DECLINING MARKETS, RESOURCE SPECIFICITY, AND REDEPLOYMENT DECISIONS

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ABSTRACT

This essay emphasizes that the key determinants of redeployment decisions—adjustment costs and transaction costs—are illuminated by consideration of the sources of resource specificity. Building on prior work separating the degree of a resource's firm specificity and usage specificity, we develop a set of novel propositions on the conditions under which headquarters are more likely to withdraw a resource from a declining market and transfer it to a more attractive one. First, we clarify how usage specificity and business relatedness may interact in determining adjustment costs. Second, we examine how firm specificity and market transaction costs may interact in determining the use of resource redeployment. Third, we integrate the dimensions of usage- and firm-specificity into our framework explaining redeployment decisions. Overall, this essay contributes to an improved understanding of the self-selection processes of redeployment decisions and provides managers with a framework to evaluate particular resources as potential candidates for internal redeployment in the course of corporate renewal.

***Keywords*:** Declining markets; resource redeployment; resource specificity; business relatedness; transaction costs; corporate renewal.

INTRODUCTION

The question about potential responses of firms to significant adverse shifts in their market environment has long been of interest in strategic management (e.g., Harrigan, 1981; Harrigan and Porter, 1983; Porter and Caves, 1976). While the literature traditionally focuses on barriers to selling resources in secondary markets (i.e., divestment), an emerging body of research emphasizes that under certain conditions, firms may be able to strategically respond to threats through internal markets—by withdrawing non-financial resources from threatened markets and reallocating them to markets with stronger growth potential (e.g., Anand and Singh, 1997; Helfat and Eisenhardt, 2004; Levinthal and Wu, 2010; Lieberman, Lee, and Folta, 2017; Sakhartov and Folta, 2014, 2015; Wu, 2013).

Since this corporate flexibility is largely a function of the costs of adjusting resources for use in the new business, one implication of this theory is that firms with flexible resources might have a corporate advantage because they can redeploy resources at lower costs to exploit growth asymmetries across markets (e.g., Folta, Helfat, and Karim, 2016). Besides suggesting that more flexible resources are associated with lower adjustment costs, the literature emphasizes that adjustment costs are partially determined by business relatedness—the similarity of resource requirements between current and new businesses (Helfat and Eisenhardt, 2004; Lieberman et al., 2017; Sakhartov and Folta, 2014). However, despite the strong recognition that adjustment costs influence the use of resource redeployment, little is known about how resource flexibility and business relatedness may interact in determining adjustment costs in the first place.

The literature also emphasizes that resource redeployment must be appraised against the next best alternative—buying and selling the resources in secondary markets (e.g., Lieberman et al., 2017). Recent research supports the notion that there is a positive relationship between market transaction costs and the use of resource redeployment

(Giarratana and Santaló, 2020). Because more flexible resources should be more valuable for a larger number of firms but market transaction costs can potentially offset the value that can be recovered from selling the resources in secondary markets, a notable question is how resource flexibility may interact with market transaction costs in determining the use of resource redeployment.

To clarify the two interaction effects noted above, we borrow from prior work on commitment vs. flexibility. Ghemawat and del Sol (1998) recognize that resources might be firm-specific and/or usage-specific. Firm-specific resources "tend to be 'sticky' in the sense that there are significant costs to separating them from the firm that possesses them" (p. 28); while resources are usage-specific if they "restrict a firm's ability to change the way that it is positioned in its product markets" (p. 29). By classifying resources based on their degree of firm- and usage-specificity, we clarify how they might create (or restrict) redeployment flexibility in the process of corporate renewal.

Our level of analysis is a particular resource that is subject to potential redeployment. We start by focusing on the dimensions of firm- and usage-specificity in isolation (i.e., we examine the moderating effect of usage specificity for a given degree of firm specificity, and vice versa). First, we focus on the costs of adjusting a resource for a different use. Because usage specificity refers to the adjustments needed when a resource is allocated to a different business, we clarify how usage specificity and business relatedness may interact in determining adjustment costs. Second, we focus on the costs of buying and selling a resource in the external market. Because firm specificity refers to how tradable a resource is in the external market, we clarify how firm specificity and market transactions costs may interact in determining the use of resource redeployment.[1] We then integrate the dimensions of firm and

[1] Although the degree of usage specificity is held constant in this analysis, we note that market transaction costs would have to be considered across a larger number of product markets when resources are more usage flexible.

usage specificity into our framework explaining redeployment decisions. Finally, based on the assumption that adjustment costs are jointly determined by usage specificity and business relatedness, we emphasize the role of usage specificity for the potential tradeoff between inducements and adjustment costs in determining the choice of an alternative market. While the level of analysis in our essay is a resource, we conclude by discussing potential implications of our framework at the level of a firm. We also provide managers with some guidance to evaluate particular resources as potential candidates for internal redeployment.

