeply interwoven across layers—it becomes harder to split work into clean, self-contained units. As a result, each task tends to have fewer sub-tasks the further down one goes, creating a structure with smaller spans at lower levels. In contrast, in a 'separated' or 'modular hierarchy'—where tasks are more independent—more sub-tasks can be assigned at each level without overwhelming the system. That means the span can actually grow deeper into the hierarchy, because each part can be handled more independently (Puranam, 2018). Given this, the way a firm structures task relationships—tight and interdependent versus modular and independent—has a major impact on both coordination costs and how work is distributed throughout the organization.

Finally, as tasks are broken down into smaller parts, teams working on them need different kinds of knowledge depending on where they sit in the task hierarchy. Those at the top are responsible for big-picture planning and long-term direction—they need to understand how everything fits together, but they don't need to know every detail. On the contrary, at the bottom of hierarchy, the focus shifts to more immediate work that unfolds

over shorter time frames. Thus, the smaller and more detailed a task is, the quicker it tends to get done. So, when a large goal is decomposed into sub-tasks, those pieces become faster to execute, easier to manage in the short-term, and more narrowly focused—mirroring how time itself is layered across different levels of work (Puranam, 2018). In short, grasping how the task hierarchy (how work is broken down and organized) and the authority hierarchy (who has decision-making power) align is essential—because this alignment can not only drive organizational effectiveness, but also reflect how the organization evolves over time (Puranam, 2018; Puranam *et al*. 2014).

In sum, understanding organizational microstructure requires seeing how task-related and people-related elements interact to solve the dual challenges of dividing work and coordinating it effectively. Task division specifies what needs to be done, while the task hierarchy structures these activities in a logical sequence. On the other side, task allocation decides who is responsible for each task, with the authority hierarchy governing who supervises, evaluates, and controls those teams and tasks. To ensure that the system functions smoothly, information flow provides the clarity needed for coordination across units. Authority weaves through all of these elements—it not only guides how tasks are assigned, but also shapes motivation and access to knowledge. Taken together, these interconnected design choices determine whether an organization can operate with both coherence and adaptability.

Building on this foundation, we turn to the challenge of managing the synergy-redeployment trade-off in diversified firms. To do so, we introduce a theoretical framework shaped by Puranam's microstructural view of how organizations function. But before we dive

into the framework, we first clarify what we mean by "task" and "task complexity" in the specific context of diversified firms.

2.3. THEORETICAL FRAMEWORK

2.3.1 Defining tasks in the context of a diversified firm

Puranam *et al*. (2014), explain that tasks emerge by breaking down an organization's broader goals into smaller, manageable components that fit within a larger web of interconnected activities. These tasks are not isolated efforts—they are designed to work in tandem to move the organization toward its strategic objectives (Puranam *et al*. 2014). In diversified firms, this becomes especially important because the firm's goals are spread across different markets, business units, or product lines. In such settings, some tasks are meant to be shared across units—for example, centralized branding—while others are tailored to specific product lines and can be shifted in response to performance, like adjusting shelf space. This means that understanding task design in diversified firms need to consider both the interdependence across units and the ability of each unit to respond to changing conditions—depending on whether the firm leans toward a synergy-driven or redeployment-driven strategy.

In diversified firms, tasks could range from highly operational, like assigning shelf space, to more integrative, such as aligning brand messaging across products. For instance, coordinating a marketing campaign that spans multiple product lines under a unified brand identity is aimed at reinforcing the brand as a whole. Such efforts require close alignment across units to ensure consistency in order to amplify the benefits of integration. To support

this, tasks should be designed to limit unit-level autonomy and promote cross-unit collaboration. The task structure in these settings should be configured to facilitate integration, allowing the firm to maximize the collective value that emerges from coordinated action across product lines.

Thus, we define a synergy-oriented task in a diversified firm as follows:

Definition:

A task is an interdependent, shared activity that supports multiple product lines or business units simultaneously to help align efforts across the organization and support collective value creation. Because these tasks involve multiple parts of the firm, they require a high degree of coordination and consistency.

For example, a unified brand campaign supporting several product lines would fall into this category. The brand campaign task can be decomposed into several subtasks such as: developing consistent brand guidelines, coordinating product messaging across units, or designing a shared visual identity, each of which could contribute to accomplish the overall brand campaign task (e.g., Veloutsou and Delgado-Ballester, 2018).

On the other hand, diversified firms that prioritize redeployment often choose to define tasks more narrowly—typically within the scope of individual product lines—and tie them to non-scale free resources—like shelf space or managerial time—that cannot be easily shared (Giarratana *et al*. 2021; Levinthal and Wu, 2010). For instance, if one product line is performing better than another, a firm may choose to reallocate shelf space from the underperforming product line to the one showing stronger results. To support such moves, these tasks would benefit from being modular, loosely linked to other units, and designed for

easy transfer of resources. The emphasis is on responsiveness and the ability to adapt quickly—without having to coordinate broadly across the firm.

Thus, we define a redeployment-oriented task in a diversified firm as follows:

Definition:

A task is a modular, unit-specific activity tied to non-scale free resources that can be moved across units based on relative performance. To enable such a redeployment, the task must be designed for ease of reassignment of resources, with minimal interdependencies that could otherwise constrain flexibility.

For example, managing shelf space from one product to another in response to shifting performance can be considered as a task composed of several sub-tasks, such as tracking sales for each product, adjusting placement, and evaluating shelf effectiveness. Each of these sub-tasks contribute to accomplishing the overall shelf management task. If the product line underperforms, the shelf space can be reallocated to another product line.

In essence, the way tasks are designed in a diversified firm reflect a strategic trade-off: firms aiming for synergy, could design tasks in a way that reinforce integration, while those focused-on redeployment could build on the flexibility to move resources quickly across their portfolio. On the contrary, in a more focused or specialized firm, tasks are closely aligned with a single product or line of business. There is no need to manage coordination across multiple units, so the task structure tends to be more straightforward and internally consistent. These tasks are tailored to deepen expertise and improve efficiency within a well-defined domain. For example, a single-business firm producing a single niche product might structure tasks around manufacturing, marketing, and distribution within that product line alone.

Because all efforts are concentrated in one area, the task design emphasizes simplicity, focus, and depth rather than flexibility or cross-unit collaboration. Table 2.1 presents how tasks are defined in both diversified firms and specialized firms, and summarizes the key design features associated with each.

TABLE 2.1. TASK DEFINITION AND DESIGN CHARACTERISTICS ACROSS DIFFERENT STRATEGIC ORIENTATIONS IN DIVERSIFIED VERSUS SPECIALIZED FIRM

Strategic orientation	What is a Task?	Key Design Features
Synergy-oriented task	A shared, interdependent activity designed to integrate efforts across multiple units to create shared value.	Coordinated, tightly coupled, promotes integration.
Redeployment-oriented task	A modular, product-specific activity designed to allow flexible reallocation of resources across units.	Separable, loosely coupled, built for flexibility.
Focus-oriented task	A focused activity tied to a single product or business domain to support depth and specialization.	Cohesive, internally focused, streamlined for one business.

Note: Definition of a task focuses mainly on how it is set up—its internal structure and how much it depends on other activities—rather than on who is actually responsible for doing it.

2.3.2 Defining task complexity in a diversified firm

A large part of the research on organizational complexity focuses on what it leads to—like increased coordination costs (e.g., Zhou, 2011; Zhou, 2013)—without really exploring how

that complexity comes about in the first place. With a few exceptions, such as Zhou and Wan (2017), we still lack a clear understanding of how complex interdependencies actually emerge in the day-to-day workings of diversified firms. If we can trace this complexity back to its roots, we would be in a better position to identify where coordination is truly needed and potentially redesign task and authority structures that unintentionally create extra complexity.

In diversified firms, the pursuit of synergy often involves integrating resources across multiple businesses. This integration helps unlock efficiencies but also increases the degree to which units depend on one another (Zhou, 2011). The more resources are shared (such as a common brand), the more interconnected the tasks across divisions become, such that a strategic change in one division can trigger ripple effects throughout the organization. This kind of cross-interdependence is what Zhou (2013) refers to as task complexity—it is not just about how intricate individual tasks are, but about how deeply they are tied to other tasks across the firm. At the same time, firms also aim to remain flexible by redeploying resources across businesses in response to new opportunities. Redeployment is more manageable when tasks in each unit operate with some degree of independence. But when tasks are tightly connected, moving a key resource out of one area can unintentionally disrupt others (Giarratana *et al*. 2021). In these situations, shifting a non-scale free resource from one part of the business to another can interfere with existing synergies, making redeployment a costly move (Giarratana *et al*. 2021). This tension lies at the heart of a core organizational challenge. The more a firm relies on shared resources to generate synergy, the more interconnected and complex its task structure becomes—making it harder to move resources around freely.

Conversely, designing for flexibility in redeployment often requires limiting integration, which can reduce the potential for synergy. For firms attempting to pursue both goals, this trade-off intensifies task complexity. It reflects the ongoing challenge of maintaining tight coordination across units while keeping enough structural slack to allow for efficient redeployment. In such organizations, task complexity is not a side issue—it becomes a central concern that shapes how they navigate the balance between integration and adaptability.

One way to clearly see this type of task complexity is through the example of a firm that uses a shared asset—like a well-known brand—across multiple products, such as Product A and Product B. Leveraging the same brand across these offerings can generate valuable synergies; strong performance by one product can enhance how customers view the other. But problems can arise when the firm starts shifting resources—like reallocating shelf space—from Product A to Product B. If the shift is too aggressive—such as drastically scaling back or withdrawing Product A—it can undermine the brand's strength, which was built through the combined presence of both products. Thus, redeployment disrupts the interdependent brand effects and weakens the shared value that both products once enjoyed (Giarratana *et al*. 2021).

In this example, *brand management* and *managing shelf space* function as two core tasks. Even though these tasks follow different logics, what happens in one can directly impact the other. Shifting shelf space from one product to another might weaken the overall brand synergy, while trying to preserve a consistent brand image could restrict how freely the firm reallocates shelf space. Looking at tasks through this lens helps illuminate what we mean by task complexity in a diversified firm. When a task like brand management spans multiple

divisions, it naturally creates interdependencies between them, increasing the complexity of managing the organization. And if the task also has to accommodate redeployment, it must be designed in a way that allows those adjustments without causing ripple effects. This dual responsibility is what makes a thoughtful task design and authority structure so essential in diversified firms.

Much like the well-known example of the 18 interdependent steps in pin-making (e.g., Puranam, 2018; Raveendran *et al*. 2016), managing a brand can also be viewed as a series of tightly linked sub-tasks that collectively create and sustain brand value (e.g., Veloutsou and Delgado-Ballester, 2018). This process typically includes: (i) developing a brand strategy, which involves defining the brand's core positioning, tone, and values to shape how it is perceived by customers; (ii) Managing visual identity, such as maintaining consistent use of logos, colors, and design elements across all platforms; (iii) Crafting the brand's voice and messaging, including slogans and marketing language that reflects its personality while adapting to different audiences; (iv) Establishing brand guidelines, which serve as internal rulebooks to ensure coherence across teams and products; (v) Executing campaigns, where promotional and advertising efforts bring the brand strategy to life in the marketplace; and (vi) Monitoring and feedback, which involves tracking brand performance—such as awareness or customer sentiment—and making adjustments when needed to protect or enhance brand reputation (e.g., Veloutsou and Delgado-Ballester, 2018).

Thus, we define task complexity in a diversified firm as:

Definition:

Task complexity in diversified firms refers to the degree to which multiple tasks—often spanning different business units—are interdependent and subject to competing strategic logics. In such cases, task complexity arises from the challenge of coordinating across interdependent tasks without undermining either strategic goal—synergy or redeployment.

We now lay the groundwork that highlights the kinds of organizational structures and mechanisms that enable diversified firms to achieve synergistic benefits effectively. Then, we turn to the specific design principles and mechanisms—drawing on Puranam's (2018) microstructural framework—that enable firms to redeploy resources strategically—while still protecting, or at least limiting disruption to, the synergies they have built.

Teece (1980) argues that firms diversify to gain cost efficiencies—known as integration economies—by applying shared resources across different business lines. However, as Penrose (1959) noted, these resources are often indivisible and difficult to trade across firms, prompting firms to internalize them instead (Zhou, 2011). By doing so, firms capture economies of scope while avoiding the risks of external collaboration (Teece, 1980; Zhou, 2011). Yet, internalizing shared resources does not eliminate coordination costs; it simple transfers them in-house (Zhou, 2011). As business units share inputs, they become more interdependent, increasing the need for coordination mechanisms (Puranam *et al*. 2012). Managing these interdependencies requires joint planning, synchronized operations, and aligned incentives (Puranam *et al*. 2012; 2014; Zhou, 2011).

According to Zhou (2011), expanding into related businesses—those that rely on shared resources—often brings higher coordination challenges compared to unrelated diversification, which requires less integration, in turn amplifying the synergy-redeployment

trade-off. These challenges become even more pronounced when a firm already manages a complex set of operations. Related diversification adds new layers of interdependence, making the portfolio harder to manage. When the new business draws on the same inputs as existing ones, it often triggers adjustments across the units to align operations. This ripple effect increases the coordination burden, making the process more demanding and costly (Zhou, 2011). This underscores the importance of having organizational structures that can effectively manage inter-unit interdependencies and support synergy through well-designed coordination across divisions.

2.3.3 Structuring for synergy

Originally, firms were set up by function—separate departments for activities like sales, manufacturing, and R&D. But as they diversified, they began grouping their operations around specific products or markets. Each business area became its own distinct division or unit (Williamson, 1975). In a functional structure, the firm is organized by functions—rather than by products or divisions. All products or business lines share the same centralized functional department (like a single R&D unit for all products), thereby fostering synergies (Dessein *et al*. 2010). First, when functions are centralized, different divisions can tap into the same pool of expertise leading to cost efficiencies (e.g., Teece, 1980). Second, with every division working within the same function, it is simpler to pass along best practices, leading to easier knowledge flows (e.g., Henderson and Cockburn, 1994). Finally, having one central function helps maintain uniform standards—such as in branding and product design—making the firm run cohesively. However, because work is organized by function, it can be challenging for divisions or teams across departments—like marketing—to coordinate

effectively. Also, when product lines target very different markets, a shared function might struggle to serve them all equally well. This can lead to misaligned priorities based on what individual products actually need. The M-form eases this problem by letting each division operate more independently, with its dedicated resources (Helfat and Eisenhardt, 2004). This setup also helps senior executives manage better, since it prevents them from being bogged down in every operational detail and allows them to concentrate on broader strategic issues (Helfat and Eisenhardt, 2004). While the M-form supports operational independence, it can limit economies of scope due to weak cross-unit integration (Helfat and Eisenhardt, 2004). To truly capitalize on economies of scope, the firm must move beyond divisional independence and adopt mechanisms that support greater cross-unit integration (Helfat and Eisenhardt, 2004).

Hill *et al*. (1992) advocate for centralization, inter-divisional coordination mechanisms, shared performance metrics, and firm-level incentives to foster collaboration. By adopting these structural adjustments, firms can move beyond the limitations of traditional M-form and more effectively harness synergies across related business units (Hill *et al*. 1992). Others, like Martin and Eisenhardt (2003), emphasize the role of cross-divisional leadership teams in identifying real-time opportunities for synergy. Building on this, Helfat and Eisenhardt (2004) propose the modular organizational forms, where firms retain divisional autonomy but reduce coordination burdens through selective central decision-making and minimal cross-unit integration. The example of Omni illustrates how such a decentralized modular model can still unlock synergy by managing charter transfers centrally while granting product units operational freedom. This suggests that full integration is not always necessary to

generate synergy. Instead, well-designed decentralized structure—anchored in performance-based incentives and selective central decision-making—can also support value creation in related diversified firms (e.g., Helfat and Eisenhardt, 2004).

Additionally, according to Zhou (2013), hierarchy plays a key role in helping diversified firms unlock synergies—especially when tasks are complex and divisions depend on one another. Synergy happens when divisions create more value together than they could separately, whether by sharing resources like R&D or marketing teams, reducing redundancy through joint distribution, or combining capabilities to deliver bundled offerings (Montgomery, 1994; Priem, 2007; Ramanujam and Varadarajan, 1989; Ye *et al*. 2012). But achieving synergies—whether demand-side or supply-side—requires coordination. If each division operates in isolation, collaboration opportunities can easily be missed. That is where hierarchical structures play an important role. Middle and senior managers act as bridges between business units (Zhou, 2013). With a broad view of the organization, they can spot where collaboration makes sense—such as sharing facilities or resources—help mediate disputes over resources, and make decisions that serve the firm as a whole, rather than just individual units (Chandler, 1962; March and Simon, 1958; Mintzberg, 1979; Puranam, 2018; Williamson, 1975; Zhou, 2013). For instance, when divisions need to collaborate in pursuit of synergy—whether through sharing resources, co-developing products, or targeting the same customers—conflict can easily emerge. Each division has its own goals, so what benefits one unit may strain another. Without clear accountability, aligned incentives, or mechanisms to coordinate efforts, divisional managers are unable to resolve issues on their own, and a higher-level manager can help resolve conflicts (Puranam, 2018).

Hierarchy also improves decision-making by accounting for how tasks in different parts of the firm are connected (Zhou, 2013). Division managers, when acting alone, tend to focus narrowly on their own responsibilities—for example, considering only the cost of resources under their control. This can lead them to overlook cost-saving opportunities that arise from working with other divisions. A common supervisor, on the other hand, can recognize these cross-division synergies—like combining efforts to lower overall production costs—that individual managers might not see (Geanakoplos and Milgrom, 1991). Thus, when divisions are tightly connected, whether through shared resources, overlapping technologies, or common customer bases, it is essential for a common supervisor to guide overarching business choices, to prevent divisions from working at cross-purposes. In this vein, hierarchical structures, by design, help facilitate coordinated action across many interdependent units (Galbraith, 1993). A practical way to manage this is by grouping several divisions under a single department manager, and then, once that manager's span of control is exceeded, creating another layer by adding more departments (Galbraith and Nathanson, 1978; Puranam, 2018). This arrangement—grouping multiple divisions under a department manager can be understood as an integration mechanism. Placing several divisions under the leadership of a single manager helps improve coordination (Puranam, 2018), especially when those divisions depend on one another for shared resources. In this role, the department manager serves as a connector, helping to smooth communication, resolve tensions, and spot opportunities for collaboration across units (e.g., Puranam, 2018; Zhou and Wan, 2017). In this way, hierarchy enables better coordination, reduces duplication, and helps firms translate potential synergies into actual performance gains (Kocak *et al*. 2023; Zhou, 2013; Zhou and Wan, 2017). Zhou and Wan (2017) build on this perspective by portraying firms as complex

systems that must constantly balance the trade-offs between achieving scale and capturing scope. To manage this, they introduce the concept of sourcing hubs—intermediate structural solutions that help firms coordinate shared activities and unlock synergies across a varied portfolio of products. Thus, to manage this complexity, Zhou and Wan (2017) highlight the value of intermediate coordinating layers—hierarchical structures that help firms coordinate across divisions without defaulting to full centralization or decentralization.

Finally, hybrid organizational structures can also help firms achieve synergies, where some business activities are standardized across units and some are left customized, provided both functional and business-unit managers work toward share goals, not just division-specific goals (Dessein *et al*. 2010). Dessein *et al*. (2010) consider a firm with two distinct product units. In the model proposed by Dessein *et al*. (2010), each business unit is tasked with managing two key functions—such as marketing and manufacturing. Marketing remains decentralized, giving individual product units the flexibility to adapt their strategies to the specific needs of their target markets, thereby leveraging local knowledge. Manufacturing, on the other hand, is treated as a function where standardization offers clear advantages. For example, both units might rely on a shared production facility or adopt uniform manufacturing processes, overseen by a centralized manager with specialized expertise. This setup represents a classic hybrid structure: some functions are customized at the unit level, while others are centrally coordinated to drive cost savings. According to the authors, realizing synergies in this arrangement depends on coordinating manufacturing efforts across units. They emphasize that firms can gain from combining centralized and

decentralized decision-making—as long as roles are clearly defined and incentives are properly aligned.

In summary, existing research on how firms structure themselves to capture synergies generally falls into two complementary streams. The first focuses on governance and control, emphasizing the importance of assigning decision rights thoughtfully—balancing centralization and decentralization—and designing incentive systems that encourage collaboration across units (e.g., Dessein *et al*. 2010; Hill *et al*. 1992). This perspective centers on how authority and reward structures can help manage the coordination challenges that come with related diversification. The second stream takes an organizational design lens, suggesting that synergy depends on how work is divided and coordinated—whether tasks are grouped by function or product—and how interdependent units are connected through design elements like hierarchy, modular structures, or intermediate coordinating hubs (e.g., Puranam, 2018; Raveendran *et al*. 2016; Zhou, 2013; Zhou and Wan, 2017). Our study deliberately moves away from incentive-based theories, which are more closely tied to human capital or agency perspectives. Instead, we adopt a structural approach informed by Puranam's (2018) framework. The focus is on how diversified firms manage the tension between synergy and redeployment through micro-structural features—specifically, how tasks are divided and allocated, across the organization. We are particularly interested in how these design choices play out when resources like a shared brand name span multiple product lines. Rather than centering on managerial intent or behavior, our approach highlights how the configurations of task and authority structures shape a firm's ability to balance integration and flexibility.

We now examine how microstructural design elements—such as task division, task allocation, task sequencing, and authority structures—can be purposefully configured to address the core organizational challenge of managing the synergy-redeployment trade-off in diversified firms, where the pursuit of integration often conflicts with the need for flexibility.

2.3.4 Structuring for synergy—redeployment trade-off

Task Partitioning

In brand architectures where elements are tightly linked, tasks tend to be highly interdependent (Puranam, 2018). For example, a co-branded marketing initiative—may often demand tight coordination across design elements, brand messaging, and the timing of launch for both Product A and B. In such settings, reallocating shelf space from one product to another is not a simple shift; it could disrupt the delicate brand balance, since each part reinforced the other. Following Puranam's (2018) logic, breaking down complex brand tasks into smaller, manageable components can enhance execution. But this decomposition also creates new coordination challenges, particularly when synergy between products is essential. When firms disaggregate brand activities—for example, by separating national advertising, in-store displays, tailored messaging, and shelf strategy—they enable different teams to specialize. A design team might refine packaging aesthetics, while another team handles point-of-sale promotions. Yet, this division of labor increases mutual dependence (Puranam, 2018). The branding for Product A needs to align with that of Product B, and changes in shelf layout could influence how both are seen side by side. Without a clear structure or hierarchy guiding brand-related tasks, maintaining coherence becomes difficult.

One way firm can navigate the tension between synergy and redeployment is by designing their brand management systems to be more modular—allowing for separation where needed, while preserving the connections that matter.

Following the structural approach informed by Puranam's (2018) framework, we argue that a modular brand structure allows individual teams greater autonomy in how they carry out their work. Under this model, product-specific teams—for instance, those managing Products A and B—can lead their own localized efforts, such as developing packaging or designing promotional strategies, while still aligning with an overarching brand identity. Even though these teams operate independently and may work on different schedules, their activities are still anchored in a shared set of brand principles, including tone, values, and visual design. This setup enables each product to express itself distinctly while contributing to a unified brand image. Because execution is separated across teams, decisions like adjusting shelf space for Product A don't necessarily disrupt how Product B is marketed or perceived. The synergy here doesn't come from identical actions but from a shared identity that customers recognize and trust. Modular task design makes it easier for teams to customize their efforts to fit the needs of each product, while still anchoring them in the broader brand framework. In such a system, teams are not constantly checking in with each other, instead, they are aligned through a clear set of brand guidelines that help maintain cohesion without requiring constant coordination.

However, if not carefully designed and managed, modular task structures can easily lead to fragmentation (Puranam, 2018; Helfat and Maritan, 2024). For instance, Product B might fail to carry forward the branding legacy of Product A, weakening the overall brand

story. When customers don't recognize a link between the two, the equity built through a shared brand presence may begin to erode. But that is not what well-designed task partitioning is about (Puranam, 2018). The key is in how the tasks are divided: execution should be separated, not the underlying strategic direction. To preserve brand cohesion, the high-level brand platform—which includes things like core values, design aesthetics, and tone of voice—should remain centralized. This platform could act as the anchor, giving all products a shared foundation from which to build. In this way, Products A and B can both draw from the same brand identity, reinforcing a consistent message across the portfolio. While strategy is set by a centralized branding unit, the actual execution should be delegated to individual product teams. This setup allows each team to tailor its branding efforts to fit the needs of its target audience or local market, all while staying aligned with the broader brand message. In doing so, it strikes a balance—offering teams the flexibility to adapt on the ground, without compromising the brand coherence that creates synergy at the organizational level.

When product teams are given control over tactical branding decisions—such as packaging design—they can respond more swiftly to market shifts. For example, if Product A is underperforming, the team responsible for Product B does not need to wait on central approval to act. They can quickly revise the packaging to highlight different features or adjust the messaging to better emphasize the product's unique value. This level of responsiveness is hard to achieve in systems where all branding decisions are centralized. Even within this more decentralized structure, the central branding team continues to play a vital role. They are responsible for shaping the overarching brand identity—defining its tone, core values,

and the visual and messaging elements that bring coherence across products. However, they don't oversee every detail. Instead, they provide a clear framework that ensures brand consistency while allowing room for adaptation. This creates a multi-layered brand system: a centralized platform that fosters synergy across the brand portfolio, alongside product-level teams who develop sub-brands tailored to their specific markets. The result is a structure that supports both flexibility and cohesion—enabling product teams to stay agile without compromising the brand's overall integrity.

In this setup, the central brand team is responsible for defining the overarching elements of brand identity—referred to as 'platform-level branding'. These tasks are centered around a specific function: managing the brand's strategic direction across all product lines. This makes it a clear example of *activity-based task grouping*, where the focus is on a shared function rather than any single product. Meanwhile, the execution of branding at the product level—such as adapting messaging for local audiences or managing shelf presence—is handled by individual teams. These responsibilities reflect *object-based task grouping*, where tasks are organized around distinct product lines rather than centralized expertise (e.g., Raveendran *et al*. 2016). When combined, these two approaches create what Puranam (2018) describes a *hybrid task structure*. Strategic brand decisions are set at the top to maintain coherence and synergy, while product teams are empowered to execute quickly and adaptively in response to shifts in performance or market conditions. This makes intuitive sense. Product teams are on the ground; they understand their customers and can make informed, tactical decisions. Meanwhile, central teams are better positioned to manage long-

term strategy and ensure that brand integrity holds up across the organization (Raveendran *et al*. 2016). Given this, we posit that:

P1: *A hybrid task structure—characterized by centralized platform-level branding and decentralized tactical execution—will enable diversified firms to respond to opportunities for resource redeployment while reducing the risk of undermining existing synergies.*

Task sequencing

Building on Puranam's (2018) idea of task hierarchy (i.e., asymmetry and transitivity), we argue that firms can better protect brand synergies by arranging brand-related activities in a deliberate, structured sequence—especially when they face pressure to shift shelf space from Product A to Product B. When tasks are ordered thoughtfully, it becomes possible to decouple brand presence from a product's physical placement. In doing so, firms can reallocate resources without diminishing the overall strength of the brand. Rather than treating redeployment as a one-off, tactical move, it should be seen as part of a broader, interconnected series of tasks. This approach allows firms to stay responsive to changes in performance while continuing to protect the shared value tied to a unified brand identity. To make this possible, we outline a task hierarchy designed to guide shelf space redeployment in a way that preserves—rather than disrupts—brand synergy.

Stage 1: Brand reinforcement (prior to shelf space redeployment)

Task 1.1: Strengthen the brand connection between Product A and Product B

This first stage is essential for protecting brand synergy. It involves intentionally transferring the brand value built around Product A to Product B before any reduction in shelf space takes place. Taking this step early helps preserve the trust, recognition, and credibility that the brand has earned over time. By making this transition thoughtfully, firms can

maintain the synergies that link both products and contribute to the brand's overall strength. Skipping this step—or treating redeployment as a quick fix—risks breaking those connections and weakening the brand's impact across the portfolio.

When this kind of sequencing is overlooked, things can quickly start to fall apart. The brand team may be left out of key decisions, and customers might be caught off guard if Product A suddenly disappears from store shelves. The connection that once linked Products A and B—that familiar, unified brand experience—can start to break down as Product A fades from view. In these cases, the issue goes beyond poor timing. It signals a deeper problem: a breakdown in cross-team coordination, where decisions are made in isolation and the broader health of the brand gets lost in the process.

At this point, firms have the opportunity to maintain brand continuity by intentionally carrying over recognizable elements from Product A—such as its visual style, tone, or messaging—into Product B. Doing this before reducing Product A's shelf presence helps reinforce the connection in consumer's mind. Even as Product A is phased out, it's presence can still be felt through Product B. But if that link is not established early, removing Product A risks erasing not just the product, but also the brand trust and recognition it helped build—undermining the synergies tied to that shared identity. By deliberately bridging the two, firms can carry forward the brand equity already in place. The goal is not to reinvent the brand—it is to ensure that the value created through a shared brand history does not vanish when one product steps back.

At first glance, it might seem like strengthening the link between Product A and Product B before redeployment just makes them more dependent on each other. But that's not the

goal. The point of this step isn't to lock the two products together forever—it's to make sure the brand value transitions smoothly from one to the other. By carefully planning brand-building efforts that highlight continuity and reinforce a shared identity, firms can soften the impact of phasing out a product that has contributed to overall brand synergy. When done right, this early-stage work helps consumers experience the change as a natural evolution rather than a loss. Product B becomes a continuation of the brand story, not just a substitute. But if this step is skipped and Product A disappears without any clear connection being made, customers may struggle to see how the two products relate. Instead of seeing consistency, they see replacement—and that shift can weaken the brand's identity, causing confusion or even mistrust. In that sense, overlooking the importance of reinforcing the link between Products A and B can make redeployment feel abrupt, disjointed, and potentially damaging to the brand.

Stage 2: Phased redeployment
Task 2.1: Reduce shelf space from Product A gradually
Task 2.2: Monitor customer response and brand metrics
Task 2.3: Adjust if needed

This stage gives firms a chance to approach resource redeployment gradually and with control, leaving room to learn and adjust along the way. Rather than pulling Product A from shelves all at once, local teams can start by phasing out the lower-performing variants while keeping the popular ones available. That way, long-time customers still see something familiar, which helps preserve the sense of continuity they associate with the brand. As the process unfolds, managers can track key signals—like how customers are reacting, whether brand perception is shifting, and how Product B is performing—to get a sense of whether the

transition is making sense to customers or leaving them confused. If trust seems to be eroding or Product B isn't gaining traction, there's still time to slow things down or even pause redeployment. On the other hand, if the response is positive, teams can move forward with more confidence. In this way, redeployment stops being a one-time, rigid event and becomes something more adaptable—a process that allows the firm to stay responsive while still protecting the brand synergies that matter.

So, the steps involved in redeploying shelf space reflect what Puranam (2018) describes as a task hierarchy—where tasks are connected in an asymmetric, ordered way. For example, reinforcing the brand link between products has to happen *before* pulling Product A from the shelf. These actions aren't interchangeable; each one sets the stage for the next. When followed in the right order, this sequence creates a clear path that helps preserve the shared brand value—that sense of synergy—even as Product A's physical presence shrinks. Given this, we propose the following:

P2: *Diversified firms that approach resource redeployment through a structured sequence of brand-related tasks—rather than treating it as an isolated action—will be able to respond to opportunities for resource redeployment while reducing the risk of undermining existing synergies.*

Authority structures

We suggest that shelf space decisions are typically carried out by local product or business unit teams. That makes sense—they're closest to the market, they often have direct relationships with retailers, and they're responsible for the unit's performance. From a task design perspective, it's logical to allocate this work based on the skills and experience that sit with these teams (Puranam, 2018; Raveendran *et al*. 2016). But just because these teams

do the work doesn't mean they *own* the decisions—especially when those decisions have implications for the broader brand identity. That's where a key distinction comes in. Task allocation (who executes) isn't always the same as authority (who decides). And recognizing this difference is crucial when trying to balance the tension between synergy and redeployment. Drawing on Puranam's (2018) framework, authority is shaped by two factors: ex ante intervention probability (*pa*)—how likely it is that a superior steps in *before* a decision is made; and ex post accountability probability (*pp*)—how likely it is that the decision is reviewed *after* it's been carried out. We argue that a "delegated but accountable" model of authority (Puranam, 2018) works especially well for managing this trade-off in diversified firms. In this model, local teams have the freedom to act on their insights and respond quickly to changing conditions, but they're still held accountable after the fact—they need to explain and justify their choices (Puranam, 2018). To support this idea, we examine all four combinations of *pa* and *pp*, and show that the most effective setup is one where ex ante intervention is low (so teams can move fast), but ex post accountability is high (so the firm's shared goals remain intact).

Case 1: When ex ante intervention (*pa)* is high, and ex post accountability (*pp)* is low

In this setup, the corporate brand team needs to approve shelf space decisions before anything can move forward. But once the decision is made, there is little to no follow-up or accountability. Under this scenario, decisions take longer because local teams have to wait for approval, which can slow things down (e.g., Helfat and Maritan, 2024). On the upside, brand consistency is well protected. However, this tight control tends to limit local flexibility

and makes it harder for teams to act quickly. Thus, firm can enjoy brand synergies, but it comes at the cost of agility.

Case 2: When ex ante intervention (*pa)*, and ex post accountability (*pp)* are low, i.e., total decentralization

In this setup, local product teams operate with full autonomy. They don't need approval before making decisions, and there's no expectation to report back afterward. That kind of freedom makes it easy to move fast—decisions can be made and implemented almost immediately, which is great for responsiveness (e.g., Helfat and Maritan, 2024; Puranam, 2018). But without any oversight, teams might unintentionally make choices—like removing Product A from shelves—without thinking through the broader impact on the brand (e.g., Argyres *et al*. 2020; Helfat and Maritan, 2024). When coordination breaks down, it can unravel the synergies that connect products through a shared brand identity. So, although this approach allows for greater flexibility in reallocating shelf space, it also leaves the brand vulnerable to mistakes that could weaken its overall coherence and impact.

Case 3: High ex ante intervention (*pa)*, and high ex post accountability (*pp)*, i.e., total centralization

In this model, the central brand team plays a hands-on role throughout the entire decision-making process. They are involved not just before any actions are taken, but also follow up afterward to assess the outcomes. This level of oversight provides the highest degree of protection for brand consistency and helps sustain synergies across the product portfolio. However, such tight control does not come without trade-offs—it can slow things

down and limit the agility of local teams. With so many layers of approval and review, the process can get slow and cumbersome (e.g., Helfat and Maritan, 2024; Puranam, 2018). Local teams may feel stuck in bureaucracy, which limits their ability to act quickly—say, reallocating shelf space to Product B when the market calls for it. So, while this approach does a great job safeguarding the brand synergies, it often does so at the expense of speed and local responsiveness.

Case 4: When ex ante intervention is low (*pa)*, and ex post accountability is high (*pp)*—the hybrid model

This setup—often referred to as the '*hybrid*' model (e.g., Puranam, 2018)—gives local product teams the freedom to reallocate shelf space as needed, without having to wait for approval from the corporate brand team. But that freedom comes with responsibility. After the fact, teams are expected to explain their choices and show how their decisions support the firm's broader brand goals. It's a model that encourages speed and responsiveness. Local teams can act quickly in response to shifting market dynamics, while the central brand team stays in the loop—not by micromanaging, but by stepping in after decisions are made to ensure they're aligned with brand standards. If something goes wrong—say, a shelf space reduction that unintentionally weakens the brand synergies—the central team can offer guidance to protect synergies.

It is noteworthy to mention that redeploying resources is not always a win—especially when it puts shared resources, like a common brand, at risk. If a firm pulls back too much on the supporting resources—like shelf space—for a product that plays a key role in reinforcing the brand, it can end up weakening the very synergy it was counting on (Giarratana *et al*.

2021). Even small cutbacks can have unexpectedly big consequences. Take advertising, for instance: once spending drops below a certain threshold, it often stops making any real impact (Vakratsas *et al*. 2004). The same idea applies to other non-scale free resources. Thus, to truly benefit from a shared brand—a resource that can be stretched across product lines at relatively low marginal cost—firms still need to maintain a baseline level of investment in the resources that make that brand visible and credible (Giarratana *et al*. 2021).

Given this, just like with advertising, shelf space presence could also have a visibility threshold. Below a certain point, consumers no longer associate that product with the brand. For instance, some products—like flagships—should always have a certain amount of shelf space, even if their short-term performance drops. This prevents local teams from completely removing a product (Product A) that contributes to the success of another (Product B). In doing so, the firm protects products that carry the brand's identity—without needing corporate approval before every move. It could be a way to maintain brand consistency with minimal ex ante intervention, while still holding teams accountable if cutting back too far ends up hurting the brand.

Under the hybrid authority model, firms don't need to rely on rigid, top-down rules. Instead, they can equip local teams with clear, scenario-based guidelines. For instance, if Product A's sales dip below a certain threshold, it should still be kept in at least 30% of stores. This kind of flexible rule-setting gives local teams room to respond to market shifts while staying aligned with brand priorities. The goal here is to make sure that no product representing the brand—especially one that plays a symbolic role in tying the portfolio together—is pulled entirely. These boundaries help maintain a consistent brand presence

across products, which is key to sustaining synergy. It's a smart balance: teams can move quickly (low ex ante intervention), but they still operate within a framework that gets reviewed after the fact (high ex post accountability). Therefore, by adopting a "*delegated but accountable*" authority model, firms can preserve cross-product brand synergy through visibility thresholds, even when there are strong inducements to reallocate shelf space. In this vein, we posit:

P3: *A hybrid authority structure—characterized by low ex ante intervention probability and high ex post accountability probability—will enable diversified firms to respond to opportunities for resource redeployment while reducing the risk of undermining existing synergies.*

To sum up, by breaking down complex-tasks into smaller, clearly defined activities, task partitioning allows firms to assign responsibilities more effectively across teams. Task sequencing adds structure to this by ensuring that these tasks are carried out in the right order, based on how they depend on one another—helping to avoid premature shelf space reallocation, that could disrupt brand synergies. Meanwhile, a hybrid authority structure gives local product teams the flexibility to respond to inducements to redeploy, while still preserving synergies through centralized brand oversight. When combined thoughtfully, these design mechanisms can help diversified firms better manage how tasks are divided, assigned, and coordinated—particularly when trying to seize redeployment opportunities without disrupting the brand synergies already in place.

2.4 DISCUSSION

This paper takes a closer look at how diversified firms handle the tension between moving resources into new opportunities and maintaining the synergies that come from shared resources like a unified brand platform. While prior research has often emphasized synergy

as the primary driver of performance in related diversification, more recent work has pointed to the important role of redeployability (Helfat and Eisenhardt, 2004; Sakhartov and Folta, 2014). Yet, how these two value-creation logics interact—and how diversified firms can navigate the tension between them—remains underexplored.

To help fill this gap, we introduced a theoretical framework rooted in the principles of micro-structural organizational design (Puranam, 2018; Puranam *et al*. 2014). This framework explores how firms can use task and authority structures to balance the need to protect existing synergies while remaining responsive to shifts in performance. We first put forward the idea of hybrid task structures—which combine both activity-based and object-based task groupings (Puranam, 2018; Raveendran *et al*. 2016). In this setup, strategic brand oversight—referred to as platform-level branding—is kept centralized to ensure alignment and strengthen synergies across the product portfolio. Meanwhile, tactical branding decisions are delegated to individual product teams, who are better positioned to respond quickly to changes in local market dynamics. Second, we emphasized the importance of sequencing brand-related tasks—such as reinforcing product linkages—before making resource reallocation decisions like reducing shelf space. Third, we proposed a hybrid authority structure where local teams operate with autonomy but are accountable for decisions after the fact, i.e., when ex ante intervention probability is low and ex post accountability probability is high (Puranam, 2018). This setup enables product teams to act swiftly in response to market shifts, while also safeguarding brand equity from being diluted by decisions that might push it below key visibility thresholds.

Taken together, these structural choices provide diversified firms with a way to balance flexibility and integration—capturing the value of both redeployment and synergy without letting one come at the expense of the other. In doing so, our work contributes to the resource redeployment literature by emphasizing the role of internal structure in managing these tensions, and to the organizational design literature by demonstrating how micro-structural elements—task partitioning, task sequencing, and authority structure—can be applied to real-world complexities.

One of the key takeaways for managers is the importance of structuroplasticity—a term we use to describe a firm's capacity to adjust its internal structure as strategic priorities evolve. Rather than viewing organizational structures as fixed, this perspective encourages managers to treat them as adaptable frameworks. This includes rethinking how tasks are grouped and sequenced, and adopting an authority model that limits unnecessary top-down control before decisions are made, while still holding teams accountable afterward. Taking this flexible approach could enable firms to pursue redeployment opportunities, without undermining the synergies that make diversification worthwhile.

In closing, while the tension between synergy and redeployment may be an enduring one, it can be managed with thoughtful structural design—offering executives a practical path to navigate competing demands more effectively. By carefully aligning task and authority structures, diversified firms can better balance the need for both integration and flexibility. This kind of alignment can unlock value that might otherwise be lost to internal friction and misalignment.

CHAPTER 3

Unpacking the Organizational Factors

Shaping Value in Multi-business Firms

ABSTRACT

This study presents initial empirical findings that highlight the contingency of firm value from *redeploying resources* on specific organizational factors. Focusing on vertical configuration of the *organizational structure*, such as the *number of organizational layers* and the degree of *dispersion of functional activities*, we examine their moderating effect on the relationship between inducements to redeploy (proxied by industry-level volatility) and firm value. Leveraging a unique dataset built from the U.S. Medical and Healthcare Marketplace Guide, this study offers comprehensive insights into the U.S. pharmaceutical industry from 1983 to 1992. Our findings support what has been demonstrated in existing research, by showing that higher industry-level volatility enhances firm value through the increased value of strategic flexibility. We contribute to this basic finding by introducing two novel boundary conditions associated with the firm's organizational structure. First, we show that the positive relationship between industry-level volatility and firm value weakens as the number of organizational layers increases. We argue that more organizational layers reduce oversight from top management, thus increasing the likelihood of resource *mis*allocations. That is, a higher number of organizational layers increase the risk of information loss and slows decision-making. Second, we argue that multi-business firms with dispersed key functional activities (that is, R&D, manufacturing, and marketing) may struggle to capitalize on inducements to redeploy resources due to a lack of a cohesive strategy and diminished coordination. Our results for this hypothesis, however, show an insignificant effect, suggesting a potential source of complexity in how functional structures interact with industry-volatility. Additionally, by focusing on industry-level volatility as a measure of external uncertainty, our results present a different perspective from earlier studies: operating as a diversified firm—particularly within related industries—can reduce firm performance under volatility due to interdependencies and disrupted synergies. Based on our findings, we discuss some important strategic implications and propose directions for future research for the literature on resource redeployment.

Keywords: resource redeployment, organizational structure, organizational layers, functional structure

3.1 INTRODUCTION

There has been a longstanding emphasis on the advantages of multi-business firms over single-business firms (e.g., Ansoff, 1957; Chandler, 1969; Penrose, 1959). One reason for this advantage is that multi-business firms have an internal flexibility, as they can *redeploy resources* internally, rather than relying on external strategic factor markets to transact these resources: this internal flexibility takes the form of a real option to redeploy resources across businesses and is considered a crucial factor contributing to value creation in multi-business firms (Dickler *et al.* 2022). Within the growing literature on resource redeployment (Helfat and Eisenhardt, 2004; Levinthal and Wu, 2010, 2024; Sakhartov and Folta, 2014, 2015), Dickler *et al*. (2022) make an advancement in the real options literature by moving beyond the traditional focus on growth options and introducing a more nuanced view of how firms—particularly those with multiple businesses—can extract value from volatility. In doing so, they argue that when volatility increases, diversified firms may be uniquely positioned to respond—not just by scaling investment up or down, but by reallocating resources internally to where they are most needed. This idea is grounded in the real options view that volatile environments present both greater upside opportunities and increased downside risks. In such settings, firms with internal redeployment capacity can act more decisively (e.g., Dickler and Folta, 2020). However, there is a dearth of empirical evidence on the influence of certain types of organizational factors that may contribute to heterogeneity among multi-business firms in the effectiveness of resource redeployment (e.g., Helfat and Maritan, 2024; Levinthal and Wu, 2024). This gap should be addressed to achieve a more comprehensive understanding of the relationship between inducements to redeploy resources across businesses (proxied by higher industry-level volatility) and firm value.

While all multi-business firms may have, in theory, a fundamental capability for resource redeployment, this does not automatically guarantee an *equal* degree of effectiveness in redeploying resources (Helfat and Maritan, 2024; Levinthal and Wu, 2024). In this regard, an aspect that has received scant attention in the literature on resource redeployment is the potential *heterogeneity* among multi-business firms concerning the organizational factors that influence resource redeployment decisions. This paper aims to provide some initial empirical evidence suggesting that the corporate advantage associated with the internal flexibility of redeploying resources across businesses is contingent on certain types of organizational factors, thereby influencing redeployment effectiveness of multi-business firms. Therefore, our paper provides insights into the organizational factors that can enhance the ability of multi-business firms to redeploy resources more effectively, thereby reducing resource *mis*allocations and improving overall firm value[2]. In this paper, we examine how specific organizational factors, related to vertical configurations of the firm's *organizational structure*—specifically, the *number of organizational layers*—and the degree of *dispersion of functional activities* (namely, R&D, manufacturing, and marketing) across these layers[3]—affect the relationship between inducements to redeploy across businesses (proxied by industry-level volatility) and firm value.

To address this question, we employ a unique dataset built from the third edition of the U.S. Medical and Healthcare Marketplace Guide. This Guide offers information concerning

[2] In this paper, we will use the terms 'redeployment' and 'reallocation' (and related terms, like '*mis*allocation') interchangeably.

[3] This study focuses on the distribution of key functions across different levels of the hierarchy within diversified firms. Although this involves task allocation, it is most closely tied to the firm's functional structure, as it reveals how various activities are structured and carried out throughout the organization.

a firm's operational involvements within the U.S. medical sector. Therefore, for multi-business firms, the Guide provides detailed information about the product portfolios of the parent firm and of its respective divisions. Given the dispersion of product market activities among different divisions, firms may engage in resource redeployment activities to consolidate or substitute resources across these divisions and, in this way, respond to market opportunities (Karim, 2006). Moreover, the Guide underscores the importance of understanding organizational relationships represented by the connections between the headquarters and its divisions, as well as among the divisions themselves. Through these connections, we can gather insights into the hierarchical structure of multi-business firms and how it evolves over time. In this paper, we specifically concentrate on the U.S. medical sector, examining the period between 1983 and 1992. This time frame provides information on a firm's decision to diversify across three distinct industries within the U.S. medical sector, i.e., pharmaceutical drugs, medical devices, and healthcare services, encompassing a total of 85 product categories.

Our findings align with the real options theory, by replicating (first of all) the relationship between industry-level volatility and firm value through the increased value of strategic flexibility (e.g., Amore and Mastrogiorgio, 2022; Sakhartov, 2018; Sakhartov and Folta, 2014, 2015). We contribute to this basic finding by introducing two novel boundary conditions associated with a firm's organizational structure. First, we show that the positive relationship between industry-level volatility and firm value weakens as the number of organizational layers increase. We argue that a higher number of organizational layers can create challenges for top management in establishing direct connections at deeper levels within the firm (Puranam, 2018). Consequently, this distorts information as information

passes through more layers (Helfat and Maritan, 2024), thereby increasing the likelihood of resource *mis*allocations. We then argue that a high degree of functional dispersion may reduce the potential gains associated with industry-level volatility. As functional dispersion increases, due to diminished 'integrative capabilities' (Cattani *et al.* 2024), firms may struggle to capitalize on inducements to redeploy resources due to a lack of cohesive strategy and reduced coordination (e.g., Argyres *et al*. 2020; Cattani *et al*. 2024; Helfat and Maritan, 2024). While we initially expected that greater functional dispersion would weaken the link between industry-level volatility and firm value due to coordination challenges, the results tell a more nuanced story. The negative, though statistically insignificant, interaction suggests that excessive concentration of functional activities might limit a firm's ability to benefit from external uncertainty. This pattern hints that neither extreme—high dispersion nor full concentration—is ideal.

Additionally, while Dickler *et al*. (2022) show that rising firm-specific volatility enhances the performance of diversified firms, our study offers a different perspective by focusing on industry-level volatility to capture external environmental uncertainty. In contrast to earlier findings, our results show that operating as a diversified firm is linked to weaker performance under volatile conditions—especially when firms are engaged in intra-industry diversification or span closely related fields where segments often depend on shared resources. In such closely tied portfolios, disruptions in one area—like pharmaceuticals—can easily spill over into adjacent segments such as medical devices, reducing the value of redeploying resources internally (Giarratana *et al*. 2021). This interdependence creates a *strategic dilemma*: while flexibility is theoretically possible, acting on it may come at the cost of disrupting beneficial synergies (Giarratana *et al*. 2021; Morandi *et al*. 2020; Sakhartov

and Folta, 2014). These results indicate that operating as a multi-business firm does not automatically result in superior performance during periods of uncertainty; rather, its effectiveness is contingent upon whether a firm's internal structure enables the smooth transfer of resources across its businesses or business units without disrupting existing synergies. It is noteworthy to mention that this study focuses on within-industry diversification (Wu, 2013), where businesses operate in closely related domains. The theoretical framework developed here is therefore most relevant to settings characterized by a high degree of relatedness, in which firms have greater opportunities to leverage shared resources and generate synergies. Building on these insights, this study offers both theoretical and empirical contributions to the real options theory (e.g., Amore and Mastrogiorgio, 2022; Sakhartov, 2018; Sakhartov and Folta, 2015) and the broader literature on resource redeployment (e.g., Dickler *et al*. 2022) by identifying two novel structural boundary conditions. Specifically, it argues that firms gain an advantage not simply from having access to growth or switching options, but from their ability to implement them effectively—something that relies on an appropriate organizational design. Thus, we extend the real options theory by linking the value of flexibility to the firm's internal structure and in doing so, we challenge the widespread assumption that multi-business firms automatically provide an edge over their single-business counterparts, during uncertain times.

The rest of the chapter is organized as follows: In Section 3.2, we review the relevant literature. In Section 3.3, we develop the hypotheses. In Section 3.4, we explain the data, sample construction, variables, and the empirical strategy to test the main effects. In Section 3.5, we present the key results. Section 3.6 revisits and builds on findings from earlier studies. In Section 3.7, we discuss the strategic implications and the paper's contributions to the

redeployment literature, followed by Section 3.8 offering potential directions for future research. Finally, we conclude.

3.2 BACKGROUND

3.2.1 Resource redeployment: current trends

In the pursuit of diversification, firms can benefit from two types of economies of scope: economies of scope may stem from either the simultaneous sharing of resources across businesses or the *redeployment* of 'non-scale-free' resources across businesses over time (Levinthal and Wu, 2010). While the former are known as 'intra-temporal economies of scope', the latter have been called 'intertemporal economies of scope' (Helfat and Eisenhardt, 2004). In cases involving *intertemporal economies of scope*, the redeployment of resources is guided by economic considerations related to *opportunity costs* over time, including factors such as the "size, growth, and competitive conditions in alternative businesses" (Levinthal and Wu, 2010, p. 784). For instance, non-scale-free resources like managerial attention cannot be shared simultaneously across different endeavours but can only be redeployed over time. Consequently, a persistent challenge arises in determining the optimal allocation of managerial attention (or other types of non-scale free resources) over time, which requires considering the opportunity costs of alternatives 'uses' of these resources (Levinthal and Wu, 2024).

The literature on resource redeployment highlights three overarching factors that determine whether resource redeployment contributes to firm value, namely, adjustment costs, transaction costs in external strategic factor markets, and inducements to redeploy (Dickler *et al.* 2022; Dickler and Folta, 2020; Helfat and Eisenhardt, 2004; Sakhartov and

Folta, 2014, 2015). Firstly, according to Helfat and Eisenhardt (2004), when businesses share similarities, reallocating resources between them tends to be more cost-effective due to lower adjustment costs. These reduced costs increase the option value of resource redeployment, ultimately contributing to higher firm value, especially in uncertain environments (Sakhartov and Folta, 2014). Additionally, the efficiency of strategic factor markets significantly impacts a firm's ability to capitalize on opportunities through resource redeployment (Dickler and Folta, 2020). When these markets operate smoothly, firms face fewer obstacles and may favor external transactions because of lower associated costs. However, if strategic factor markets are inefficient or lack liquidity—leading to increased transaction costs—firms may choose to reallocate resources internally to circumvent these external challenges (Dickler and Folta, 2020). In such cases, the higher costs of external transactions make internal redeployment a more attractive option, which can, in turn, enhance firm value.

Finally, the extent to which resource redeployment contributes to firm value largely depends on the presence of strong incentives that drive firms to reallocate their resources (Penrose, 1959; Sakhartov and Folta, 2014; 2015). Research on redeployment suggests that firms are more likely to shift resources when they anticipate better performance outcomes in other business areas (Sakhartov and Folta, 2014). These incentives are often reflected in higher financial return volatility in those areas (Amore and Mastrogiorgio, 2022). Based on the logic of real options (Myers, 1977), Sakhartov and Folta (2014; 2015) have shown that inducements increase the value of the option to redeploy resources (this option is known as *resource redeployability*), such that corporate portfolios featuring businesses with increased volatilities, divergent performances, and inversely correlated returns are expected to drive firm value. This comes from the simple possibility that resources will yield higher value if

redeployed to a different segment of the portfolio in the future (Sakhartov and Folta, 2015). Given this, when the opportunities materialize, firms are prompted to proactively redeploy resources to capitalize on demand opportunities, particularly when the costs of not doing so are substantial (Dickler and Folta, 2020). For instance, according to Dickler and Folta (2020), in a multi-business setting, firms will experience higher opportunity costs for non-scale free resources when operating businesses in their portfolio that exhibit more significant variations in their expected returns.

In a recent paper that further explores the role of inducements, Dickler *et al.* (2022) present relevant empirical evidence on the relationship between the inherent *flexibility* to redeploy resources across a firm's (diverse) portfolio of businesses and firm value. According to them, such flexibility becomes more valuable in situations of uncertainty, as proxied by higher volatilities in the firm's businesses. A key insight of their research is that *multi-business* firms, being equipped with internal markets for resources, inherently possess an added flexibility when compared to their single-business counterparts (Dickler *et al.* 2022). This enables multi-business firms to pursue growth opportunities in certain (growing) businesses and withdraw from other (declining) businesses more effectively than their single-business counterparts. The value inherent in these 'switching options' (e.g., Bernardo and Chowdhry, 2002; Dickler *et al.* 2022; Matsusaka and Nanda, 2002; Sakhartov and Folta, 2014) lies in the ability of multi-business firms to leverage upside potentials or mitigate downside risks by effectively redeploying resources across the portfolio of businesses to seize evolving opportunities. Consequently, in a scenario of higher uncertainty proxied by higher volatilities, the relative value of multi-business firms over single-business firms is expected to be higher (Dickler *et al.* 2022). Given this, the internal flexibility represented by the real

options to redeploy resources across businesses is considered a fundamental driver of value creation in multi-business firms.

In the same paper, Dickler *et al.* (2022) show that multi-business firms with *better* resource redeployment *capabilities* are likely to experience *higher* market returns related to switching options. The reason is that such capabilities enhance internal efficiency by minimizing adjustment costs and, at the same time, improving the timing (and speed) of redeploying resources. This claim aligns with what has been previously discussed by strategy scholars within the evolving literature on 'dynamic capabilities' (e.g., Helfat *et al.* 2009; Helfat and Peteraf, 2003; Teece, 2007) that, of course, have important implications for resource redeployment.[4] In fact, the links between capabilities and resource redeployment are receiving increasing attention in the literature (Cattani *et al.* 2024; Helfat and Maritan, 2024). However, an important aspect related to firm capabilities that deserves further attention is the role of a firm's organizational factors, to which we now turn.

3.2.2 Unpacking the role of organizational factors

An aspect that has not been thoroughly examined in the literature on resource redeployment is the potential *heterogeneity* across multi-business firms in their capabilities to redeploy resources (Helfat and Maritan, 2024). Even though there is evidence on the general fact that resource redeployment drives value (Amore and Mastrogiorgio, 2022; Dickler *et al.* 2022; Giarratana *et al.* 2021; Helfat and Eisenhardt, 2004; Sakhartov and Folta, 2014; 2015), there is less clarity on how redeployment decisions are implemented within firms and what are the

[4] Teece *et al*. (2016) refer to organizational agility as "the capacity of an organization to efficiently and effectively *redeploy/redirect* its resources to value creating and value protecting (and capturing) higher-yield activities as internal and external circumstances warrant" (p. 17, emphasis added).

organizational factors shaping them (Cattani *et al.* 2024; Helfat and Maritan, 2024; Levinthal and Wu, 2024). Given this, it is important to understand why some firms are more effective at redeploying resources than others, which could be attributed to various factors, such as the *organizational arrangements*, the culture, and the routines that shape firm operations (Cattani *et al.* 2024; Helfat and Maritan, 2024; Levinthal and Wu, 2024). In fact, as argued by Lovallo *et al.* (2020), *some* firms may possess a 'dynamic capability' to redeploy resources that *other* firms may lack. That is, although all multi-business firms may (in theory) possess a fundamental, underlying capability of resource redeployment, this does not automatically imply an *equal* degree of effectiveness in redeploying resources: for instance, some firms may fail to redeploy funds (or other types of resources) to projects with the highest returns. Consequently, as firms can differ in their effectiveness in redeploying resources, this can lead to different levels of overall firm value (Cattani *et al.* 2024; Helfat and Maritan, 2024).

In this regard, recent works by Helfat and Maritan (2024) and Levinthal and Wu (2024) have also explored these themes. Helfat and Maritan (2024) highlight various organizational factors—such as established routines, managerial decision-making processes, and cognitive biases—that significantly influence the effectiveness of resource redeployment in multi-business firms. The authors suggest that firms can enhance performance by refining their internal search mechanisms, which involve identifying opportunities to reallocate resources more efficiently. However, the complexity of organizational structures, particularly interactions across different levels of management, can create obstacles in this process. Challenges such as misaligned incentives, communication bottlenecks, and information asymmetry may slow down or hinder effective redeployment (Helfat and Maritan, 2024). Moreover, since resource redeployment is an adaptive process, excessive organizational

layering can reduce the firm's agility, making it harder to respond swiftly to changing conditions (Helfat and Maritan, 2024; Puranam, 2018).

In a similar vein, Levinthal and Wu (2024) explore how organizational structure—whether centralized or decentralized—affects the efficiency of resource redeployment. The authors emphasize that effectively managing interdependencies and organizational complexity is key to reallocating resources in dynamic environments. For instance, structures that are nearly decomposable allow firms to align divisional activities with broader corporate goals while still benefiting from the specialized expertise within each division. This balance can enhance resource redeployment across divisions. In contrast, fully decomposable structures, where divisions operate independently, may fail to capitalize on potential synergies, resulting in inefficiencies and lost redeployment opportunities. Therefore, to maximize the effectiveness of resource redeployment, firms must carefully coordinate interactions among divisions (Levinthal and Wu, 2024).

Further, firms that frequently reallocate resources tend to develop "integrative capabilities," which help them coordinate operations while minimizing adjustment costs (Helfat and Campo-Rembado, 2016; Henderson, 1994; Iansiti and Clark, 1994; Helfat and Eisenhardt, 2004). These capabilities enable firms to efficiently absorb new business activities and optimize resource redeployment, making redeployment less costly over time (Helfat and Eisenhardt, 2004; Helfat and Raubitschek, 2000; Mitchell and Shaver, 2003). Thus, simply possessing valuable resources is not enough; firms must also build the internal expertise required to reallocate them efficiently (Cattani *et al*. 2024). For instance, firms that excel in resource redeployment often employ cross-functional teams or other coordination

mechanisms to ensure smooth collaboration between specialized divisions, enhancing the efficiency of resource transfers (Cattani *et al*. 2024; Helfat and Maritan, 2024).

Cattani *et al*. (2024) highlight the role of organizational structure in shaping resource redeployment effectiveness. The authors argue that whether a firm operates with a centralized or a decentralized structure, a hierarchical versus flat model, significantly impacts how resources are integrated and reallocated. Dynamic integrative capabilities—the ability to coordinate functions across divisions (Helfat and Raubitschek, 2000; Henderson, 1994; Iansiti and Clark, 1994)—are most effective when supported by an adaptable structure (Cattani *et al*. 2024). Thus, firms that align their structure to support these capabilities can efficiently reallocate resources to maximize value.

Building on these arguments, this paper examines the organizational factors that affect resource redeployment in multi-business firms by understanding how these factors can facilitate or constrain redeployment, influencing resource reallocation efficiency and overall firm performance. Specifically, we explore how certain organizational factors—proxied by vertical configurations of the organizational structure, namely, the number of organizational layers and the degree of dispersion of functional activities—moderate the relationship between inducements to redeploy and firm value.

To answer this question, we provide a theoretical framework leading to three testable hypotheses in the next section. The hypotheses are illustrated in the conceptual model of Figure 3.1.

Insert Figure 3.1 about here

H1 deals with a baseline hypothesis already studied in the resource redeployment literature, that is, the relationship between inducements to redeploy (proxied by volatilities) and firm value. H2 and H3 deal with the boundary conditions: namely, the *number of organizational layers* and the degree of *dispersion of functional activities*.

3.2.3 Existing theoretical perspectives on diversification, volatility, and firm value

Much of the literature grounded in real options theory emphasizes that a firm's potential for future growth plays a key role in explaining how uncertainty—particularly volatility—translates into higher firm value (e.g., Aabo *et al*. 2016; Duffee, 1995; Grullon *et al*. 2012). Put simply, these studies argue that growth options enhance the upside of volatility, offering a reason why certain firms are better positioned to benefit when conditions become more unpredictable. Grullon *et al*. (2012), for example, show that a rise in firm-specific volatility can be advantageous, particularly for firms that possess strong growth opportunities. Such options provide firms with strategic leeway—enabling them to postpone or accelerate investments depending on how conditions evolve. Higher volatility tends to widen the gap between potential losses and gains. Firms that can pull back during downturns and act aggressively when opportunities arise, can use that flexibility to their advantage. Despite these contributions, one important aspect that remains largely overlooked is how firms operating across multiple businesses—firms with the capacity to reallocate resources internally—may be uniquely positioned to navigate volatile environments. Most prior work on real options and firm value (e.g., Aabo *et al*. 2016; Duffee, 1995; Grullon *et al*. 2012) centers on growth opportunities that any firm—whether diversified or not—can leverage. However, this body of research does not address the question whether increased volatility

strengthens the relative advantage of multi-business firms by enabling them to shift resources across their internal portfolio in response to changing conditions.

Dickler *et al*. (2022) offer a more recent and valuable contribution by exploring whether increased volatility elevates the strategic value of internal resource redeployment in multi-business firms. Their analysis specifically investigates how the interaction between growth opportunities and switching options—that is, the capacity to move resources across businesses—affects firm value as firm-specific volatility evolves. Building on prior growth option theory, Dickler *et al*. (2022) introduce a critical extension by examining how switching flexibility operates alongside growth options in volatile contexts. In doing so, they argue that when volatility increases, diversified firms may be uniquely positioned to respond—by reallocating resources internally to where they are most needed. This idea is grounded in real options view that volatile environments present both greater upside opportunities and increased downside risks. In such settings, firms with internal redeployment capacity can act more decisively (Dickler and Folta, 2020). If one business is underperforming due to a sector-specific turbulence, the firm can quickly redirect resources toward another business with stronger prospects. This ability to flexibly rebalance the internal portfolio allows the firm to buffer losses and amplify gains (Dickler and Folta, 2020; Sakhartov and Folta, 2014). What makes this internal flexibility especially powerful is that it tends to be less costly and faster than engaging with external markets (Dickler and Folta, 2020). As Dickler and Folta (2020) note, internal redeployment avoids the friction, delay, and transaction costs often associated with external, market-based adjustments. In this sense, multi-business firms can operate more like internal markets, using switching options to respond to uncertainty with a speed that

single business firms—cannot match, thereby increasing the strategic worth of switching options in uncertain environments (Dickler *et al*. 2022).

Our *baseline* hypothesis is guided by two core considerations drawn from the real options (e.g., Aabo *et al*. 2016; Amore and Mastrogiorgio, 2022; Grullon *et al*. 2012; Sakhartov, 2018; Sakhartov and Folta, 2015) and resource redeployment literature (e.g., Dickler *et al*. 2022). First, building on prior research, (Aabo *et al*. 2016; Amore and Mastrogiorgio, 2022; Grullon *et al*. 2012; Sakhartov, 2018; Sakhartov and Folta, 2015), we adopt the view that volatility increases the value of strategic flexibility. In this context, external volatility is treated as a general inducement that can enhance firm value by increasing the potential payoff from flexible resource use (e.g., Amore and Mastrogiorgio, 2022; Sakhartov, 2018; Sakhartov and Folta, 2015). Second, while we acknowledge that only multi-business firms possess formal switching options—i.e., the ability to reallocate resources across different businesses (Dickler *et al*. 2022)—our baseline analysis includes both single-and multi-business firms to reflect a broader interpretation of flexibility. This is because, even single-business firms retain growth options that allow them to delay or expand investment, which prior work shows can yield value in volatile environments (e.g., Aabo *et al*. 2016; Duffee, 1995; Grullon *et al*. 2012). Moreover, single-business firms may not necessarily be simple in design; many could have deep hierarchies, making them structurally complex despite their narrow business focus. As an example from our dataset, Cambrex Corporation, which falls under SIC 283, was identified as a single business firm, yet it operated with some internal complexity through a separate internal division, such as Nepera Inc. This type of organizational setup illustrates that even firms with a focused product-market scope can adopt divisional architectures—reflecting structural sophistication that

parallels what is typically seen in more diversified firms. This broader framing allows us to test whether external uncertainty, as captured by industry-level volatility (e.g., Amore and Mastrogiorgio, 2022; Sakhartov, 2018; Sakhartov and Folta, 2015), generally enhances firm value by activating different forms of flexibility across varied organizational forms.

At the same time, this study acknowledges that multi-business firms hold an added advantage: the structural ability to shift resources between businesses (Dickler and Folta, 2020; Dickler *et al*. 2022). This leads to the proposition that such firms may be better positioned to benefit from volatility compared to their more narrowly focused peers. To assess this argument, this study introduces an additional focus on firms with diversified operations, offering an empirical lens through which to evaluate whether internal resource mobility enhances the firm's ability to turn volatility into value. In doing so, this study extends the insights of Dickler *et al*. (2022) by asking whether diversification, by itself, is sufficient to produce a positive switching option effect—or whether the effectiveness of switching depends on a firm's internal organizational structure.

In this vein, this study's key contribution is to show that simply having growth or switching options isn't enough to create value in volatile settings—their effectiveness depends on how well the firm's internal structure supports their use. Our findings highlight that both growth and switching options yield value only when supported by the right structural conditions, thereby extending real options theory by connecting the concept of strategic flexibility with the firm's organizational design (e.g., Aabo *et al*. 2016; Amore and Mastrogiorgio, 2022; Grullon *et al*. 2012; Sakhartov, 2018; Sakhartov and Folta, 2015). In doing so, our perspective also challenges the common assumption that diversification

automatically translates into advantage under uncertainty for multi-business firms (e.g., Dickler *et al*. 2022).

3.3 HYPOTHESES

Inducements are the incentives to redeploy resources across businesses. These inducements to redeploy resources arise from performance advantages across businesses, which are reflected in the higher volatility of their financial returns (Amore and Mastrogiorgio, 2022). Building on the early intuitions of Penrose (1959), the redeployment literature has identified inducements as the key factor driving resource redeployment and corporate value, particularly in response to increased volatilities (Sakhartov, 2018; Sakhartov and Folta, 2014; 2015). As a result, corporate portfolios comprising businesses with higher volatility, varying performance levels, and inversely correlated returns are likely to boost firm value (Sakhartov and Folta, 2015). This comes from the simple possibility that resources can create greater value when redeployed to a different segment of the portfolio in the future (Sakhartov and Folta, 2015).

In this vein, Amore and Mastrogiorgio (2022) draw on insights from the resource redeployment literature (Sakhartov, 2018; Sakhartov and Folta, 2014; 2015), which conceptualizes resource redeployability—that is, a firm's ability to shift resources to new uses—as a form of growth option in line with the framework proposed by Kulatilaka and Perotti (1998). Amore and Mastrogiorgio (2022) build on real options theory to examine how technological entry into new domains creates redeployment opportunities that can enhance firm value. They propose that technological entry offers latent options to redeploy resources,

and that the value of these options is influenced by inducements—such as high return volatility in the new domain, which signal potential upside.

We build our baseline argument on the resource redeployment literature, particularly the works of Amore and Mastrogiorgio (2022); Sakhartov and Folta (2015) and Sakhartov (2018), who model resource redeployability as a type of growth option—drawing on the foundational work by Kulatilaka and Perotti (1998). Within this view, the value of redeployment options is shaped by two core factors: the inducements to redeploy and the costs of doing so (Amore and Mastrogiorgio, 2022; Sakhartov and Folta, 2014; 2015). In this study, we focus specifically on inducements which are typically tied to differences in performance across markets and are often proxied by volatility in financial returns, which signals where resources might be more profitably employed (Sakhartov and Folta, 2015). Following this, the redeployment literature argues that the ability to move resources across businesses itself constitutes a real option—one that becomes more valuable when firms have the discretion and structural capacity to act on it (Folta *et al*. 2016). Amore and Mastrogiorgio (2022) extend this logic by considering how volatility in the firm's current business increases the value of holding redeployment options. When the original business underperforms or becomes unstable, the ability to reallocate resources acts as a hedge against downside risk. At the same time, volatility in a new technological domain may signal high upside potential, making entry into that domain a potentially valuable exercise of optionality (Amore and Mastrogiorgio, 2022). Simulations by Sakhartov and Folta (2015) support this logic, showing that redeployment adds more value when firms face higher volatility in both the origin and destination domains. In summary, volatility—whether it reflects risk in a firm's current operations or opportunity in a new market—increases the value of being able to shift

resources. Firms that possess and act on this kind of flexibility are better positioned to adapt to environmental changes and capture value in uncertain conditions.

In this vein, we state our baseline hypothesis:

H1 (baseline): *Higher industry-level volatility in the firm's businesses positively affects firm value, by increasing the value of strategic flexibility.*

We build on this line of thinking by proposing that it is not simply the presence of growth options or switching options that gives firms an edge, but rather their ability to leverage it effectively—a capability that depends on having the right organizational structures in place. An important factor moderating the baseline hypothesis is the number of organizational layers, here referring to the number of *vertical* layers within a firm's organizational structure, where each layer includes at least one subordinate division. Firms do not implement vertical layers randomly; rather, these structures exist because, with a broad view of the organization, they can spot where collaboration makes sense—such as sharing facilities or resources, help mediate disputes over resources, and make decisions that serve the firm as a whole, rather than just individual units (Chandler, 1962; March and Simon, 1958; Mintzberg, 1979; Puranam, 2018; Williamson, 1975; Zhou, 2013). Thus, by dividing decision-making responsibilities across hierarchical levels, vertical layers help firms manage organizational complexity (Zhou, 2013; Zhou and Wan, 2017). However, their influence on resource redeployment in volatile markets is not straightforward. While hierarchical structures can enhance oversight and accountability (Zhou, 2013), they often come with trade-offs, such as slower decision-making, and increased bureaucracy, which can limit a firm's responsiveness to rapid market shifts (e.g., Puranam, 2018; Rajan and Zingales, 2001; Zhou, 2013; Zhou and Wan, 2017). On the contrary, flatter organizational structures with

fewer managerial layers and broader spans of control can support quicker decision-making, as teams are less dependent on multiple layers of approval. However, this greater speed may come at the cost of weaker oversight, which can result in inconsistent decisions or poor alignment with broader organizational goals (Helfat and Maritan, 2024; Zhou, 2013). Ultimately, the effectiveness of hierarchical structures depends on how well a firm can balance the need for coordination and control with the flexibility to act quickly in fast-changing conditions (Kocak *et al*. 2023).

For instance, an increase in hierarchical layers can limit the span of control held by top managers (Mintzberg, 1979; Puranam, 2018), making it harder for them to stay directly connected with divisional and operational leaders (Helfat and Maritan, 2024; Puranam, 2018). This reduced engagement can slow down resource redeployment, especially when decisions require approval across multiple layers (Helfat and Maritan, 2024). Since effective redeployment depends on a firm's ability to move quickly and make ongoing adjustments, added layers can become a bottleneck—delaying action while top management gathers additional information to assess new opportunities (e.g., Helfat and Maritan, 2024). In fast-changing environments, where timely entry and exit from markets is critical, these bureaucratic hurdles can slow adaptation (Kocak *et al*. 2023; Puranam, 2018; Zhou, 2013). As a result, having too many layers may reduce organizational agility and weaken the firm's ability to respond to redeployment opportunities in a way that enhances value.

Additionally, it is well-known that a higher number of layers can complicate communication and slow the flow of information, as both messages and decisions need to pass through multiple managerial levels (Helfat and Maritan, 2024). As proposals move upward through the hierarchy, they often face delays and the risk of distortion, making it

more difficult for top management to make timely and well-informed decisions (e.g., Helfat and Maritan, 2024). At the same time, managers at the divisional or operational level may hold valuable insights into market conditions but may lack the incentives to align their decisions with the firm's overall strategic goals (Argyres, 1996; Argyres *et al*. 2020; Hoskisson *et al*. 1993). In volatile environments, when communication remains confined to vertical reporting lines, it becomes harder to foster lateral coordination, which can lead to misaligned incentives (due to fragmentation or silos) and the risk of middle managers using their position to control or withhold information (Rajan and Zingales, 2001; Zhou, 2013). These challenges can ultimately hinder the firm's ability to redeploy resources efficiently.

To sum up, as the number of organizational layers grows, communication and coordination become increasingly difficult, with information and decisions having to pass through several levels of hierarchy (e.g., Helfat and Maritan, 2024; Zhou, 2013). This can distort key insights and raise the chances of poor resource allocation. Top executives may end up supporting lower-value projects while overlooking more promising ones (Bardolet *et al.* 2011). Additionally, these extra layers slow down the firm's ability to adapt quickly to redeployment opportunities, making it harder to shift resources in time to capitalize on emerging prospects (e.g., Helfat and Maritan, 2024; Kocak *et al*. 2023; Puranam, 2018; Zhou, 2013). This lack of responsiveness can result in missed opportunities and, ultimately, a decline in firm value. Taken together, these challenges suggest that additional layers may weaken the positive link between inducements to redeploy and firm value, leading to our second hypothesis:

H2*: The number of organizational layers negatively moderates the relationship between industry-level volatility in the firm's businesses and firm value.*

Another important factor moderating the baseline hypothesis is the degree of dispersion of functional activities, i.e., how the key functional activities (namely, R&D, manufacturing, and marketing) are distributed between the parent firm and its divisions and thus dispersed across the hierarchy. Helfat and Eisenhardt (2004) noted how firms must balance centralized and decentralized arrangements to achieve economies of scope. Centralization maximizes coordination and control, while decentralization provides divisions with the flexibility to adapt (Helfat and Eisenhardt, 2004). Higher dispersion of functional activities complicates this balance by introducing coordination challenges, as divisions often prioritize their own objectives, creating silos and misaligned goals (Helfat and Eisenhardt, 2004; Helfat and Maritan, 2024).

We argue that firms that have a high degree of dispersion in their functional activities across different hierarchical levels risk losing alignment with the organization's overarching goals, leading to functional silos (Argyres, 1996; Argyres *et al*. 2020), which can lead to ineffective resource redeployment[5]. Dynamic integrative capabilities, or a firm's ability to coordinate its functions (Helfat and Raubitschek, 2000; Henderson, 1994; Iansiti and Clark, 1994), are key to overcoming resource redeployment challenges (e.g., Cattani *et al*. 2024). Organizational structures that support these capabilities help integrate resources across their divisions or product lines, ensuring efficient redeployment to areas with the highest value potential (Cattani *et al*. 2024). On the contrary, weak coordination between functions could increase inefficiencies associated with resource reallocations (Cattani *et al*. 2024). Thus,

[5] We assume that each function (e.g., R&D, marketing) competes for resources at the divisional level, rather than a common corporate-level bargaining process.

firms with strong integrative capabilities can better coordinate efforts across divisions for smoother resource transfers.

Consequently, as functional activities spread across a firm, redeploying resources becomes more challenging, particularly when integrative capabilities and cross-divisional coordination are weak. In such cases, divisions may focus on advancing their own objectives rather than aligning with the firm's broader strategic goals (Argyres, 1996; Argyres *et al*. 2020). This misalignment can lead to resource redeployment decisions that favor individual divisions but undermine the overall performance of the firm. As a result, this misalignment weakens the positive effect of inducements to redeploy on firm value, as fragmented decision-making hampers the ability to seize value-enhancing opportunities. This dynamic creates a negative moderating effect on the relationship between inducements to redeploy and firm value. This leads to our third hypothesis:

H3*: A high degree of dispersion of functional activities negatively moderates the relationship between industry-level volatility in the firm's businesses and firm value.*

3.4 EMPIRICAL FRAMEWORK

3.4.1 Data and sample

Our study utilizes data gathered from different editions of the Medical and Healthcare Marketplace Guide[6], with a specific emphasis on the publications for the years 1983, 1986, 1990, and 1993. The 1983 edition contains data for that year, the 1986 edition covers 1986, the 1990 edition provides data for 1988 and 1989, and the 1993 edition includes data for 1991

[6] The Medical and Healthcare Marketplace Guide was originally published by International Bio-Medical Information Services, Inc. (Acton, MA, and Miami, FL), under the editorship of Adeline B. Hale and Arthur B. Hale, in 1975, 1978, 1983, 1986, and 1989. Later editions have been published by MLR Publishing Company (Philadelphia, PA) and Dorland's Biomedical Publications (Philadelphia, PA).

and 1992. The Guide offers insights into for-profit companies operating within the U.S. medical and healthcare sector. The medical sector can be categorized into three primary segments: healthcare services, medical devices, and pharmaceutical drugs. Given that the pharmaceutical industry is one of the three primary segments of the medical sector, alongside healthcare services and medical devices, our sample consists of all the U.S. publicly traded firms within the pharmaceutical industry. We selected publicly traded U.S. firms from the Guide in order to obtain parent-firm level information from Compustat. The Guide adopts a structure wherein all listed divisions are presented sequentially following the parent firm. The Guide focuses on mapping organizational relationships by linking headquarters to their divisions and highlighting connections among the divisions themselves. For multi-business firms, the Guide provides comprehensive details regarding both the product portfolios of the parent firm and those of its corresponding divisions. Although product market activities may initially be distributed across multiple divisions, firms often respond by reallocating resources. This can involve consolidating similar activities within divisions or transferring resources between divisions to enhance capabilities by enabling firms to optimize operations and achieve synergistic benefits (Karim, 2006). In other words, dispersion of product market activities creates the need for strategic realignment, prompting firms to restructure divisions and reallocate resources more effectively (Capron *et al.* 1998; Karim and Mitchell, 2004).

The process of constructing our sample involved several key steps. Our study focuses exclusively on publicly traded U.S. firms in the pharmaceutical industry, a specific segment within the broader medical sector. The sample is drawn from the Medical and Healthcare Marketplace Guide for the years 1983, 1986, 1988, 1989, 1991, and 1992. Financial data for these firms is sourced from the Compustat Fundamental Annuals, while stock returns are

calculated using data from the CRSP (Center for Research in Security Prices) daily and monthly return files. Additionally, daily and monthly factor returns, as well as risk-free rates, are obtained from Ken French's website[7]. Given that our analysis is conducted at the corporate-parent level, we use the parent firm-year as the unit of analysis. To integrate the data, we merged financial information from Compustat and returns data from CRSP with the hand-collected data from the Medical and Healthcare Marketplace Guide at the parent firm level. Due to missing data for certain years, the resulting dataset is an unbalanced panel. While the Guide provides information on the product categories of each firm, it does not specify the corresponding SIC codes for those categories. To address this limitation, we manually assigned three-digit SIC codes to the product categories [8].

Through our data collection efforts, we were able to track ownership changes over time. This was accomplished by manually assigning unique IDs to each firm, encompassing both the parent firm and its divisions. According to the details provided in the Guide, these shifts in ownership stem from different types of corporate restructuring initiatives. Such activities encompass scenarios where firms might spin off underperforming divisions or be acquired by other firms. These dynamic changes in ownership are not captured by the Compustat database. Consequently, through the manual assignment of unique IDs, we could construct a dynamic database that traces the evolution of corporate ownership structure over time. The

[7] French's data are available at: https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

[8] We refer to the SIC code classification provided by SICCODE.com. For instance, according to the Medical Guide, in 1986, ALZA operated in several product categories, including Biomolecular Research and Development, Implantable, Infusion Devices, and Pharmaceuticals, Drugs, and Medicines. However, the Guide did not provide corresponding SIC codes for these categories. To classify them, we manually assigned SIC codes based on their industry alignment: Pharmaceuticals, Drugs, and Medicines was categorized under SIC 283, Implantable and Infusion Devices under SIC 384, and Biomolecular Research and Development under SIC 873.