This essay contributes to the growing and increasingly influential research stream on resource redeployment by separating firm specificity from usage specificity, allowing us to shed new light on the working of the key determinants of redeployment decisions. We also contribute to the literature on corporate renewal by elaborating how strategies emphasizing internal redeployment might lead to more timely withdrawals of resources from declining markets. Overall, by clarifying the conditions under which firms are more likely to use internal or external markets to withdraw particular resources from declining markets, our essay contributes to a more complete understanding of the fundamental question in strategy research of why firms differ in their resource allocation decisions and boundary choices (Rumelt, Schendel, and Teece, 1994).

LITERATURE REVIEW

How firms make decisions about the allocation of non-financial resources to exploit asymmetries in growth opportunities across markets has been considered by several streams of literature. It has been noted that the timely exit of a business from a declining product market represents a significant managerial challenge, especially in the presence of exit barriers such as a thin resale market for the business' resources, labor settlements, and the costs associated with eliminating a plant (e.g., Harrigan, 1981; Harrigan and Porter, 1983; Porter and Caves, 1976). For example, Harrigan (1981) shows that durable and firm-specific

assets such as machinery, plants, and inventory can represent major exit barriers because they involve investments that are difficult to recover, suggesting that firms tend to stay in a declining market long after they can earn acceptable returns on their resources. Dixit (1989) and a stream of accompanying work in real options formalize this logic, demonstrating how investment irreversibility (i.e., sunkness) reduces the likelihood of entry and exit, holding economic profits constant.

Lieberman et al. (2017) extended Dixit's (1989) ideas to the context of multi-business firms, noting that firms with an ability to internally redeploy resources to other businesses may be quicker to enter and exit because they have lower irreversibility. Their work builds critically on an emerging stream of research on resource redeployment that was originally proposed by Penrose (1959), and resurrected by Helfat and Eisenhardt (2004). The literature on resource redeployment suggests that diversification can provide a solution to problems of unfavorable movements in market conditions, such as permanent adverse changes in demand. Levinthal and Wu (2010) explain that redeployment, in contrast to sharing, is pertinent only for non-scale free resources – resources with capacity constraints. Sakhartov and Folta (2014, 2015) model how "resource redeployability" creates value for firms with the option to exploit an internal resource market to execute transactions.

The theory of resource redeployment has received some empirical support. For example, using a fine-grained dataset to capture demand conditions across submarkets in the cardiovascular medical device industry, Wu (2013) found that greater differences in demand maturity between current and potential markets incentivize firms to diversify, and that such diversification moves are positively associated with corporate performance. Belenzon and Tsolmon (2016) showed that in environments where benefits from corporate flexibility are high, greater market frictions can be a source of superior performance of affiliates of corporate groups over stand-alone firms. Giarratana and Santaló (2020) found that market

transaction costs are a driver of resource redeployment in multiniche firms. Sohl and Folta (2020) provide empirical evidence in the global retail sector that firms exit more quickly when there is a combination of easily redeployable fixed assets in separable business units (lower adjustment costs), negative regulatory shocks (higher market transaction costs), and performance differences across portfolio businesses (positive inducements).

A final literature addressing when firms may change a course of action investigates the tension between flexibility and commitment. This includes not only the real options literature (Dixit, 1989; Dixit and Pindyck, 1994), but also conceptual work on this topic (Selznick, 1957; Ghemawat, 1991). Selznick (1957: 18) proposes that resource-creating commitments "bind the organization to specific aims and procedures, often greatly limiting the freedom of the leadership to deploy its resources" to different contexts when confronted by changing environments. In particular, we point to Ghemawat and del Sol (1998), who speak to two types of resource specificity, firm- and usage-specificity, each bearing upon the potential to redeploy resources. Figure 1 illustrates their resource-specificity matrix, highlighting the four potential combinations of usage- and firm-specificity.[2]

Insert Figure 1 here

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[2] We note that *fungibility*, which is driven by the extent to which a resource is specialized, is an overarching resource characteristic that can refer to *usage-flexibility* and/or *firm-flexibility*. While resources that can be exchanged and utilized readily across firms are considered fungible (e.g., cash and commodities), other resources that can be transferred readily to different uses within the firm are also considered fungible (e.g., brands and technologies) (Nason and Wiklund, 2018). We chose to build on Ghemawat and del Sol (1998) because we are interested in separating usage- from firm-flexibility. Similarly, we also note that Montgomery and Wernerfelt (1988) suggest that performance implications of diversification depend on the degree of resource specificity and market distance (i.e., relatedness). However, because they did not distinguish between the degree of firm- and usage-specificity, we build here on Ghemawat and del Sol's (1998) resource specificity matrix. Finally, we note that firm-specific resources are the focus in Dierickx and Cool (1989) and are linked to Barney's (1991) *VRIN* framework; whereas usage-specific resources can be imitated when they are simultaneously firm-flexible.