Guide provides comprehensive descriptions of more than 825 events that took place in the U.S. medical sector. These events span a broad spectrum of corporate restructuring activities, incorporating a series of acquisitions, alliances, and other external sourcing strategies utilized by these firms. Additionally, the Guide records whether a firm ceased its operations or underwent a name change. The data are grounded in personal interviews conducted by the owners of the Guide, with key members of the management teams of the firms listed in the Guide.

As an illustration of the database, consider the case of Johnson & Johnson (J&J hereafter), assigned the unique ID 99 for the years 1983, 1986, 1988, 1989, 1991, and 1992. The Technicare Ultrasound Division—formerly Unirad Corporation, acquired by Technicare in 1976 and then by J&J in 1979—is a manufacturer of non-invasive ultrasonic diagnostic imaging equipment. This division also included Echo Laboratories Inc. and Irex Medical Systems, both of which were acquired by Technicare in 1982. The Technicare Ultrasound Division was spun off as a separate entity from Technicare Corporation. However, in 1986, J&J decided to close the division, selling its assets to General Electric Company. In 1980, J&J acquired Iolab Corporation, a maker and distributor of intraocular lenses and surgical instruments. In 1983, the Iolab unit incorporated Site Microsurgical Systems Inc., a company specializing in ophthalmic microsurgical instruments, which had also been acquired by J&J. In 1991 and 1992, Site Microsurgical Systems Inc. was rebranded as Iolab Site Microsurgical Systems Inc. Extracorporeal Medical Specialities Inc., acquired by J&J in 1978, Cardio-Systems Inc., purchased in 1981, and Vascor Inc., also acquired in 1978, were manufacturers of critical care products used in cardiovascular therapy. These three companies were merged in 1983 to form Hancock Extracorporeal. These examples illustrate the broad scope of

corporate restructuring activities, allowing us to construct a dynamic database that tracks changes in corporate ownership structures over time. Figure 3.2 provides a visual representation of the structural evolution within the database from 1983 to 1992, while Table 3.1 outlines the primary functional activities carried out at both the headquarter and division levels in 1992, using J&J as a representative case.

Insert Figure 3.2 and Table 3.1 about here

The sample underwent a series of data refinements steps to ensure completeness and consistency. We begin by merging data from the Medical Guide with the firm-level financial and market data from Compustat and CRSP. This process yielded an initial sample of 1,268 parent firm-year observations from an unbalanced panel spanning six years (1983-1992) and comprising 212 publicly traded U.S. corporations. Of these, 132 were multi-business firms operating across up to 85 product categories, while 69 were multi-layered firms with organizational structures ranging from zero to five layers. Multi-business firms are those that operate across multiple lines of business, which, though distinct, often maintain some degree of connection within the broader medical sector. While these businesses can differ in industries, products, and services, they remain linked by their focus on healthcare and related fields, creating opportunities for strategic alignment despite their diversity. The primary objective of such firms is typically to diversify risk, achieve economies of scale and scope, and leverage opportunities across various industries. Among the 69 multi-layered firms, 19 have more than one vertical layer. For instance, Pfizer is a prime example of a multi-business and multi-layered firm. As a multi-business firm, Pfizer operates across several distinct lines

of business, including pharmaceuticals, consumer healthcare products, and agricultural product. Pfizer's pharmaceutical division develops and markets a wide range of prescription medications, while its consumer healthcare products include over-the-counter medications such as pain relievers and nutritional supplements, further diversifying its operations. In terms of organizational structure, Pfizer is also a multi-layered firm, with its operations spanning multiple levels of management and different layers of business divisions.

Next, we eliminated observations with missing excess returns—our key dependent variable—resulting in the removal of 562 firm-year observations. Additional observations were excluded due to missing data on key independent and control variables. A total of 85 observations were excluded due to missing industry-level volatility data, and 5 were removed for missing functional dispersion data. Additionally, observations without firm-level controls, including R&D intensity, capital expenditures, and total diversification, were also excluded. After these adjustments, the final sample includes 530 firm-year observations from 179 unique firms.

3.4.2 Variables

Dependent variable

In this study, excess returns are calculated as the difference between a firm's monthly return and the one-month Treasury bill rate (Dickler *et al.* 2022). Monthly returns are calculated as the change in the firm's stock price from month '*t*' and '*t-1*' (Dickler *et al*. 2022). We then compute the annual return by averaging the firm's monthly returns over the year.

Overall, excess returns provide a measure of performance that is adjusted for risk, which is relevant in our case. In fact, in real-options theory (Myers, 1977), where decisions

often involve uncertainty, adjusting for risk is important. We thus employed this measure because in the real option framework, where investment decisions may involve the choice to defer, expand, or abandon projects based on future information (Myers, 1977), comparing actual returns with expected returns helps in evaluating the effectiveness of the real options embedded in the investment. Since real options are used in situations where there is uncertainty about future market conditions, excess returns help in quantifying the uncertainty-adjusted performance, helping firms in assessing whether the flexibility provided by real options enhances value under uncertain conditions (Dickler *et al.* 2022).

Independent variables

Industry-level volatility. The volatility of firm *i* in month *t* is calculated as the standard deviation of daily returns, given by the following formula:

$$\sqrt{\sum_{\tau \in t} (R_{\mathrm{i}}, \tau - \bar{R}_{\mathrm{i}}, _{\mathrm{t}})^2 \; / \, n_{\mathrm{t}} - 1}$$

where R_{i}, τ represents the natural logarithm of the daily gross excess returns of firm *i*'s stock, $\bar{R}_{\mathrm{i}}, _{\mathrm{t}}$ is the mean of R_{i}, τ during month *t*, and n_{t} denotes the count of non-missing return observations during month *t* (Dickler *et al*. 2022). This helps to assess how much the daily returns of a firm vary from their average during a particular month, giving an indication of how volatile or stable the stock is over that period. To capture inducements, our approach involved calculating volatility at the industry-level, which involved several steps outlined below. First, we computed monthly returns for each firm, as explained above. Second, after calculating the monthly volatility for firm *i* within a specific year, we proceeded to determine the annual volatility for firm *i* in that same year. Specifically, the yearly volatility for firm *i*

is computed by averaging the monthly volatilities. Third, for each focal year in the panel, we calculated the average volatility over the preceding three years. We computed the average of the past three years' returns relative to the current or focal year. To illustrate, for the year 1986, we determined the average of the yearly returns for 1983, 1984, and 1985. Starting with 1983 as the initial year in our manually collected dataset, we acquired CRSP return data from 1980 onward. This enabled the computation of the average yearly returns for 1980, 1981, and 1982 for the firms' reporting data since 1980 in the CRSP. Consequently, this yielded the average for 'preceding three-year' volatility value for the base year 1983 in our dataset. Fourth, we moved on to calculate industry-level volatility using the previously determined average for 'preceding three-year' volatility values for each individual firm. Given that each industry is defined by a specific SIC code and comprises of multiple firms, we computed the average volatility across all firms associated within a particular SIC code in a specific year. This enabled the determination of average industry-level volatility in a given year. Finally, taking into account that a focal firm may operate in multiple SIC codes, we calculated the average of the average industry-level volatility across all these diverse SIC codes. This computation enabled us to ascertain the ultimate volatility value for a firm in a given year, essentially at the parent-firm level.

Although much of the existing literature relies on firm-specific volatility to represent total uncertainty (e.g., Aabo *et al*. 2016; Dickler *et al*. 2022; Grullon *et al*. 2012), our choice to use industry-level volatility is motivated by several conceptual and methodological considerations. To begin with, our baseline approach aligns with the real options logic established in Sakhartov and Folta (2015) and applied empirically by Amore and

Mastrogiorgio (2022), which justifies the use of industry-level volatility. In their study, Amore and Mastrogiorgio (2022) rely on volatility at the industry level—rather than changes in firm-specific volatility (e.g., Dickler *et al*. 2022)—because their theoretical perspective views volatility as an exogenous performance signal that serves as an inducement to redeploy resources. Their goal is to determine whether sustained uncertainty in a firm's primary business environment increases the value of entry into a new domain. This method follows the modeling assumptions of prior real options research (e.g., Sakhartov and Folta, 2015), which treats volatility not as a firm-level outcome but as an external characteristic of the market. Thus, what matters is the overall level of uncertainty in the environment, not how much firm-specific uncertainty changes from one period to the next.

Second, industry-level volatility provides a clearer measure of systematic uncertainty, as it captures changes that are external to any individual firm but common to all players in the industry. This broader measure is especially appropriate for diversified firms that span multiple industries and must adjust internally to changes in external conditions. Since, firms operating in multiple businesses typically do not base their internal resource reallocation decisions solely on internal risk metrics—they also pay close attention to volatility trends across the external markets they engage with. When uncertainty increases in one industry, such firms may choose to pull back investment from that industry and redirect resources toward other, more opportunistic industries.

Third, using firm-specific volatility in our study risks endogeneity, since it is shaped by a firm's own strategies and internal dynamics. For example, a firm's organizational structure may affect how it reacts to external uncertainty. Firms with more hierarchical layers

might respond more slowly to external changes. These structural limitations can cause delayed responses, which may lead to greater fluctuations in firm performance—thereby higher firm-specific volatility. If we then use firm-specific volatility as an independent variable, we would be using a variable that is already partially determined by the firm's structure—the very moderator we are trying to test. This creates potential endogeneity because firm-specific volatility is not fully exogenous—it reflects not only external uncertainty but also the internal structure of the firm. To avoid this, we rely on industry-level volatility, which better reflects common environmental shocks across firms and allows to cleanly assess how internal structures influence adaptive capability of firms.

It is also important to acknowledge that previous studies (e.g., Dickler *et al*. 2022; Grullon *et al*. 2012) rely on changes in firm-specific volatility rather than static levels to represent uncertainty. This approach suggests that the value of flexibility rises when uncertainty increases, not simply when uncertainty is present. Thus, a firm operating in a consistently high-volatility environment may not necessarily change its behavior unless it experiences a shift in risk conditions. Furthermore, because firm-specific volatility may be shaped by internal factors, focusing on changes in volatility helps reduce endogeneity concerns. In contrast, our study employs a level-based measure of industry-level volatility, not changes, to better align with our objectives. Specifically, we compute a three-year rolling average of industry volatility to reflect longer-term patterns in environmental uncertainty. This measure is more appropriate given our focus on how firms adjust their internal structures—such as the number of managerial layers—over time in response to broader, external trends. Structural adaptations of this kind typically reflect long-term shifts, rather

than short-term market noise. By smoothing out temporary volatility spikes, the rolling average helps us better capture systematic uncertainty that affects all firms in a given industry. Second, our approach is also consistent with the underlying logic of real options theory (Myers, 1977), which is concerned with how firms make strategic investment decisions under conditions of enduring uncertainty (e.g., Amore and Mastrogiorgio, 2022). When assessing decisions such as resource redeployment or reconfiguration of internal systems, we believe that a long-term view of volatility is more relevant than short-term fluctuations. This is because relying on short-term fluctuations can lead managers to make short-sighted choices that may not hold up over time. In some cases, a decision to redeploy resources based on temporary changes may later need to be reversed—potentially resulting in significant sunk costs (Sakhartov and Folta, 2015). For these reasons, we rely on industry-level volatility levels rather than firm-specific volatility changes to represent the type of uncertainty that influences long-horizon strategic choices.

Number of organizational layers. To examine whether the number of organizational layers negatively moderates the relationship between industry-level volatility in the firm's businesses and firm value, we measured the number of organizational layers by analyzing the vertical structure of the firm (Zhou, 2013), with each layer containing at least one subordinate division[9]. For example, in 1983, J&J had two organizational layers (see Figure 3.2). The first layer, at the top level, included 19 divisions under the parent firm, while the second layer consisted of three divisions beneath the Technicare Corporation division. As

[9] The Medical and Healthcare Marketplace Guide provides information on both subsidiaries and divisions of the parent firm. For clarity and consistency, the term "division" is used throughout this paper to refer to both subsidiaries and divisions.

such, the number of organizational layers is treated as a count variable which captures the depth of a firm's hierarchy by counting how many vertical layers exist between the corporate headquarters and its lowest-level entities. A firm with more layers may have more decision-making complexity, even if it has relatively few divisions. Unlike the total number of divisions or diversification, this variable does not indicate how many distinct businesses the firm is engaged in, only how they are structured internally, thus reflecting vertical complexity.

Functional dispersion index. To examine whether a high degree of dispersion in functional activities negatively moderates the relationship between industry-level volatility in a firm's businesses and firm value, we constructed a functional dispersion index. This process began by identifying the hierarchical vertical layers within the firm's organizational structure, from the topmost entity to the lowest-level divisions. For example, an organizational structure could consist of three layers: Layer 1, representing the parent firm at the top; Layer 2, encompassing the divisions directly beneath the parent firm; and Layer 3, which includes sub-divisions under the divisions. We then catalogued the functions performed at each layer, such as manufacturing, marketing, and R&D. By calculating the proportion of layers performing each function, we were able to compute a simple Herfindahl-Hirschman Index (HHI). To normalize the index to a range of 0 to 1, we divided it by the total number of functions considered. A higher HHI value reflects that certain functions are highly concentrated in a few layers, implying low dispersion[10]. If functional dispersion is high (low HHI), the firm may have greater adaptive capacity, but excessive dispersion could lead to

[10] We computed the index using the following formula: $HHI = \Sigma (\text{Proportion of layers performing function i})^2$, where Σ denotes the sum over all functions considered, and $(\text{Proportion of layers performing function i})^2$ represents squaring the proportion of layers performing each function.

inefficiencies, redundancy, and coordination bottlenecks. On the contrary, if functional dispersion is low (high HHI), the firm may struggle to adapt to volatile environments, as key functions are concentrated in a few layers, limiting cross-layer information flow and slowing response times. Thus, by using HHI to quantify functional dispersion, the study ensures that the moderating effect is precisely captured, allowing for a nuanced understanding of how organizational structure impacts strategic adaptability and firm value.

Control variables

We controlled for several variables at the firm and industry level.

We include both the *diversified firm dummy* and *total diversification* as control variables, as they capture different dimensions of a firm's diversification strategy. The *diversified firm dummy* helps account for broad differences between single-business and multi-business firms. In contrast, the *total diversification* is a continuous measure that reflects the extent and balance of diversification across industries. By including both variables, we separately control for the general presence of diversification and the degree to which a firm's business is spread across multiple segments. For instance, a firm with multiple divisions may not necessarily be diversified if all divisions operate in the same industry. *Diversified firm dummy* is a binary variable with a value of 1 when a firm operates in two or more segments classified under different three-digit SIC codes and 0 otherwise (e.g., Dickler *et al.* 2022; Kuppuswamy and Villalonga, 2016; Maksimovic and Phillips, 2002; Tate and Yang, 2015). Second, to measure a firm's diversification strategy, we employed the classical entropy measure introduced by Palepu (1985). More specifically, to determine the *total diversification* of a firm during a specific year, we used Compustat business segment data.

We follow Palepu's (1985) method to measure diversification using SIC codes. Segments with different four-digit SIC codes but within the same two-digit industry group are treated as related, and we calculate related diversification using the following formula: $\mathrm{DR_j} = \sum_{\mathrm{i}\in\mathrm{j}} P_i^j \ln\left(\frac{1}{P_i^j}\right)$, where P_i^j is the share of segment *i* of group *j* in the total sales of the group (Palepu, 1985). Since the firm operates across multiple industry groups, its total related diversification DR is a function of DR_j, j = 1…, M, and is defined as: $\mathrm{DR} = \sum_{\mathrm{j}=1}^{\mathrm{M}} \mathrm{DR_j} P^j$, where P^j represents the proportion of sales from the *j*-th industry group relative to the firm's total sales (Palepu, 1985). If a firm operates in multiple two-digit SIC codes, it is considered to have unrelated diversification. Finally, we calculate total diversification as the sum of related and unrelated diversification (Palepu, 1985). Controlling for diversification is essential because diversification can influence how resources are allocated within firms, which in turn affects the extent to which organizational complexity hampers or facilitates resource redeployment. Third, as the Guide facilitates the identification of linkages between the headquarters and its divisions, we incorporated a control for the *total number of divisions* affiliated with a corporate parent in the context of a multi-layered organizational structure. This variable reflects the breadth of a firm's operations by counting the number of distinct divisions under the corporate parent, *regardless* of their hierarchical position. It captures the firm's horizontal complexity, reflecting the degree of segmentation within the firm—more divisions suggest greater operational scope and specialization. Also, more divisions may imply greater coordination challenges, economies of scope, or resource sharing opportunities. Furthermore, in a multi-layered organization, firms with more divisions may experience challenges related to information flow, managerial oversight, and resource

reallocation. Given this, we include it as a control variable to account for the complexity of a firm's organizational structure.

We control for *firm size* using the natural logarithm of total consolidated book assets (ln(at)), as firm size can influence strategic decisions associated with resource reallocation. Larger firms have more diversified operations which can affect their ability to redeploy resources and respond to industry volatility. We use the logarithmic transformation to normalize the distribution of firm size, thereby reducing skewness. We capture internal efforts the firm makes to innovate and grow through *R&D intensity* (ratio of R&D expenditure to total assets) and *capital expenditure*. For instance, *R&D intensity* reflects the firm's ability to respond to changes in the external environment, enhancing resilience to volatility by enabling resource redeployment. Similarly, *capital expenditure* reflects the firm's potential for product expansion, offering more opportunities for resource reallocation. These controls help isolate the impact of organizational structure.

We controlled for *leverage*, defined as the ratio of the long-term debt to total assets, as high leverage can limit a firm's ability to redeploy resources due to debt servicing obligations. Finally, controlling for *agency costs* helps account for inefficiencies in managerial decision-making. We measure *agency costs* using the asset utilization ratio, which captures how effectively a firm employs its assets to generate revenue. Following Ang *et al.* (2000) and Rashid (2013), this measure is inversely related to agency costs—firms with lower asset utilization ratios tend to exhibit higher agency costs due to managerial inefficiencies. The asset utilization ratio measures the ratio of sales to assets. For the sake of simplicity in interpretation, to estimate the level of agency cost, we multiplied the asset

utilization ratio by -1. This means that a higher asset utilization ratio is associated with higher agency costs, while a lower ratio indicates lower agency costs (Joseph *et al*. 2022).

To account for product-market competition at the industry-level, we construct the Herfindahl-Hirschman Index (HHI) using data at the segment level. Our process begins with extracting segment-specific net sales from the Compustat BUSSEG file, keeping only those segments that report valid four-digit SIC codes. To ensure comparability across similar lines of business, we consolidate all segments that share the same three-digit SIC code within each firm. We then calculate the HHI for each industry-year combination by summing the squared market shares of all firms active in that three-digit SIC industry. By focusing on activity at the segment level rather than at the aggregate firm level, the resulting measure offers a clearer picture of competitive dynamics, particularly in industries where diversification is common. A higher HHI score reflects a more concentrated industry and thus lower competitive intensity. The index is calculated by summing the squared market shares of all firms within a given industry:

$$HHI_{\mathrm{st}} = \sum_{\mathrm{S}=1}^{n_{\mathrm{s}}} S^{2}{}_{\mathrm{ist}} \tag{6}$$

where S_{ist} is the market share of firm 'i' in industry 's', in year 't', and 'n_s' is the number of firms operating in industry 's', in year 't' (e.g., Gu, 2016). This variable was then merged at the firm-year level. We use HHI to capture industry concentration because we wanted to know the degree of dominance by firms. Firms operating in highly competitive industries (low HHI) may face greater external pressure to redeploy resources efficiently, highlighting the importance of having an appropriate organizational structure.

3.5 KEY FINDINGS

The empirical analysis is based on an ordinary least squares (OLS) panel model regression incorporating firm fixed effects to account for time-invariant unobserved variations among firms, and year dummies. We used the Huber-White-Sandwich estimator of variance to adjust the standard errors because this method is unbiased when dealing with cluster-correlated data (Dickler and Folta, 2020; Rogers, 1993; Wooldridge, 2010). Our model is the following:

$$Y_{i,t} = \beta_0 + \beta_1 X_{i,t} + \beta_2 L_{i,t} + \beta_3 X_{i,t} L_{i,t} + \beta_4 F_{i,t} + \beta_5 X_{i,t} F_{i,t} + \beta_6 Z_{it} + \alpha_i + \gamma_t + \varepsilon_{it}$$

where, $Y_{i,t}$ is the excess returns of firm i in year t, and $X_{i,t}$ is the industry-level volatility of firm i in year t. In line with our first hypothesis, we expect the coefficient β_1 to be positive and statistically significant. $L_{i,t}$ is the number of organizational layers of firm i in year t, followed by the interaction $X_{i,t}L_{i,t}$ between industry-level volatility and number of organizational layers. According to our second hypothesis, we expect the coefficient β_3 of the interaction term to be negative and statistically significant. $F_{i,t}$ is the functional dispersion index of firm i in year t, followed by the interaction $X_{i,t}F_{i,t}$ between industry-level volatility and functional dispersion index. Consistent with hypothesis 3, we expect the coefficient β_5 to be negative and statistically significant. Z_{it} is the vector containing controls, α_i captures the time-invariant unobserved firm heterogeneity, γ_t captures time-variant factors, and ε_{it} is the error term that includes unobserved factors that vary over time. The descriptive statistics, pairwise correlation matrix, and baseline regression findings are presented in Tables 3.2, 3.3, and 3.4, respectively.

Insert Table 3.2, 3.3, 3.4 about here

Table 3.2 shows the summary statistics for all the variables used in the analyses. Focusing on the two variables used to test hypotheses 2 and 3 (boundary conditions), we must note that the *number of organizational layers* range from zero to five. This suggests that our sample includes firms with either a flat structure, lacking a clear hierarchical organization, or firms with a more complex, multi-layered organizational framework. For instance, Squibb Corporation, in the year 1983, has a maximum of 5 organizational layers. Moving to the second variable, the *functional dispersion index*, its mean value is 0.94, suggesting that, on average, the functions within the organizational layers are highly concentrated rather than dispersed across those layers.

Table 3.3 presents the pairwise correlation between the variables, revealing a moderate negative relationship of -0.62 between the *functional dispersion in*dex and the *number of organizational layers*. This suggests that, as the number of organizational layers increases, the level of functional dispersion tends to decrease, and vice versa. In other words, firms with more layers in their organizational structure tend to have a more concentrated or less dispersed allocation of functions across those layers.

Table 3.4 reports the baseline results for the panel data fixed-effect regression. Model 1 reports the results without control variables or interaction terms. Model 2 incorporates all control variables. Model 3 extends this by including the interaction between industry-level volatility and the number of organizational layers. Lastly, Model 4 represents the full model, incorporating all control variables along with the interaction between the functional dispersion index and industry-level volatility.

In Model 1, the positive relationship found in the literature between *industry-level volatility* and *excess returns*, without incorporating any control variables, is replicated. In

line with prior research (e.g., Amore and Mastrogiorgio, 2022; Sakhartov, 2018; Sakhartov and Folta, 2015), we find that greater volatility at the industry-level has a positive relationship with firm value, as captured by our dependent variable, i.e., excess returns. In fact, the coefficient for industry-level volatility is positive and significant at the 5% level. After incorporating all the control variables in Model 2 and including the interaction terms in Models 3 and 4, we find that the positive relationship between industry-level volatility and excess returns remains stable. In Model 2, the coefficient for industry-level volatility is positive and statistically significant at 5% level. Similarly, in Model 3 and 4, the coefficient remains positive and statistically significant at 1% and 5% level respectively, in line with our baseline hypothesis.

Upon incorporating the control variables in Model 3, the positive relationship between *industry-level volatility* and *firm value* is weakened as the *number of organizational layers* increases—indicating a negative interaction between volatility and structural complexity. The coefficient for the interaction effect is negative, and statistically significant at 1% level. This is in line with our second hypothesis, asserting that augmenting the number of organizational layers diminishes span of control (Puranam, 2018), limits access to information, and leads to less direct participation by the top management in business operations and decisions related to resource redeployment (Helfat and Maritan, 2024; Puranam, 2018; Wulf, 2012). This, in turn, heightens the probability of resource *mis*allocation across businesses. Consequently, firms may compromise performance by augmenting the number of organizational layers.

Model 4 presents the findings for the interaction between *functional dispersion index* and *industry-level volatility* on *firm value*. Since a higher value of the functional dispersion

index actually implies greater concentration, the negative coefficient for the functional dispersion index suggests that greater concentration of functions may have a detrimental effect on firm value. This implies that when key functions are more concentrated, it may reduce the firm's ability to effectively redeploy resources across its divisions. The concentration of functions could lead to inefficiencies in resource reallocation, as top management may become overly focused on managing centralized activities, leading to managerial overload (e.g., Zhou, 2013), which might hinder timely decision-making and the flexibility needed for effective resource redeployment. While the coefficient for functional concentration is negative, it does not reach statistical significance. This suggests a possible—but inconclusive—tendency for greater concentration of functions to reduce firm value. The result indicates that functional structure alone may not significantly influence firm performance in the presence of other factors, or that its effect varies across firms. For instance, for some firms, consolidating R&D into a single unit may improve efficiency and lower costs, potentially enhancing performance. However, in other firms, this same approach could slow decision-making or limit flexibility across different product lines, resulting in reduced responsiveness and performance.

Furthermore, while our theoretical framework suggests that having more dispersed functional activities might weaken the link between industry volatility and firm value—due to coordination challenges—the results tell a different story. The negative interaction coefficient indicates that it was actually greater functional concentration that reduced the positive effect of industry volatility on firm value, although this effect was not statistically significant.

It is noteworthy to mention that, while both the number of divisions and layers reflect organizational complexity, they influence firm value differently. The positive coefficient for the *total number of divisions* (in Models 2, 3, and 4) suggests that firms with more divisions tend to have higher firm value, all else being equal. This finding could suggest that a larger number of divisions may enable better specialization, clearer accountability, and more effective resource reallocation across divisions. More divisions could enhance a firm's ability to pursue diversified strategies and adapt to market opportunities, potentially increasing firm value. However, this effect was statistically insignificant which may indicate that simply having more divisions does not consistently enhance performance across firms. The effectiveness of a divisional structure may hinge on other elements—like the efficiency of coordination among units, or how closely the structure supports the firm's strategic goals—which may not be fully accounted for in the current analysis. In contrast, the *number of organizational layers* has a negative impact on firm value, as indicated by the negative and statistically significant coefficient in Model 4. More hierarchical layers can introduce bureaucratic inefficiencies, slow decision-making, and create communication bottlenecks (e.g., Helfat and Maritan, 2024; Puranam, 2018). Finally, a negative and statistically significant effect of *R&D intensity* on firm value (in Model 2) could suggest that, in industries like pharmaceuticals, high R&D spending might not immediately contribute to firm value due to long development cycles, regulatory hurdles, or high failure rates.

Prior research suggests that when volatility increases, diversified firms may be uniquely positioned to respond by reallocating resources internally to where they are most needed, leading to diversified firms outperforming single-business firms (Dickler *et al*. 2022). To evaluate this, our analysis specifically focuses on multi-business firms to examine

whether their capacity to reallocate resources across businesses enhances the beneficial impact of volatility on firm value. This analysis extends the insights of Dickler *et al*. (2022) by not only considering the role of diversification in enabling switching options, but also probing whether the effectiveness of those options depends on the firm's internal organizational structure. The findings related to this part of the analysis are reported in Table 3.5.

Insert Table 3.5 about here

We began by examining the interaction between industry-level volatility and a diversification dummy to assess whether diversified firms are more capable than their single-business counterparts in managing increased volatility. We then broadened the analysis by introducing organizational structure as a potential moderating factor, testing a three-way interaction involving industry-level volatility, diversification status, and each of the two structural features: the number of organizational layers and the degree of functional dispersion.

As presented in Table 3.5, industry-level volatility positively influences excess returns, with statistical significance in all models, reinforcing our baseline hypothesis. When examining the interaction between industry-level volatility and diversified firm dummy, the effect is negative and significant in Models 3 and 4, while it remains statistically insignificant in Models 5 and 6. In contrast, Dickler *et al*. (2022) focus on changes in firm-specific volatility and report a positive and significant interaction with diversification, indicating that diversified firms experience substantially higher returns than single-business firms, during

periods of rising volatility. Unlike their approach, our analysis uses industry-level volatility (level measure) to capture external uncertainty. Under this specification, the interaction with diversification yields a negative effect in earlier models and remains insignificant as controls and moderators are added, suggesting a more nuanced relationship between volatility, diversification, and firm value. This finding suggests that simply having the ability to move resources around does not guarantee it will be done effectively. There are several potential explanations for this result. First, firms may vary in how they are structured, which in turn affects how effectively they are able to redeploy resources (Folta *et al*. 2016; Levinthal and Wu, 2024). For example, firms may face internal barriers such as coordination breakdowns, bureaucratic delays, or competition between divisions for resources (Helfat and Maritan, 2024). Under conditions of heightened volatility, these structural challenges may become more pronounced, ultimately reducing firm value. This points to a broader insight: the value of real options depends not only on having them available, but on a firm's capacity to use them effectively.

Another factor could be differences in sample composition between our study and that of Dickler *et al*. (2022), which may account for the divergent findings. Unlike broader, cross-industry diversification, the firms in our sample are mainly concentrated within the broad U.S. medical sector, spanning areas such as pharmaceuticals, medical devices, and healthcare services. This type of diversification is either within the same industry or between closely related sectors, where businesses or business units often rely on interdependent and shared resources. In such cases, disruptions in one segment—like pharmaceuticals—can easily ripple into others, such as medical devices, thereby diminishing the effectiveness of internal

resource reallocation. As a result, shifting resources from pharmaceuticals to medical devices may not necessarily improve the firm's overall performance (Giarratana *et al*. 2021). This tight coupling creates a strategic tension: while resource flexibility is possible, exercising it may come at the expense of breaking synergies across interlinked segments. Volatility, when it affects interconnected or positively correlated areas simultaneously, can restrict the usefulness of redeployment as a strategic response (Giarratana *et al*. 2021). As Giarratana *et al*. (2021) explain, when business segments share scale-free resources, shifting resources away from one segment can weaken the shared value across the entire portfolio. In such settings, redeployment can erode overall firm performance, particularly when complementarities between segments are strong. As a result, rather than enhancing performance, internal resource shifts during volatile periods may lead to lost synergies and reduced firm value. This dynamic offers a plausible explanation for the negative interaction between volatility and diversification observed in our empirical results. In contrast, Dickler's *et al*. (2022) sample includes firms that diversify across distinct industries where a shock in one industry is less likely to affect the other. Therefore, performance across segments is negatively correlated making redeployment a more attractive option (Giarratana *et al*. 2021). This variance across segments creates opportunity to redeploy resources from underperforming to stronger segments (Dickler *et al.* 2022; Giarratana *et al*. 2021; Sakhartov and Folta, 2015).

Third, unlike Dickler *et al*. (2022) who focus on changes in firm-specific volatility to capture sudden, firm-level shocks, that may spur rapid strategic adjustments, our study relies on a level-based measure of industry volatility, which reflects ongoing environmental

uncertainty shared across firms. A sharp increase in volatility, as captured by Dickler's approach, can push managers to respond quickly—often by reallocating resources toward better-performing businesses. However, when volatility is persistently high across a set of closely related industries, as in this study's context, it can produce the opposite effect. Rather than prompting action, constant uncertainty may cause firms to hesitate or become more structurally rigid, especially if they fear misallocating resources in a volatile environment. Moreover, the costs of doing so—whether due to coordination challenges or potential disruption of cross-unit synergies—can outweigh the perceived benefits. As a result, switching options may exist in theory, but their practical value diminishes in the face of internal complexity and sector-wide instability across positively correlated segments.

The three-way interaction between volatility, diversified firm dummy, and the number of organizational layers has a negative and statistically significant coefficient of 0.507 in Model 5 and 0.607 in Model 6, as shown in Table 3.5. This suggests that the performance disadvantage associated with operating as a diversified firm in a volatile environment becomes more pronounced as the firm's hierarchy becomes more complex. In other words, when a firm has a deep hierarchy, the challenges brought on by volatility appear to hit harder because a greater number of layers can slow decision-making, increase coordination costs, and introduce bureaucratic inefficiencies, limiting a firm's ability to respond swiftly to volatility (Puranam, 2018; Rajan and Zingales, 2001; Zhou, 2013). Additionally, the three-way interaction between volatility, diversified firm dummy, and functional dispersion is negative (0.888) in Model 6, as presented in Table 3.5. This suggests that for diversified firms, concentrating key functions tends to make the negative impact of industry-level

volatility on firm value even worse. In other words, when volatility is high, firms with more functionally concentrated structures seem to struggle more as they may find it harder to adapt. Although the coefficient for the three-way interaction is negative, it does not reach statistical significance, suggesting that the moderating effect of functional dispersion on the volatility-diversification-value relationship is inconclusive. This result may reflect heterogeneity across firms—some may still allow local flexibility within a centralized structure—leading to heterogeneity in how this design feature plays out in practice. Alternatively, the finding may imply that functional concentration alone does not consistently constrain how diversified firms respond to environmental uncertainty unless it is paired with other structural features, such as tight authority hierarchies or poor information flow (Puranam, 2018).

3.6 REPLICATION OF PRIOR RESEARCH

We replicate the core approach of Dickler *et al*. (2022) by integrating *change firm-level volatility* into our regression framework. Tables 3.8 and 3.9 include *change firm-level volatility* as a control variable—first in the baseline model and then in the three-way interaction examining industry-level volatility, diversification, and firm value. Table 3.10 goes a step further by replicating the key finding from Dickler *et al*. (2022), showing a positive and statistically significant interaction between *change firm-level volatility* and the *diversification dummy* in predicting *excess returns*. The close alignment between our results and those of the original study by Dickler *et al*. (2022) supports the robustness of our data, variable definitions, and empirical strategy. Building on this replication, we expand the analysis to explore whether the strength of this relationship depends on internal

organizational design—specifically, the number of organizational layers, and the degree of functional dispersion within firms.

Insert Table 3.8, 3.9, 3.10 about here

After accounting for *change firm-level volatility*, the results remain robust. As shown in Table 3.8 (baseline regression) and Table 3.9 (three-way interaction models), the overall patterns are consistent with our earlier findings. In Table 3.9, the coefficient for industry-level volatility remains positive and statistically significant, lending further support to our baseline hypothesis. The interaction between industry-level volatility and the diversified firm dummy continues to be negative and significant in Models 3 and 4, but becomes insignificant in Models 5 and 6. Additionally, the three-way interaction between industry-level volatility, diversification, and the number of organizational layers is negative and significant at the 5% level in Model 6. Meanwhile, the interaction involving functional dispersion remains negative but statistically insignificant—consistent with the results observed before controlling for *change firm-level volatility*.

While Models 3, 4, and 5 in Table 3.10 successfully replicate the main findings of Dickler *et al*. (2022)—showing a positive and significant interaction between *change firm-level volatility* and the *diversification variable*—the pattern changes in the fully specified Model 6, where both our moderators are introduced. These results indicate that the benefit of diversification amid rising volatility is not universal; rather, it depends on a firm's internal structural features. When these structural elements are considered, the direct effect of

diversification under volatile conditions becomes less pronounced or even negative. Additionally, the three-way interaction results present a different picture when *change firm-level volatility* is used as the primary independent variable, while *industry-level volatility* included as a control. Specifically, the interaction between *change firm volatility*, *diversification*, and the *number of organizational layers* turns positive and significant, even though the standalone effect of organizational layering remains negative and significant. Similarly, although the individual coefficient for the functional dispersion index continues to be negative and statistically significant at 10% level, the corresponding three-way interaction involving *change firm volatility*, *diversification*, and *functional dispersion* turns positive but remains statistically insignificant. The contrast in findings can be traced back to the distinct nature of the volatility measures used. *Change firm-level volatility* may signal unique, internal disruptions that may still leave room for selective resource reallocations—even in firms with more complex structures—resulting in a positive interaction with diversification. For instance, firm-specific volatility might stem from internal issues such as leadership changes, or product-specific fluctuations—factors that might only impact one division. On the other hand, sustained industry-level volatility reflects broad-based, external uncertainty that tends to impact all segments or divisions of a firm at once. Because these shocks are broad and industry-wide, they don't just affect one business unit—they tend to impact every business unit that operates within the same related industry, regardless of internal performance. Under such conditions, simultaneous pressure is created on coordination and redeployment of resources across positively correlated businesses, making redeployment costly and unattractive (Giarratana *et al*. 2021). Thus, the challenges posed by organizational complexity—such as deep hierarchies or functional silos—become more apparent when

industry-level volatility is used, often hindering the firm's ability to adapt efficiently and diminishing the value generated through diversification.

3.7 DISCUSSION

Multi-business firms must continuously adjust their product scope to navigate uncertainty effectively. In particular, uncertainty surrounding a core business may be mitigated by expanding into additional businesses, enabling resource redeployment (Dickler *et al*. 2022). However, the success of resource redeployment varies across firms (Helfat and Maritan, 2024). This study examines how the organizational structure—captured through vertical configuration, i.e., number of layers, and the degree of functional dispersion—moderates the relationship between inducements to redeploy and firm value. Our findings align with prior research, showing that heightened industry-level volatility enhances firm value by increasing the option value of resource redeployment (Amore and Mastrogiorgio, 2022; Sakhartov, 2018; Sakhartov and Folta, 2014; 2015). Additionally, we revisit the methodology of Dickler *et al*. (2022), by incorporating changes in firm-specific volatility into our regression analysis. The consistency of our findings with those in the original study by Dickler *et al*. (2022), affirms the credibility of our dataset, variables construction, and analytical approach. Building on this foundation, our study proceeds to examine whether this relationship is influenced by organizational structure—specifically the number of organizational layers and the degree of dispersion of functional activities.

We contribute to the real options theory and the literature on resource redeployment by identifying two key boundary conditions that may weaken the positive relationship between industry-level volatility and firm value. First, we find that this relationship weakens as the

number of organizational layers increases. A greater number of layers reduces the span of control, making it harder for top management to engage directly in decision-making (Puranam, 2018). This can slow down processes like resource redeployment, ultimately delaying decision-making. In multi-layered structures, decision-making authority is often diffused, creating information asymmetry between top executives and divisional managers. This makes it harder for corporate leaders to directly monitor performance and tailor incentives effectively (Helfat and Maritan, 2024; Puranam, 2018). As a result, divisional managers may prioritize local or short-term objectives over firm-wide strategic goals, leading to misaligned decision-making (e.g., Argyres *et al*. 2020). This misalignment weakens the firm's ability to efficiently redeploy resources, ultimately reducing firm value.

Second, we argue that greater dispersion of key functional activities (i.e., manufacturing, marketing, and R&D), negatively moderates the relationship between inducements to redeploy and firm value because it creates challenges in integrative capabilities and coordination within the organization (Cattani *et al*. 2024). We refer to functional dispersion as the distribution of key functions across different divisions within a firm. As the firm diversifies its operations, it requires more effort to integrate knowledge and skills from various parts of the organization. This dispersal may dilute the firm's ability to efficiently leverage its existing resources across divisions, diminishing its capacity to redeploy resources effectively, in the absence of integrative capabilities (e.g., Cattani *et al*. 2024). When divisions operate more independently, they may not align their efforts to the same strategic goals, resulting in missed opportunities to capitalize on synergies or redeploy resources where they are most needed. Further, the coordination of activities across multiple units becomes increasingly complex as functional dispersion increases. This, in turn, can

negatively affect firm value, as timely and effective resource redeployment is crucial for maintaining competitive advantage and seizing new growth opportunities. Since a higher value of the functional dispersion index indicates greater concentration, our findings reveal a negative and significant coefficient for the functional dispersion index, suggesting that increased concentration of functions within the firm is associated with a decrease in firm value. Although our theoretical framework anticipated that spreading functional activities across divisions might weaken the relationship between industry-level volatility and firm value—mainly due to coordination difficulties—the results point in a different direction. The negative interaction coefficient suggests that concentrating those functions too heavily may actually dampen the positive impact of industry-level volatility on firm value, even if the effect was not statistically significant. This finding, while inconclusive, could imply that both extremes—too much dispersion or too much concentration—may be suboptimal, hinting at the potential value of adopting a hybrid structure. This insignificant finding may reflect heterogeneity across firms—some may still allow local flexibility within a centralized structure—leading to variation in how this design feature plays out in practice. Alternatively, the finding may imply that functional concentration alone does not consistently constrain how diversified firms respond to environmental uncertainty unless it is paired with other structural features, such as tight authority hierarchies or poor information flow (e.g., Puranam, 2018).

It is noteworthy to mention that our measure reflects how key functions are spread across the organization, depending on whether they are handled centrally by headquarters or delegated to individual business units. Although it does not directly capture who makes the decisions, i.e., who has the decision-making authority, it offers meaningful insight into how

tasks are divided and carried out across different levels of the hierarchy. In that sense, the way functional activities are distributed aligns with the idea of a hybrid task structure, where central teams and product-level teams take on different, yet complementary, responsibilities—balancing long-term strategic direction with the need to respond quickly to inducements to redeploy.

Our study offers several key managerial implications. Our findings indicate that organizational factors impact a firm's ability to redeploy resources efficiently, enhancing adaptability and performance (Helfat and Maritan, 2024). Streamlining organizational structures by designing hierarchies without reinforcing silos (e.g., by implementing lateral integration mechanisms) can improve access to unfiltered information, enabling better decision-making. Additionally, offering stronger incentives to divisional managers can align their goals with the firm's broader strategy, facilitating smoother redeployment of resources (Helfat and Eisenhardt, 2004). This approach can reduce delays and inefficiencies, overcoming the challenges of complex hierarchies (Wulf, 2012). Finally, developing strong integrative capabilities can reduce both divisional and functional silos, thereby improving coordination within the firm.

Second, the negative interaction between functional concentration and volatility did not show a significant effect on firm value. This finding suggests that neither extreme concentration nor full dispersion is ideal. Managers should be mindful that the way functional tasks are spread across the organization—whether centralized at headquarter or delegated to individual business units—can affect their ability to align strategic goals with day-to-day responsiveness. This highlights that achieving flexibility does not necessarily mean giving up control—it means dividing responsibilities in an effective way. A hybrid task structure

could be a solution, where central teams can guide the broader vision, while local teams could be empowered to act quickly when redeployment opportunities arise. This kind of task partitioning and allocation makes sense because product level teams have the skills and expertise to respond to tactical decisions as they are closer to the market and customers while central teams have the expertise to respond to broader, long-term decisions that affect the organization as a whole. Striking this balance can lead to faster responses, and better coordination, helping firms to maintain synergies while still adapting as needed.

Finally, divisions enable specialization, improving resource allocation by focusing on specific business areas. However, increasing divisions may also create silos that limit communication and collaboration, leading to inefficiencies. To address this, cross-functional teams can improve adaptability by fostering collaboration across divisions (Helfat and Maritan, 2024). Thus, balancing specialization with effective cross-functional collaboration is key to optimizing resource reallocation and maximizing firm value. Overall, macro-structural configurations establish the broader organizational framework within which micro-structural design choices operate. When aspects like excessive vertical layers or heavy concentration of key functions begin to limit a firm's ability to stay flexible, it becomes important for managers to rethink the underlying micro-structures. This may involve redesigning how tasks are divided, delegated, and managed in order to improve coordination, realign incentives, and ensure the organization remains agile.

3.8 FUTURE RESEARCH AVENUES

We encourage researchers to explore how resource redeployment routines evolve as firms adjust their structures, revealing patterns in how they respond to market changes. Second, a promising direction for future research is to explore how hybrid authority structures—where

local product level teams have the freedom to act without needing prior approval (low ex ante intervention) but are still held accountable afterward (high ex post accountability) (Puranam, 2018)—shape resource redeployment decisions in diversified firms. While our study focuses on how key functions are spread across the organization, depending on whether they are handled centrally by headquarters or delegated to individual business units, we do not directly capture who makes the decisions, i.e., who has the decision-making authority. For example, studies might empirically examine how hybrid authority models could influence outcomes in cases where decisions, like reallocating non-scale free resources, could unintentionally disrupt synergies across product lines.

Our study has several limitations. Establishing causal relationships between organizational configurations and firm value was challenging. It is difficult to control for all confounding factors, and establishing causality would require more robust experimental or quasi-experimental designs. Further, there is a possibility that the relationship between organizational structure and resource redeployment effectiveness could be influenced by the reverse order of causation. This means that rather than organizational structure impacting a firm's ability to redeploy resources effectively, the opposite might be true: a firm's resource redeployment effectiveness could influence the way its organizational structure evolves over time. For instance, firms that are highly adept at resource redeployment may choose or develop organizational structures that better support their ability to redeploy resources. In this case, resource redeployment effectiveness could be shaping the firm's organizational structure, not the other way round. This reverse causality can create challenges in interpreting the true direction of the relationship and can make it difficult to establish a clear cause-and-effect link between the two variables. To address this, future research could consider using

instrumental variables to better capture the direction of causality and control for the possibility that resource redeployment capabilities themselves could influence the organizational structure. Finally, since the sample size of our study is relatively small and focused on pharmaceutical firms, the results may not be fully representative of the broader population. Expanding the sample size and diversity of firms could improve the robustness and generalizability of our findings.

To conclude, this study uncovers key empirical insights into how organizational factors shape the impact of resource redeployment on firm value. By examining both vertical (e.g., number of organizational layers) and horizontal (e.g., dispersion of functional activities) dimensions of organizational structure, we explore how these factors moderate the link between inducements to redeploy resources—captured through industry-level volatility—and firm value. Using a unique dataset from the U.S. Medical and Healthcare Marketplace Guide, covering the pharmaceutical industry from 1983 to 1992, we confirm existing research that highlights the option value of resource redeployment, showing that firms operating in more volatile industries tend to realize higher firm value. Building on this, we identify two critical boundary conditions. First, we find that an increase in organizational layers weakens the positive effect of industry volatility on firm value, likely due to reduced managerial oversight and a higher risk of resource misallocation, which can delay strategic responses such as exiting underperforming markets. Second, while we hypothesized that firms with more dispersed functional activities (like R&D, manufacturing, and marketing) would struggle to effectively redeploy resources due to coordination challenges, our findings show no significant moderating effect, pointing to complexities in how functional structures, with a specific emphasis on task allocation across hierarchical levels, influence resource

redeployment. These insights offer important strategic implications, emphasizing the role of organizational design in shaping the benefits of resource redeployment and highlighting avenues for future research to further unpack these dynamics.

FIGURE 3.1. CONCEPTUAL MODEL

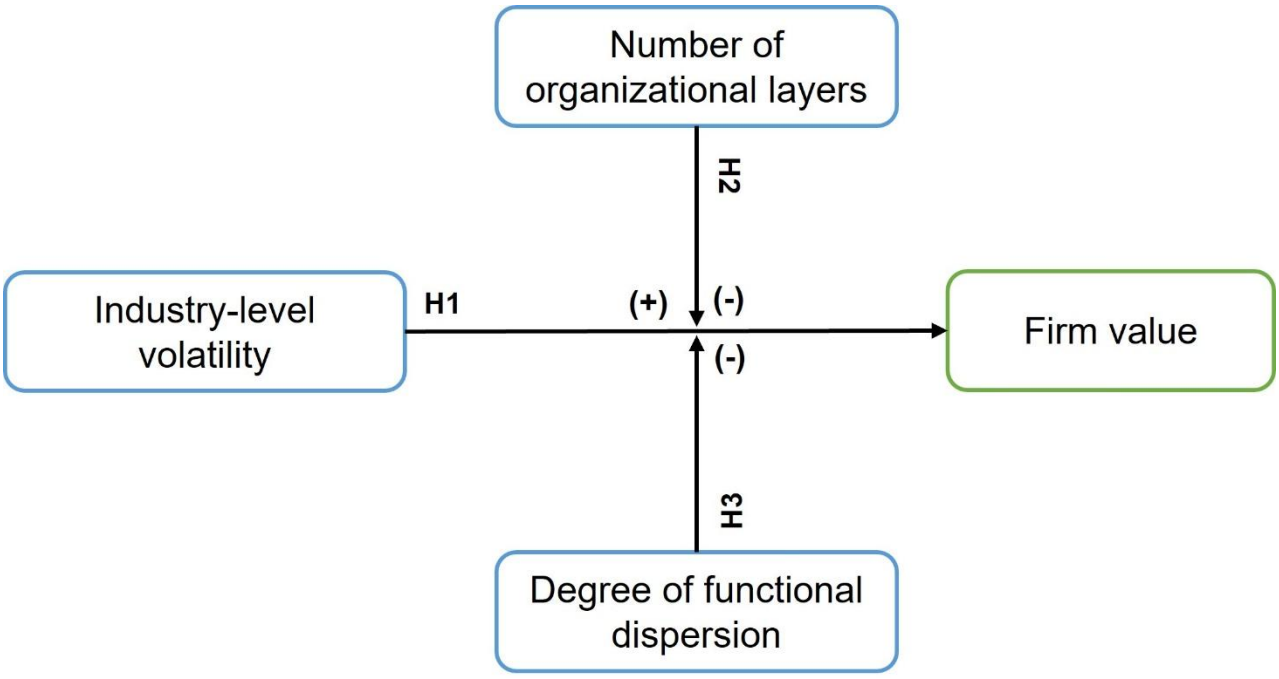
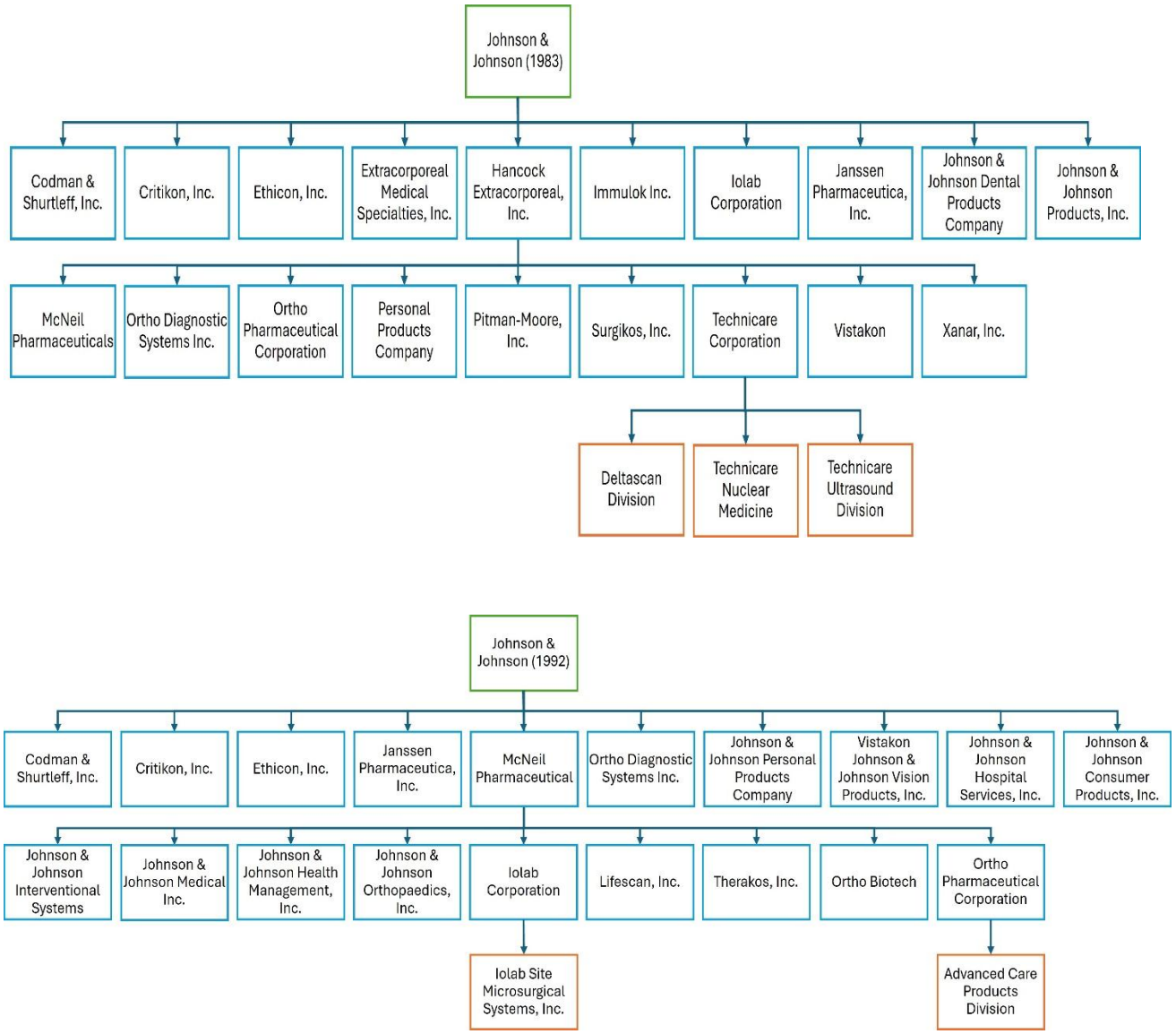


FIGURE 3.2. JOHNSON AND JOHNSON ORGANIZATIONAL STRUCTURE EVOLUTION FROM 1983 TO 1992



Source: U.S. Medical and Healthcare Marketplace Guide

TABLE 3.1. JOHNSON AND JOHNSON KEY FUNCTIONAL ACTIVITIES (1992)

Company Name	Business type
Johnson & Johnson (1992)	Manufacturer, Distributor, Service Provider, Importer, Exporter, Multinational, Research Organization, Marketer
Codman & Shurtleff, Inc.	Manufacturer, Marketer
Critikon, Inc.	Manufacturer, Marketer
Ethicon, Inc.	Manufacturer, Marketer
Janssen Pharmaceutica, Inc.	Manufacturer, Distributor, Importer, Multinational, Marketer
McNeil Pharmaceutical	Manufacturer, Research Organization, Marketer
Ortho Diagnostic Systems Inc.	Manufacturer, Marketer
Johnson & Johnson Personal Products Company	Manufacturer, Marketer
Vistakon Johnson & Johnson Vision Products, Inc.	Manufacturer, Distributor, Marketer
Johnson & Johnson Hospital Services, Inc.	Distributor, Service Provider
Johnson & Johnson Consumer Products, Inc.	Manufacturer, Marketer
Johnson & Johnson Interventional Systems	Manufacturer, Marketer
Johnson & Johnson Medical Inc.	Manufacturer, Marketer
Johnson & Johnson Health Management, Inc.	Service Provider, Marketer
Johnson & Johnson Orthopaedics, Inc.	Manufacturer, Marketer
Iolab Corporation	Manufacturer, Distributor, Marketer
➢ Iolab Site Microsurgical Systems, Inc.	Manufacturer
Lifescan, Inc.	Manufacturer
Therakos, Inc.	Manufacturer, Service Provider, Exporter, Marketer
Ortho Biotech	Manufacturer, Marketer
Ortho Pharmaceutical Corporation	Manufacturer, Research Organization, Marketer
➢ Advanced Care Products Division	Manufacturer, Marketer

Source: U.S. Medical and Healthcare Marketplace Guide

TABLE 3.2: DESCRIPTIVE STATISTICS

Variable	#Obs	Mean	Std. Dev.	Min	Max
Excess returns	530	.336	1.933	-10.274	28.482
Industry-level volatility	530	.331	.027	.242	.389
Number of organizational layers	530	.423	.777	0	5
Functional dispersion index	530	.939	.157	.08	1.25
Diversified firm dummy	530	.621	.486	0	1
Total diversification	530	.086	.222	0	1.065
Total number of divisions	530	1.494	4.339	0	35
Firm size	530	3.794	2.338	-1.382	9.383
R&D intensity	530	.179	.256	0	2.288
Capital expenditure	530	51.535	156.38	0	1142.4
Leverage	530	.116	.183	0	1.536
Agency cost	530	-.566	.475	-2.973	0
HHI competition	530	.001	.009	0	.154

TABLE 3.3: CORRELATION MATRIX

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Excess returns	1.00												
(2) Industry-level volatility	-0.11*	1.00											
(3) Number of organizational layers	-0.04	-0.20*	1.00										
(4) Functional dispersion index	0.09*	0.11*	-0.62*	1.00									
(5) Diversified firm dummy	0.02	-0.28*	0.30*	-0.22*	1.00								
(6) Total diversification	-0.04	-0.17*	0.60*	-0.35*	0.25*	1.00							
(7) Total number of divisions	-0.06	-0.18*	0.76*	-0.45*	0.24*	0.62*	1.00						
(8) Firm size	0.02	-0.09*	0.61*	-0.25*	0.29*	0.52*	0.56*	1.00					
(9) R&D intensity	-0.05	0.03	-0.21*	0.16*	-0.04	-0.16*	-0.15*	-0.34*	1.00				
(10) Capital expenditure	-0.08	-0.10*	0.60*	-0.31*	0.22*	0.45*	0.67*	0.66*	-0.11*	1.00			
(11) Leverage	-0.04	-0.01	-0.02	0.02	-0.00	0.03	0.02	-0.01	-0.04	-0.02	1.00		
(12) HHI competition	0.01	-0.08	-0.27*	-0.12*	0.01	0.41*	0.29*	0.26*	-0.06	0.22*	0.01	1.00	
(13) Agency cost	0.06	0.11*	-0.35*	0.21*	-0.07	-0.37*	-0.26*	-0.19*	0.10*	-0.25*	-0.17*	-0.13*	1.00

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE 3.4: PANEL DATA FIXED EFFECT BASELINE REGRESSION

Variables	(Model 1) Excess returns	(Model 2) Excess returns	(Model 3) Excess returns	(Model 4) Excess returns
Industry-level volatility	0.398**	0.435**	0.556***	1.457**
	(0.183)	(0.190)	(0.214)	(0.734)
Number of organizational layers			-0.369	-0.503*
			(0.264)	(0.269)
Industry-level volatility x Number of organizational layers			-0.515***	-0.629***
			(0.204)	(0.261)
Functional dispersion index				-0.868
				(0.614)
Industry-level volatility x Functional dispersion index				-0.895
				(0.668)
Diversified firm dummy		0.039	0.146	0.162
		(0.316)	(0.315)	(0.315)
Total diversification		1.112	0.996	1.106
		(0.725)	(0.769)	(0.750)
Total number of divisions		0.025	0.007	0.001
		(0.039)	(0.044)	(0.045)
Firm size		0.118	0.134	0.132
		(0.174)	(0.173)	(0.173)
R&D intensity		-0.562*	-0.499	-0.462
		(0.316)	(0.304)	(0.302)
Capital expenditure		-0.054	-0.087	-0.075
		(0.116)	(0.109)	(0.106)
Leverage		-0.626**	-0.644***	-0.631***
		(0.269)	(0.248)	(0.248)
Agency cost		-0.345	-0.389	-0.343
		(0.396)	(0.384)	(0.386)
HHI competition		0.060	0.033	0.029
		(0.093)	(0.070)	(0.067)
Year Fixed Effects	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES
Constant	0.162	-0.432	-0.313	0.579
	(0.426)	(0.922)	(0.890)	(1.073)
Observations	530	530	530	530
R-squared	0.12	0.13	0.15	0.15
Number of parent firms	179	179	179	179

Robust standard errors are reported in parenthesis
****p<=0.01, **p<=0.05, *p<=0.10*

TABLE 3.5: PANEL DATA FIXED EFFECT REGRESSION: THREE-WAY INTERACTION OF VOLATILITY, DIVERSIFICATION, AND ORGANIZATIONAL STRUCTURE

Variables	(Model 1) Excess returns	(Model 2) Excess returns	(Model 3) Excess returns	(Model 4) Excess returns	(Model 5) Excess returns	(Model 6) Excess returns
Industry-level volatility	0.398**	0.406**	0.601***	0.616***	0.580***	0.581***
	(0.183)	(0.176)	(0.219)	(0.226)	(0.210)	(0.211)
Diversified firm dummy		0.108	0.130	0.067	0.142	0.135
		(0.304)	(0.296)	(0.308)	(0.309)	(0.312)
Industry-level volatility x Diversified firm dummy			-0.510***	-0.491***	-0.262	0.618
			(0.197)	(0.195)	(0.173)	(0.846)
Number of organizational layers					-0.423	-0.515*
					(0.288)	(0.290)
Industry-level volatility x Diversified firm dummy x Number of organizational layers					-0.507**	-0.607**
					(0.224)	(0.283)
Functional dispersion index						-0.706
						(0.677)
Industry-level volatility x Diversified firm dummy x Functional dispersion index						-0.888
						(0.882)
Total diversification				1.135	0.993	1.123
				(0.734)	(0.794)	(0.773)
Total number of divisions				0.016	0.007	0.001
				(0.042)	(0.047)	(0.048)
Firm size				0.074	0.114	0.108
				(0.167)	(0.168)	(0.167)
R&D intensity				-0.626**	-0.553*	-0.537*
				(0.298)	(0.292)	(0.290)
Capital expenditure				-0.032	-0.058	-0.056
				(0.106)	(0.100)	(0.102)
Leverage				-0.561**	-0.599**	-0.589**
				(0.278)	(0.255)	(0.256)

Agency cost				-0.310	-0.389	-0.356
				(0.379)	(0.372)	(0.375)
HHI competition				0.068	0.037	0.032
				(0.083)	(0.067)	(0.066)
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES	YES	YES
Constant	0.162	0.102	0.206	-0.155	-0.109	0.637
	(0.426)	(0.421)	(0.417)	(0.902)	(0.885)	(1.102)
Observations	530	530	530	530	530	530
R-squared	0.12	0.12	0.13	0.14	0.16	0.16
Number of parent firms	179	179	179	179	179	179

Robust standard errors are reported in parenthesis
****p<=0.01, **p<=0.05, *p<=0.10*

TABLE 3.6: DESCRIPTIVE STATISTICS

Variable	#Obs	Mean	Std. Dev.	Min	Max
Excess returns	478	.344	2.007	-10.274	28.482
Industry-level volatility	478	.331	.027	.243	.389
Number of organizational layers	478	.439	.803	0	5
Functional dispersion index	478	.939	.153	.08	1.25
Change firm-level volatility	478	.055	.168	-.336	.896
Diversified firm dummy	478	.604	.489	0	1
Total diversification	478	.091	.229	0	1.065
Total number of divisions	478	1.585	4.541	0	35
Firm size	478	3.938	2.346	-1.382	9.383
R&D intensity	478	.173	.227	0	2.288
Capital expenditure	478	56.698	163.797	0	1142.4
Leverage	478	.114	.169	0	1.484
Agency cost	478	-.557	.462	-2.973	0
HHI competition	478	.001	.009	0	.154

TABLE 3.7: CORRELATION MATRIX

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Excess returns	1.00													
(2) Industry-level volatility	-0.10*	1.00												
(3) Number of organizational layers	-0.05	-0.20*	1.00											
(4) Functional dispersion index	0.09*	0.12*	-0.65*	1.00										
(5) Change firm-level volatility	0.29*	-0.16*	-0.13*	0.13*	1.00									
(6) Diversified firm dummy	0.02	-0.29*	0.31*	-0.22*	-0.13*	1.00								
(7) Total diversification	-0.04	-0.18*	0.62*	-0.39*	-0.11*	0.27*	1.00							
(8) Total number of divisions	-0.07	-0.18*	0.76*	-0.47*	-0.10*	0.25*	0.63*	1.00						
(9) Firm size	0.01	-0.07	0.63*	-0.31*	-0.10*	0.33*	0.54*	0.58*	1.00					
(10) R&D intensity	-0.05	0.03	-0.22*	0.16*	0.04	-0.08	-0.18*	-0.16*	-0.37*	1.00				
(11) Capital expenditure	-0.08	-0.10*	0.60*	-0.34*	-0.10*	0.25*	0.45*	0.67*	0.67*	-0.13*	1.00			
(12) Leverage	-0.03	-0.02	-0.02	0.00	-0.04	-0.01	0.05	0.02	0.02	-0.02	-0.02	1.00		
(13) HHI competition	0.01	-0.08	0.27*	-0.13*	-0.05	0.13*	0.41*	0.29*	0.26*	-0.07	0.22*	0.01	1.00	
(14) Agency cost	0.06	0.14*	-0.39*	0.27*	0.16*	-0.09*	-0.42*	-0.28*	-0.25*	0.23*	-0.27*	-0.12*	-0.15*	1.00

**** p<0.01, ** p<0.05, * p<0.1*

TABLE 3.8: PANEL DATA FIXED EFFECT BASELINE REGRESSION

Variables	(Model 1) Excess returns	(Model 2) Excess returns	(Model 3) Excess returns	(Model 4) Excess returns
Industry-level volatility	0.451**	0.517***	0.659***	1.011
	(0.198)	(0.206)	(0.232)	(0.649)
Number of organizational layers			-0.472	-0.592**
			(0.294)	(0.288)
Industry-level volatility x Number of organizational layers			-0.616***	-0.656***
			(0.235)	(0.272)
Functional dispersion index				-0.827
				(0.629)
Industry-level volatility x Functional dispersion index				-0.346
				(0.548)
Change firm-level volatility		2.554	2.893	2.861
		(1.755)	(1.803)	(1.780)
Diversified firm dummy		0.109	0.254	0.264
		(0.336)	(0.350)	(0.355)
Total diversification		1.005	0.950	1.018
		(0.899)	(0.981)	(0.962)
Total number of divisions		0.013	-0.006	-0.012
		(0.041)	(0.046)	(0.048)
Firm size		0.217	0.229	0.228
		(0.210)	(0.210)	(0.210)
R&D intensity		-0.486	-0.424	-0.390
		(0.308)	(0.295)	(0.297)
Capital expenditure		-0.089	-0.135	-0.119
		(0.118)	(0.110)	(0.109)
Leverage		-0.788**	-0.787**	-0.783**
		(0.368)	(0.367)	(0.369)
Agency cost		-0.622	-0.680	-0.653
		(0.474)	(0.460)	(0.461)
HHI competition		0.065	0.028	0.026
		(0.071)	(0.060)	(0.059)
Year Fixed Effects	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES
Constant	-0.002	-1.466	-1.317	-0.474
	(0.460)	(1.233)	(1.177)	(1.343)
Observations	478	478	478	478
R-squared	0.13	0.17	0.20	0.20
Number of parent firms	156	156	156	156

Robust standard errors are reported in parenthesis
****p<=0.01, **p<=0.05, *p<=0.10*

TABLE 3.9: PANEL DATA FIXED EFFECT REGRESSION: THREE-WAY INTERACTION OF INDUSTRY-LEVEL VOLATILITY, DIVERSIFICATION, AND ORGANIZATIONAL STRUCTURE

Variables	(Model 1) Excess returns	(Model 2) Excess returns	(Model 3) Excess returns	(Model 4) Excess returns	(Model 5) Excess returns	(Model 6) Excess returns
Industry-level volatility	0.451**	0.461***	0.655***	0.697***	0.654***	0.657***
	(0.198)	(0.189)	(0.233)	(0.251)	(0.232)	(0.234)
Diversified firm dummy		0.108	0.117	0.125	0.236	0.236
		(0.322)	(0.323)	(0.347)	(0.354)	(0.356)
Industry-level volatility x Diversified firm dummy			-0.574***	-0.555***	-0.279	-0.096
			(0.213)	(0.219)	(0.195)	(0.921)
Number of organizational layers					-0.522	-0.600*
					(0.320)	(0.316)
Industry-level volatility x Diversified firm dummy x Number of organizational layers					-0.599**	-0.614**
					(0.257)	(0.297)
Functional dispersion index						-0.586
						(0.716)
Industry-level volatility x Diversified firm dummy x Functional dispersion index						-0.185
						(0.945)
Change firm-level volatility				2.601	2.834	2.826
				(1.728)	(1.778)	(1.754)
Total diversification				1.067	0.952	1.002
				(0.920)	(1.016)	(0.999)
Total number of divisions				0.003	-0.006	-0.010
				(0.045)	(0.050)	(0.050)
Firm size				0.155	0.202	0.200
				(0.202)	(0.207)	(0.206)
R&D intensity				-0.550*	-0.479	-0.459
				(0.299)	(0.290)	(0.290)
Capital expenditure				-0.066	-0.100	-0.091
				(0.106)	(0.099)	(0.101)

Leverage				-0.598*	-0.683*	-0.682*
				(0.360)	(0.369)	(0.370)
Agency cost				-0.578	-0.676	-0.660
				(0.456)	(0.453)	(0.454)
HHI competition				0.073	0.032	0.031
				(0.062)	(0.060)	(0.061)
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES	YES	YES
Constant	-0.002	-0.061	0.083	-1.098	-1.054	-0.454
	(0.460)	(0.452)	(0.449)	(1.204)	(1.168)	(1.355)
Observations	478	478	478	478	478	478
R-squared	0.13	0.13	0.14	0.19	0.21	0.21
Number of parent firms	156	156	156	156	156	156

Robust standard errors are reported in parenthesis
****p<=0.01, **p<=0.05, *p<=0.10*

TABLE 3.10: PANEL DATA FIXED EFFECT REGRESSION: THREE-WAY INTERACTION OF FIRM-LEVEL VOLATILITY, DIVERSIFICATION, AND ORGANIZATIONAL STRUCTURE

Variables	(Model 1) Excess returns	(Model 2) Excess returns	(Model 3) Excess returns	(Model 4) Excess returns	(Model 5) Excess returns	(Model 6) Excess returns
Change firm-level volatility	2.414	2.417	-0.307	-0.113	-0.205	-0.161
	(1.727)	(1.734)	(1.043)	(1.071)	(1.066)	(1.068)
Diversified firm dummy		0.038	-0.213	-0.202	-0.291	-0.310
		(0.333)	(0.348)	(0.336)	(0.352)	(0.360)
Change firm-level volatility x Diversified firm dummy			6.082**	5.938**	3.052**	-28.639
			(2.932)	(2.943)	(1.578)	(25.308)
Number of organizational layers					-0.238	-0.565*
					(0.260)	(0.332)
Change firm-level volatility x Diversified firm dummy x Number of organizational layers					9.924**	13.424**
					(4.508)	(6.095)
Functional dispersion index						-1.618*
						(0.973)
Change firm-level volatility x Diversified firm dummy x Functional dispersion index						31.415
						(25.615)
Industry-level volatility				0.392**	0.150	0.191
				(0.200)	(0.196)	(0.181)
Total diversification				1.305	2.017	2.114
				(0.972)	(1.250)	(1.279)
Total number of divisions				-0.004	-0.052	-0.063
				(0.045)	(0.066)	(0.066)
Firm size				0.199	0.126	0.123
				(0.220)	(0.207)	(0.206)
R&D intensity				-0.438	-0.543*	-0.450
				(0.379)	(0.326)	(0.315)
Capital expenditure				-0.068	-0.047	0.129
				(0.116)	(0.129)	(0.149)

Leverage				-0.695*	-0.780**	-0.744**
				(0.379)	(0.342)	(0.332)
Agency cost				-0.747	-0.679	-0.762
				(0.500)	(0.523)	(0.554)
HHI competition				0.066	-0.096	-0.083
				(0.054)	(0.112)	(0.115)
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES	YES	YES
Constant	0.357	0.341	0.407	-1.213	-0.262	1.437
	(0.408)	(0.430)	(0.417)	(1.200)	(1.065)	(1.491)
Observations	478	478	478	478	478	478
R-squared	0.14	0.14	0.20	0.23	0.33	0.35
Number of parent firms	156	156	156	156	156	156

Robust standard errors are reported in parenthesis
****p<=0.01, **p<=0.05, *p<=0.10*

CHAPTER 4

Examining the Impact of Resource Redeployment and Synergies on Strategic Business Segment Disclosures

ABSTRACT

This study examines how resource redeployment and synergies arising from related diversification influence the extent of a firm's business segment disclosure. Utilizing strategic deterrence and discretionary disclosures as theoretical frameworks, we show that diversified firms, when redeploying resources across markets, tend to under-report fewer segments. This strategic approach to disclosure is in line with the overarching objectives of diversified firms equipped with redeployment capabilities. It aims to bolster their competitive stance by showcasing their adeptness at redeploying resources aggressively, thereby dissuading potential competitors from entering these markets. Conversely, we find that firms diversifying into related product markets tend to under-report a greater number of segments, prioritizing the protection of synergistic sources. Further, the negative relationship between resource redeployment and segment under-reporting is weakened as the firm's level of unabsorbed slack increases. When unabsorbed slack accumulates excessively, it can lessen the discipline with which investments are evaluated, potentially leading to inefficient reallocations in markets with limited return potential. Given this, firms may limit disclosure. In contrast, related diversification negatively interacts with unabsorbed slack. For relatedly diversified firms, it is easier to repurpose unabsorbed slack across businesses due to similarity in operations and resource needs. This allows firms to allocate excess resources more efficiently, reinforcing complementary activities that drive efficiency. Thus, relatedly diversified firms may signal this capability to external stakeholders. These findings align with an archival

dataset focusing on the U.S. pharmaceutical industry spanning from 1983 to 1992. The dataset encompasses diversification across three distinct industries within the U.S. medical sector, spanning a total of 85 product categories.

Managerial Summary: Managers of multi-business firms must navigate the tension between transparency and the protection of proprietary synergies. Internal reporting structures can be shaped not only to comply with disclosure standards but also to influence how external stakeholders perceive the firm's strategic focus. Firms emphasizing redeployment may design reporting lines that highlight business unit autonomy, thereby making their resource reallocation capabilities more visible. In contrast, synergy-driven firms may favor integrated reporting structures that obscure segment boundaries and facilitate aggregation, thereby limiting external visibility. In both cases, micro-structural design choices could serve as a tool for managing disclosure in line with the firm's diversification logic. Finally, in the context of less-related markets, where segments donot benefit from shared synergies, unabsorbed slack should be tightly managed and kept in check to avoid potential inefficiency in resource reallocations.

Keywords: redeployment capability; strategic deterrence; synergies; scale-free vs non-scale-free resources; discretionary disclosures; competitive advantage

4.1 INTRODUCTION

Managers often have significant flexibility when determining the number of business segments to include in their filings with the Securities and Exchange Commission (SEC, *hereafter*) (e.g., Berger and Hann, 2003; Hermann and Thomas, 2000). However, the motivations behind these disclosure choices remain unclear. Are firms deliberately selective in revealing some segments while withholding others? Disclosing segment-level information can sometimes work against a firm's interests—for example, by revealing insights that competitors could use to their advantage (Verrecchia, 1990). As a result, the way firms choose to disclose their business segments plays a strategic role and can significantly shape their competitive standing in the market (Cho, 2015).

Prior research on segment disclosure highlights three key themes: First, diversified firms often face lower valuations due to agency problems and inefficiencies in resource reallocation[11] within internal capital markets, leading to strategic concealment of segment performance to obscure these issues (e.g., Berger and Hann, 2007; Berger and Ofek, 1995; Denis *et al*. 1997; Hope and Thomas, 2008; Lang and Stulz, 1994; Rajan *et al*. 2000). Second, regulatory reforms, such as the Statement of Financial Accounting Standards, No. 131 (SFAS 131, hereafter), have significantly improved transparency by enhancing segment disclosure and improving information and monitoring environment (e.g., Berger and Hann, 2003; Botosan *et al*. 2009; Ettredge *et al*. 2005; Herrmann and Thomas, 2000; Street *et al*. 2000). Third, firms weigh proprietary costs and competitive risks in their discretionary disclosure decisions, underscoring the strategic nature of segment reporting (e.g., Darrough and Stoughton, 1990; Hayes and Lundholm, 1996; Verrecchia, 1983;

[11] In this paper, we will use the terms 'redeployment' and 'reallocation' interchangeably.

Wagenhofer, 1990). While these studies predominantly rely on publicly available financial data, like SEC filings, prior research states that publicly available financial statements have limitations when it comes to drawing conclusions about the motives behind segment under-reporting (e.g., Bens *et al*. 2011).

Previous research has largely overlooked the link between segment under-reporting and the fundamental advantages of diversification. Specifically, little is known about how a firm's ability to leverage synergies or redeploy resources across product markets influences its decision to under-report business segments. This study addresses this gap by connecting segment under-reporting to the strategic benefits of diversification, moving beyond the traditional focus on agency costs associated with diversification. We explore how resource redeployment and synergies arising from related diversification influence the extent of a firm's business segment disclosure. Redeployment choices, influenced by factors such as competitive pressure and evolving market demand, generally follow the following approaches: engaging in competition or strategically withdrawing (Levinthal and Wu, 2010; Morandi *et al*. 2020). The competitive approach involves reallocating resources to intensely competitive markets, signaling strength and a firm's commitment to maintaining its position (Morandi *et al*. 2020). Conversely, the withdrawal strategy shifts resources away from underperforming markets toward expanding markets, emphasizing adaptability and a firm's capacity to efficiently reallocate resources within its internal market (Lieberman *et al*. 2017; Wu, 2013). We propose that firms can enhance their strategic positioning by increasing transparency in redeployment decisions, intentionally reducing the under-reporting of business segments to highlight their resource reallocation capabilities. Conversely, we posit that firms expanding into related markets are more likely to under-report a greater number of segments to protect

competitive advantages derived from scale-free resources that create synergistic benefits. These synergies, created by shared resources across related markets, result in interdependencies between segments (Giarratana *et al*. 2021), making firms more vulnerable to imitation threats if these connections are exposed. Given this, our arguments suggest that under-reporting is a critical element of a firm's corporate strategy, enabling firms to showcase their redeployment capabilities using non-scale free resources, while safeguarding sensitive information to protect synergies in related product markets, driven by scale-free resources. Finally, to assess whether our proposed mechanisms function as theorized, we examine two key interactions: (i) between unabsorbed slack and redeployment, and (ii) between unabsorbed slack and related diversification. Our findings show that a high level of unabsorbed slack weakens the negative effect of resource redeployment on segment under-reporting. This happens because when unabsorbed slack accumulates excessively, it can lessen the discipline with which investments are evaluated, potentially leading to inefficient resource redeployment. This happens because high levels of unabsorbed slack can undermine the opportunity cost logic, i.e., when slack is scarce, managers are forced to make the trade-off between current and new alternatives, and redeploy resources where marginal returns are the highest. In contrast, high slack can reduce this trade-off pressure, thereby leading to inefficient reallocations. On the contrary, slack could be beneficial in related markets because in such markets the potential for resource complementarities makes it easier to monitor and justify the use of slack, leading to more efficient use of slack. This allows firms to maintain transparency by under-reporting fewer segments.

This study draws on an archival dataset compiled from the third edition of the U.S. Medical and Healthcare Marketplace Guide, offering in-depth insights into how firms

organize their various business lines internally within the U.S. medical sector. Our focus is on the U.S. pharmaceutical industry between 1983 to 1992. Our dataset captures diversification across three key industries in the U.S. medical sector—pharmaceuticals, medical devices, and healthcare services—covering a total of 85 different product categories classified under SIC codes 283, 384, and 873 respectively. We empirically define "underreporting" as the omission of a segment in a firm's SEC filings that is otherwise included in the Guide. Our analysis reveals that, in our sample, firms under-report a maximum of 8 business segments in their SEC filings. A notable case is Baxter International Inc., which had 62,500 employees in 1986 and chose to under-report as many as 8 business segments. This dataset allows us to examine how firm's tendencies to under-report business segments are influenced by factors such as resource redeployment and the synergies associated with related diversification. We test our hypotheses through a two-step estimation method that predicts the number of segments that remain under-reported. In the first step, a probit regression is used to model sample selection; then, the main model is estimated using non-linear least squares.

This study makes a valuable contribution to the segment disclosure literature by shifting the focus from the agency costs of diversification to understanding how firms strategically use discretionary under-reporting to capitalize on their diversification advantages. Theoretically, it links the diversification advantages (e.g., Dickler *et al*. 2022; Giarratana *et al*. 2021; Sakhartov and Folta, 2014; 2015) with segment under-reporting decisions (e.g., Bens *et al*. 2011; Berger and Hann, 2003; 2007; Cho, 2015; Verrecchia, 1983), providing fresh insights into how firms can strategically manage segment under-reporting. We introduce two novel objectives that shape under-reporting decisions: first, signaling the ability to redeploy resources, which leads to under-reporting fewer

segments; and second, protecting synergies in related markets, which results in under-reporting a greater number of segments. By linking the diversification advantages with segment under-reporting, we show that under-reporting is not merely a matter of regulatory compliance but also a strategic tool that firms use to signal their corporate strategy. Additionally, unlike traditional studies on segment disclosures that have relied on publicly available financial reports, the Medical Guide offers detailed, industry-specific insights into how firms organize their business lines internally—insights that were not publicly accessible before the regulatory changes such as the SFAS 131. By cross-referencing this piece of information with the Compustat data, we are able to uncover the discrepancies in segment reporting that deepens our understanding of the strategic motives behind segment under-reporting.