Quadrant A displays *firm*- and *usage-flexible* resources, which are quite fungible, and can be used across contexts and firms. An example is office space in general buildings that can be used by different firms independent of their product market activities. Quadrant B displays *firm-specific* and *usage-flexible* resources, which can be moved throughout a single firm at low adjustment costs. For example, office space in a firm's headquarters buildings can be used by different divisions of the firm independent of their product market activities. Quadrant C shows implications for *firm-flexible* and *usage-specific* resources, that can be deployed across many firms, but will incur substantial adjustment costs if the new context uses it differently. For example, an IT programmer who specializes in general software programs such as SAP or Oracle enterprise resource planning (ERP), which are used by a large number of firms. Quadrant D shows *firm*- and *usage-specific* resources, where a resource can be deployed within the firm, but will incur substantial adjustment costs if used differently in the new context. An example is an IT programmer who specializes in a software program that is highly customized to the needs of a particular firm. While the emphasis of Ghemawat and del Sol (1998) was to understand the relationship between commitment and flexibility, we intend to elaborate the implications of their framework on the use of resource redeployment.

RESOURCE SPECIFICITY AND REDEPLOYMENT DECISIONS

Theory suggests that two factors determine the use of internal redeployment of non-scale free resources to exploit any given growth asymmetry across markets (i.e., inducements). These include (i) adjustment costs and (ii) transaction costs (Folta et al., 2016). The thesis of this essay is to emphasize that these two determinants of redeployment decisions are illuminated by consideration of the source of resource specificity. In particular, we build on prior work separating the degree of a resource's firm specificity and usage specificity (e.g., Ghemawat and del Sol, 1998) to first describe how each dimension of resource specificity may interact

with key determinants of resource redeployment. We then integrate both dimensions of resource specificity into our framework explaining when firms are more likely to use internal redeployment of a particular resource relative to divestment. Based on our theoretical development, we derive a set of novel predictions which can be tested in future empirical research.

Usage Specificity and Business Relatedness: Implications for Adjustment Costs

We start by clarifying how usage specificity and business relatedness may interact in determining adjustment costs. In this section we keep constant the degree of firm flexibility (i.e., the extent to which a resource can be used by other firms) and market transaction costs.[3] Usage-flexible resources, such as a programable robot or office space, can be allocated to different uses without losing value. In contrast, usage-specific resources such as particular types of machinery, manufacturing plants, or retail stores need adjustments if they are allocated to different uses, implying that their value decreases when the firm applies them in different product markets (Ghemawat and del Sol, 1997).

By suggesting that business relatedness lowers adjustment costs, it has been implicitly assumed that resources are usage specific. For example, studies have suggested that "unless the business that a firm exits is related to one that it enters, the firm cannot redeploy resources between the two businesses" (Helfat and Eisenhardt, 2004: 1222). Building on the recognition that resources vary in their degree of usage specificity, we seek to extend prior research by illuminating the potential interplay between usage specificity and business relatedness in determining adjustment costs. Because usage specificity refers to a

[3] As mentioned before, market transaction costs would have to be considered across a larger number of product markets when a resource is more usage flexible. This, however, does not imply that market transaction costs are systematically different for a usage-flexible (vs. a usage-specific) resource because the market with the lowest transaction costs may be the same for a usage-flexible and a usage-specific resource. In the following, the terms "usage-flexible" and "usage-specific" are used to characterize the two ends of a continuum that measures the degree of usage specificity of a resource.

characteristic of a particular resource, while business relatedness refers to the similarity of resource requirements between businesses, it is assumed they are conceptually distinct determinants of adjustment costs.

Usage-flexible resources allow firms to switch them from one product market to another at relatively low costs, enhancing a firm's ability to respond flexible to adverse changes in the current market. Usage-specific resources, on the other hand, need adjustments when they are redeployed to other uses; and the significance of these adjustments depends on how related the current and new markets are. Helfat and Eisenhardt (2004) argue that in dynamic markets, the length of time that it takes to redeploy resources becomes especially important in determining how much a firm can profit from inter-temporal economies of scope. While the length of time that it takes to redeploy usage-flexible resources is mainly determined by the relatively short period of moving equipment and people, adjusting usage-specific resources to new uses can involve a substantial amount of time. For example, Anand and Singh (1997: 115) suggest that "redeployment of industry-specific assets to new uses is challenging, particularly in stressful environments that demand management attention to established activities."

Insert Figure 2 here

Figure 2 illustrates how usage specificity and business relatedness may interact in determining adjustment costs (AC). Specifically, the degree of "unrelatedness (UR)" on the horizontal axis indicates the dissimilarity of resource requirements between the current and new market (Rumelt, 1974). When firms redeploy usage-flexible resources between markets, adjustment costs should mainly depend on the costs of withdrawing the resources and the time and expenses needed to move equipment and people. Thus, redeploying a usage-flexible

resource involves relatively low adjustment costs, which are not affected by the relatedness between the current and new market. In contrast, redeployment of usage-specific resources between markets can require costly and time-intensive adjustments, in addition to the costs of withdrawing the resources and moving equipment and people, and these additional adjustment costs should increase with the degree of unrelatedness between the current and new market.