This chapter is organized as follows. Section 4.2 highlights the relevant literature followed by section 4.3 focusing on hypothesis development. Section 4.4 highlights the data and sample construction, methodology, and the variables used in the empirical analysis. Section 4.5 discusses the key findings, and Section 4.6 examines how unabsorbed slack acts as a moderating factor in the relationship between resource redeployment, related diversification, and the under-reporting of business segments. Finally, Section 4.7 concludes by discussing the managerial implications of the findings, contributions of the study, and offering some avenues for future research.

4.2 LITERATURE REVIEW

4.2.1 Segment underreporting

Existing research on segment disclosure has extensively explored the key reasons why firms may choose to withhold segment information. One primary factor is agency costs,

which significantly influence a firm's underreporting decisions (Berger and Hann, 2007). Earlier research has found that diversified firms are often valued less by the market compared to focused, standalone companies (Berger and Ofek, 1995; Lang and Stulz, 1994). This so-called diversification discount has been linked to agency-related inefficiencies within firms (Denis *et al*. 1997). Moreover, studies suggest that conglomerates with internal capital markets don't always allocate financial resources effectively across their business segments (Lamont, 1997; Rajan *et al*. 2000; Shin and Stulz, 1998). To prevent external stakeholders from scrutinizing such inefficiencies, firms may strategically limit segment disclosures.

Second, in models of discretionary disclosure, firms tend to consider the competitive environment when determining whether to reveal specific segment information (e.g., Darrough and Stoughton, 1990; Feltham and Xie, 1992; Verrecchia, 1983; Wagenhofer, 1990). Research in this area supports the notion of an equilibrium condition, where firms choose to disclose segment-level details only if the expected benefits in capital markets surpass the proprietary costs involved (Cho, 2015). The proprietary cost hypothesis assumes that there is no misalignment of interests between managers and shareholders, minimizing the role of agency costs in under-reporting decisions (Cho, 2015). As a result, prior studies suggest that when agency conflicts are not a concern, the extent to which firms aggregate segment information is largely shaped by the competitive pressures within their respective industries (Botosan and Stanford, 2005; Harris, 1998).

Previous research on segment disclosure mostly in the accounting domain has also shown that regulations such as the SFAS 131, has effectively achieved its objective of providing investors with more comprehensive insights into organizational structures,

better segment-level information to predict future earnings, and segment performance (Berger and Hann, 2003; Botosan *et al*. 2009; Ettredge *et al*. 2005; Herrmann and Thomas, 2000; Street *et al*. 2000). For instance, when firms transitioned from being classified as single-segment firms under SFAS 14 to multiple-segment firms under SFAS 131, it uncovered agency issues within the internal markets of diversified firms that were previously hidden under SFAS 14 (Berger and Hann, 2003). This finding aligns with the notion that SFAS 131 has enhanced the oversight and monitoring of managers (Berger and Hann, 2003), thereby potentially mitigating agency costs by incentivizing managers to reallocate resources more efficiently (Cho, 2015). These studies primarily focus on the performance outcomes of being forced to disclose more information due to regulations like the SFAS 131, rather than directly addressing the strategic motivations behind segment under-reporting.

Given this, an under-explored aspect in the existing literature on segment disclosure pertains to the strategic rationale behind why firms choose to keep certain segments confidential. Specifically, there is limited understanding of how a firm's ability to leverage synergies or redeploy resources across product markets influences its decision to under-report business segments. The next section examines the benefits of diversification strategies, highlighting both the advantages of resource redeployment and the value created through synergies.

4.2.2 Advantages from resource redeployment

Recent studies on resource redeployment emphasize the considerable adaptability firms gain by shifting non-scale free resources between various businesses in their portfolios (Dickler and Folta, 2020; Folta *et al*. 2016; Giarratana and Santalo, 2020; Helfat and

Eisenhardt, 2004; Levinthal and Wu, 2010; Sakhartov and Folta, 2014; 2015). This adaptability enables firms to reallocate resources toward areas with higher potential returns, ultimately improving overall performance (Dickler *et al*. 2022; Giarratana *et al*. 2021). By efficiently shifting resources, firms can respond to market fluctuations, mitigate risks, and maximize portfolio value, even in uncertain environments (Dickler *et al*. 2022). This view aligns with the real options theory, which suggests that the value of strategic flexibility increases as volatility rises in key factors such as demand, costs, or profitability (e.g., Aabo *et al*. 2016; Dickler *et al*. 2022; Duffee, 1995; Grullon *et al*. 2012).

Dickler *et al*. (2022) build on this idea by demonstrating that resource redeployment enhances the advantages of operating in high-volatility environments, particularly for multi-business firms. As market uncertainty increases, the strategic benefits of shifting resources become more evident. Diversified firms hold a competitive edge over single-business firms because their ability to reallocate resources allows them to navigate unpredictable market shifts (Dickler *et al*. 2022). For instance, when demand in a particular market decline, diversified firms can transfer resources from struggling segments to those with stronger growth prospects (Wu, 2013). This flexible approach, often termed the "flee" strategy, helps firms withdraw from underperforming markets and focus on more lucrative opportunities (Levinthal and Wu, 2010; Morandi *et al*. 2020; Wu, 2013). By capitalizing on demand fluctuations, diversified firms improve resource efficiency, maintain adaptability, and sustain overall performance.

The ability to transfer resources between negatively correlated businesses is a key factor that enhances the value of resource redeployment (Giarratana *et al*. 2021; Sakhartov and Folta, 2015). This flexibility is a major driver of value creation in multi-

business firms, particularly when there are diverse opportunities within their portfolios (Giarratana *et al*. 2021). Unlike scale-free resources, which provide consistent benefits across all business segments, non-scale free resources allow firms to take advantage of performance differences between segments, often leading to negative correlations in growth rates (Giarratana *et al*. 2021). This redeployment strategy is especially useful in uncertain environments, where the ability to quickly adapt and reallocate resources is crucial for sustaining a competitive advantage (Dickler *et al*. 2022; Giarratana *et al*. 2021). Resource redeployment, rather than just seeking synergies, becomes a central mechanism for creating competitive advantage in diversified firms, particularly when they face uneven opportunities across different markets (Giarratana *et al*. 2021; Sakhartov and Folta, 2015). Chauvin and Poliquin (2024) argue that firms with the ability to efficiently redeploy resources gain a competitive edge when there are significant disparities in resource availability across markets. In areas where resources are limited, firms that can quickly reallocate them to higher-demand or more profitable sectors improve their strategic positioning. The impact of this capability is substantial: firms with strong redeployment abilities can secure superior resources and apply them across various markets. This allows the firm to expand into additional markets, thus enhancing its reach and competitive strength (Chauvin and Poliquin, 2024).

4.2.3 Advantages from synergies

Synergies play a pivotal role in shaping the success of diversification strategies, as they allow firms to leverage existing resources and capabilities across multiple domains. According to Penrose (1959), firms often possess surplus resources beyond their current production needs. This surplus creates an incentive for diversification into areas where these resources can be more effectively utilized. This body of work underscores the

importance of how closely related markets are and how easily resources can be transferred across them in shaping firms' diversification strategies (e.g., Rumelt, 1974).

Teece (1980) expands on cost efficiency-based theories of diversification, emphasizing economies of scope, which refer to cost savings achieved by producing a variety of products together rather than independently (Bailey and Friedlander, 1982; Panzar and Willig, 1981; Teece, 1980; 1982). Unlike economies of scale—focused on cost savings from producing higher volumes of a single product—economies of scope highlight the advantages of resource sharing across multiple products. However, Teece (1980) emphasize that economies of scope alone do not fully explain why firms diversify. Instead, diversification becomes more efficient when economies of scope are tied to firm-specific proprietary know-how, such as specialized, unique knowledge, or to indivisible physical assets that can be utilized across multiple product lines. Indivisibility plays a crucial role: when certain inputs are indivisible, firms are motivated to diversify internally to fully exploit these resources. In contrast, if inputs are divisible, firms could outsource the surplus, eliminating the need for diversification (Teece, 1980). By leveraging these firm-specific and indivisible resources internally, which are difficult to trade externally, firms can reduce costs and enhance overall efficiency, making related diversification a strategic choice (Zhou, 2011).

Markides and Williamson (1994) argue that sharing knowledge, brand, or core competencies across related markets can be a source of competitive advantage. They argue that diversification creates real benefits when it strengthens and leverages the firm's core competencies, rather than relying on apparent similarities across businesses. The authors emphasize that when a firm diversifies into related markets, it can share its core capability across multiple markets, effectively spreading the cost and increasing its

returns on investment. This is referred to as the "amortization advantage", which allows firms to spread the costs of existing assets across multiple markets or business units (Markides and Williamson, 1994). Henderson and Cockburn (1994) underscore the role of knowledge spillovers as a form of synergy. For instance, discoveries in one research area can be shared across related therapeutic areas, thereby enhancing R&D productivity. This demonstrates the benefits of transferring knowledge and capabilities between interconnected domains. Internal knowledge spillovers can allow for more efficient use of shared resources as learnings from one area can be applied to another. This dynamic aligns closely with the concept of related diversification, where synergies arise from leveraging complementary knowledge.

In this context, segment disclosure serves as a strategic tool for firms to signal their strategic orientation—whether they emphasize the benefits of synergy or the agility and adaptability enabled by redeployment. To explore this, a theoretical framework will be developed to link the advantages of resource redeployment and synergies to the decision-making process behind segment under-reporting.

4.3 HYPOTHESES DEVELOPMENT

Prior studies on resource redeployment emphasize that the opportunity costs associated with reallocating resources depend on market demand and competitive dynamics in alternative markets (Levinthal and Wu, 2010; Morandi *et al*. 2020; Wu, 2013). A rise in competition within a particular market influence how firms adjust their resource reallocation strategies (Morandi *et al*. 2020). In response to competitive pressures, firms can either defend their position or retreat. Choosing to engage in competition may involve deterring potential entrants by signaling a willingness to engage in price-based

competition (Lieberman and Montgomery, 1988) or adopting differentiation strategies (Fernandez-Kranz and Santalo, 2010; Flammer, 2015) that enhance customer retention by increasing switching costs. A firm's ability to communicate its commitment to a competitive strategy is essential, as it signals its determination to maintain market share. When a firm discloses its resource redeployment efforts through a defensive strategy, it highlights its proactive approach to strengthening entry barriers. This openness may serve as a deterrent to potential rivals, as they would recognize the firm's strategic initiatives to safeguard its market position. Therefore, diversified firms tend to invest more assertively by channelling resources into highly competitive markets (Morandi *et al*. 2020). Their ability to move capital internally gives them the flexibility to act quickly and decisively (e.g., Dickler and Folta, 2020; Dickler *et al*. 2022; Sakhartov and Folta, 2014). This aggressive approach sends a strong signal to potential rivals, making the firm appear highly competitive and discouraging rivals from entering the market.

The flee strategy, in contrast, involves shifting resources away from declining markets and reallocating them to areas with stronger growth potential (Levinthal and Wu, 2010; Lieberman *et al*. 2017; Wu, 2013). Even in this approach, visibility remains crucial. While a fight strategy signals a firm's determination to protect its market position, a flee strategy underscores its ability to efficiently reallocate resources internally. Demonstrating a capacity to swiftly redirect investments toward high-growth sectors showcases a firm's internal capital market strength and its strategic responsiveness to changing market conditions due to enhanced switching options (Dickler *et al*. 2022; Dickler and Folta, 2020). Since transacting in the external markets can be slow and costly due to high information asymmetry, having strong internal capital markets enables the firm overcome these frictions, making them more adaptive and efficient than competitors

who rely on external markets (Chauvin and Poliquin, 2024; Dickler and Folta, 2020). Also, it is important to recognize that internal switching options can complement and enhance the value of growth opportunities (Dickler *et al*. 2022). As firms identify new areas of expansion, the ability to shift resources allows them to move quickly and take advantage of emerging opportunities—accelerating the realization of growth (Helfat and Eisenhardt, 2004; Dickler *et al*. 2022; Dickler and Folta, 2020; Sakhartov and Folta, 2014). Multi-business firms don't always need to make full-scale moves; instead, they can reassign resources in a more targeted way—without completely entering or exiting a market (Dickler and Folta, 2020). At the same time, this flexibility helps firms exit underperforming areas more decisively, cutting losses before they escalate (Dickler and Folta, 2020). Therefore, internal redeployment, can lower the performance thresholds required to justify investment (entry) or divestment (exit) decisions (Lieberman *et al*. 2017). This ability to make smaller, gradual adjustments gives them a competitive advantage, as these shifts are often quicker, more cost-effective, and carry less risk than major strategic changes (Dickler and Folta, 2020). In this way, switching options don't just offer operational agility—they also enhance the strategic value of growth options by making it more feasible and less risky to act on them (Dickler *et al*. 2022). By making these reallocations evident, a firm not only signals its ability to maximize returns but also establishes a form of deterrence through its adaptability.

Second, competitors and investors recognize that a firm capable of exiting underperforming markets quickly has a structural advantage over those with less flexible resource reallocation systems. For instance, some firms may have relatively more flexible structures that encourage faster redeployment within firms (e.g., Folta *et al*. 2016). This adaptability fosters a competitive edge as firms that can seamlessly shift resources

become harder to challenge. Their ability to transition between markets efficiently reduces predictability, making it difficult for rivals to anticipate their next moves. Since many competitive strategies rely on forecasting a firm's future actions, firms that exhibit consistent agility in redeploying resources create an additional barrier to entry by remaining strategically elusive.

Effectively reallocating resources showcases a firm's strategic expertise, emphasizing its ability to adapt swiftly to shifting market conditions. Instead of simply withdrawing, the firm redirects its focus toward more lucrative opportunities, reinforcing its resilience and capacity for resource optimization. Competitors perceive this flexibility as a competitive strength, discouraging aggressive rivalry. Publicly showcasing quick resource reallocation signals preparedness for market challenges, reducing the incentive for other firms to enter or compete in the market. Thus, the firm's ability to swiftly exit declining markets highlights its superior internal capital market mechanisms (Dickler and Folta, 2020), enhancing its reputation for efficiency and strategic competence. Investors favor firms with strong internal systems, as they offer better resource control and risk management, rather than being dependent on external sources of capital, which can be subject to market fluctuations.

Within this framework, we propose that the more actively a firm reallocates resources, the fewer segments it tends to under-report. This pattern reflects a deliberate strategy, consistent with the goals of diversified firms that leverage redeployment to strengthen their competitive advantage.

Formally, we hypothesize:

H1. *The more a diversified firm redeploys resources across product markets, the lower the number of business segments that are kept under-reported.*

We propose that firms diversifying into related markets tend to under-report a greater number of segments to protect synergistic advantages. Firms realize economies of scope when they expand into markets that are closely related to their existing operations (Bailey and Friedlander, 1982; Panzar and Willig, 1981; Teece, 1980). These intra-temporal scope economies (Helfat and Eisenhardt, 2004) that arise from contemporaneously sharing scale-free resources (Levinthal and Wu, 2010), result in cost advantages firms gain by producing several products jointly, rather than running separate production processes for each (Panzar and Willig, 1981). These cost savings can significantly shape how firms compete within related markets (e.g., Bailey and Friedlander, 1982; Panzar and Willig, 1981).

Firms benefiting from economies of scope can spread their fixed costs across several related product lines. As a result, these firms can afford to charge lower prices, giving them an edge over specialized rivals who lack such cost-sharing advantages (Bailey and Friedlander, 1982). This dynamic can sometimes spark price wars, as firms can leverage their cost leadership across similar product lines to compete aggressively. Another factor that increases competition for multiproduct firms operating in related markets is that firms with multiple related product lines can shift profits from one area to subsidize low pricing in another (Bailey and Friedlander, 1982). For instance, a firm might use earnings from a profitable division to lower prices in a related segment. Such cross-subsidization can be a calculated approach to break into new segments, intensifying rivalry in the process. When applied in closely connected markets, these strategies tend to heighten competitive pressure. So, even though related businesses often share

resources and capabilities—seen as promoting synergies—competition can actually be fiercer in these settings due to strategic pricing behavior. Thus, larger, diversified firms can undercut rivals, putting pricing pressure across their entire lineup of products.

The growing intensity of competition—often due to overlapping product markets—heightens the need for firms to safeguard the synergies that support their cost advantages. To navigate this challenge, firms may opt to limit the level of detail in their segment disclosure. In cases of related diversification, where segments frequently depend on shared resources, revealing too much can unintentionally expose the firm's broader strategic approach, including how it distributes resources and achieves cost efficiencies. This transparency can make it easier for rivals to imitate those practices. Take, for example, a pharmaceutical firm that also produces medical devices. By integrating R&D, marketing, or distribution across both divisions, it reduces costs. However, if the firm were to disclose the specific ways in which these areas are connected, it might give competitors a roadmap to replicate those efficiencies. Given this, firms operating in related markets often draw on the same scientific knowledge, share resources, and work with similar customers and suppliers. Because of this overlap, it becomes easier for rivals to understand the focal firm's strategies and replicate them. As a result, such firms often choose to aggregate segments or limit granularity in segment disclosures to obscure these internal synergies.

In light of these risks—both from pricing pressure due to cost efficiencies and the threat of imitation due to overlapping markets—firms frequently choose to consolidate or withhold segment-level information.

Formally, we hypothesize:

H2. *The more a diversified firm operates in related markets, the higher the number of business segments that are kept under-reported.*

4.4 METHODOLOGY

4.4.1 Data and sample

Our sample is composed of all the U.S. public firms in the pharmaceutical industry. This industry offers a particularly compelling empirical context for several reasons. Pharmaceutical firms often diversify their product offerings into adjacent niches (Hill and Hansen, 1991), leveraging both supply-side and demand-side synergies (Ye *et al*. 2012). On the supply-side, the fungible nature of general-purpose technologies (Anand and Singh, 1997; Penrose, 1959; Teece, 1982) enables firms to reuse knowledge and resources across different therapeutic areas. For instance, a chemical compound developed for treating cardiovascular diseases can be repurposed to address related health issues, such as metabolic disorders, with minimal modifications (Polidoro and Toh, 2011). From a demand perspective, firms often implement "one-stop-shop" strategies (Giarratana and Santalo, 2020) to cater to customers with diverse healthcare needs, spanning from prescription medications to over-the-counter supplements. For example, Johnson and Johnson's extensive portfolio—including pharmaceuticals, consumer healthcare products, and medical devices—enables the firm to meet a wide range of health and wellness demands. The ability to capitalize on both demand- and supply-side synergies, facilitated by resource fungibility (Danneels, 2007; Gambardella and Giarratana, 2013; Gruber *et al*., 2008; Maine and Garnsey, 2006), makes the pharmaceutical sector particularly relevant for examining how firms disclose business segments under different diversification strategies.

Additionally, resource redeployment plays a crucial role in the pharmaceutical sector, given its dependence on managing high R&D expenditures, unpredictable product success rates, and evolving market (DiMasi and Grabowski, 2012). Pharmaceutical firms frequently redeploy resources across projects and therapeutic areas to maximize returns (Xu, 2023). For instance, when Pfizer sold Plax Pre-Brushing Rinse business and Coty Cosmetics line due to decline in revenues, the company redeployed its resources toward product markets with strong growth potential such as Unisom Sleep Gels and Desitin Daily Care Diaper Rash Powder[12]. This strategic flexibility allows firms to optimize resource utilization, mitigating risks associated with high failure rates of underperforming businesses. Finally, the industry faces intense competition from generic drugs (Polidoro and Toh, 2011; Saha *et al*. 2006), once patents for blockbuster drugs expire, making secrecy a crucial strategy for mitigating imitation threats and safeguarding competitive advantages. These characteristics—synergies, redeployment advantages, high R&D costs, and intense competition—make the pharmaceutical industry an ideal setting for exploring the interplay between redeployment, synergy, and disclosure.

We developed our sample through a multi-stage process. As a starting point, we used the third edition of *The Medical and Healthcare Marketplace Guide*[13]—published in 1983, 1986, 1990, and 1993—which provides detailed profiles of for-profit companies in the U.S. medical and healthcare industries. From this dataset, we focused specifically on publicly traded U.S. firms and linked them to Compustat segment data and Fundamental Annuals covering the years 1983 to 1992. This approach allowed us to align

[12]Source: The 3rd edition of the Medical and Healthcare Marketplace Guide.
[13] International Bio-Medical Information Services, Inc. (M. A. Acton and F. L. Miami; ed. Adeline B. Hale and Arthur B. Hale) published "The Medical & Healthcare Marketplace Guide in 1975, 1978, 1983, 1986, and 1989. MLR Publishing Company (Philadelphia, PA) and Dorland's Biomedical Publications (Philadelphia, PA.) have published subsequent editions.

firm-level information across sources and build the dependent variables needed for our analysis.

The U.S. medical sector can be broadly divided into three major industries: pharmaceutical drugs, medical devices, and healthcare services. To build our dependent variables and account for differences in segment reporting between Compustat and the *Medical Guide*, we combined historical segment data from Compustat with manually collected data from the *Guide*. Financial information for parent firms was sourced from Compustat Fundamental Annuals. Because our analysis focuses on the parent firm-year as the unit of analysis, we merged the financial data from Compustat with the segment-level data. One limitation of the *Guide* is that it does not link product categories directly to SIC codes. To overcome this, we manually assigned three-digit SIC codes to the product categories associated with pharmaceuticals, medical devices, and healthcare services.

The distinguishing feature of the Guide lies in its detailed focus on the specific products and services offered by a company's headquarters, subsidiaries, or divisions. It classifies businesses into 225 specific product or service categories, including areas like biomolecular research, genetic engineering, and surgical laser technology. This detailed classification helps in accurately identifying each firm's financially significant and technologically advanced offerings. It's extensive coverage of high-tech sectors is especially useful, as it distinguishes between products and services based on their level of technological sophistication. This level of detail enables us to pinpoint the exact product categories each entity is involved in, a task that would be difficult to accomplish using Compustat segment database.

The Guide lists 2,269 companies and 1,043 subsidiaries and divisions, amounting to 3,312 operational units. This listing provides a robust dataset for constructing a detailed overview of the product portfolios of corporations and their subsidiaries. In contrast, while Compustat does include segment descriptions, such as Pharmaceuticals, and Consumer Products, these tend to be broad and do not provide the same granular insight into individual products or services. This difference arises because the Guide organizes companies based on management's internal reporting structure, reflecting the way management views and handles its divisions, thereby offering more precise information about the firms' internal structure. This granularity makes the Medical Guide a more detailed resource compared to Compustat, especially in light of historical accounting standards. Under Statement of Financial Accounting Standards No. 14 (SFAS 14 hereafter)[14], firms were required to report segment data by industry (i.e., SIC codes), but the flexibility in defining what constituted an "industry" allowed companies to disclose minimal segment information externally, often omitting details that were included in internal firm reports (Berger and Hann, 2003). Companies only had to report segments that contributed 10 percent or more of their total operations. This allowed them to restrict detailed reporting ensuring that a business line was reported separately only if it met the 10 percent threshold (Berger and Hann, 2003; Villalonga, 2004). For instance, if 95 percent of a firm's activity was concentrated in industry A and only 5 percent in industry B, the firm could report only industry A as a segment in Compustat. However, alternative sources like the Medical Guide, which provide more detailed breakdowns of business

[14] The Financial Accounting Standards Board (FASB) mandates that firms comply with the 10 percent materiality rule, which requires them to disclose detailed information about their most significant operating segments. Segments that do not meet this materiality threshold may either be combined with others or omitted from separate disclosure.

operations, may reveal that the firm also has a presence in industry B. Although this segment is not "material" under the accounting rule, it is still operationally distinct—and its omission may affect how external users assess the firm's true scope of activity. This highlights the discrepancies in classification approaches depending on the underlying operations and reporting thresholds.

Given this, firms had significant discretion in defining what constituted an "industry", leading to strategic reporting choices. Some firms aggregated multiple business lines under broad industry categories to minimize segment disclosures. Others reclassified segments over time to avoid crossing the 10% threshold, thereby reducing external transparency. One clear example of firms applying SFAS 14's reporting flexibility to limit disclosure is Alza Corporation. On Compustat, Alza reported only one segment— "pharmaceutical products"—despite operating in multiple business lines. However, in the Medical Guide, the company was categorized under both pharmaceutical drugs and medical devices, indicating a broader scope of operations than was externally reported. This suggests that Alza selectively defined its industries, thereby consolidating reporting.

The process of constructing our dataset involved several stages to ensure alignment with the coverage of the Medical Guide and Compustat. To begin, we manually constructed an initial dataset using the Medical Guide, which resulted in 2,205 subsidiary-firm-year observations. This version of the dataset included both parent firms and their subsidiaries. This dataset was essential for identifying differences in SIC code reported between Compustat and the Guide. However, since our unit of analysis was at the parent-firm year, we refined the sample by removing subsidiaries. After excluding subsidiaries and narrowing the focus to parent firms, the sample was reduced to 1,268 parent-firm

year observations. Once all the independent and control variables were computed—some at the segment level and others at the firm-year level—we merged them into a single dataset, keeping only complete records for each parent firm-year observation. At this stage, the sample further decreased to 1,147 observations due to missing data in some variables. Because our dependent variable was based on an unbalanced panel structure, while the independent variables were balanced across all years, we opted to create a structurally aligned balanced panel initially for cleaner estimation. However, to ensure consistency with the Medical Guide and to avoid artificially extending the sample beyond available years, we included a year dummy variable in the regressions to restrict the data to only those years covered in the Guide. After applying this restriction, the sample reduced again—to 755 firm-year observations. This final dataset of 755 observations was used in our regression analysis.

4.4.2 Data and methods

4.4.2.1 Analysis

In this study, we utilize a count data model, where the dependent variable represents the number of under-reported SIC codes. Our hypothesis suggests that the extent of under-reporting, denoted as 'y', can be modelled as a function: $y = f(x,\beta)$. Here, 'y' signifies the count of under-reported SIC codes, 'x' represents a set of explanatory variables, and 'β' is a vector of parameters to be estimated. There are systematic differences between firms that choose to under-report their business segments and those that do not. For instance, non-diversified firms are inherently less likely to under-report segments, as they have fewer or no segments to hide. Diversified firms, on the other hand, have more segments and greater incentives to strategically under-report. Because of this, we treat firms that

under-report segments as fundamentally different from those that don't—believing it is more accurate to model them separately. That is why a two-stage method proposed by Terza (1998) has been employed, where in the first stage a probit model is used to estimate the likelihood that a firm chooses to under-report segments, based on the full sample of 755 firms. Then, in the second stage, we model the number of segments hidden—but only among those firms that decide to hide segments.

The key challenge here is that the second stage sample is not randomly drawn from the full population. These firms self-select into under-reporting based on certain strategic factors. If those same factors also influence how many segments a firm under-report, then the error term in the second-stage regression becomes correlated with the selection process—violating a basic assumption of unbiased estimation and introducing a sample selection bias. To address this, we rely on an instrumental variable in the first stage—an acquisition dummy—which affects the likelihood that a firm under-reports segments but does not affect how many segments it under-reports. This instrument allows us to properly identify the selection equation. The probit model then produces a correction term—that captures the influence of unobserved factors driving selection. This correction term is included in the second-stage regression to adjust for the bias.

In this model, the observed count of omitted SIC codes for a firm, represented as y_i, is assumed to follow a Poisson distribution that is conditional on a normally distributed error term: $y_i \mid \varepsilon_i \sim \text{Poisson}(\Upsilon_i)$. The log of the Poisson mean is modelled as a linear function of explanatory and control variables, denoted x_i, with the error term drawn from a normal distribution, $\varepsilon_i \sim N(0, \sigma^2)$ (Fosfuri *et al*. 2008). The corresponding equation is presented below:

$$ln\ E\ (y_i \mid x_i, \varepsilon_i) = ln\ Y_i \mid \varepsilon_i = \beta' x_i + \varepsilon_i \quad (1)$$

This modeling approach includes a normally distributed error term to account for unobserved heterogeneity, offering an advantage over the traditional Poisson model. Consistent with Terza's (1998) methodology, the estimation unfolds in two steps. In the first stage, we use a probit regression where the dependent variable is binary—set to '1' when the *Medical Guide* indicates that a firm operates in a given business segment, but this segment is not disclosed in its financial filings. An instrumental variable is introduced at this stage to support identification.

In the first stage, the probit model estimates the alpha coefficients based on the following specification: $(d_i = 1\ if\ z_i^* = \alpha' w_i + u_i \geq 0;$ where the error term u_i follows a standard normal distribution, $u_i \sim N\ (0, 1))$. Once these parameters are estimated, they are used to calculate the expected number of SIC codes that a firm under-report in Compustat, conditional on the likelihood that a segment (i.e., SIC code) is omitted from disclosure ($d_i = 1$), following the framework proposed by Terza (1998):

$$E\ [y_i \mid x_i, d_i = 1] = \exp\ (\beta° + \beta_1 x_{1i} + \ldots..)\ (\phi\ (\alpha' w_i + \Theta / \phi\ (\alpha' w_i)) \quad (2)$$

Where ϕ denotes the cumulative distribution function of the standard normal distribution. In the second stage of estimation, the parameters β and θ within the conditional mean function are estimated using a non-linear least squares approach, following the methods outlined by Terza (1998) and Fosfuri *et al*. (2008).

4.4.2.2 Dependent variable

As we outlined, our analysis follows a two-stage model. In the first stage, the dependent variable represents the likelihood of under-reporting and is defined as a binary indicator that takes a value of 1 if the Medical Guide identifies a firm as operating in a particular

business segment, yet the firm does not disclose this primary segment in its SEC filings for that year. The second stage focuses on a count-based metric of under-reporting, referred to as the *under-reporting-count*. This variable captures the number of business segments in which a firm is active, as documented by the Medical Guide, but are not reported in the firm's SEC filings.

4.4.2.3 Independent variables

In the first stage of our analysis, we use an instrumental variable in the form of a dummy variable. This variable takes the value of 1 if a parent firm has at least one subsidiary in its portfolio that has been acquired during a given year, and 0 otherwise. The *acquisition dummy* captures whether a firm has recently made an acquisition, which could influence endogenous variables such as capital redeployment and a firm's diversification strategy. Acquisitions often trigger corporate restructuring (Meyer and Lieb, 2003), which can lead to higher capital redeployment. These changes in capital reallocation may, in turn, impact a firm's decision to under-report business segments. It is important to note that the acquisition dummy itself is unlikely to have a direct effect on segment under-reporting; rather, it is the subsequent adjustments in capital reallocation following an acquisition that could drive changes in the firm's under-reporting behavior. Thus, we use the acquisition dummy as an instrument by emphasizing its role as an observable, exogenous event that influences internal changes, like capital redeployment, which in turn can drive segment under-reporting. However, the specific direction of impact is theoretically ambiguous, as firms may adjust their under-reporting strategies depending on their strategic goals post-acquisition.

Various disclosure-related factors, identifiable within a firm's financial statements, can help predict the extent to which a firm under-report its business segments. Based on this, the key independent variables in the second stage include a firm's capital redeployment activities and its approach to related diversification. Notably, our study places significant emphasis on financial resources, with a particular focus on capital. The focus on capital redeployment stems from its prominence in a firm's strategic decision-making regarding resource allocation (Morandi *et al*. 2020). Two key factors drive this emphasis. First, capital is a constrained resource that must be withdrawn from one market before it can be allocated elsewhere, as noted by Levinthal and Wu (2010). Second, Kim and Bettis (2014) highlight that reallocating financial resources is a highly visible strategic action, making it noticeable to competitors. This visibility allows capital redeployment to serve as a credible market signal, conveying the firm's intention to shift investment into a particular area (Morandi *et al*. 2020).

To evaluate *capital redeployment*, we adopt the deviation in investment ratio (*DIR*, *hereafter*) as proposed by Lovallo *et al*. (2020). Their study examines how firms adjust capital expenditures across business segments, using DIR as a metric to capture these shifts. DIR measures the change in financial investment across segments from year '*t-1*' to year '*t*', reflecting variations in investment allocation over time. A lower DIR value suggests minimal capital reallocations between segments, whereas a higher DIR indicates active redeployment. We derive this measure from Compustat segment data, making it a representation of "disclosed" redeployment since it is based on publicly available financial reports. The DIR is computed using the following equation:

$$DIR_{it} = \sum_{S=1}^{n} ABS\left(\frac{CAPEXS_{ist}}{ASSETS_{ist}} - \frac{CAPEXS_{ist-1}}{ASSETS_{ist-1}}\right) * W_{ist-1} \quad (3)$$

We use *related diversification* as a proxy for synergy, as firms in related markets are better equipped to leverage shared resources and capabilities, leading to improved operational efficiency. Previous research shows that related diversification enables firms to leverage synergies, by fostering economies of scope (Teece, 1980), resource sharing efficiencies (Penrose, 1959; Montgomery and Wernerfelt, 1988), and knowledge transfer across businesses (Henderson and Cockburn, 1994). Thus, related diversification enables firms to fully exploit their resources, creating value that would not be achievable if the firm expanded into unrelated markets. During the 1980s and early 1990s, relatedness was widely regarded as the most reliable measure for synergy, given its ability to capture interdependencies across business segments (e.g., Palepu, 1985). Since our study focuses on data from this time-period, we adopt the classical entropy measure developed by Palepu (1985), which was the standard approach for capturing relatedness at the time. The entropy measure provides us with an indicator of "disclosed diversification" since it relies on publicly accessible Compustat segment data. We use the Standard Industrial Classification (SIC) system to categorize related and unrelated product groups (Palepu, 1985). Products classified under different four-digit SIC codes within the same two-digit industry group are considered related (Palepu, 1985). Mathematically, let DR_j represent the related diversification that results from operating across multiple segments within industry group *j*. Based on the entropy measure definition, DR_j can be expressed as follows:

$$DR_j = \sum_{i \in j} P_i^j \ln\left(\frac{1}{P_i^j}\right) \quad (4)$$

where P_i^j is the share of segment *i* of group *j* in the total sales of the group (Palepu, 1985). Since the firm operates across multiple industry groups, its total related diversification DR is a function of DR_j, $j = 1\ldots, M$, and is defined as:

$$\mathrm{DR} = \sum_{\mathrm{j}=1}^{\mathrm{M}} \mathrm{DR_j} P^j \quad (5)$$

where P^j represents the proportion of sales from the *j*-th industry group relative to the firm's total sales (Palepu, 1985). It is important to note that DR represents the weighted average of related diversification across all *m* groups. Each group is assigned a weight corresponding to its share, reflecting its significance in the firm's overall operations (Palepu, 1985). Conversely, firms that distribute their sales across different two-digit SIC codes are considered unrelatedly diversified (Palepu, 1985). Thus, related diversification reflects the extent to which a firm's operations are concentrated in similar industry groups, providing insight into the firm's strategic focus on leveraging synergies between its businesses.

4.4.2.4 Control variables

To capture agency costs, we use the asset utilization ratio as a proxy, following the method applied by Ang *et al*. (2000) and Rashid (2013), who link lower asset utilization to higher agency-related inefficiencies. This ratio is calculated by dividing a firm's total sales by its total assets, offering insight into how efficiently assets are being used to generate revenue. A lower asset utilization ratio may indicate that managers are not using the firm's resources efficiently, possibly reflecting poor investment decisions, or acquiring assets with limited or no strategic value (Ang *et al*. 2000). Firms that overinvest tend to accumulate higher total asset values, which in turn results in a lower ratio,

signaling heightened agency issues. Conversely, a higher asset utilization ratio reflects more efficient asset management and, consequently, lower agency costs. For ease of interpretation, we adjust the calculation by multiplying the asset utilization ratio by (-1). This transformation allows for a direct relationship, where a higher asset utilization ratio corresponds to greater agency costs, while a lower ratio indicates reduced agency costs (Joseph *et al*. 2022).

Agency cost = -1* asset utilization ratio

To account for product-market competition at the industry-level, we construct the Herfindahl-Hirschman Index (HHI) using data at the segment level. Our process begins with extracting segment-specific net sales from the Compustat BUSSEG file, keeping only those segments that report valid four-digit SIC codes. To ensure comparability across similar lines of business, we consolidate all segments that share the same three-digit SIC code within each firm. We then calculate the HHI for each industry-year combination by summing the squared market shares of all firms active in that three-digit SIC industry. This method enhances accuracy by capturing the presence of multi-segment firms more precisely and avoids inflating a firm's influence in one market. By focusing on activity at the segment level rather than at the aggregate firm level, the resulting measure offers a clearer picture of competitive dynamics, particularly in industries where diversification is common. A higher HHI score reflects a more concentrated industry and thus lower competitive intensity. The index is calculated by summing the squared market shares of all firms within a given industry:

$$HHI_{\mathrm{st}} = \sum_{\mathrm{S}=1}^{n_{\mathrm{s}}} S^{2}{}_{\mathrm{ist}} \qquad (6)$$

where S_{ist} is the market share of firm '*i*' in industry '*s*', in year '*t*', and 'n_s' is the number of firms operating in industry '*s*', in year '*t*' (e.g., Gu, 2016). This variable was then merged at the firm-year level. We use HHI to capture industry concentration because we wanted to know the degree of dominance by firms. If instead, we used entropy to compute industry concentration, it would de-emphasize the dominance by the largest firm, treating all firms equally.

We also include several firm-year-level control variables in our analysis. To capture firm size, we use the natural logarithm of the parent company's consolidated book assets, denoted as ln (at) (Dyreng *et al*. 2020). We also account for the profitability of the parent firm, measured by *return on assets,* which is calculated as net income divided by total assets. In addition, we include the parent firm's *research and development* (R&D) expenditure as a control variable.

4.5 RESULTS

Table 4.1 shows the summary statistics for all variables used in the main analysis. As indicated, the Medical Guide identifies a firm that has up to 8 business segments under-reported in the Compustat segment database. This happens in the case of Baxter International Inc. in the year 1986. On average, firms in our sample were reallocating about 4.2% of their capital expenditure across segments over time. This reflects a moderate level of capital redeployment activity. Table 4.2 reports the correlation matrix for all the variables. Tables 4.3 and 4.4 present the results from the first and second stage regressions. Table 4.5 shows the results for the negative binomial regression. All tables have been included in the appendix section 4.1.

Insert Table 4.1, 4.2, 4.3, 4.4 about here

4.5.1 Analysis step 1: probit regression

Table 4.3 presents the first-stage results of the probit regression. In Model 2, which includes all control variables, the coefficient for related diversification is positive (0.87) with a p-value of 0.11, indicating that the effect is statistically insignificant. In both Models, the coefficient for the deviation in investment ratio (DIR) is negative and insignificant. Furthermore, when an acquisition dummy is included as an instrument in the selection equation, the coefficient becomes positive (1.00) with a p-value of .00 in Model 2. This implies that multi-divisional firms with at least one acquired subsidiary in their portfolio are more likely to under-report business segments.

4.5.2 Analysis step 2: non-linear least square regression

Table 4.4 reports the results from the second stage of the non-linear least squares regression, showing how the key independent variables influence the number of segments a firm chooses to under-report. In line with hypothesis 1 (Model 1, as presented in table 4.4), the coefficient for deviation in investment ratio (DIR) is negative (-1.50) with a p-value equal to 0.08. The result suggests that as diversified firms increase their capital redeployment across various product markets, they tend to under-report fewer segments. This suggests that firms strategically under-report fewer segments to *signal* their readiness to adopt an 'aggressive' redeployment strategy, thereby deterring rivals. Thus, Hypothesis 1 is supported. As shown in figure 4.1, DIR has a greater negative impact on under-reporting count at the 75^{th} percentile than at the 25^{th} percentile, suggesting that the effect of DIR becomes more pronounced as it increases. This implies that changes in DIR

affect under-reporting count more significantly when DIR is higher, indicating greater sensitivity to DIR variations at elevated levels.

Consistent with hypothesis 2, as shown in Model 1 of table 4.4, the presence of a diversified firm in related product markets is associated with a higher number of under-reported segments. The coefficient for related diversification is positive (1.52) with a p-value of 0.00. The positive coefficient indicates that firms involved in related diversification may be less inclined to utilize disclosure practices. This tendency leads to a higher number of under-reported segments, potentially because withholding information about related markets allows firms to protect their competitive advantage. This finding lends support to Hypothesis 2.

In terms of controls, when agency costs are included as a control variable, the coefficient is positive and statistically insignificant in all models, as shown in Table 4.4. Consistent with prior research, this result underscores the function of discretionary disclosure, allowing managers to obscure inefficiencies within specific segments (e.g., Bens *et al*. 2011). In Model 1 of table 4.4, the coefficient for industry competitiveness, measured by the HHI competition, is negative (0.02) with a p-value of 0.64. The negative sign of this variable, even though it lacks statistical significance, suggests that, in more-concentrated industries, firms under-report fewer segments. This result is in line with the predictions of Bens *et al*. (2011), suggesting that in less competitive environments, firms are less likely to aggregate segments since they face fewer concerns about exposing sensitive information.

The positive coefficient for firm size, with a p-value of 0.00 in all models as shown in table 4.4, implies that larger firms often operate in more diverse markets and possess a

broader array of segments. This complexity can lead to greater opportunities and motivations for under-reporting. Larger firms might have more strategic interests to protect sensitive information about their business segments and under-reporting segments allow them to shield valuable operational details and competitive advantages from rivals. Further, as firms grow, the administrative and strategic burden of disclosing detailed segment information increases. Large firms might opt for under-reporting to simplify reporting processes and focus on managing their vast operations effectively without disclosing potentially sensitive information. While R&D is crucial for developing new products, the insignificance of this variable in all models of Table 4.4 suggests that the amount of R&D expenditure alone does not directly drive the extent of segment under-reporting. The relationship might be complex, with factors like the nature of R&D projects, their outcomes, and timing of disclosure playing a more significant role. Thus, the positive sign indicates a potential trend where higher R&D spending is associated with more under-reporting, but this effect is not strong enough to be statistically significant. Finally, a negative and statistically significant relationship (in all models) between return on assets and segment under-reporting suggests that firms with higher profitability (indicated by higher ROA) might be more transparent in their disclosures. High-performing firms have less to under-report and may use their strong financial performance as a signal of their competitive position and operational efficiency (Berger and Hann, 2003).

4.6 UNABSORBED SLACK AS A MECHANISM TEST

To assess whether our proposed mechanisms are operating as expected, we examine the interaction between unabsorbed slack, capital redeployment, and related diversification. We focus on unabsorbed slack because it is regarded as a proxy for a firm's adaptive

capacity (Argiles *et al*. 2016). Moreover, prior studies indicate that firms are seen as posing a more serious competitive threat through resource redeployment when they face fewer financial constraints and maintain a sizable pool of discretionary slack (Morandi *et al*. 2020). The central premise is that unabsorbed slack plays a more supportive role in redeployment and synergy creation, whereas absorbed slack is more constrained, as it is already embedded in current operations (Argiles *et al*. 2016). Because absorbed slack is committed to ongoing activities, it offers limited managerial flexibility. Its specialized and context-bound nature also makes it less transferable (Argiles *et al*. 2016). In contrast, unabsorbed slack consists of resources that can be redirected more freely, providing greater flexibility to managers. Since these resources are not context-specific, they are more adaptable across contexts, making them more suitable for redeployment (Argiles *et al*. 2016). Given this, we focus on unabsorbed slack.

Unabsorbed slack is measured as the ratio of a firm's cash and marketable securities to its current liabilities, following the approach of Tan and Peng (2003). This data is sourced from Compustat Fundamental Annuals. The metric evaluates how well a firm's cash and marketable securities for a given fiscal year can cover its short-term liabilities. Essentially, it quantifies the amount of liquid resources that are not immediately tied to financial obligations. A higher ratio indicates greater financial flexibility, as it reflects a firm's substantial cash reserves relative to its liabilities.

We begin by examining how unabsorbed slack moderates the relationship between capital redeployment and the extent to which firms under-report segments. In the first and third models presented in Table 4.4, which incorporate the interaction between DIR and unabsorbed slack, we find that the positive interaction effect counterbalances the individual negative impacts of DIR and unabsorbed slack on the number of under-

reported segments. This suggests that when both factors interact, the tendency to under-report segments is increased. In model 1 of table 4.4, the coefficient for the interaction effect is positive (1.48), with a p-value of 0.04. Meanwhile, the coefficient for DIR is negative (-1.50), with a p-value of 0.08, and the coefficient for unabsorbed slack is also negative (-0.29), with a p-value of .00. The positive interaction effect between DIR and unabsorbed slack suggests that the influence of DIR on segment under-reporting is contingent upon the level of unabsorbed slack. This indicates a moderation effect, where at high levels of unabsorbed slack, the negative impact of DIR on segment under-reporting is attenuated. In other words, when firms have substantial unabsorbed slack, they may have less incentive to highlight their resource redeployment capabilities, as excessive slack could imply that resources are not being efficiently reallocated. Rather than positioning capital redeployment as a strategic advantage that enhances flexibility, the presence of unabsorbed resources might be interpreted as poor resource management. This happens because when firms operate with leaner resource bases, they tend to allocate their unabsorbed slack more effectively, often directing it toward emerging or growth-focused areas (Argiles *et al*. 2016). However, there is a potential downside. When unabsorbed slack accumulates excessively, it can lessen the discipline with which investments are evaluated, potentially leading to overallocation in projects with limited return potential. This may result in inefficient resource redeployment. Moreover, high levels of slack can undermine the opportunity cost logic that normally guides careful resource reallocation. When slack is limited, managers must make trade-offs and prioritize reallocation toward high-return opportunities. With abundant slack, this pressure diminishes, potentially leading to inefficient resource allocations. Given this, at high levels of both redeployment and unabsorbed slack, firms may under-report segments

to obscure suboptimal reallocation. Managers with greater discretionary slack may also prefer to maintain opaque segment boundaries, allowing them to exercise resource control with less external oversight. Ultimately, high slack can undermine the intended deterrence effect by suggesting that the firm is not fully leveraging its internal resources for competitive advantage.

Next, we observe how related diversification interacts with unabsorbed slack to shape under-reporting decisions. Related diversification shows a negative interaction with unabsorbed slack, indicating that firms under-report less in related markets when slack levels are high. This relationship is reflected by a negative coefficient of (-2.12) with a p-value of 0.00 (as shown in Model 2, Table 4.4). This suggests that when both related diversification and unabsorbed slack are high, firms tend to under-report fewer segments. Because businesses are similar, unabsorbed slack is more fungible as it can be used across different businesses without much adaptation. Given this, slack is more likely to be invested in businesses that reinforce core capabilities. This reduces wastage of slack as it feeds into complementary activities that drive efficiency. Firms operating in related markets can justify that slack is being strategically allocated rather than wasted. By showcasing how slack is utilized to support coordinated activities across interconnected segments, firms can reassure external stakeholders that excess resources are contributing to value creation rather than being misused, due to resource complementarities that exist across related segments.

4.7 CONCLUSIONS

Business segment disclosures play a key role in shaping the competitive landscape. While much research emphasizes the concealment of inefficiencies (e.g., Berger and Ofek, 1995; Denis *et al*. 1997; Hope and Thomas, 2008; Lang and Stulz, 1994; Rajan *et al*. 2000) or

proprietary information (e.g., Cho, 2015), our study highlights how firms could strategically disclose segments to signal their redeployment capabilities. By revealing the ability to reallocate resources, firms can deter competitors from entering the markets, showcasing their competitive strength. Additionally, for firms with related diversification, the focus shifts from signaling redeployment capabilities to protecting synergistic advantages. Consequently, these firms may strategically withhold information about related segments to safeguard internal synergies. Under these premises, this study makes a significant contribution to the segment disclosure literature by shifting the focus from traditional explanation of agency costs to how firms strategically use discretionary under-reporting to manage diversification advantages. It bridges segment disclosure literature (e.g., Berger and Hann, 2003; 2007; Cho, 2015) with resource redeployment studies (e.g., Giarratana *et al*. 2021; Morandi *et al*. 2020; Sakhartov and Folta, 2014). The study introduces two novel strategic objectives: signaling redeployment capabilities and protecting synergies in related markets. This helps explain better how firms strategically disclose or conceal segment information based on their resource allocation goals. By linking diversification advantages to segment under-reporting strategies, the study offers a fresh perspective on how the nature of diversification could help shape segment reporting. For firms, segment disclosure is not merely a compliance task but a tool to influence competitive dynamics and a firm's corporate strategy. Empirically, the study contributes by using the Medical Guide alongside Compustat data to analyze segment under-reporting, revealing strategic disclosure discrepancies that were previously hidden before regulatory changes like SFAS 131.

Our study carries several managerial implications. First, managers must carefully balance transparency with the need to protect proprietary synergies in order to sustain

competitive advantage. Concealing sensitive information about related diversification strategy can help safeguard unique operational or technological benefits, preventing rivals from exploiting them. Firms could adapt their internal reporting architecture not just to satisfy the reporting requirements, but also to strategically influence how external stakeholders interpret the nature of their diversification. Organizations focused on redeployment—those aiming to showcase their redeployment capability—may deliberately structure to emphasize unit-level independence. By having segment leaders report directly to the chief decision-maker, these firms could ensure visibility of operational boundaries thereby enabling external audiences to perceive their strategic agility. Conversely, firms that pursue synergy—those deriving value from tightly integrated activities—tend to benefit from more integrated structures. Such firms may avoid segment level details to protect proprietary coordination mechanisms or shared resource strategies through shared reporting lines, thereby blurring the lines between segments. In both cases, the underlying micro and macro structures become mechanisms not only for managing internal operations, but also for shaping the firm's external disclosure narrative in alignment with its diversification logics.

Second, managers in innovation-focused firms often treat segment disclosure as a strategic communication tool. They should carefully design reporting structures to strike a balance between openness and concealment—aiming to highlight the firm's innovation capabilities while also safeguarding sensitive information to protect innovations from imitation.

Third, internally, segment disclosures can strengthen governance by ensuring that managers across divisions are accountable for their capital reallocations. This not only strengthens internal governance but also ensures that resources are used efficiently,

aligning managerial actions with long-term strategic goals. Finally, in the context of less-related markets, where segments donot benefit from shared synergies a lot, unabsorbed slack should be tightly managed and kept in check to avoid potential inefficiency in resource reallocations.

Future research could investigate the long-term performance implications of varying segment disclosure strategies and explore how these dynamics play out in different institutional and industry contexts, particularly in light of evolving regulatory frameworks such as SFAS 131. Further, a limitation of our study is the reliance on the entropy measure to assess relatedness, as it depends on the distribution of a firm's revenues across industries, categorized by SIC codes. While it provides a quantitative summary of diversification breadth and depth, this measure *assumes* that industries classified under the same SIC code automatically exhibit similarity, which may not hold true. Given this, entropy measure does not capture actual resource sharing, cost reductions or revenue enhancements that result from resource sharing, resource interdependencies, or knowledge spillovers. Future research could address this limitation by exploring alternative approaches to measuring relatedness. For instance, patent citation analyses could provide a better measure of synergy in a technology-driven industry like pharmaceutical. A firm could hold patents in multiple technology domains and if those patents cite each other, it could be a reflection of knowledge being shared across different domains. Given this, we suggest a better approach to measuring relatedness.

TABLE 4.1: DESCRIPTIVE STATISTICS

Variable	Obs	Mean	Std. Dev.	Min	Max
Likelihood under-reporting	755	.391	.488	0	1
Under-reporting count	755	.727	1.313	0	8
DIR	755	.042	.075	0	.754
Unabsorbed slack	755	1.275	1.094	0	4.976
Related diversification	755	.053	.135	0	.752
Return on asset	755	-.596	1.561	-6.214	.909
Agency cost	755	-.628	.761	-14	0
HHI competition	755	.001	.005	0	0.095
Firm size	755	3.653	2.263	0.024	9.383
R&D expenditure	755	56.642	156.791	0	1127
Acquisition dummy	755	.208	.406	0	1

TABLE 4.2: PAIRWISE CORRELATION MATRIX

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Likelihood under-reporting	1.000										
(2) Under-reporting count	0.692***	1.000									
(3) DIR	-0.084**	-0.099***	1.000								
(4) Unabsorbed slack	-0.147***	-0.161***	0.027	1.000							
(5) Related diversification	0.301***	0.583***	-0.104***	-0.182***	1.000						
(6) Return on asset	0.064*	0.090**	-0.024	0.056	0.129***	1.000					
(7) Agency cost	-0.089**	-0.135***	0.126***	0.313***	-0.188***	0.092**	1.000				
(8) HHI competition	0.168***	0.232***	-0.057	-0.083**	0.427***	0.046	-0.079**	1.000			
(9) Firm size	0.252***	0.433***	-0.115***	-0.078**	0.492***	0.398***	0.014	0.124***	1.000		
(10) R&D expenditure	0.296***	0.472***	-0.103***	-0.147***	0.450***	0.122***	-0.130***	0.117***	0.629***	1.000	
(11) Acquisition dummy	0.406***	0.490***	-0.137***	-0.209***	0.460***	0.155***	-0.171***	0.260***	0.497***	0.450***	1.000

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE 4.3: FIRST STAGE-PROBIT REGRESSION

Likelihood under-reporting	Model 1	Model 2
DIR	-.47 (.46)	-.36 (.56)
Related diversification	1.79*** (.00)	.87 (.11)
Unabsorbed slack		-.01 (.97)
Return on asset		-.03 (.29)
Agency cost		.02 (.64)
HHI competition		.54** (.05)
Firm size		-.03 (.30)
R&D Expenditure		.02*** (.00)
Acquisition dummy	1.10*** (.00)	1.00*** (.00)
Constant	-.57*** (.00)	-.45*** (.00)
# Observations	755	755
Pseudo R-Squared	.14	.16

P-values based on robust standard errors are reported in parenthesis
Abbreviations: DIR, Deviation in investment ratio, HHI, Herfindahl Hirschman Index
**** p <= .01, ** p <= .05, *p <= .10*

TABLE 4.4: SECOND STAGE NON-LINEAR LEAST SQUARE REGRESSION

Under-reporting count	Model 1	Model 2	Model 3
Beta0	.13	-.07	-.06
	(.41)	(.63)	(.70)
DIR	-1.50*	-.22	-.48
	(.08)	(.59)	(.44)
Related diversification	1.52***	2.19***	2.19***
	(.00)	(.00)	(.00)
Unabsorbed slack	-.29***	-.04	-.05
	(.00)	(.40)	(.30)
Return on asset	-.04**	-.03**	-.04**
	(.03)	(.03)	(.03)
Agency cost	.20	.03	.03
	(.11)	(.74)	(.72)
HHI competition	-.02	-.02	-.02
	(.64)	(.68)	(.69)
Firm size	.11***	.10***	.10***
	(.00)	(.00)	(.00)
R&D Expenditure	.01	.02	.02
	(.43)	(.52)	(.51)
Theta	.10	.02	.02
	(.30)	(.82)	(.81)
Year dummies	YES	YES	YES
DIR x Unabsorbed slack	1.48**		.35
	(.04)		(.51)
Related diversification x Unabsorbed slack		-2.12***	-2.10***
		(.00)	(.00)
#observations	431	431	431
R squared	.79	.81	.81

P-values based on robust standard errors are reported in parenthesis
Abbreviations: DIR, Deviation in investment ratio, HHI, Herfindahl Hirschman Index
**** p <= .01, ** p <= .05, *p <= .10*

TABLE 4.5: NEGATIVE BINOMIAL REGRESSION

Under-reporting Count	Model 1	Model 2	Model 3
DIR	-.07 (.95)	-.60 (.53)	-.05 (0.96)
Related diversification	.43 (.36)	.60 (.31)	.60 (.31)
Unabsorbed slack	-.22** (.02)	-.23*** (.00)	-.21** (.02)
Return on asset	-.03 (.41)	-.03 (.40)	-.03 (.41)
Agency cost	-.03 (.73)	-.03 (.40)	-.03 (.72)
HHI competition	.07 (.18)	.07 (.19)	.07 (.19)
Firm size	.20*** (.00)	.20*** (.00)	.20*** (.00)
R&D Expenditure	.03 (.38)	.02 (.45)	.02 (.44)
DIR x Unabsorbed slack	-.55 (.59)		-.54 (.59)
Related diversification x Unabsorbed slack		-.42 (.63)	-.42 (.63)
Constant	18.92 (.95)	16.44 (.97)	15.85 (.95)
# Observations	755	755	755

P-values are reported in parenthesis
Abbreviations: DIR, Deviation in investment ratio, HHI, Herfindahl Hirschman Index
**** p <= .01, ** p <= .05, *p <= .10*

FIGURE 4.1: MARGINAL EFFECTS: DIR

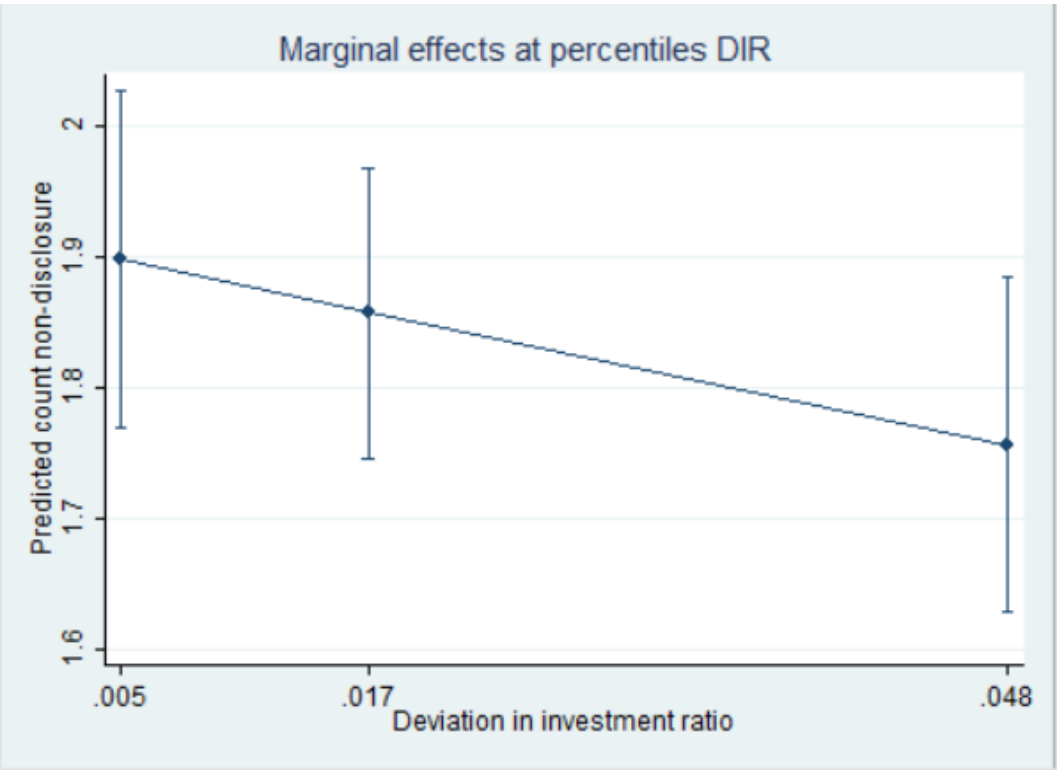


FIGURE 4.2: MARGINAL EFFECTS: UNABSORBED SLACK

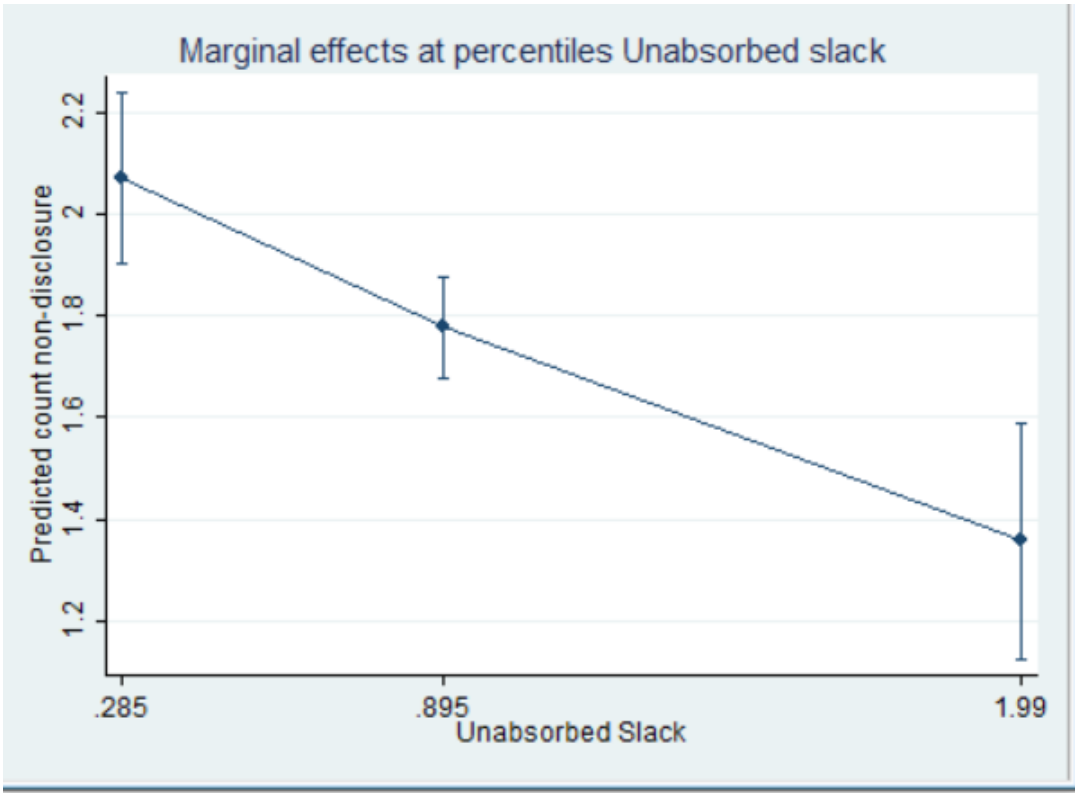
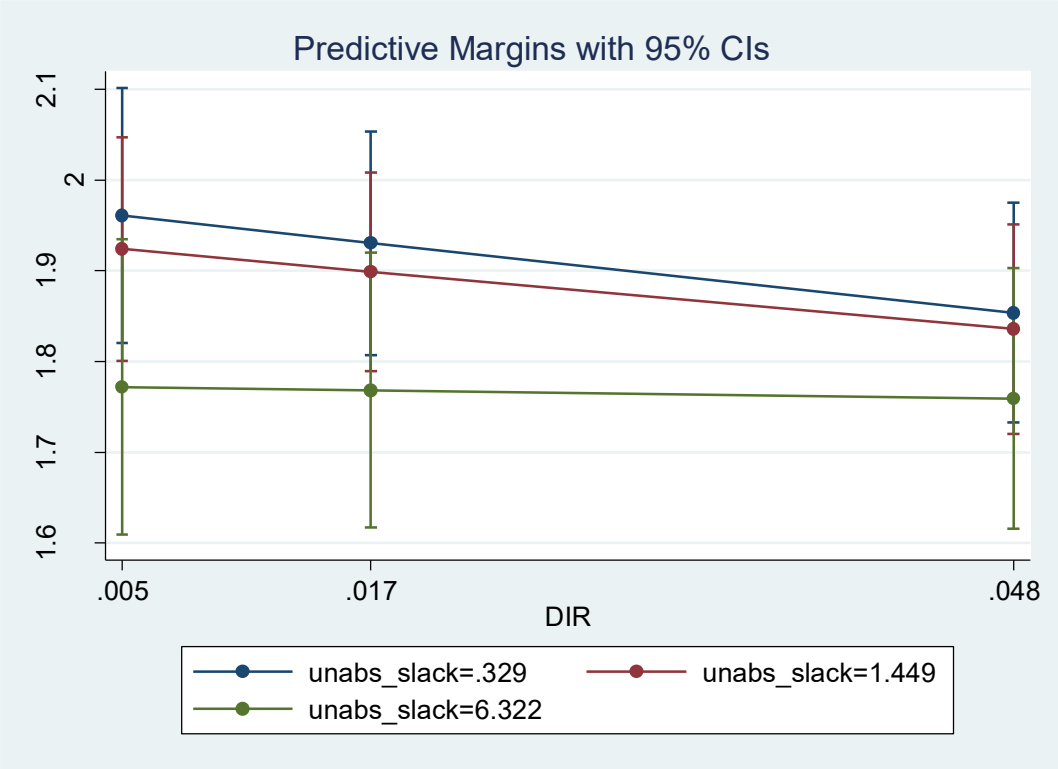


FIGURE 4.3: INTERACTION EFFECT (DIR x UNABSORBED SLACK)



CHAPTER 5

Conclusion

5.1 CONCLUSION

This dissertation asks the broad question: *how can diversified firms design their organizational structures to effectively manage the competing demands of synergy and redeployment; and strategically communicate these diversification logics to the external stakeholders*. Answering this question is what drives the core motivation behind this dissertation. Firms that can figure out how to manage these two competing logics—building structures that support synergies while simultaneously staying flexible to redeploy resources in response to emerging opportunities—will be better equipped to remain competitive and responsive over time—without having to alternate between these distinct strategic approaches. Although earlier research has studied each approach on its own, we still know relatively little about how firms can manage both logics at the same time as each requires different type of organizational structure (Folta *et al*. 2016).

To address this broad research question, this dissertation brings together ideas from the organizational design, resource redeployment, and segment disclosure research. It shows how internal choices around structure not only shape how firms manage their resources internally but also how they present themselves to the external stakeholders—ultimately helping them build a competitive advantage.

Chapter 2 introduces a theoretical framework that draws on ideas from micro-structural organizational design (e.g., Puranam, 2018; Puranam *et al*. 2014; Puranam *et al*. 2012; Raveendran *et al*. 2016). This chapter looks at how diversified firms operating across multiple businesses manage the internal tension between two competing diversification logics, i.e., synergy and redeployment. Synergy has long been recognized

as central to the performance benefits of related diversification (e.g., Helfat and Eisenhardt, 2004; Rumelt, 1974; Teece, 1980; Zhou, 2011). However, recent work has begun to emphasize the value of flexibility—especially a firm's capability to shift resources in response to changing conditions (Helfat and Eisenhardt, 2004; Sakhartov and Folta, 2014). The core issue lies in the fact that focusing on one objective can often come at the expense of the other. When firms reallocate resources away from areas that foster synergies, they risk weakening the very configurations that generate shared value. On the contrary, maintaining those synergies can limit the firm's ability to shift resources where they are most needed (Giarratana *et al*. 2021; Morandi *et al*. 2020; Sakhartov and Folta, 2014). While interest in this synergy-redeployment trade-off has grown, we still lack a clear understanding of the internal structures that might help diversified firms manage this trade-off effectively. This is a critical gap, since both synergy and redeployment are value creating mechanisms—but they rely on organizational designs that are often at odds with one another (Folta *et al*. 2016).

This chapter brings together perspectives from both the resource redeployment and organizational design literatures to address the above gap by asking: *how can diversified firms structure their internal systems—particularly task and authority structures—to take advantage of resource redeployment opportunities without compromising the synergies created through shared resources.* The framework proposed highlights three key organizational design mechanisms, in line with Puranam (2018). First, it introduces a hybrid task structure where strategic brand decisions remain under central control, while day-to-day decisions—such as managing shelf space—are handled by individual product teams. Second, it emphasizes the importance of thoughtfully sequencing brand-related activities to help prevent synergistic disruptions when resources are reallocated. Third, it

proposes a hybrid model of authority, granting local teams the flexibility to act independently while requiring them to justify their decisions afterward, thereby maintaining oversight and accountability.

This framework offers two key contributions. First, although the value of redeployment is increasingly acknowledged, there remains limited research on how it interacts with synergistic strategies (Folta *et al*. 2016; Sakhartov and Folta, 2014). Existing studies rarely draw a clear distinction between these two logics of value creation or explore how their interplay affects firm performance. This chapter responds to this gap by examining how diversified firms can manage the tension between synergy and redeployment using micro-structural organizational design as a lens. Second, by exploring how the tension between synergy and redeployment gives rise to task complexity, this chapter offers a clearer understanding of when and where coordination is truly necessary—and how appropriate task and authority structures might reduce organizational friction, thereby contributing to the organizational design literature.

This chapter highlights a key managerial insight: firms can enhance their adaptability by adjusting specific micro-structural elements—such as task division, sequencing, or authority distribution—without needing to completely redesign their broader organizational structure. For instance, rather than overhauling the entire organizational chart, firms can make targeted shifts by redistributing specific responsibilities among business units. They might also reconfigure the sequence in which tasks are carried out, aiming to ease coordination challenges or reduce bottlenecks—without the need to formally alter reporting relationships. Additionally, firms can reduce the need for upfront managerial approval (low ex ante intervention) while increasing post decision review (high ex post accountability). This approach gives units more freedom to

act swiftly, while preserving the existing hierarchy. In doing so, this chapter reinforces the argument that building dynamic capabilities is important for firms looking to explore new opportunities (e.g., Teece *et al*. 1997). A critical aspect of dynamic capability lies in a firm's ability to reconfigure and realign its internal processes and resource reallocations, especially in environments where systems are highly interconnected and complex (Zhou, 2011; 2013; Zhou and Wan, 2017). For instance, breakdowns in cross-functional coordination could stem from poor task sequencing, where interdependent tasks are carried out in isolation, i.e., when tasks are interdependent and not completed in the right order, it can create misalignment between functions or teams (Puranam, 2018; Puranam *et al*. 2012). When redeployment follows a carefully ordered sequence of brand-related tasks, it becomes a more integrated and adaptable process—rather than a disconnected one. Seen this way, the ability to thoughtfully partition and sequence tasks becomes a dynamic capability in its own right, giving firms a structural tool to navigate complexity associated with the synergy-redeployment trade-off.

Given this, looking at firms from a micro-structural angle helps by focusing on the ways units interact, rather than relying solely on formal organizational structures (Puranam, 2018). Even so, a major challenge remains: it's difficult to observe and measure these micro-level design choices in real-world settings. Compared to the broader macro-structural features discussed in Chapter 3, micro-structural elements tend to be more abstract, making them much harder to track and study empirically.

Building on earlier research (e.g., Amore and Mastrogiorgio, 2022; Dickler *et al*. 2022; Sakhartov and Folta, 2015), *Chapter 3* presents novel empirical insights into how the value created from resource redeployment is shaped by specific features of a firm's internal structure. I focus on the number of hierarchical layers and the distribution of core

functions like R&D, marketing, and manufacturing across the organization. These structural features are tested as moderators in the relationship between inducements to redeploy resources (captured through industry-level volatility) and firm value.

Consistent with prior work, this chapter shows that higher industry-level volatility is positively associated with firm value, reinforcing the idea that strategic flexibility becomes more valuable in uncertain environments (e.g., Amore and Mastrogiorgio, 2022; Sakhartov and Folta, 2015). However, I extend this baseline finding by showing that the positive impact of industry volatility on firm value diminishes as the number of organizational layers increase. I argue that additional layers may weaken top management's ability to oversee resource reallocation decisions, increasing the chances of misallocations. Deeper hierarchies can slow decision-making and result in the loss of critical information as it moves through multiple layers (Helfat and Maritan, 2024; Puranam, 2018; Zhou, 2013). Second, while theoretically I posit that a fragmented functional structure could impair coordination and strategic coherence due to divisional and functional silos (Argyres *et al*. 2020), my empirical findings suggest that more functional concentration could limit a firm's ability to respond to redeployment opportunities. While this moderation effect was negative in direction, it was not statistically significant. This result may indicate that the influence of functional structure on the relationship between inducements to redeploy and firm value is more complex and warrants further investigation. Finally, by centering my analysis on industry-level volatility—a broad and persistent indicator of external uncertainty—it suggests that in related diversification settings, external shocks may reduce multi-business firm's performance compared to single business firms, by disrupting tightly coupled operations and weakening the synergies that these firms rely on, thereby reinforcing the synergy-

redeployment trade-off (e.g., Giarratana *et al*. 2021; Sakhartov and Folta, 2014). It therefore adds a new perspective to the redeployment literature, contrary to the conclusions reached by Dickler *et al*. (2022). My findings suggest that simply being a multi-business firm does not guarantee better performance under uncertainty. Instead, the advantage depends on whether the firm's internal structure supports the efficient movement of resources. Furthermore, this flexibility must be achieved without undermining the synergies when firms diversify in related markets.

This chapter highlights several important implications for managers of diversified firms. One way to support flexible and efficient reallocation of resources could be by simplifying hierarchical layers while avoiding the reinforcement of silos—through the use of lateral coordination tools (e.g., Puranam, 2018). These mechanisms can improve the flow of accurate information across the organization. Moreover, aligning the incentives of divisional managers with the firm's broader objectives can encourage more coordinated and efficient redeployment (e.g., Puranam *et al*. 2012; Puranam, 2018). Additionally, building strong integrative capabilities (e.g., Cattani *et al*. 2024) across the firm can help break down both functional and divisional silos, further strengthening internal coordination across the firm.

Since my analysis revealed that the negative interaction between functional concentration and volatility did not have a statistically significant effect on firm value, this finding suggests that neither fully centralized nor entirely dispersed functional structures are ideal in dynamic environments. Managers should consider how core functions are distributed—whether they are handled centrally by the headquarters or delegated to divisions—as this distribution can influence the firm's ability to balance strategic alignment with local responsiveness. Given this, flexibility to reallocate

resources depends on a thoughtful division of responsibilities. A hybrid task structure could offer a practical solution—where central teams focus shaping long-term strategy, and local teams are empowered to make decisions in response to changing market conditions (e.g., Puranam, 2018; Raveendran *et al*. 2016). Alternatively, the insignificant finding may imply that functional concentration alone does not consistently constrain how diversified firms respond to environmental uncertainty unless it is paired with other structural features, such as tight authority hierarchies or poor information flow (Puranam, 2018). This implies that even when functional tasks are concentrated at the top, firms can maintain agility—provided that decision-making authority is decentralized, highlighting the importance of appropriate authority structures.

In the fourth chapter, I examine how firms pursuing different diversification logics can enhance their competitive advantage by strategically signaling their internal capabilities to the external audiences. I propose two distinct strategic motivations that influence segment under-reporting: first, firms aiming to demonstrate resource redeployment capabilities disclose more segments; second, firms seeking to protect synergies within related markets are more likely to aggregate segments, thereby limiting disclosure. This finding offers an important managerial insight: managers must thoughtfully manage the trade-off between transparency and the protection of proprietary synergies to maintain and strengthen their competitive position in the external market. Importantly, internal reporting structures could serve as instruments for framing how the firm's strategic intent is presented externally. Firms seeking to highlight their redeployment capability to the external stakeholders could structure information flow and reporting hierarchies to reflect unit-level independence by ensuring that divisional heads report directly to the chief decision-makers, thereby signaling agility. In contrast, firms

focused on capturing synergies through integration may adopt reporting frameworks that blur segment distinctions, enabling them to consolidate disclosures and protect proprietary coordination efforts. Ultimately the micro and macro structural design choices could become a means of aligning disclosure practices with the firm's broader diversification strategy. While traditional diversification research has mainly focused on internal resource management and organizational structures for value creation, it has largely overlooked this external dimension. Through my dissertation, I offer a new perspective by proposing that firms can also strategically manage diversification logics externally to strengthen their competitive advantage.

Overall, managing both synergy and redeployment effectively is especially important for diversified firms operating in dynamic, innovation-driven industries like pharmaceuticals. In these industries, structural decisions carry significant importance. Therefore, being able to address the synergy-redeployment trade-off is not just strategic—it is essential. To remain competitive, firms need to leverage the knowledge and capabilities already embedded across their units, while also remaining open and responsive to new opportunities. Striking this balance calls for an organizational structure that supports both integration and adaptability—allowing firms not only to manage resources efficiently within their boundaries, but also to make deliberate choices about what to reveal or withhold externally in alignment with their strategic objectives.

This dissertation is not without limitations. First, it relies on a relatively small sample focused exclusively on pharmaceutical firms, which may limit the broader applicability of the findings. Expanding the sample to include a wider range of industries could enhance the robustness and generalizability of future research. Second, because this dissertation looks at how structural features influence the connection between

inducements to redeploy and firm value, it is important to establish that these structural features are not themselves a reaction to performance changes. For instance, sometimes high-performing firms may have more resources to adopt complex or flexible structures (e.g., add layers, decentralize functions) while low-performing firms may restructure by simplifying their organizational chart to cut costs. In such cases, the observed relationship between structure and firm value may be driven by performance, not the other way round. This makes it difficult to establish causality. Future research could test our predictions with more robust methodologies.

Although, past research often uses relatedness to represent lower adjustment costs (e.g., Sakhartov and Folta, 2014), it may not fully capture how easy it is to move resources between segments. This is because relatedness does not just indicate how easily resources can be shifted between segments due to lower redeployment costs—it can also reflect the presence of synergy and how closely linked or interdependent those segments are (Sakhartov and Folta, 2014). In reality, segments that are closely related may actually be more integrated, which can make it harder—not easier—to reallocate resources (Giarratana *et al*. 2021). In that sense, synergy might complicate, rather than support redeployment flexibility. As such, this chapter does not include an empirical measure of synergy or examine its connection to firm value as it is difficult to separate the extent to which firm value is influenced by redeployment incentives versus the benefits arising from synergy. Rather, the focus is exclusively on exploring how inducements to redeploy relate to firm value. Nevertheless, the insights from this chapter could have broader implications for the synergy-redeployment trade-off that runs through this dissertation. Understanding the organizational barriers that make redeployment harder could also help explain why it can be tough for firms to design systems that support both integration and

flexibility simultaneously. Future research should disentangle how much firm value is driven by redeployment opportunities compared to the value created through synergy when firms diversify in related markets (e.g., Folta *et al*. 2016).

Another limitation is the use of the entropy measure to compute relatedness, which serves as a proxy for capturing synergy. The entropy index, based on the distribution of firm revenues across industries classified by SIC codes, provides a quantitative measure of diversification breadth and depth. However, it *assumes* that industries within the same SIC classification are inherently similar, an assumption that may not always hold true. As a result, this measure may misrepresent the real synergies between businesses and thus, may not fully capture the underlying qualitative aspects of synergy—such as shared resources or resource interdependencies across businesses. Better alternatives that capture the qualitative nature of synergy could be employed in future studies.

To conclude, this dissertation provides an integrated framework for understanding how diversified firms can internally configure their structures and externally manage their communication to address the synergy-redeployment tension, thereby reinforcing their competitive advantage in increasingly dynamic settings.

Traducción al español – Introducción

Un desafío central en la diversificación corporativa radica en cómo las empresas asignan sus recursos internos al expandirse en distintos mercados de productos. Dos mecanismos principales sustentan el potencial de creación de valor en la diversificación: la búsqueda de sinergias y la redistribución de recursos. Aunque cada uno de estos caminos ha sido estudiado por separado, la posibilidad de gestionarlos de manera simultánea plantea una tensión estratégica más compleja y menos comprendida, especialmente relevante en empresas con diversificación relacionada, donde la capacidad tanto de compartir como de reasignar recursos es clave para mantener una ventaja competitiva (Helfat y Eisenhardt, 2004; Sakhartov y Folta, 2014).

Aunque persisten los debates sobre si la diversificación mejora el valor de la empresa (e.g., Campa y Kedia, 2002; Villalonga, 2004), estudios que se remontan al trabajo fundacional de Rumelt (1974) muestran que la diversificación relacionada, en particular, genera un valor superior. Gran parte de este valor se ha atribuido tradicionalmente a las sinergias, que surgen cuando unidades de negocio con necesidades similares dentro de una empresa diversificada comparten recursos de manera simultánea a lo largo de múltiples líneas de producto o unidades de negocio (e.g., Teece *et al*. 1994). Al compartir recursos en un mismo momento temporal, las empresas pueden lograr eficiencias de costos (Bailey y Friedlander, 1982; Markides y Williamson, 1994; Panzar y Willig, 1981; Teece, 1980), generando economías de alcance intra-temporales (Helfat y Eisenhardt, 2004).

La mayoría de los debates sobre el intercambio de recursos se centran en lo que ocurre en un momento determinado, pero pasan por alto otra dimensión crucial: cómo se reubican los recursos a lo largo del tiempo. En lugar de limitarse a compartir recursos en

el presente, las empresas pueden generar lo que se conoce como economías de alcance inter-temporales trasladando recursos entre mercados a medida que las circunstancias evolucionan (Helfat y Eisenhardt, 2004). Al hacerlo, pueden retirarse de mercados con bajo rendimiento y redirigir esos recursos hacia áreas más nuevas y prometedoras, lo que les permite mantener su flexibilidad (Lieberman *et al*. 2017; Sakhartov y Folta, 2014; Wu, 2013). En vista de ello, diversos autores han subrayado que la verdadera fortaleza de la diversificación relacionada no reside únicamente en generar sinergias, sino también en establecer la capacidad de redistribuir recursos de manera eficaz cuando sea necesario (Helfat y Eisenhardt, 2004; Sakhartov y Folta, 2014).