> *Proposition 1: All else equal, the positive relationship between the degree of unrelatedness and adjustment costs is accentuated when a resource is more usage specific.*

Firm Specificity and Transaction Costs: Implications for Redeployment Benefits

Some resources are firm flexible and can be purchased in factor markets (tradable resources). In contrast, other resources are firm specific and not available in factor markets (non-tradeable resources), or only available as inferior substitutes.[4] For example, firm-flexible human resources, machinery, and real estate are valued equally by a large number of different firms, whereas firm-specific human resources, machinery, and real estate are more valuable to the firm by which they are employed or owned than to any alternative firm. Secretaries who learn popular word-processing programs or managers who obtain an MBA degree are examples of investments in firm-flexible human capital. Investments in firm-specific human capital, on the other hand, include learning the details of a firm's particular production, accounting, or IT system (e.g., Brickley, Smith, and Zimmerman, 2015). In the following, we clarify how the firm specificity of a resource may interact with market transaction costs in determining the use of resource redeployment. We do this by holding constant the usage

[4] In this section the terms "firm-flexible" and "firm-specific" resource are used to characterize the two ends of a continuum that measures the degree of firm specificity of a resource.

specificity of the resource and adjustment costs.[5] We also assume there are positive inducements to redeploy net of adjustment costs.

In his seminal work on the multiproduct firm, Teece (1982) emphasizes that diversification is driven by transaction costs, and distinguishes between transaction costs that affect resources and transaction costs that affect markets for resources. Transaction costs that affect resources are related to firm-specific resources (e.g., tacit knowledge) that can be shared within the firm but are difficult or impossible to share across firms or sell in the market; whereas transaction costs that affect markets for resources are related to firm-flexible resources (e.g., cash) that could be exchanged but are more efficiently allocated through internal markets when external markets have greater imperfections. Since we focus on firm-specific and firm-flexible resources and both types of transaction costs are present in our study, we use the term "market" transaction costs to refer to the costs of trading (firm-flexible) resources, such as the costs of searching potential buyers, writing and enforcing contracts, transferring property, laying off employees, and fees paid to financial intermediaries (e.g., Harrigan, 1980, 1981; Harrigan and Porter, 1983; Porter and Caves, 1976). Because these costs are mainly caused by government regulation and market structure, it is assumed they are largely exogenous to redeployment decisions and conceptually distinct from firm flexibility, which refers to a characteristic of a particular resource.

Previous research suggests that market transaction costs enhance the likelihood of resource redeployment. For example, Lieberman et al. (2017) proposed that market transaction costs are an important factor determining when internal redeployment is more

[5] We assume that adjustment costs such as the costs of withdrawing and transporting a resource are not systematically different for a firm-flexible (vs. a firm-specific) resource. For example, the costs of withdrawing a resource are related to the current business, independent of whether the new, resource-receiving business is part of the same firm or a different firm. Moreover, transportation costs are mainly driven by the geographic distance between the current and new business, rather than by whether the new business is part of the same firm or a different firm.

efficient than divestment. Giarratana and Santaló (2020) provide evidence supportive of the view that market transaction costs drive the decision to redeploy resources within firms. We seek to extend this prior work by clarifying how the degree of a resource's firm specificity may interact with market transaction costs in determining redeployment decisions.

While firm-specific resources are difficult to imitate by competitors and can lead to sustainable superior performance (e.g., Barney, 1991; Dierickx and Cool, 1989), investments in such resources also involve high sunk costs—expenses that cannot be recovered if the original investment is reversed at a later date (Dixit, 1992). Specifically, a large portion of investments that make a resource firm specific are sunk (i.e., fixed costs that cannot be recovered) because such investments should not increase the value of the resource in the resale market. For example, investments that make resources such as machines or buildings more specific to the location or production process of a particular firm are sunk because other firms typically do not value such resource investments.

As such, if investments in firm-specific resources turn out to be suboptimal, they are difficult and costly to reverse. Without having the option to redeploy internally, the sunk costs of abandoning firm-specific resources tend to delay market exits because they decrease the marginal costs of staying in the market, especially under conditions of high market uncertainty (e.g., Harrigan and Porter, 1983; O'Brien and Folta, 2009). Thus, because firm-specific resources are valuable within the firm but have little or no value when separated from the firm, their internal redeployment represents an important strategic option for firms.

In contrast, firms retain the option of recovering (most of) the value of firm-flexible resources because they can easily divest them in factor markets. Given that investments in firm-flexible resources involve low sunk costs, firms will use redeployment only in the presence of market transaction costs, which raise the sunkness of an investment (Lieberman et al., 2017). Specifically, firm-level rents can be realized when firm-flexible resources are

re-allocated more efficiently by authority (within the firm) than by the market (Williamson, 1979). Thus, although firm-flexible resources involve low sunk costs when markets work efficiently, higher market transactions costs can make investments in firm-flexible resources more costly to reverse, increasing the likelihood that firms use internal redeployment to exploit growth asymmetries across markets.