La teoría de la afinidad sostiene que operar en mercados relacionados reduce el coste de reasignar recursos, mejorando así la capacidad de la empresa para adaptarse internamente cuando sea necesario (Sakhartov y Folta, 2014; 2015). No obstante, esta perspectiva pasa por alto la complejidad del proceso de toma de decisiones que implica la redistribución de recursos. Si bien los menores costes de traslado de recursos hacen que la diversificación relacionada resulte atractiva, también es importante tener en cuenta los incentivos—impulsados por el rendimiento—que desencadenan la reasignación de recursos (Sakhartov y Folta, 2015). Por ejemplo, existen situaciones en las que, a pesar de afrontar mayores costes de redistribución, las empresas pueden optar por reasignar recursos hacia mercados menos relacionados cuando los beneficios potenciales—como mayores retornos esperados, mayor incertidumbre o mercados negativamente correlacionados—superan dichos costes (Sakhartov y Folta, 2015).

Otro debate clave en la literatura sobre redistribución es que, aunque la afinidad puede permitir a las empresas aprovechar tanto las sinergias como la redistribución, los beneficios de estas dos estrategias no se suman de forma automática. De hecho, obtener

valor de una puede, en ocasiones, debilitar las ventajas de la otra (Giarratana *et al*. 2021; Morandi *et al*. 2020; Sakhartov y Folta, 2014). Esta tensión se hace especialmente evidente en empresas cuyas unidades de negocio dependen entre sí mediante un recurso compartido, como una marca común (Giarratana *et al*. 2021). Imaginemos una empresa con dos productos—A y B—que se benefician ambos de una misma marca. Cuando el producto A tiene un buen desempeño, mejora la imagen de marca, lo que a su vez impulsa las ventas del producto B. Pero si la empresa comienza a reasignar recursos no escalables desde el producto A, ese efecto de marca compartida puede debilitarse. Incluso si el producto B mejora su rendimiento, el beneficio total para la empresa puede disminuir, ya que la sinergia de marca que conecta ambos productos comienza a desintegrarse (Giarratana *et al*. 2021). En estos escenarios, trasladar recursos no escalables a otra unidad puede interrumpir la colaboración continua y el intercambio de recursos que generan sinergias entre negocios, lo que convierte la redistribución en un enfoque menos eficaz. Esta tensión inherente sugiere que el éxito de una empresa con la diversificación depende de cuán hábilmente gestione estos dos enfoques, que con frecuencia compiten entre sí.

Es importante reconocer que, aunque los mercados relacionados pueden parecer más estables debido a la familiaridad, no están exentos de volatilidad. Las empresas que operan en mercados relacionados también pueden verse afectadas por cambios inesperados. Dicho esto, las empresas que operan en mercados relacionados suelen estar en mejor posición para gestionar este tipo de turbulencias. Su experiencia compartida y los recursos superpuestos les permiten reaccionar con mayor facilidad. En contraste, las empresas diversificadas en mercados no relacionados enfrentan un desafío distinto. Suelen operar sin recursos comunes entre sus unidades de negocio, lo que hace que estos entornos sean más impredecibles. En tales situaciones, la capacidad de transferir recursos

de una parte del negocio a otra se convierte en una ventaja crucial (Giarratana *et al*. 2021). La flexibilidad se transforma en el principal motor del rendimiento. Por tanto, aunque la redistribución de recursos sea teóricamente posible incluso dentro de mercados relacionados, esta puede resultar costosa debido a la pérdida de beneficios sinérgicos que surge al reasignar recursos (Giarratana *et al*. 2021). En cambio, en los mercados no relacionados, la redistribución adquiere un papel mucho más relevante. Se convierte en el principal mecanismo para hacer frente a la incertidumbre y aprovechar nuevas oportunidades de crecimiento, lo que hace que la redistribución resulte especialmente atractiva (Giarratana *et al*. 2021).

Dado que las empresas diversificadas pueden obtener ventajas tanto de las economías de alcance intra-temporales como inter-temporales (Helfat y Eisenhardt, 2004), es importante explorar cómo podrían respaldar tanto la sinergia como la redistribución de recursos sin comprometer una en favor de la otra. En lugar de comprometerse por completo con un modelo centrado en la sinergia o enfocarse únicamente en la redistribución, las empresas pueden beneficiarse de adoptar ambos enfoques. Al hacerlo, pueden capturar valor al compartir recursos escalables entre unidades o líneas de negocio, manteniéndose lo suficientemente ágiles como para reasignar recursos no escalables cuando cambian las condiciones del mercado. El reto, sin embargo, radica en que cada enfoque se apoya en estructuras y sistemas organizativos distintos (Folta *et al*. 2016). Como resultado, pasar de un enfoque estratégico a otro no es algo sencillo—suele implicar cambios costosos y lentos en los procesos internos y marcos organizativos. En muchos casos, las empresas que se inclinan demasiado hacia una lógica corren el riesgo de quedar atrapadas en esa trayectoria. Incluso cuando la estrategia original ya no se ajusta al entorno externo, cambiar de rumbo puede resultar difícil.

Dado lo anterior, lograr con éxito tanto las ventajas de la sinergia como las de la redistribución a menudo requiere configuraciones organizativas distintas, y centrarse en exceso en una de estas lógicas puede dificultar la implementación efectiva de la otra (Sakhartov y Folta, 2014). Esta tensión surge porque cada estrategia se apoya en su propio conjunto de rutinas internas, estructuras de costes y sistemas de incentivos (e.g., Helfat y Maritan, 2024; Giarratana *et al*. 2021; Zhou, 2011). Por ejemplo, pensemos en las empresas que se expanden aprovechando recursos escalables (Levinthal y Wu, 2010). Para aprovechar al máximo estos recursos, las empresas suelen requerir sistemas de coordinación sólidos que faciliten el intercambio de recursos entre distintas partes del negocio (Henderson y Cockburn, 1994; Zhou, 2011). Por otro lado, cuando las empresas crecen utilizando recursos que no pueden ampliarse indefinidamente—es decir, recursos no escalables (Levinthal y Wu, 2010)—necesitan mantener flexibilidad y trasladar esos recursos rápidamente hacia oportunidades más prometedoras (Brahm *et al*. 2017). Aunque estas dos estrategias tienden a orientarse en direcciones distintas, gran parte de la investigación sobre redistribución de recursos se ha centrado en lo que hace únicos a los propios recursos (e.g., Levinthal y Wu, 2010; Giarratana *et al*. 2021), prestando mucha menos atención a los desafíos organizativos que conlleva moverlos en la práctica.

Recientemente, cada vez más estudios han comenzado a examinar cómo la estructura interna de una empresa puede facilitar o dificultar el movimiento eficiente de recursos (e.g., Cattani *et al*. 2024; Helfat y Maritan, 2024; Levinthal y Wu, 2024). Por ejemplo, Helfat y Maritan (2024) sostienen que las jerarquías profundas pueden ralentizar la redistribución al generar problemas como incentivos mal alineados, una comunicación deficiente y distorsión de la información—todos factores que dificultan que una empresa responda con rapidez a los cambios del mercado. Si bien esta línea de investigación ofrece

un punto de partida para comprender cómo difieren las empresas multiunidad en la forma de organizarse para la redistribución, la mayoría de los estudios hasta ahora sigue siendo principalmente teórica, con un enfoque específico en el papel de las rutinas (Helfat y Maritan, 2024) y las capacidades integradoras dinámicas (Cattani *et al*. 2024). Además, incluso con estas contribuciones, todavía queda mucho por entender sobre cómo las empresas pueden gestionar la complejidad organizativa que surge cuando reciben incentivos para reasignar recursos mientras intentan mantener los beneficios derivados de la sinergia. Cuando la redistribución de recursos aleja a una empresa de una configuración orientada a la sinergia, el desafío clave consiste en realizar esa transición sin socavar las sinergias que generan valor.

Además, la estructura interna de una empresa refleja la imagen que busca proyectar ante los actores externos. Las empresas que logran equilibrar eficazmente la generación de sinergias con la flexibilidad interna estarán mejor preparadas para gestionar la tensión entre transparencia y confidencialidad en la divulgación de información por segmentos. Su capacidad para coordinar recursos compartidos y, al mismo tiempo, mantenerse adaptables, les otorga mayor control sobre qué partes del negocio deciden destacar y cuáles prefieren mantener ocultas. En la práctica, esto suele implicar resaltar los segmentos de negocio donde la agilidad refuerza su posición competitiva, mientras que los detalles se presentan de forma ambigua o agrupada en aquellas áreas donde proteger las sinergias o las ventajas sensibles resulta prioritario. Lograr este equilibrio es fundamental: si se revela demasiado, los competidores podrían identificar las fortalezas de la empresa; si se revela muy poco, los inversores podrían empezar a dudar de su capacidad para adaptarse a los cambios del mercado. Dado lo anterior, la divulgación de información por segmentos no es simplemente un ejercicio de cumplimiento normativo,

sino una decisión estratégica estrechamente vinculada a cómo las empresas se organizan y se presentan ante su entorno.

Esto nos lleva a la pregunta de investigación principal: ¿cómo pueden las empresas diversificadas diseñar sus estructuras organizativas para gestionar eficazmente las demandas contrapuestas de sinergia y redistribución de recursos, y señalar estratégicamente estas lógicas de diversificación a los actores externos? Abordar esta cuestión constituye la motivación central que impulsa esta tesis doctoral. Las empresas que logren gestionar estas dos lógicas—construyendo estructuras que fomenten las sinergias y, al mismo tiempo, conserven la flexibilidad necesaria para la redistribución—estarán mejor preparadas para mantener su competitividad y capacidad de respuesta a lo largo del tiempo, sin necesidad de alternar entre enfoques estratégicos completamente distintos. Responder a esta pregunta contribuye a comprender cómo la estructura organizativa influye tanto en la ejecución como en la proyección externa de la estrategia de diversificación.

En este contexto, esta tesis se plantea tres objetivos principales. En primer lugar, busca comprender cómo las empresas diversificadas pueden estructurar sus organizaciones para llevar a cabo una redistribución estratégica de recursos sin deteriorar significativamente las sinergias ya existentes. Esto requiere un análisis más detallado de los elementos de diseño organizativo a nivel microestructural que podrían permitir a las empresas diversificadas gestionar eficazmente la tensión entre sinergia y redistribución. En este sentido, el Capítulo 2 aborda una importante laguna en la literatura sobre redistribución de recursos al explorar cómo las estructuras de tareas y de autoridad—por ejemplo, la manera en que se dividen y asignan las tareas, el orden en que se ejecutan y la distribución de la autoridad decisoria—pueden ayudar a las empresas diversificadas a

aprovechar las oportunidades de redistribución de recursos sin comprometer las sinergias generadas a través de recursos compartidos. El Capítulo 3 desplaza el enfoque al nivel macro, examinando cómo características estructurales—como el número de niveles jerárquicos y el grado de dispersión funcional—influyen en la relación entre los incentivos de una empresa para redistribuir recursos y su valor general. Si bien todas las empresas multiunidad pueden tener, en teoría, una capacidad fundamental para redistribuir recursos, esto no garantiza automáticamente un mismo grado de efectividad en la implementación de dicha redistribución (Dickler *et al*. 2022; Helfat y Maritan, 2024; Levinthal y Wu, 2024). En este sentido, un aspecto que ha recibido escasa atención en la literatura sobre redistribución de recursos es la posible heterogeneidad entre las empresas multiunidad con respecto a los factores organizativos que influyen en las decisiones de redistribución de recursos. Este capítulo busca ofrecer evidencia empírica inicial que sugiere que la ventaja corporativa asociada a la flexibilidad interna para redistribuir recursos entre unidades de negocio depende de ciertos tipos de factores organizativos, lo que influye en la efectividad de la redistribución en empresas multiunidad. Por tanto, este capítulo tiene como objetivo aportar información sobre los factores organizativos que pueden mejorar la capacidad de las empresas multiunidad para redistribuir recursos de manera más eficaz, reduciendo así la mala asignación de recursos y mejorando el valor general de la empresa. En este capítulo, analizo cómo ciertos factores organizativos, relacionados con las configuraciones verticales de la estructura organizativa de la empresa—específicamente, el número de niveles jerárquicos y el grado de dispersión de las actividades funcionales (en particular, I+D, producción y marketing) a lo largo de dichos niveles—afectan la relación entre los incentivos para redistribuir recursos entre unidades de negocio (representados por la volatilidad a nivel sectorial) y el valor de la

empresa. El tercer objetivo de esta tesis es comprender cómo las empresas diversificadas pueden utilizar sus lógicas internas de diversificación—sinergia y redistribución—para influir en la percepción que los actores externos tienen de ellas. Esta cuestión se aborda en el Capítulo 4, que examina cómo la redistribución de recursos y las sinergias derivadas de la diversificación relacionada influyen en el grado de divulgación de los segmentos de negocio de una empresa. La divulgación de información a nivel de segmento puede, en ocasiones, ir en contra de los intereses de la empresa—por ejemplo, al revelar datos que los competidores podrían aprovechar a su favor (Verrecchia, 1990). Por tanto, la forma en que las empresas deciden divulgar sus segmentos de negocio cumple una función estratégica y puede influir de manera significativa en su posición competitiva en el mercado (Cho, 2015).

Para abordar estos objetivos de investigación, esta tesis se basa en aportes provenientes de tres áreas principales: la redistribución de recursos (e.g., Amore y Mastrogiorgio, 2022; Dickler *et al*. 2022; Giarratana *et al*. 2021; Sakhartov y Folta, 2014; 2015), el diseño organizativo (e.g., Puranam, 2018; Puranam *et al*. 2014; Puranam *et al*. 2012; Raveendran *et al*. 2016) y la divulgación de segmentos (e.g., Berger y Hann, 2003; 2007; Cho, 2015).

Los trabajos basados en la tradición microestructural del diseño organizativo han arrojado luz sobre algunos de los desafíos más fundamentales que enfrentan las empresas—en particular, cómo dividir las tareas, asignar responsabilidades y garantizar que la información fluya eficazmente entre las distintas partes de la organización (Puranam *et al*. 2012; Puranam *et al*. 2014; Puranam, 2018; Raveendran *et al*. 2016). Puranam (2018) sostiene que estos constituyen los problemas centrales de la organización y que las decisiones de diseño estructural—como la forma en que se agrupan las tareas y

se distribuye la autoridad—actúan como los mecanismos clave a través de los cuales pueden abordarse dichos problemas. Sin embargo, a pesar de la riqueza teórica en esta área, todavía se sabe relativamente poco sobre cómo funcionan estos mecanismos en contextos reales—especialmente cuando surgen tensiones internas. Una de estas tensiones surge cuando una empresa diversificada reasigna recursos en busca de nuevas oportunidades, pero al hacerlo, los desvía de áreas donde actualmente respaldan un valor sinérgico. Es ahí donde entra esta tesis. Al vincular las ideas del diseño organizativo con los desafíos reales que enfrentan las empresas diversificadas, contribuye a cerrar una brecha significativa entre dos corrientes clave de investigación.

Al integrar estas distintas corrientes literarias, esta tesis impulsa el avance del pensamiento en los campos de la diversificación y la redistribución de recursos, ofreciendo nuevas perspectivas tanto a nivel teórico como empírico. Desde el punto de vista teórico, contribuye a la literatura sobre diversificación y redistribución. Aunque se reconoce el valor de la capacidad de redistribución, se sabe relativamente poco sobre cómo interactúa con la sinergia (Folta *et al*. 2016; Sakhartov y Folta, 2014). Esta tesis aborda dicha brecha al examinar cómo las empresas diversificadas pueden utilizar el diseño organizativo microestructural—a través de la partición de tareas, la secuenciación y la estructura de autoridad—para equilibrar estas lógicas en competencia. Esta perspectiva ofrece una nueva forma de pensar sobre cómo las empresas pueden aprovechar la afinidad mientras gestionan la tensión entre sinergia y redistribución. En segundo lugar, esta tesis también aporta a la literatura sobre diseño organizativo al aplicar principios microestructurales a las complejidades reales que enfrentan las empresas diversificadas. Aunque investigaciones previas se han centrado principalmente en los resultados de la complejidad organizativa—como el aumento de los costes de

coordinación (e.g., Zhou, 2011; Zhou y Wan, 2017)—se sabe menos sobre cómo surge realmente dicha complejidad (es decir, las interdependencias de tareas) dentro de las empresas diversificadas. Al examinar la tensión entre sinergia y redistribución, esta tesis arroja luz sobre una fuente clave de complejidad de tareas y sobre cómo estructuras adecuadas de tareas y autoridad pueden ayudar a las empresas a abordar eficazmente la disyuntiva entre sinergia y redistribución.

Desde una perspectiva empírica, y en contraste con investigaciones anteriores (e.g., Dickler *et al*. 2022), esta tesis sugiere que la diversificación puede derivar en un menor rendimiento en entornos volátiles—especialmente cuando las empresas multiunidad operan en industrias estrechamente relacionadas, donde los segmentos de negocio dependen de recursos compartidos. En estos casos, las disrupciones en una unidad pueden extenderse a otras, reduciendo los beneficios derivados de la redistribución interna de recursos (Giarratana *et al*. 2021). Esta interdependencia plantea un desafío estratégico: si bien las empresas pueden contar con la flexibilidad para reasignar recursos, hacerlo puede poner en riesgo sinergias valiosas (Giarratana *et al*. 2021; Sakhartov y Folta, 2014). Esta tesis demuestra que las empresas multiunidad no ofrecen automáticamente una ventaja en contextos de incertidumbre. Por el contrario, el rendimiento depende de si la estructura interna de la empresa respalda la reasignación de recursos sin comprometer las ventajas sinérgicas. En este contexto, la tesis contribuye a la teoría de las opciones reales (e.g., Amore y Mastrogiorgio, 2022; Sakhartov y Folta, 2015) y a la literatura sobre redistribución de recursos (e.g., Dickler *et al*. 2022), al identificar dos condiciones estructurales novedosas. Por tanto, puede afirmarse que el verdadero valor de la flexibilidad no reside únicamente en tener acceso a opciones de crecimiento o reasignación, sino en la capacidad de la empresa para ejecutarlas—lo cual depende de

contar con el diseño organizativo adecuado, desafiando así la creencia común de que las empresas multiunidad están inherentemente mejor posicionadas para enfrentar la incertidumbre.

Por último, aunque la investigación tradicional sobre diversificación se ha centrado principalmente en cómo las empresas gestionan internamente sus recursos y estructuras para generar valor, en gran medida ha permanecido enfocada en los procesos organizativos internos. Esta tesis ofrece una nueva perspectiva al proponer que las lógicas de diversificación también pueden gestionarse activamente en el ámbito externo para reforzar la ventaja competitiva. Más concretamente, muestra que las empresas pueden utilizar la divulgación de segmentos de negocio como algo más que un ejercicio de cumplimiento normativo. Al señalar su capacidad para redistribuir recursos, pueden destacar su flexibilidad ante el mercado y, al mismo tiempo, mantener ocultas sus fortalezas sinérgicas para proteger ventajas competitivas de carácter confidencial. Desde esta perspectiva, esta tesis contribuye a la literatura sobre diversificación y divulgación de segmentos al vincular las decisiones estratégicas internas de la empresa con sus tácticas de comunicación externa. Demuestra que la forma en que las empresas presentan sus lógicas de diversificación ante los actores externos puede moldear la percepción del mercado, y desempeñar un papel crucial en el mantenimiento de su ventaja competitiva.

Tras haber expuesto las principales contribuciones de esta tesis, la siguiente sección presenta un resumen conciso de cada capítulo con el fin de ilustrar la estructura general y el desarrollo del trabajo de investigación. El Capítulo 2 sostiene que la forma en que se estructuran las tareas y la autoridad desempeña un papel fundamental en la capacidad de las empresas para aprovechar oportunidades de redistribución sin debilitar las sinergias existentes. Siguiendo el marco teórico de Puranam (2018), este capítulo propone tres

elementos clave de diseño: (i) una estructura de tareas híbrida que combina una supervisión estratégica centralizada de la marca con una ejecución descentralizada del espacio en estantería a nivel de producto, (ii) una secuenciación deliberada de las tareas relacionadas con la marca para reducir la disrupción durante los cambios de recursos, y (iii) una estructura de autoridad híbrida que permite autonomía local al tiempo que garantiza la rendición de cuentas mediante una revisión posterior a la toma de decisiones.

El tercer capítulo presenta una investigación empírica sobre cómo las configuraciones macroestructurales—específicamente, el número de niveles organizativos (un atributo vertical) y la dispersión de las actividades funcionales—moderan la relación entre los incentivos para redistribuir recursos, representados por la volatilidad sectorial, y el valor de la empresa. Para explorar esta relación, la tesis utiliza un conjunto de datos archivísticos recopilado manualmente a partir de la tercera edición del *U.S. Medical and Healthcare Marketplace Guide*, que proporciona información operativa interna sobre empresas del sector farmacéutico estadounidense entre 1983 y 1992. Utilizando datos de 212 empresas que cotizan en bolsa, y aplicando regresiones en panel OLS con efectos fijos por empresa y variables ficticias por año, este capítulo amplía investigaciones previas al replicar, en primer lugar, la hipótesis base: una mayor volatilidad sectorial en las líneas de negocio de la empresa tiene un efecto positivo sobre su valor, al incrementar el valor de la flexibilidad estratégica (e.g., Amore y Mastrogiorgio, 2022; Sakhartov, 2018; Sakhartov y Folta, 2014; 2015). Sin embargo, esta relación positiva se debilita en las empresas que presentan una mayor cantidad de niveles jerárquicos y una mayor concentración de actividades funcionales clave a lo largo de dichos niveles organizativos.

Aunque la investigación previa sobre la divulgación por segmentos ha explorado la tensión a la que se enfrentan las empresas entre promover la transparencia (e.g., Berger y Hann, 2003) y proteger información confidencial de carácter estratégico (e.g., Bens *et al*. 2011; Botosan y Stanford, 2005; Harris, 1998), dichas decisiones de divulgación suelen enmarcarse principalmente como respuestas a presiones externas del mercado, es decir, como un ejercicio de cumplimiento normativo. El Capítulo 4 de esta tesis amplía dicha perspectiva al proponer que las estrategias de divulgación también están moldeadas por la orientación estratégica interna de la empresa—ya sea que enfatice la sinergia o la redistribución de recursos—la cual, a su vez, está arraigada en la forma en que la empresa estructura y organiza sus operaciones internas. Específicamente, se investiga cómo la búsqueda de sinergias y la redistribución de recursos influyen en el enfoque que adoptan las empresas respecto a la divulgación de sus segmentos de negocio.

Mediante un enfoque de estimación en dos etapas—que comienza con la aplicación de un modelo probit, seguido de una regresión de mínimos cuadrados no lineales para estimar la subdeclaración de segmentos—este capítulo plantea que las empresas que priorizan las sinergias en mercados de productos relacionados tienden a reportar menos segmentos, con el fin de proteger los beneficios sinérgicos y, así, reducir el riesgo de imitación. Por otro lado, las empresas orientadas hacia la redistribución reportan un mayor número de segmentos para demostrar su flexibilidad en la reasignación de recursos, lo cual desincentiva la entrada de posibles competidores en el mercado. En última instancia, la capacidad de una empresa para gestionar lo que revela o lo que oculta depende de cuán bien su estructura interna respalde tanto la integración como la adaptación ágil.

En conclusión, las empresas no solo deben estructurar su organización interna para gestionar eficazmente tanto la sinergia como la redistribución, sino también comunicar

estratégicamente estas lógicas de diversificación a los actores externos con el fin de obtener una ventaja competitiva en entornos dinámicos.

Traducción al español – Conclusión

Esta tesis plantea la siguiente pregunta general: ¿cómo pueden las empresas diversificadas diseñar sus estructuras organizativas para gestionar eficazmente las demandas contrapuestas de sinergia y redistribución, y comunicar estratégicamente estas lógicas de diversificación a los actores externos? Responder a esta pregunta constituye la motivación central que impulsa esta investigación doctoral. Las empresas que logren gestionar estas dos lógicas en competencia—construyendo estructuras que favorezcan las sinergias y, al mismo tiempo, manteniéndose flexibles para reasignar recursos en respuesta a nuevas oportunidades—estarán mejor preparadas para conservar su competitividad y capacidad de adaptación a lo largo del tiempo, sin necesidad de alternar entre enfoques estratégicos claramente diferenciados. Aunque investigaciones anteriores han estudiado cada enfoque por separado, aún sabemos relativamente poco sobre cómo las empresas pueden gestionar ambas lógicas simultáneamente, ya que cada una requiere un tipo distinto de estructura organizativa (Folta *et al*. 2016).

Para abordar esta amplia pregunta de investigación, esta tesis integra ideas provenientes de la literatura sobre diseño organizativo, redistribución de recursos y divulgación de segmentos. Demuestra cómo las decisiones internas relacionadas con la estructura no solo influyen en la manera en que las empresas gestionan sus recursos, sino también en cómo se presentan ante los actores externos—lo que, en última instancia, les ayuda a construir una ventaja competitiva.

El Capítulo 2 presenta un marco teórico que se basa en conceptos del diseño organizativo microestructural (e.g., Puranam, 2018; Puranam *et al*. 2014; Puranam *et al*. 2012; Raveendran *et al*. 2016). Este capítulo analiza cómo las empresas diversificadas que operan en múltiples unidades de negocio gestionan la tensión interna entre dos lógicas

de diversificación en competencia: la sinergia y la redistribución. Desde hace tiempo, la sinergia ha sido reconocida como un elemento central en los beneficios de desempeño asociados a la diversificación relacionada (e.g., Helfat y Eisenhardt, 2004; Rumelt, 1974; Teece, 1980; Zhou, 2011). No obstante, trabajos recientes han comenzado a destacar el valor de la flexibilidad—especialmente la capacidad de una empresa para reasignar recursos en respuesta a condiciones cambiantes (Helfat y Eisenhardt, 2004; Sakhartov y Folta, 2014). El problema central radica en que centrarse en un objetivo suele implicar sacrificar el otro. Cuando las empresas reasignan recursos desde áreas que fomentan sinergias, corren el riesgo de debilitar las configuraciones que generan valor compartido. Por el contrario, mantener esas sinergias puede limitar la capacidad de la empresa para trasladar recursos hacia donde más se necesitan (Giarratana *et al*. 2021; Morandi *et al*. 2020; Sakhartov y Folta, 2014). Aunque ha crecido el interés por esta disyuntiva entre sinergia y redistribución, aún carecemos de una comprensión clara sobre qué estructuras internas pueden ayudar a las empresas diversificadas a gestionar eficazmente esta tensión. Se trata de una brecha crítica, ya que tanto la sinergia como la redistribución son mecanismos generadores de valor—pero dependen de diseños organizativos que, a menudo, entran en conflicto entre sí (Folta *et al*. 2016).

Este capítulo integra perspectivas tanto de la literatura sobre redistribución de recursos como del diseño organizativo para abordar la brecha mencionada, planteando la siguiente pregunta: ¿cómo pueden las empresas diversificadas estructurar sus sistemas internos—en particular, las estructuras de tareas y de autoridad—para aprovechar las oportunidades de redistribución de recursos sin comprometer las sinergias generadas a través de recursos compartidos? El marco propuesto destaca tres mecanismos clave de diseño organizativo, en línea con lo planteado por Puranam (2018). En primer lugar,

introduce una estructura de tareas híbrida en la que las decisiones estratégicas de marca permanecen bajo control centralizado, mientras que las decisiones del día a día—como la gestión del espacio en estantería—son gestionadas por los equipos de producto individuales. En segundo lugar, se subraya la importancia de secuenciar cuidadosamente las actividades relacionadas con la marca, con el fin de evitar disrupciones sinérgicas cuando se reasignan los recursos. En tercer lugar, propone un modelo híbrido de autoridad que otorga a los equipos locales la flexibilidad para actuar de forma independiente, pero que les exige justificar sus decisiones posteriormente, asegurando así tanto la supervisión como la rendición de cuentas.

Este marco ofrece dos contribuciones clave. En primer lugar, aunque el valor de la redistribución está siendo cada vez más reconocido, aún existe una investigación limitada sobre cómo interactúa con las estrategias sinérgicas (Folta *et al*. 2016; Sakhartov y Folta, 2014). Los estudios existentes rara vez establecen una distinción clara entre estas dos lógicas de creación de valor o exploran cómo su interacción afecta al desempeño empresarial. Este capítulo responde a dicha brecha examinando cómo las empresas diversificadas pueden gestionar la tensión entre sinergia y redistribución utilizando el diseño organizativo microestructural como marco de análisis. En segundo lugar, al explorar cómo la tensión entre sinergia y redistribución da lugar a una mayor complejidad de tareas, este capítulo aporta una comprensión más clara de cuándo y dónde la coordinación resulta verdaderamente necesaria—y cómo las estructuras adecuadas de tareas y de autoridad pueden reducir la fricción organizativa, contribuyendo así a la literatura sobre diseño organizativo.

Este capítulo destaca una idea clave de gestión: las empresas pueden mejorar su capacidad de adaptación ajustando elementos microestructurales específicos—como la

división de tareas, la secuenciación o la distribución de la autoridad—sin necesidad de rediseñar por completo su estructura organizativa general. Por ejemplo, en lugar de reformular todo el organigrama, las empresas pueden realizar ajustes puntuales mediante la reasignación de responsabilidades específicas entre las distintas unidades de negocio. También podrían reconfigurar el orden en que se ejecutan las tareas, con el objetivo de facilitar la coordinación o reducir los cuellos de botella—sin necesidad de modificar formalmente las líneas jerárquicas de reporte. Además, las empresas pueden reducir la necesidad de aprobación directiva previa (baja intervención ex ante) e incrementar la revisión posterior a la toma de decisiones (alta responsabilidad ex post). Este enfoque otorga a las unidades mayor libertad para actuar con agilidad, al tiempo que se conserva la jerarquía existente. Al hacerlo, este capítulo refuerza el argumento de que desarrollar capacidades dinámicas es fundamental para las empresas que buscan explorar nuevas oportunidades (e.g., Teece *et al*. 1997). Un aspecto clave de las capacidades dinámicas reside en la capacidad de la empresa para reconfigurar y realinear sus procesos internos y la reasignación de recursos, especialmente en entornos donde los sistemas están altamente interconectados y son complejos (Zhou, 2011; 2013; Zhou y Wan, 2017). Por ejemplo, los fallos en la coordinación interfuncional pueden derivarse de una mala secuenciación de tareas, cuando las tareas interdependientes se realizan de forma aislada; es decir, si no se completan en el orden adecuado, pueden generar desalineamientos entre funciones o equipos (Puranam, 2018; Puranam *et al*. 2012). Cuando la redistribución sigue una secuencia cuidadosamente ordenada de tareas relacionadas con la marca, se convierte en un proceso más integrado y adaptable, en lugar de uno fragmentado. Desde esta perspectiva, la capacidad de dividir y secuenciar tareas de manera reflexiva se convierte en una capacidad dinámica en sí misma, proporcionando a las empresas una

herramienta estructural para afrontar la complejidad asociada a la disyuntiva entre sinergia y redistribución.

En este contexto, observar a las empresas desde un enfoque microestructural resulta útil al centrarse en las formas en que interactúan las unidades, en lugar de basarse únicamente en las estructuras organizativas formales (Puranam, 2018). Aun así, persiste un desafío importante: resulta difícil observar y medir estas decisiones de diseño a nivel micro en contextos reales. En comparación con las características macroestructurales más amplias analizadas en el Capítulo 3, los elementos microestructurales tienden a ser más abstractos, lo que dificulta considerablemente su seguimiento y análisis empírico.

Basándose en investigaciones previas (e.g., Amore y Mastrogiorgio, 2022; Dickler *et al*. 2022; Sakhartov y Folta, 2015), el Capítulo 3 presenta nuevas evidencias empíricas sobre cómo el valor generado a partir de la redistribución de recursos está determinado por características específicas de la estructura interna de la empresa. Me centro en el número de niveles jerárquicos y en la distribución de funciones clave como I+D, marketing y producción a lo largo de la organización. Estas características estructurales se evalúan como variables moderadoras en la relación entre los incentivos para redistribuir recursos (medidos mediante la volatilidad sectorial) y el valor de la empresa.

En línea con estudios previos, este capítulo demuestra que una mayor volatilidad a nivel sectorial se asocia positivamente con el valor de la empresa, reforzando la idea de que la flexibilidad estratégica adquiere mayor valor en entornos de incertidumbre (e.g., Amore y Mastrogiorgio, 2022; Sakhartov y Folta, 2015). Sin embargo, amplío este hallazgo base al mostrar que el impacto positivo de la volatilidad sectorial sobre el valor de la empresa disminuye a medida que aumenta el número de niveles organizativos.

Sostengo que los niveles jerárquicos adicionales pueden debilitar la capacidad de la alta dirección para supervisar las decisiones de reasignación de recursos, aumentando así la probabilidad de asignaciones ineficientes. Las jerarquías más profundas pueden ralentizar la toma de decisiones y provocar la pérdida de información crítica a medida que esta se transmite a través de múltiples niveles (Helfat y Maritan, 2024; Puranam, 2018; Zhou, 2013). En segundo lugar, aunque desde una perspectiva teórica planteo que una estructura funcional fragmentada podría afectar la coordinación y la coherencia estratégica debido a los silos divisionales y funcionales (Argyres *et al*. 2020), mis hallazgos empíricos sugieren que una mayor concentración funcional podría limitar la capacidad de la empresa para responder a oportunidades de redistribución. Si bien este efecto moderador fue negativo en su dirección, no resultó estadísticamente significativo. Este resultado podría indicar que la influencia de la estructura funcional sobre la relación entre los incentivos para redistribuir y el valor de la empresa es más compleja y requiere una investigación adicional. Finalmente, al centrar mi análisis en la volatilidad sectorial—un indicador amplio y persistente de incertidumbre externa—se sugiere que, en contextos de diversificación relacionada, los choques externos pueden reducir el desempeño de las empresas multiunidad en comparación con las empresas de un solo negocio, al interrumpir operaciones altamente interdependientes y debilitar las sinergias de las que dependen, reforzando así la disyuntiva entre sinergia y redistribución (e.g., Giarratana *et al*. 2021; Sakhartov y Folta, 2014). Por lo tanto, este capítulo aporta una nueva perspectiva a la literatura sobre redistribución, en contraste con las conclusiones alcanzadas por Dickler *et al*. (2022). Mis hallazgos sugieren que el hecho de ser una empresa multiunidad no garantiza, por sí solo, un mejor desempeño en entornos de incertidumbre. Por el contrario, la ventaja depende de si la estructura interna de la empresa permite un

movimiento eficiente de los recursos. Además, esta flexibilidad debe lograrse sin comprometer las sinergias cuando las empresas se diversifican en mercados relacionados.

Este capítulo destaca varias implicaciones importantes para los directivos de empresas diversificadas. Una forma de favorecer una reasignación de recursos flexible y eficiente podría ser simplificando los niveles jerárquicos, al mismo tiempo que se evita el refuerzo de silos, mediante el uso de herramientas de coordinación lateral (e.g., Puranam, 2018). Estos mecanismos pueden mejorar el flujo de información precisa en toda la organización. Además, alinear los incentivos de los directivos divisionales con los objetivos generales de la empresa puede fomentar una redistribución más coordinada y eficiente (e.g., Puranam *et al*. 2012; Puranam, 2018). Asimismo, desarrollar sólidas capacidades integradoras (e.g., Cattani *et al*. 2024) en toda la organización puede contribuir a eliminar los silos tanto funcionales como divisionales, reforzando aún más la coordinación interna de la empresa.

Dado que mi análisis reveló que la interacción negativa entre la concentración funcional y la volatilidad no tuvo un efecto estadísticamente significativo sobre el valor de la empresa, este hallazgo sugiere que ni las estructuras funcionales totalmente centralizadas ni las completamente dispersas resultan ideales en entornos dinámicos. Los directivos deberían considerar cómo se distribuyen las funciones clave—ya sea que estén gestionadas de forma centralizada por la sede o delegadas a las divisiones—ya que esta distribución puede influir en la capacidad de la empresa para equilibrar la alineación estratégica con la capacidad de respuesta local. En este contexto, la flexibilidad para reasignar recursos depende de una división reflexiva de responsabilidades. Una estructura de tareas híbrida podría ofrecer una solución práctica—en la que los equipos centrales se concentren en definir la estrategia a largo plazo, y los equipos locales tengan la autonomía

para tomar decisiones en respuesta a las condiciones cambiantes del mercado (e.g., Puranam, 2018; Raveendran *et al*. 2016). Alternativamente, el hallazgo no significativo podría implicar que la concentración funcional por sí sola no limita de manera sistemática la capacidad de las empresas diversificadas para responder a la incertidumbre del entorno, a menos que se combine con otras características estructurales, como jerarquías de autoridad rígidas o una deficiente circulación de la información (Puranam, 2018). Esto sugiere que, incluso cuando las tareas funcionales se concentran en los niveles superiores, las empresas pueden mantener su agilidad—siempre que la autoridad para la toma de decisiones esté descentralizada, lo que subraya la importancia de contar con estructuras de autoridad adecuadas.

En el cuarto capítulo, examino cómo las empresas que siguen distintas lógicas de diversificación pueden mejorar su ventaja competitiva al comunicar estratégicamente sus capacidades internas a los públicos externos. Propongo dos motivaciones estratégicas distintas que influyen en la subdeclaración de segmentos: en primer lugar, las empresas que desean demostrar sus capacidades de redistribución de recursos tienden a divulgar un mayor número de segmentos; en segundo lugar, aquellas que buscan proteger las sinergias en mercados relacionados son más propensas a agrupar segmentos, limitando así el nivel de divulgación. Este hallazgo ofrece una valiosa implicación para la gestión: los directivos deben gestionar cuidadosamente la tensión entre la transparencia y la protección de sinergias propietarias para mantener y reforzar su posición competitiva en el mercado externo. Es importante señalar que las estructuras internas de reporte podrían servir como instrumentos para enmarcar cómo se presenta externamente la intención estratégica de la empresa. Las empresas que desean destacar su capacidad de redistribución ante los actores externos podrían estructurar el flujo de información y las

jerarquías de reporte de manera que reflejen la independencia a nivel de unidad, asegurando que los responsables divisionales reporten directamente a los principales responsables de toma de decisiones, señalando así agilidad. En contraste, las empresas enfocadas en capturar sinergias mediante la integración pueden adoptar esquemas de reporte que diluyan las distinciones entre segmentos, permitiéndoles consolidar la información divulgada y proteger sus esfuerzos de coordinación estratégica. En última instancia, las decisiones de diseño estructural, tanto a nivel micro como macro, pueden convertirse en un mecanismo para alinear las prácticas de divulgación con la estrategia de diversificación general de la empresa. Si bien la investigación tradicional sobre diversificación se ha centrado principalmente en la gestión interna de recursos y en las estructuras organizativas para la creación de valor, ha pasado en gran medida por alto esta dimensión externa. A través de esta tesis, ofrezco una nueva perspectiva al proponer que las empresas también pueden gestionar estratégicamente sus lógicas de diversificación en el ámbito externo para reforzar su ventaja competitiva.

En términos generales, gestionar eficazmente tanto la sinergia como la redistribución resulta especialmente importante para las empresas diversificadas que operan en industrias dinámicas e impulsadas por la innovación, como la farmacéutica. En este tipo de industrias, las decisiones estructurales adquieren una relevancia considerable. Por lo tanto, ser capaz de abordar la disyuntiva entre sinergia y redistribución no es solo una cuestión estratégica—es esencial. Para seguir siendo competitivas, las empresas deben aprovechar el conocimiento y las capacidades ya integradas en sus distintas unidades, al mismo tiempo que se mantienen abiertas y receptivas ante nuevas oportunidades. Lograr este equilibrio requiere una estructura organizativa que facilite tanto la integración como la adaptabilidad, permitiendo a las empresas no solo gestionar

los recursos de manera eficiente dentro de sus límites, sino también tomar decisiones deliberadas sobre qué revelar o qué mantener oculto externamente, en coherencia con sus objetivos estratégicos.