Insert Figure 3 here

Figure 3 illustrates how the relationship between redeployment benefits (RB) and market transaction costs (TC) may depend on the degree of firm-specificity of a resource.[6] A firm-specific resource is typically developed over time and can represent a source of sustainable superior returns (Dierickx and Cool, 1989). As such, firm-internal redeployment should allow firms to recover (most of) the superior value of the resource. At the same time, a purely firm-specific resource is, by definition, non-tradeable in the resale market. So, while firms that withdraw a firm-specific resource through internal redeployment can recover most of its value, firms that divest the resource may not be able to recover any value of the original investments. Thus, there should be high returns to the redeployment of a firm-specific resource, which do not vary with the degree of transactions costs in the resale market.

For a firm-flexible resource, Figure 3 shows positive but marginally diminishing returns to redeployment as the degree of market transaction costs increases. At very low degrees of market transactions costs, there should be no incentive to internally redeploy a firm-flexible resource because—given positive adjustment costs—all firms should choose to

[6] Figure 3 illustrates the two ends of the firm-specificity continuum, suggesting that the area between firm-flexible and firm-specific resource represents how the relationship between market transaction costs and redeployment benefits varies with different degrees of firm specificity.

sell the resource in factor markets. However, as the degree of market transaction costs increases, recovering value through resource divestments in the external market should become more difficult, increasing the potential benefits of internal redeployment. As such, the best case for the use of resource redeployment is when market transactions cannot occur. This scenario occurs either when a resource is firm specific or when there are very high market transaction costs for the exchange of a firm-flexible resource. Therefore, we assume a concave relationship between market transactions costs and redeployment benefits for firm-flexible resources, which converges to the redeployment benefits for firm-specific resources as market transaction costs hit high levels.

> *Proposition 2: All else equal, the positive (concave) relationship between the degree of market transactions costs and the likelihood of resource redeployment is accentuated when a resource is more firm flexible.*

Integrating the Dimensions of Firm- and Usage-Specificity

Based on the relationships developed above, we now integrate the dimensions of usage- and firm-specificity of a particular resource to derive implications about when firms are more likely to use internal redeployment (as opposed to divestment) of a resource, assuming there are positive inducements to do so. Figure 2 suggests that, on average, adjustment costs are higher for a usage-specific resource than for a usage-flexible resource; and Figure 3 suggests that, on average, redeployment benefits are higher for a firm-specific resource than for a firm-flexible resource. It follows that firms should be more likely to use internal redeployment of a given resource when the resource is more usage flexible and more firm specific, holding everything else constant.

> *Proposition 3: All else equal, the likelihood that a resource will be internally redeployed is enhanced when the resource is more usage flexible.*

> *Proposition 4: All else equal, the likelihood that a resource will be internally redeployed is enhanced when the resource is more firm specific.*

Implications for the Choice of Alternative Markets

So far, we assumed there are positive inducements net of adjustment costs. We now examine the interplay between inducements and adjustment costs—holding constant market transaction costs—to further illuminate the question of how resource characteristics may influence the decision to redeploy a particular resource in response to declining markets. Specifically, we examine factors that should influence the choice of the alternative market when firms withdraw a resource from a declining market.

The most closely related research is that of Sakhartov and Folta (2015), who predict that inducements and adjustment costs *jointly* determine the value creation potential of resource redeployment, holding all else constant. As mentioned above, there are inducements to redeploy if markets offer substantively different payoffs.[7] Absent inducements, there is no incentive to redeploy because there is no payoff from doing so. In their model, there exists an interplay between adjustment costs and inducements, where inducements can potentially offset adjustment costs.

In the context of declining markets, Penrose (1959: 58) refers external inducements as to the special case of "changes which might adversely affect a firm's existing operations and against which it could protect itself through expansion in particular directions". Sakhartov and Folta (2015) describe inducements along the dimensions of current return advantage, return volatilities, and return correlation. Their comprehensive account of inducements also covers the scenario of external inducements, which may be especially deterministic in influencing the potential tradeoff between inducements and adjustment costs. In their model, resource transfers from a declining to a growing market correspond to the setting where the

[7] While the concepts of inducements and opportunity costs overlap to some extent, they also differ in at least one aspect. Opportunity costs typically refer to the value of a resource in its next best use, implying that the *use* to which the new user puts the resource is *different*. Inducements refer to advantages in returns that new over existing users can generate with the resource, but the *use* to which the new user may wish to put the resource may be exactly the *same*.

current return advantage in the business to which resources are redeployed is very high and volatility of business returns is low.

Our focus on resource specificity clarifies that the importance of the potential tradeoff between inducements and adjustment costs increases with the usage specificity of a particular resource, making business relatedness an important indicator that senior managers must consider when deciding about alternative markets. That is, business relatedness—and associated lower adjustment costs—makes redeployment of usage-specific resources possible and hence it should allow the firm to recover more value from internal redeployment. However, when permanent adverse changes in product markets cause the decline of a business, the performance of related businesses that use similar inputs and produce similar outputs might also be negatively affected by these adverse changes. Because the costs of adjusting a resource for use in a less related business should be accentuated when the resource is more usage specific, we suggest that the potential tradeoff between inducements and adjustment costs in determining the choice of an alternative market for a resource is pertinent when the resource is more usage-specific.

DISCUSSION

The timely withdrawal of a firm's resources from a declining market has been of fundamental interest in the strategic management literature (e.g., Harrigan, 1981; Harrigan and Porter, 1978; Porter and Caves, 1976). A recent stream of corporate strategy research focuses on resource redeployment as a potential response by firms to declining markets, suggesting that firms might benefit from corporate flexibility—the ability to internally redeploy non-financial resources across markets (e.g., Helfat and Eisenhardt, 2004; Levinthal and Wu, 2010; Lieberman et al., 2017; Sakhartov and Folta, 2014, 2015; Wu, 2013). This theory addresses the fundamental question in strategy research about the value added of the headquarters unit in making decisions about resource allocation and firm scope (Rumelt, Schendel, and Teece,

1994), and has been lauded as an alternative justification for the multi-business firm, distinct from theories around resource sharing, internal capital markets, and risk reduction (Folta et al., 2016).

The choice of withdrawing a resource from a declining market through internal redeployment or external divestment requires a theory that predicts when firms are more likely to choose one exit mode over the other. This essay engages in the development of resource redeployment theory by joining research on resource redeployment and commitment vs. flexibility to develop an integrative framework on the role of resource specificity in clarifying the working of key determinants of redeployment decisions. Theory posits that two factors determine when firms are more likely to use resource redeployment to exploit inducements: (i) adjustment costs and (ii) transaction costs. Our essay elaborates each factor by distinguishing between the degree of a particular resource's firm specificity and usage specificity.

Theoretical Implications

Our framework extends and complements previous redeployment research that focused on the benefits of related diversification in dynamic markets. Helfat and Eisenhardt (2004) argued that "as products and technologies mature and even decline, firms may be left with resources that can be reapplied to new related business opportunities to produce inter-temporal economies of scope" (p. 1230). Our framework begins to illuminate how the relationship between business relatedness and adjustment costs may depend on a resource's degree of usage specificity. When resources are usage specific, relatedness between current and new markets is an important determinant of adjustment costs, which in turn co-determine the use of resource redeployment. This implies that firms may only be able to redeploy a usage-specific resource from a declining market to a related market because even strong inducements may typically not offset the costs of adjusting the resource for usage in an

unrelated market. In contrast, when a resource is usage flexible, relatedness should become largely irrelevant as a determinant of adjustment costs, suggesting that a firm can redeploy the resource further away from an adversely affected market. At the firm level, this implies that under certain conditions, *unrelated* diversification may be an optimal strategy. If firms are mainly invested in usage-flexible resources, then it is possible that the benefits of corporate flexibility may justify the costs of managing an unrelated diversified firm, especially when firms operate in dynamic markets where growth asymmetries between markets with dissimilar resource requirements occur more frequently. Finally, our framework shows that for the vast majority of target markets (except of for the most related once), the costs of adjusting usage-flexible resources are lower than the costs of adjusting usage-specific resources, suggesting that firms should tend to exit a declining market faster through internal redeployment when their resource base consists mainly of usage-flexible resources.

Our framework also improves the understanding of the conditions under which market transactions costs enhance the likelihood of resource redeployment. Specifically, our framework illuminates how the relationship between market transaction costs and redeployment benefits may depend on a resource's degree of firm flexibility, holding all else equal. When a firm invested to make a resource specific to its operations, the resource is associated with high (endogenous) sunk costs as little or no value can be recovered through resource divestment, making resource redeployment an attractive strategic option regardless of the extent of market transaction costs. In contrast, because a firm-flexible resource has the same value for many firms, the use of internal redeployment should become more likely when market transaction costs decrease the value that can be recovered through resource divestment, increasing investment sunkness.

Our analysis also complements the work of Sakhartov and Folta (2015) on the interplay between inducements and adjustment costs. Their model emphasizes that the

tradeoff between inducements and adjustment costs should be especially deterministic when related businesses might be similarly affected by adverse market conditions, as in situations where the current return advantage in the related business to which resources can be redeployed is low and volatility of business returns is high. By emphasizing the interaction effect between usage specificity and business relatedness on adjustment costs, we deepen the understanding of the tradeoff between inducements and adjustment costs in determining the choice of an alternative market for a resource. In the context of declining market niches in the defense sector, Anand and Singh (1997) found that consolidation-oriented acquisitions (acquisitions within the defense sector) outperformed diversification-oriented acquisitions (acquisitions out of the defense sector). Our framework suggests that this could be related to the fact that firms in the defense sector may possess mainly usage-specific resources, implying that unrelated diversification is associated with high adjustment costs that may not justify such diversification moves, even in the presence of higher inducements. That is, although performance differences (inducements) were likely higher between current and unrelated businesses outside the declining defense sector, many senior managers may have decided to diversify into market niches within the defense sector to avoid excessively high adjustment costs for a large part of their resource base.