Esta tesis no está exenta de limitaciones. En primer lugar, se basa en una muestra relativamente pequeña centrada exclusivamente en empresas farmacéuticas, lo que podría limitar la aplicabilidad general de los hallazgos. Ampliar la muestra para incluir una gama más amplia de sectores podría aumentar la solidez y la capacidad de generalización de futuras investigaciones. En segundo lugar, dado que esta tesis examina cómo las características estructurales influyen en la relación entre los incentivos para redistribuir recursos y el valor de la empresa, es importante establecer que dichas características no sean, a su vez, una respuesta a cambios en el desempeño. Por ejemplo, a veces las empresas con buen desempeño disponen de más recursos para adoptar estructuras complejas o flexibles (como añadir capas jerárquicas o descentralizar funciones), mientras que las empresas con bajo rendimiento pueden reestructurarse simplificando su organigrama para reducir costes. En tales casos, la relación observada entre la estructura y el valor de la empresa podría estar impulsada por el desempeño, y no al revés. Esto dificulta el establecimiento de una relación causal. Las investigaciones futuras podrían poner a prueba nuestras hipótesis utilizando metodologías más sólidas.

Aunque investigaciones anteriores suelen utilizar la noción de “relacionamiento” para representar menores costos de ajuste (e.g., Sakhartov y Folta, 2014), esta medida no refleja necesariamente con precisión cuán fácil resulta mover recursos entre segmentos. Esto se debe a que el grado de relación entre segmentos no solo indica la facilidad para transferir recursos a causa de menores costos de redistribución, sino que también puede reflejar la existencia de sinergias y el nivel de interdependencia entre dichos segmentos

(Sakhartov y Folta, 2014). En la práctica, los segmentos estrechamente relacionados pueden estar más integrados, lo que en realidad podría dificultar—y no facilitar—la redistribución de recursos (Giarratana *et al*. 2021). En este sentido, la sinergia podría entorpecer, en lugar de facilitar, la flexibilidad para redistribuir recursos. Por lo tanto, este capítulo no incluye una medida empírica de la sinergia ni examina su relación con el valor de la empresa, ya que resulta difícil aislar hasta qué punto dicho valor se debe a incentivos de redistribución frente a beneficios derivados de la sinergia. En cambio, el análisis se centra exclusivamente en explorar cómo los incentivos para redistribuir recursos se relacionan con el valor de la empresa. No obstante, las conclusiones de este capítulo podrían tener implicaciones más amplias para la tensión entre sinergia y redistribución que atraviesa esta tesis. Comprender las barreras organizativas que dificultan la redistribución también podría ayudar a explicar por qué resulta complicado diseñar sistemas que fomenten simultáneamente la integración y la flexibilidad. Investigaciones futuras podrían desentrañar en qué medida el valor de una empresa proviene de las oportunidades de redistribución en comparación con el valor generado por la sinergia cuando las empresas se diversifican en mercados relacionados (e.g., Folta *et al*. 2016).

Otra limitación es el uso de la medida de entropía para calcular el grado de relación, la cual se emplea como un indicador aproximado para captar la sinergia. El índice de entropía, basado en la distribución de los ingresos de la empresa entre industrias clasificadas según los códigos SIC, ofrece una medida cuantitativa de la amplitud y profundidad de la diversificación. Sin embargo, presupone que las industrias dentro de una misma clasificación SIC son inherentemente similares, una suposición que no siempre se cumple. Como resultado, esta medida puede distorsionar las sinergias reales entre unidades de negocio y, por tanto, no captar plenamente los aspectos cualitativos

subyacentes de la sinergia—como el uso compartido de recursos o las interdependencias entre actividades empresariales. Futuros estudios podrían emplear alternativas más adecuadas que reflejen la naturaleza cualitativa de la sinergia.

Para concluir, esta tesis ofrece un marco integrado para comprender cómo las empresas diversificadas pueden configurar internamente sus estructuras y gestionar externamente su comunicación para abordar la tensión entre sinergia y redistribución, reforzando así su ventaja competitiva en entornos cada vez más dinámicos.

REFERENCES

Aabo, T., Pantzalis, C., & Park, J. C. (2016). Multi-nationality as real option facilitator—Illusion or reality? *Journal of Corporate Finance*, *38*, 1-17.

Adler, P. S., & Heckscher, C. (2018). Collaboration as an organization design for shared purpose. In *Toward permeable boundaries of organizations?* (pp. 81-111). Emerald Publishing Limited.

Amore, M. D., & Mastrogiorgio, M. (2022). Technological entry, redeployability, and firm value. *Journal of Management Studies*, *59*(7), 1688-1722.

Anand, J., & Singh, H. (1997). Asset redeployment, acquisitions and corporate strategy in declining industries. *Strategic management journal*, *18*(S1), 99-118.

Anderson, S. W. (1995). Measuring the impact of product mix heterogeneity on manufacturing overhead cost. *Accounting Review*, 363-387.

Ang, J. S., Cole, R. A., & Lin, J. W. (2000). Agency costs and ownership structure. *the Journal of Finance*, *55*(1), 81-106.

Ansoff, H. I. (1957). Strategies for diversification. *Harvard business review*, *35*(5), 113-124.

Argiles-Bosch, J. M., Garcia-Blandon, J., & Martinez-Blasco, M. (2016). The impact of absorbed and unabsorbed slack on firm profitability: Implications for resource redeployment. In *Resource redeployment and corporate strategy* (pp. 371-395). Emerald Group Publishing Limited.

Argyres, N. (1996). Capabilities, technological diversification and divisionalization. *Strategic management journal*, *17*(5), 395-410.

Argyres, N. S., & Silverman, B. S. (2004). R&D, organization structure, and the development of corporate technological knowledge. *Strategic Management Journal*, *25*(8-9), 929-958.

Argyres, N., Rios, L. A., & Silverman, B. S. (2020). Organizational change and the dynamics of innovation: Formal R&D structure and intrafirm inventor networks. *Strategic Management Journal*, *41*(11), 2015-2049.

Bailey, E. E., & Friedlaender, A. F. (1982). Market structure and multiproduct industries. *Journal of economic literature*, *20*(3), 1024-1048.

Baker, G., Gibbons, R., & Murphy, K. J. (2002). Relational Contracts and the Theory of the Firm. *The Quarterly Journal of Economics*, *117*(1), 39-84.

Baldwin, C. Y. (2010). When open architecture beats closed: The entrepreneurial use of architectural knowledge. *Harvard Business School Finance Working Paper*, (10-063).

Baldwin, C. Y., & Clark, K. B. (2000). *Design rules, Volume 1: The power of modularity*. MIT press.

Bardolet, D., Fox, C. R., & Lovallo, D. (2011). Corporate capital allocation: A behavioral perspective. *Strategic Management Journal*, *32*(13), 1465-1483.

Barnard, C. I. (1938). the functions of the executive, Harvard University press. *Cambridge, MA*.

Barroso, A., & Giarratana, M. S. (2013). Product proliferation strategies and firm performance: The moderating role of product space complexity. *Strategic Management Journal*, *34*(12), 1435-1452.

Bens, D. A., Berger, P. G., & Monahan, S. J. (2011). Discretionary disclosure in financial reporting: An examination comparing internal firm data to externally reported segment data. *The Accounting Review*, *86*(2), 417-449.

Berger, P. G., & Hann, R. (2003). The impact of SFAS No. 131 on information and monitoring. *Journal of accounting research*, *41*(2), 163-223.

Berger, P. G., & Hann, R. N. (2007). Segment profitability and the proprietary and agency costs of disclosure. *The Accounting Review*, *82*(4), 869-906.

Berger, P. G., & Ofek, E. (1995). Diversification's effect on firm value. *Journal of financial economics*, *37*(1), 39-65.

Bernardo, A. E., & Chowdhry, B. (2002). Resources, real options, and corporate strategy. *Journal of Financial Economics*, *63*(2), 211-234.

Botosan, C. A., & Stanford, M. (2005). Managers' motives to withhold segment disclosures and the effect of SFAS No. 131 on analysts' information environment. *The accounting review*, *80*(3), 751-772.

Botosan, C., McMahon, S., & Stanford, M. H. (2009). Representationally faithful disclosures, organizational design and managers' segment reporting decisions. AAA.

Bowman, E. H., & Helfat, C. E. (2001). Does corporate strategy matter? *Strategic management journal*, *22*(1), 1-23.

Brahm, F., Tarzijan, J., & Singer, M. (2017). The impact of frictions in routine execution on economies of scope. *Strategic Management Journal*, *38*(10), 2121-2142.

Bryce, D. J., & Winter, S. G. (2009). A general interindustry relatedness index. *Management Science*, *55*(9), 1570-1585.

Burns, T., & Stalker, G. M. (1994). *The management of innovation*. Oxford University Press.

Campa, J. M., & Kedia, S. (2002). Explaining the diversification discount. *The journal of finance*, *57*(4), 1731-1762.

Capron, L., Dussauge, P., & Mitchell, W. (1998). Resource redeployment following horizontal acquisitions in Europe and North America, 1988–1992. *Strategic management journal*, *19*(7), 631-661.

Carroll, G. R. (1985). Concentration and specialization: Dynamics of niche width in populations of organizations. *American journal of sociology*, *90*(6), 1262-1283.

Cattani, G., Mastrogiorgio, M., & Carignani, G. (2024). Resource reallocation across successive systemic innovations: How Rolls-Royce shaped the evolution of the turbojet, turboprop, and turbofan. *Strategic Management Journal*.

Chandler AD Jr. 1962. *Strategy and Structure: Chapters in the History of the American Industrial Enterprise*. MIT Press: Cambridge, MA.

Chandler AD Jr. 1990. *Scale and Scope: The Dynamics of Industrial Capitalism*. Belknap Press of Harvard University Press: Cambridge, MA.

Chandler Jr, A. D. (1969). *Strategy and structure: Chapters in the history of the American industrial enterprise* (Vol. 120). MIT press.

Chang, S. J., & Singh, H. (2000). Corporate and industry effects on business unit competitive position. *Strategic management journal*, *21*(7), 739-752.

Chauvin, J., Inoue, C., & Poliquin, C. (2024). Resource redeployment as an entry advantage in resource-poor settings. *Strategic Management Journal*.

Cho, Y. J. (2015). Segment disclosure transparency and internal capital market efficiency: Evidence from SFAS No. 131. *Journal of Accounting Research*, *53*(4), 669-723.

Coase RH. 1937. The Nature of the Firm. *Economica* **4**: 385-405.

Csaszar, F. A., & Siggelkow, N. (2010). How much to copy? The contingent value of imitation capabilities. *Organization Science*, *21*(3), 661-676.

Danneels, E. (2007). The process of technological competence leveraging. *Strategic management journal*, *28*(5), 511-533.

Darrough, M. N., & Stoughton, N. M. (1990). Financial disclosure policy in an entry game. *Journal of accounting and economics*, *12*(1-3), 219-243.

Denis, D. J., Denis, D. K., & Sarin, A. (1997). Agency problems, equity ownership, and corporate diversification. *The journal of finance*, *52*(1), 135-160.

Dessein, W., Garicano, L., & Gertner, R. (2010). Organizing for synergies. *American Economic Journal: Microeconomics*, *2*(4), 77-114.

Dickler, T. A., & Folta, T. B. (2020). Identifying internal markets for resource redeployment. *Strategic Management Journal*, *41*(13), 2341-2371.

Dickler, T. A., Folta, T. B., Giarratana, M. S., & Santaló, J. (2022). The value of flexibility in multi-business firms. *Strategic Management Journal*, *43*(12), 2602-2628.

Diestre, L., & Santaló, J. (2020). Why do firms suffer differently from input stigmatization? The costs of removing stigmatized inputs. *Organization Science*, *31*(1), 47-66.

DiMasi, J. A., & Grabowski, H. G. (2012). R&D costs and returns to new drug development: a review of the evidence. *The Oxford Handbook of the economics of the biopharmaceutical industry*, 21-46.

Donaldson, L. (1995). *American anti-management theories of organization: A critique of paradigm proliferation* (Vol. 25). Cambridge university press.

Duffee, G. R. (1995). Stock returns and volatility a firm-level analysis. *Journal of financial Economics*, *37*(3), 399-420.

Dyreng, S. D., Hoopes, J. L., Langetieg, P., & Wilde, J. H. (2020). Strategic subsidiary disclosure. *Journal of Accounting Research*, *58*(3), 643-692.

Eisenhardt, K. M. (1989). Agency theory: An assessment and review. Academy of management review, 14(1), 57-74.

Ethiraj, S. K., & Levinthal, D. (2004). Bounded rationality and the search for organizational architecture: An evolutionary perspective on the design of organizations and their evolvability. *Administrative Science Quarterly*, *49*(3), 404-437.

Ethiraj, S. K., & Levinthal, D. (2004). Modularity and innovation in complex systems. *Management science*, *50*(2), 159-173.

Ettredge, M. L., Kwon, S. Y., Smith, D. B., & Zarowin, P. A. (2005). The impact of SFAS No. 131 business segment data on the market's ability to anticipate future earnings. *The Accounting Review*, *80*(3), 773-804.

Etzioni, A. 1964. *Modern organizations*. Englewood Cliffs, NJ: Prentice-Hall.

Feldman, M. P., & Yoon, J. W. (2012). An empirical test for general purpose technology: an examination of the Cohen–Boyer rDNA technology. *Industrial and Corporate Change*, *21*(2), 249-275.

Feltham, G. A., & Xie, J. Z. (1992). Voluntary financial disclosure in an entry game with continua of types. *Contemporary Accounting Research*, *9*(1), 46-80.

Fernández-Kranz, D., & Santaló, J. (2010). When necessity becomes a virtue: The effect of product market competition on corporate social responsibility. *Journal of Economics & Management Strategy*, *19*(2), 453-487.

Flammer, C. (2015). Does product market competition foster corporate social responsibility? Evidence from trade liberalization. *Strategic management journal*, *36*(10), 1469-1485.

Folta, T. B., Helfat, C. E., & Karim, S. (2016). Examining resource redeployment in multi-business firms. In *Resource redeployment and corporate strategy* (Vol. 35, pp. 1-17). Emerald Group Publishing Limited.

Forte, A., Larco, V., & Bruckman, A. (2009). Decentralization in Wikipedia governance. *Journal of Management Information Systems*, *26*(1), 49-72.

Fosfuri, A., Giarratana, M. S., & Luzzi, A. (2008). The penguin has entered the building: The commercialization of open-source software products. *Organization science*, *19*(2), 292-305.

Freeland, R. F., & Zuckerman Sivan, E. W. (2018). The problems and promise of hierarchy: Voice rights and the firm. *Sociological Science*, *5*, 143-181.

Freeman, J., & Hannan, M. T. (1983). Niche width and the dynamics of organizational populations. *American journal of Sociology*, *88*(6), 1116-1145.

Galbraith, J. R. 1973. *Designing complex organizations*. Reading, MA: Addison-Wesley.

Galbraith JR (1993). *Competing with Flexible Lateral Organizations*, 2nd ed. (Addison-Wesley, Reading, MA).

Galbraith, J. R., & Nathanson, D. A. (1978). Strategy Implementation: The Role of Structure and Process, West, St. *Paul, Minn*.

Gambardella, A., & Giarratana, M. S. (2013). General technological capabilities, product market fragmentation, and markets for technology. *Research Policy*, *42*(2), 315-325.

Geanakoplos, J., & Milgrom, P. (1991). A theory of hierarchies based on limited managerial attention. *Journal of the Japanese and international Economies*, *5*(3), 205-225.

Giarratana, M. S., & Santaló, J. (2020). Transaction costs in resource redeployment for multiniche firms. *Organization Science*, *31*(5), 1159-1175.

Giarratana, M. S., Pasquini, M., & Santaló, J. (2021). Leveraging synergies versus resource redeployment: Sales growth and variance in product portfolios of diversified firms. *Strategic Management Journal*, *42*(12), 2245-2272.

Gruber, M., MacMillan, I. C., & Thompson, J. D. (2008). Look before you leap: Market opportunity identification in emerging technology firms. *Management science*, *54*(9), 1652-1665.

Grullon, G., Lyandres, E., & Zhdanov, A. (2012). Real options, volatility, and stock returns. *The Journal of Finance*, *67*(4), 1499-1537.

Gu, L. (2016). Product market competition, R&D investment, and stock returns. *Journal of Financial Economics*, *119*(2), 441-455.

Gulati, R., & Puranam, P. (2009). Renewal through reorganization: The value of inconsistencies between formal and informal organization. *Organization science*, *20*(2), 422-440.

Gulati, R., Lawrence, P. R., & Puranam, P. (2005). Adaptation in vertical relationships: Beyond incentive conflict. *Strategic management journal*, *26*(5), 415-440.

Gupta, A. K., & Govindarajan, V. (1986). Resource sharing among SBUs: Strategic antecedents and administrative implications. *Academy of Management journal*, *29*(4), 695-714.

Gupta, A. K., & Govindarajan, V. (2000). Knowledge flows within multinational corporations. *Strategic management journal*, *21*(4), 473-496.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational behavior and human performance*, *16*(2), 250-279.

Hannan, M. T., & Freeman, J. (1977). The population ecology of organizations. *American journal of sociology*, *82*(5), 929-964.

Harris, M. S. (1998). The association between competition and managers' business segment reporting decisions. *Journal of accounting research*, *36*(1), 111-128.

Hashai, N. (2015). Within-industry diversification and firm performance—an S-shaped hypothesis. *Strategic Management Journal*, *36*(9), 1378-1400.

Hayes, R. M., & Lundholm, R. (1996). Segment reporting to the capital market in the presence of a competitor. *Journal of Accounting Research*, *34*(2), 261-279.

He, V. F., & Puranam, P. (2021). Collaborative conflict management.

He, V. F., Puranam, P., Shrestha, Y. R., & von Krogh, G. (2020). Resolving governance disputes in communities: A study of software license decisions. *Strategic Management Journal*, *41*(10), 1837-1868.

Heckscher, C., & Adler, P. (Eds.). (2006). *The firm as a collaborative community: Reconstructing trust in the knowledge economy*. OUP Oxford.

Helfat, C. E., & Campo-Rembado, M. A. (2016). Integrative capabilities, vertical integration, and innovation over successive technology lifecycles. *Organization science*, *27*(2), 249-264.

Helfat, C. E., & Eisenhardt, K. M. (2004). Inter-temporal economies of scope, organizational modularity, and the dynamics of diversification. *Strategic Management Journal*, *25*(13), 1217-1232.

Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., & Winter, S. G. (2009). *Dynamic capabilities: Understanding strategic change in organizations*. John Wiley & Sons.

Helfat, C. E., & Maritan, C. A. (2024). Resource Allocation Capability and Routines in Multi-business Firms. *Organization Science*, *35*(3), 1110-1130.

Helfat, C. E., & Peteraf, M. A. (2003). The dynamic resource-based view: Capability lifecycles. *Strategic management journal*, *24*(10), 997-1010.

Helfat, C. E., & Raubitschek, R. S. (2000). Product sequencing: co-evolution of knowledge, capabilities and products. *Strategic management journal*, *21*(10-11), 961-979.

Henderson, R. (1994). The evolution of integrative capability: Innovation in cardiovascular drug discovery. *Industrial and corporate change*, *3*(3), 607-630.

Henderson, R., & Cockburn, I. (1994). Scale, scope, and spillovers: The determinants of research productivity in drug discovery. RAND Journal of Economics, 27(1), 32–59.

Henkel, J. (2009). The risk-return paradox for strategic management: disentangling true and spurious effects. *Strategic management journal*, *30*(3), 287-303.

Herrmann, D., & Thomas, W. B. (2000). An analysis of segment disclosures under SFAS No. 131 and SFAS No. 14. *Accounting Horizons*, *14*(3), 287-302.

Herzberg F (1966) Work and the Nature of Man (World, Cleveland).

Hill, C. W., & Hansen, G. S. (1991). A longitudinal study of the cause and consequences of changes in diversification in the US pharmaceutical industry 1977–1986. *Strategic Management Journal*, *12*(3), 187-199.

Hill, C. W., Hitt, M. A., & Hoskisson, R. E. (1992). Cooperative versus competitive structures in related and unrelated diversified firms. *Organization Science*, *3*(4), 501-521.

Hoberg, G., & Phillips, G. (2010). Real and financial industry booms and busts. *The Journal of Finance*, *65*(1), 45-86.

Holmstrom, B., & Milgrom, P. (1994). The firm as an incentive system. *The American economic review*, 972-991.

Hope, O. K., & Thomas, W. B. (2008). Managerial empire building and firm disclosure. *Journal of Accounting Research*, *46*(3), 591-626.

Hoskisson, R. E., Hill, C. W., & Kim, H. (1993). The multidivisional structure: organizational fossil or source of value? *Journal of Management*, *19*(2), 269-298.

Hoskisson, R. E., Hitt, M. A., & Hill, C. W. (1993). Managerial incentives and investment in R&D in large multiproduct firms. *Organization Science*, *4*(2), 325-341.

Hou, K., & Robinson, D. T. (2006). Industry concentration and average stock returns. *The journal of finance*, *61*(4), 1927-1956.

Iansiti, M., & Clark, K. B. (1994). Integration and dynamic capability: evidence from product development in automobiles and mainframe computers. *Industrial and corporate change*, *3*(3), 557-605.

Jan Piskorski, M., & Gorbatâi, A. (2017). Testing Coleman's social-norm enforcement mechanism: Evidence from Wikipedia. *American Journal of Sociology*, *122*(4), 1183-1222.

Jones, G. R., & Hill, C. W. (1988). Transaction cost analysis of strategy-structure choice. *Strategic management journal*, *9*(2), 159-172.

Joseph, A. B. D. E. L. N. O. U. R., Nicolas, A. U. B. E. R. T., & Domenico, C. A. M. P. A. (2022). Does employee ownership reduce agency costs? Evidence from French listed companies. *Finance Contrôle Stratégie*, (25-3/4).

Kamijo, Y., & Nakama, D. (2023). Designing division of labor with strategic uncertainty within organizations: Model analysis and a behavioral experiment. *Journal of Economics & Management Strategy*, *32*(2), 257-272.

Karim, S. (2006). Modularity in organizational structure: The reconfiguration of internally developed and acquired business units. *Strategic management journal*, *27*(9), 799-823.

Karim, S., & Mitchell, W. (2004). Innovating through acquisition and internal development: A quarter-century of boundary evolution at Johnson & Johnson. *Long Range Planning*, *37*(6), 525-547.

Kim, C., & Bettis, R. A. (2014). Cash is surprisingly valuable as a strategic asset. *Strategic Management Journal*, *35*(13), 2053-2063.

Koçak, Ö., & Puranam, P. (2018). Designing a culture of collaboration: when changing beliefs is (not) enough. In *Organization Design* (pp. 27-52). Emerald Publishing Limited.

Koçak, Ö., Levinthal, D. A., & Puranam, P. (2023). The dual challenge of search and coordination for organizational adaptation: How structures of influence matter. *Organization Science*, *34*(2), 851-869.

Kretschmer, T., & Puranam, P. (2004). Realizing synergies in complex organizations: when are collaborative incentives useful. *London School of Economics working paper*.

Kulatilaka, N., & Perotti, E. C. (1998). Strategic growth options. *Management Science*, *44*(8), 1021-1031.

Kuppuswamy, V., & Villalonga, B. (2016). Does diversification create value in the presence of external financing constraints? Evidence from the 2007–2009 financial crisis. *Management Science*, *62*(4), 905-923.

Laloux, F. (2014). *Reinventing organizations* (Vol. 58). Brussels: Nelson Parker.

Lamont, O. (1997). Cash flow and investment: Evidence from internal capital markets. *The Journal of Finance*, *52*(1), 83-109.

Lang, L. H., & Stulz, R. M. (1994). Tobin's q, corporate diversification, and firm performance. *Journal of political economy*, *102*(6), 1248-1280.

Lawrence, P. R., Lorsch, J. W., & Garrison, J. S. (1967). Organization and environment: Managing differentiation and integration.

Lee, E., Ilseven, E., & Puranam, P. (2023). Scaling nonhierarchically: A theory of conflict-free organizational growth with limited hierarchical growth. *Strategic Management Journal*, *44*(12), 3042-3064.

Lee, M. Y., & Edmondson, A. C. (2017). Self-managing organizations: Exploring the limits of less-hierarchical organizing. *Research in organizational behavior*, *37*, 35-58.

Levinthal, D. (1988). A survey of agency models of organizations. *Journal of Economic Behavior & Organization*, *9*(2), 153-185.

Levinthal, D. A., & Wu, B. (2010). Opportunity costs and non-scale free capabilities: Profit maximization, corporate scope, and profit margins. *Strategic Management Journal*, *31*(7), 780-801.

Levinthal, D. A., & Wu, B. (2024). Resource redeployment and the pursuit of the new best use: Economic logic and organizational challenges. *Strategy Science*, https://doi.org/10.1287/stsc.2022.0105.

Lieberman, M. B., & Montgomery, D. B. (1988). First-mover advantages. *Strategic management journal*, *9*(S1), 41-58.

Lieberman, M. B., Lee, G. K., & Folta, T. B. (2017). Entry, exit, and the potential for resource redeployment. *Strategic management journal*, *38*(3), 526-544.

Lovallo, D., Brown, A. L., Teece, D. J., & Bardolet, D. (2020). Resource re-allocation capabilities in internal capital markets: The value of overcoming inertia. *Strategic Management Journal*, *41*(8), 1365-1380.

MacDuffie, J. P., Sethuraman, K., & Fisher, M. L. (1996). Product variety and manufacturing performance: evidence from the international automotive assembly plant study. *Management Science*, *42*(3), 350-369.

Maine, E., & Garnsey, E. (2006). Commercializing generic technology: The case of advanced materials ventures. *Research Policy*, *35*(3), 375-393.

Maksimovic, V., & Phillips, G. (2002). Do conglomerate firms allocate resources inefficiently across industries? Theory and evidence. *The Journal of Finance*, *57*(2), 721-767.

Malone, T. W., & Crowston, K. (1994). The interdisciplinary study of coordination. *ACM Computing Surveys (CSUR)*, *26*(1), 87-119.

March, J. G., & Simon, H. A. (1958). Organizations john wiley & sons. *New York*.

March, J. G., & Simon, H. A. (1993). *Organizations*. John wiley & sons.

Marengo, L., & Dosi, G. (2005). Division of labor, organizational coordination and market mechanisms in collective problem-solving. *Journal of Economic Behavior & Organization*, *58*(2), 303-326.

Markides, C. C., & Williamson, P. J. (1994). Related diversification, core competences and corporate performance. *Strategic management journal*, *15*(S2), 149-165.

Martin, J. A., & Eisenhardt, K. M. (2003, August). Cross-Business Synergy: Recombination, Modularity and the Multi-Business Team. In *Academy of management proceedings* (Vol. 2003, No. 1, pp. P1-P6). Briarcliff Manor, NY 10510: Academy of Management.

Martin, J. A., & Eisenhardt, K. M. (2010). Rewiring: Cross-business-unit collaborations in multibusiness organizations. *Academy of Management Journal*, *53*(2), 265-301.

Matsusaka, J. G., & Nanda, V. (2002). Internal capital markets and corporate refocusing. *Journal of Financial Intermediation*, *11*(2), 176-211.

Meyer, K. E., & Lieb-Dóczy, E. (2003). Post-acquisition restructuring as evolutionary process. *Journal of Management Studies*, *40*(2), 459-482.

Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman Jr, H. J. (1978). Organizational strategy, structure, and process. *Academy of management review*, *3*(3), 546-562.

Milgrom, P., & Roberts, J. (1990). The economics of modern manufacturing: Technology, strategy, and organization. *The American Economic Review*, 511-528.

Miller, J. H., & Page, S. E. (2009). *Complex adaptive systems: an introduction to computational models of social life: an introduction to computational models of social life*. Princeton university press.

Mintzberg, H. (1979). The structuring of organizations Prentice-Hall. *Englewood Cliffs, NJ*.

Mintzberg, H. (1979). *The structure of organizations: A synthesis of the research*. Prentice-Hall.

Mitchell, W., & Shaver, J. M. (2003). Who buys what? How integration capability affects acquisition incidence and target choice. *Strategic Organization*, *1*(2), 171-201.

Montgomery, C. A. (1994). Corporate diversification. *Journal of economic perspectives*, *8*(3), 163-178.

Montgomery, C. A., & Hariharan, S. (1991). Diversified expansion by large established firms. *Journal of Economic Behavior & Organization*, *15*(1), 71-89.

Montgomery, C. A., & Wernerfelt, B. (1988). Diversification, Ricardian rents, and Tobin's q. *The Rand journal of economics*, 623-632.

Morandi Stagni, R., Santalo, J., & Giarratana, M. S. (2020). Product-market competition and resource redeployment in multi-business firms. *Strategic Management Journal*, *41*(10), 1799-1836.

Morgan, J. (2012). *Collaborative Organization*. McGraw-Hill Publishing.

Mortensen, M., & Haas, M. R. (2018). Perspective—Rethinking teams: From bounded membership to dynamic participation. *Organization Science*, *29*(2), 341-355.

Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of financial economics*, *5*(2), 147-175.

Newell, A., & Simon, H. A. (1972). *Human problem solving* (Vol. 104, No. 9). Englewood Cliffs, NJ: Prentice-hall.

Nickerson, J. A., & Zenger, T. R. (2004). A knowledge-based theory of the firm—The problem-solving perspective. *Organization science*, *15*(6), 617-632.

Obel, B., & Burton, R. M. (1984). Designing efficient organizations: Modelling and experimentation.

Oldham, G. R., & Hackman, J. R. (2010). Not what it was and not what it will be: The future of job design research. *Journal of organizational behavior*, *31*(2-3), 463-479.

Oxley, J., & Pandher, G. (2016). Equity-based incentives and collaboration in the modern multibusiness firm. *Strategic Management Journal*, *37*(7), 1379-1394.

Palepu, K. (1985). Diversification strategy, profit performance and the entropy measure. *Strategic management journal*, *6*(3), 239-255.

Panzar, J. C., & Willig, R. D. (1981). Economies of scope. *The American Economic Review*, *71*(2), 268-272.

Penrose ET. 1995. *The Theory of the Growth of the Firm* (3rd edn). Oxford University Press: New York.

Penrose, E. T. (1959). The Theory of the Growth of the Firm. New York: John Wiley & Sons Inc. *Penrose, E. T*, *1*, 1-23.

Polidoro Jr, F., & Toh, P. K. (2011). Letting rivals come close or warding them off? The effects of substitution threat on imitation deterrence. *Academy of Management Journal*, *54*(2), 369-392.

Porter ME. 1987. From competitive advantage to corporate strategy. *Harvard Business Review* 65: 43–59.

Porter, L. W., Lawler, E. E. I., & Hackman, J. R. 1975. *Behavior in organizations*. New York, NY: McGraw-Hill.

Prendergast, C. (1999). The provision of incentives in firms. *Journal of economic literature*, *37*(1), 7-63.

Priem, R. L. (2007). A consumer perspective on value creation. *Academy of management review*, *32*(1), 219-235.

Puranam, P. (2018). *The microstructure of organizations*. Oxford University Press.

Puranam, P., & Håkonsson, D. D. (2015). Valve's way. *Journal of Organization Design*, *4*(2), 2-4.

Puranam, P., & Raveendran, M. (2013). Interdependence and organization design. In *Handbook of economic organization* (pp. 193-209). Edward Elgar Publishing.

Puranam, P., Alexy, O., & Reitzig, M. (2014). What's "new" about new forms of organizing? *Academy of management Review*, *39*(2), 162-180.

Puranam, P., Raveendran, M., & Knudsen, T. (2012). Organization design: The epistemic interdependence perspective. *Academy of Management Review*, *37*(3), 419-440.

Rajan, R., Servaes, H., & Zingales, L. (2000). The cost of diversity: The diversification discount and inefficient investment. *The journal of Finance*, *55*(1), 35-80.

Rajan, R. G., & Zingales, L. (2001). The firm as a dedicated hierarchy: A theory of the origins and growth of firms. *The Quarterly Journal of Economics*, *116*(3), 805-851.

Ramanujam, V., & Varadarajan, P. (1989). Research on corporate diversification: A synthesis. *Strategic management journal*, *10*(6), 523-551.

Rashid, A. (2013). CEO duality and agency cost: Evidence from Bangladesh. *Journal of Management & Governance*, *17*, 989-1008.

Raveendran, M., Puranam, P., & Warglien, M. (2016). Object salience in the division of labor: Experimental evidence. *Management Science*, *62*(7), 2110-2128.

Rivkin, J. W., & Siggelkow, N. (2003). Balancing search and stability: Interdependencies among elements of organizational design. *Management science*, *49*(3), 290-311.

Robertson, B. J. (2015). *Holacracy: The new management system for a rapidly changing world*. Henry Holt and Company.

Rogers, W. (1993). sg17: Regression standard errors in clustered samples. *Stata technical bulletin*, *13*, 19.

Rumelt, R. (1974). Strategy, Structure and Economic Performance. Division of Research, Harvard Business School, Cambridge, MA.

Saha, A., Grabowski, H., Birnbaum, H., Greenberg, P., & Bizan, O. (2006). Generic competition in the US pharmaceutical industry. *International Journal of the Economics of Business*, *13*(1), 15-38.

Sakhartov, A. V. (2018). Stock market undervaluation of resource redeployability. *Strategic Management Journal*, *39*(4), 1059-1082.

Sakhartov, A. V., & Folta, T. B. (2014). Resource relatedness, redeployability, and firm value. *Strategic management journal*, *35*(12), 1781-1797.

Sakhartov, A. V., & Folta, T. B. (2015). Getting beyond relatedness as a driver of corporate value. *Strategic Management Journal*, *36*(13), 1939-1959.

Sanchez, R., & Mahoney, J. T. (1996). Modularity, flexibility, and knowledge management in product and organization design. *Strategic management journal*, *17*(S2), 63-76.

Scott, W. R. 1998. *Organizations: Rational, natural, and open systems* (4th ed.). Upper Saddle River, NJ: Prentic-Hall.

Sengul, M., Costa, A. A., & Gimeno, J. (2019). The allocation of capital within firms. *Academy of Management Annals*, *13*(1), 43-83.

Shaver, J. M. (2006). A paradox of synergy: Contagion and capacity effects in mergers and acquisitions. *Academy of Management review*, *31*(4), 962-976.

Shin, H. H., & Stulz, R. M. (1998). Are internal capital markets efficient? *The Quarterly Journal of Economics*, *113*(2), 531-552.

Siggelkow, N. (2002). Evolution toward fit. *Administrative science quarterly*, *47*(1), 125-159.

Simon HA (1945) Administrative Behavior (Macmillan Press, New York).

Simon HA (1947) *Administrative Behavior, a Story of Decision Processes in Business Organization* (Macmillan, London).

Simon HA (1962) Architecture of complexity. Proc. Amer. Philos. Soc. 106(6):467–482.

Simon HA (1996) The Sciences of the Artificial, 2nd ed. (MIT Press, Cambridge, MA). [First published in 1962.]

Simon, H. A. (1947). Administrative behavior. A study of decision-making processes in administrative organization. Free Press.

Simon, H. A. (1951). A formal theory of the employment relationship. *Econometrica: Journal of the Econometric Society*, 293-305.

Simon, H. A. (1991). Bounded rationality and organizational learning. *Organization science*, *2*(1), 125-134.

Simon, H. A. (2012). The architecture of complexity. In *The Roots of Logistics* (pp. 335-361). Springer, Berlin, Heidelberg.

Smith, A. 1776. *An inquiry into the nature and causes of the wealth of nations*. London, UK: W. Strahan and T. Cadell.

Srikanth, K., & Puranam, P. (2014). The firm as a coordination system: Evidence from software services offshoring. *Organization Science*, *25*(4), 1253-1271.

Stern, I., & Henderson, A. D. (2004). Within-business diversification in technology-intensive industries. *Strategic Management Journal*, *25*(5), 487-505.

Stinchcombe, A. L. 1965. Social structure and organizations. In J. G. March (Ed.), *Handbook of organizations*: 142-193. Chicago: Rand McNally.

Street, D. L., Nichols, N. B., & Gray, S. J. (2000). Segment disclosures under SFAS No. 131: Has business segment reporting improved? *Accounting Horizons*, *14*(3), 259-285.

Tan, J., & Peng, M. W. (2003). Organizational slack and firm performance during economic transitions: Two studies from an emerging economy. *Strategic management journal*, *24*(13), 1249-1263.

Tate, G., & Yang, L. (2015). The bright side of corporate diversification: Evidence from internal labor markets. *The review of financial studies*, *28*(8), 2203-2249.

Teece, D. J. (1980). Economies of scope and the scope of the enterprise. *Journal of economic behavior & organization*, *1*(3), 223-247.

Teece, D. J. (1982). Towards an economic theory of the multiproduct firm. *Journal of Economic Behavior & Organization*, *3*(1), 39-63.

Teece, D. J. (2007). Explicating dynamic capabilities: the nature and micro-foundations of (sustainable) enterprise performance. *Strategic management journal*, *28*(13), 1319-1350.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, *18*(7), 509-533.

Teece, D. J., Rumelt, R., Dosi, G., & Winter, S. (1994). Understanding corporate coherence: Theory and evidence. *Journal of economic behavior & organization*, *23*(1), 1-30.

Teece, D., Peteraf, M., & Leih, S. (2016). Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy. *California management review*, *58*(4), 13-35.

Terza, J. V. (1998). Estimating count data models with endogenous switching: Sample selection and endogenous treatment effects. *Journal of econometrics*, *84*(1), 129-154.

Thoma, G. (2009). Striving for a large market: evidence from a general-purpose technology in action. *Industrial and Corporate Change*, *18*(1), 107-138.

Thompson, J. D. 1967. *Organizations in action: Social science bases of administrative theory*. New York, NY: McGraw-Hill.

Turner, A. N., & Lawrence, P. R. (1965). Industrial Jobs and the Worker (Harvard Graduate School of Business Administration, Boston).

Vakratsas, D., Feinberg, F. M., Bass, F. M., & Kalyanaram, G. (2004). The shape of advertising response functions revisited: A model of dynamic probabilistic thresholds. *Marketing Science*, *23*(1), 109-119.

Veloutsou, C., & Delgado-Ballester, E. (2018). New challenges in brand management. *Spanish Journal of Marketing-ESIC*, *22*(3), 254-271.

Verrecchia, R. E. (1983). Discretionary disclosure. *Journal of accounting and economics*, *5*, 179-194.

Verrecchia, R. E. (1990). Information quality and discretionary disclosure. *Journal of accounting and Economics*, *12*(4), 365-380.

Villalonga, B. (2004). Diversification discount or premium? New evidence from the business information tracking series. *The Journal of Finance*, *59*(2), 479-506.

Von Hippel, E. (1990). Task partitioning: An innovation process variable. *Research policy*, *19*(5), 407-418.

Wagenhofer, A. (1990). Voluntary disclosure with a strategic opponent. *Journal of accounting and economics*, *12*(4), 341-363.

Wernerfelt, B. (1984*). A resource-based view of the firm. Strategic management journal, 5*(2), 171-180.

Williamson, O. E. (1975). Markets and hierarchies: analysis and antitrust implications: a study in the economics of internal organization. *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*.

Williamson, O. E. (1994). *Comparative economic organization: The analysis of discrete structural alternatives* (No. 54). Ics Press.

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT press.

Wu, B. (2013). Opportunity costs, industry dynamics, and corporate diversification: Evidence from the cardiovascular medical device industry, 1976–2004. *Strategic Management Journal*, *34*(11), 1265-1287.

Wulf, J. (2012). The flattened firm: not as advertised. *California Management Review*, *55*(1), 5-23.

Xu, M. (2023). *US pharmaceutical firms' international redeployment strategies, entry modes, and performance outcomes* (Doctoral dissertation, University of Illinois at Urbana-Champaign).

Ye, G., Priem, R. L., & Alshwer, A. A. (2012). Achieving demand-side synergy from strategic diversification: How combining mundane assets can leverage consumer utilities. *Organization Science*, *23*(1), 207-224.

Zeine, F., Jafari, N., Nami, M., & Blum, K. (2024). Awareness Integration Theory A Psychological and Genetic Path to Self-Directed Neuroplasticity. *Health Sciences Review*, 100169.

Zenger, T. R. & Hesterly, W. S. 1997. The disaggregation of corporations: Selective intervention, high-powered incentives, and molecular units. *Organization Science*, 8(3): 209-222.

Zhou, Y. M. (2011). Synergy, coordination costs, and diversification choices. *Strategic Management Journal*, *32*(6), 624-639.

Zhou, Y. M. (2013). Designing for complexity: Using divisions and hierarchy to manage complex tasks. *Organization Science*, *24*(2), 339-355.

Zhou, Y. M., & Wan, X. (2017). Product variety, sourcing complexity, and the bottleneck of coordination. *Strategic Management Journal*, *38*(8), 1569-1587.