Our framework is also complementary to previous research on exit barriers (e.g., Harrigan and Porter, 1983) and real options theory (e.g., Dixit and Pindyck, 1994). For example, the literature on real options has recognized that there is value to investment in a commitment-intensive manner and value to being flexible depending on the situation and decision-making context (e.g., Trigeorgis and Reuer, 2017). Our framework suggests that firms with more usage-flexible resources might have an advantage in escaping from declining markets because these resources can be reallocated across a wider range of alternative markets. However, when usage-flexible resources are simultaneously firm-flexible, the use of

internal redeployment must be appraised against the costs and benefits of exchanging the resources in the external market.

Managerial Implications

Global trends such as the digital transformation of industries have created business environments in which new market segments can rapidly replace existing ones. Senior managers who are facing such volatile and uncertain market environments are confronted with the fundamental question of how they can transform and revitalize their firms. Because permanent adverse changes in a market can alter the value of resources in their original use, resource redeployment can represent an important strategy for corporate renewal in such contexts. By focusing on each quadrant of the resource-specificity matrix (see Figure 1), we provide managers with a guiding framework to evaluate particular resources as potential candidates for internal redeployment. For example, if a resource falls in Quadrant D, managers should focus their attention on inducements and adjustment costs, rather than market transaction costs, in evaluating the potential for resource redeployment. For this type of resource, our framework suggests adjustment costs increase with the dissimilarity of resource requirements between current and new markets. And, for this type of resource, managers have to take into account the interaction between adjustment costs and inducements, such that stronger inducements are necessary to justify resource redeployment when current and new markets are less related.

We hope that our framework helps guiding practitioners in their decisions about the conditions under which they should redeploy a resource internally or sell it in the external market. Specifically, we encourage managers to take the degree of a resource's firm- and usage-specificity explicitly into account when making redeployment decisions. As an example, real estate in a unique location such as the city center may be subject to high opportunity costs when the current user operates in a declining product market, suggesting

that converting the real estate for use in a growing product market can create value for the firm. Our analysis also suggests that in situations of permanent adverse changes in the current product market, managers seeking to redeploy usage-specific resources must find the right balance between reducing adjustment costs on the one hand, and exploiting inducements on the other hand. Overall, by investing mainly in usage-flexible and firm-specific resources, there is a greater probability that senior executives can exploit inducements by using resource redeployment as a strategy for corporate renewal, which should be especially valuable in dynamic markets that require frequent shifts in firm boundaries.

Future Research Directions

A key implication of our framework for future theory-building research is to take into account the degree of firm- and usage-specificity of the resource that is subject to potential redeployment. For example, empiricists may focus on the redeployability of particular types of resources, such as retail stores, manufacturing plants, or machinery. When these resources can be classified as usage-specific and firm-flexible (Quadrant C), all three determinants of redeployment decisions (i.e., adjustment costs, transaction costs, and inducements) and their potential interactions must be taken into account in the research design.

We also encourage future empirical research to test our propositions. First, qualitative and case-based research could focus on how firms make redeployment decisions for particular resources in response to market decline, depending on the usage- and firm-specificity of the resource. Second, quantitative research could provide large-scale examination of when firms are more likely to use internal redeployment than divestment of resources. For example, future research could empirically examine how the relationship between business (un)relatedness and adjustment costs may be moderated by the degree of usage-specificity of resources (Figure 2); and how the relationship between market transaction costs and redeployment decisions may be moderated by the degree of firm-

specificity of resources (Figure 3). In the optimal case, large-scale data would be available at the resource level of analysis, allowing for measurement of the degree of firm- and usage-specificity to provide direct empirical tests of our four propositions. If such fine-grained information is not available, future research could examine exogenous shocks that make redeployment of certain resource types—such as more or less firm- and usage-specific types of physical or human resources—more likely. As just one example, an exogenous increase in employment protection legislation (EPL) can be used as a proxy for increased transaction costs in the labor market (e.g., Belenzon and Tsolmon, 2016), which should increase the incentive to redeploy firm-flexible (relative to firm-specific) human resources. When these human resources are simultaneously usage-specific, they should be mainly redeployed to related markets; and only relatively strong inducements should justify their redeployment to less related markets.

Moreover, we implicitly assumed that single-business and diversified firms are equally well equipped to escape from declining markets by redeploying non-scale free resources to more attractive markets. This assumption is in line with prior work suggesting that single-business firms can redeploy resources when they simultaneously exit and enter markets (Helfat and Eisenhardt, 2004), operate multiple business models in the same product market (Ahudja and Novelli, 2016), or become a diversified firm (Anand and Singh, 1997; Sakhartov and Folta, 2015). Future research can extend our study by exploring the conditions under which certain types of market frictions may provide diversified firms with an advantage over single-business firms in their redeployment decisions (see Mahoney and Qian (2013) for a detailed classification of market frictions). Finally, our framework has several limitations, providing additional opportunities for future research.

Limitations

The Role of Resource Complementarity

Our analysis focuses on how sources of resource flexibility can influence the likelihood of redeployment, holding all else equal. At the level of individual resources, our analysis suggests that it may be optimal for a firm to sell a usage-specific and firm-flexible resource in the external market (when market transaction costs are low), while internally redeploying a usage-flexible and firm-specific resource. We recognize, however, that complementarities or interdependencies can exist between pairs of resources (e.g., Brynjolfsson and Milgrom, 2013), suggesting that redeploying the two resources in combination can potentially create more value than selling one in the external market and redeploying the other one within the firm. So, a more realistic estimate of the net performance effect of resource redeployment can be obtained only when we take resource complemenarities into account. We therefore encourage future research to integrate the concept of resource complemenarity in the framework we outlined in this essay.

The Role of Agency Problems

As with most previous studies on resource redeployment, we have implicitly assumed information symmetry between senior managers (principals) and business unit managers (agents). This assumption can be useful when the objective is to analyze determinants of redeployment decisions in isolation. In the presence of information asymmetry, we recognize that both ‘adjustment costs’ and ‘agency costs’ can determine the overall ‘redeployment costs’. Business unit managers typically have private information and interests that may diverge from those of senior managers. Building on agency theory (e.g., Alchian and Demsetz, 1972; Milgrom and Roberts, 1990), we would expect that business unit managers who receive resources from a sister business unit may overstate the “true” adjustment costs to the extent that they can convert this untruthful reporting to their personal benefit. For

example, when the headquarters mistakenly believe there are higher adjustment costs, the profit target of the business unit manager who receives the resources may be set lower and will be more easily achievable for the period of resource redeployment. Moreover, the risks of opportunistic behavior should be greater for the redeployment of more usage-specific resources because integrating such resources in the new business may require more complex adjustments. This implies that incentive systems may have to be set in place to align the interests of principals and agents in the presence of information asymmetry. Thus, a more realistic account of the overall redeployment costs should include both adjustment costs and agency costs. Assuming that the degree of information asymmetry between principals and agents is positively associated with the degree of a resource's usage specificity, future research could extend our analysis by examining the interplay between usage specificity and agency costs in determining redeployment costs.

CONCLUSION

A recent stream of corporate strategy research has argued that firms can benefit from increased flexibility in dynamic markets. The contribution of this essay is the development of a framework that integrates the literature on resource redeployment and commitment vs. flexibility. Specifically, our analysis provides insights into redeployment decisions by distinguishing between the specificity (versus flexibility) of resources to particular firms and particular uses. We suggest that usage-flexible resources are key to internal redeployment because their adjustment costs are relatively low and not sensitive to the degree of business relatedness, implying that firms can exploit inducements across a larger variety of markets. But whether firms are more likely to redeploy usage-flexible resources also depends on their firm-specificity; when resources are firm flexible, internal redeployment should only be more likely than divestment when adjustment costs fall below transaction costs associated with buying and selling the resources in external markets. We hope that the framework we

presented in our essay will encourage future research to test and further elaborate on our ideas.

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FIGURES

Figure 1. Resource-specificity matrix (based on Ghemawat and del Sol, 1998, p. 29)

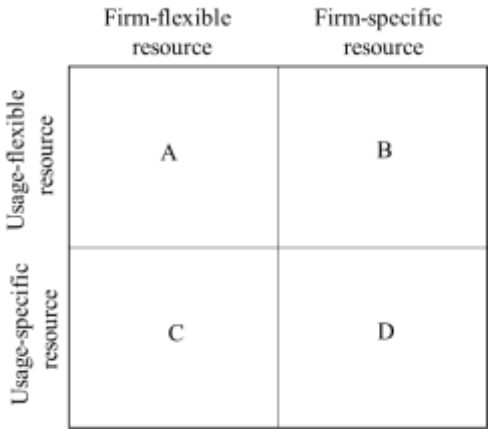

Figure 2. Adjustment costs (AC) and unrelatedness (UR): The role of usage specificity

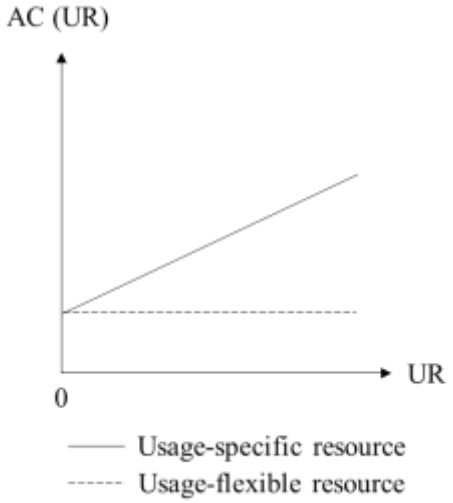

Figure 3. Redeployment benefits (RB) and market transaction costs (TC): The role of firm specificity