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The choice of value-based strategies under rivalry: Whether to enhance value creation or bargaining capabilities

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Abstract

Research Summary: The value-based perspective emphasizes the importance of both value creation and bargaining for firm performance. While formal theoretical work has focused on value creation strategies, empirical evidence suggests that substantial performance differences also arise from heterogeneity in bargaining. We develop a model where rival firms choose value-based innovation strategies to enhance either value creation or bargaining capabilities. We show a tendency for homogeneous strategy choices, with coordination on bargaining promoting firm value capture at the expense of overall industry value creation. We identify conditions for strategic heterogeneity, wherein a firm that enhances its bargaining capability risks the sustainability of its competitive advantage. Our model incorporates a natural distinction between incremental and radical value-creating innovations, which influences the risk-return tradeoffs faced by firms in their strategies.

Managerial Summary: A critical strategy choice for a firm's management is where to focus innovation efforts. Should it be on increasing the value the firm creates with other players, or on enhancing the firm's ability to bargain for a greater share of existing value creation? We develop a theory to inform such choices among rival firms. We show that there can be opportunities for rival firms to enhance their performance by coordinating

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innovation efforts on bargaining rather than on a race for value creation. However, the ability to coordinate on bargaining is undermined when value-creating innovations allow firms to disrupt extant market structures, in which case the pursuit of high-risk, high-return value-creating innovations may become attractive to individual firms even at the expense of overall industry profitability.

KEYWORDS

bargaining capability, biform games, firm heterogeneity, sustainability of competitive advantage, value-based innovation strategies

1 | INTRODUCTION

In many competitive settings, successful innovations are the key drivers of enhanced firm performance. A critical strategy choice for a firm's management is then *on which domain to focus innovation efforts?* At a high level, the firm may seek to innovate either by increasing the value it creates when working with other industry players, or by enhancing its ability to bargain for a greater share of the value created through those relationships. In this context, value creation strategies encompass process innovations, enhanced product quality and functionality, and improved aftersales service and advertising, with recent practice emphasizing the ability to gather customer insights and to upgrade user experiences. Bargaining strategies may involve the training of staff for negotiation functions, improvements to sales systems, and control over points of sale, while typically leading to more antagonistic relationships with customers and suppliers.[1]

Building on the early work of Brandenburger and Stuart (1996) and MacDonald and Ryall (2004), the value-based perspective in strategy formally decomposes firm performance into the dual challenge of (i) contributing to joint *value creation* and (ii) *bargaining* for a greater share of the created value (Gans & Ryall, 2017; Ross, 2018; Ryall, 2013). To date, the formal value-based literature has largely focused on firm strategies aimed at enhancing value creation.[2]

[1]Casadesus-Masanell and Heilbron (2015) stress that innovations associated with a firm's business model (e.g., bureaucratic structures, procedural norms, incentive systems) can make employees more effective bargainers for the firm. These authors provide notable illustrations of their claims such as: the high-powered incentives given to Ryanair employees for their negotiations with airports and travel agents; Walmart's use of spartan meeting rooms for purchase negotiations (to make opposing negotiators uncomfortable) and its centralized control of purchases as improving its ability to bargain with suppliers (previously mentioned in Bradley, Ghemawat, & Foley, 1994); or the fact that company-owned stores allow Apple to make credible and direct take-it-or-leave-it offers to customers (previously highlighted by Ryall, 2013).

[2]For example, Brandenburger and Stuart (2007) consider how advertising, product innovations, and repositioning strategies shift a firm's value creation. Both Ryall and Sorenson (2007) and Chatain and Zemsky (2011) emphasize how the network of connections that a firm develops with other economic actors may influence its ability to create value. Adner and Zemsky (2006) show how resource development strategies influence a firm's value creation, while Chatain and Zemsky (2007) consider the choice of horizontal scope strategies through a value creation lens. Finally, Jia (2013) incorporates transaction-cost and governance considerations to study competing suppliers' decisions to invest in the development of products with superior transaction value, when such investments—and the value created by them—are relationship-specific to a buyer.

Nonetheless, empirical studies in the value-based perspective suggest that bargaining strategies are also an important driver of performance.[3] For example, Bennett (2013) showed that the performance of car dealerships varied systematically with how they organized their sales process. In the medical devices industry, Grennan (2014) estimated that differences in bargaining abilities explained 79% of the variation in the prices paid by U.S. hospitals for coronary stents. In another study, Adegbesan and Higgins (2011) found that differences in bargaining abilities explained the share of key control rights won by partner firms within biotechnology R&D alliances, which they interpret as a proxy for the share of intra-alliance value capture.[4]

Accordingly, recent surveys of the value-based literature have called for more theoretical and empirical research on bargaining strategies. Gans and Ryall (2017) stress the importance of understanding better the nature and operation of bargaining capabilities and highlight that poor firm performance may sometimes be mistakenly attributed to weaknesses in value creation when, in fact, it results from lack of bargaining capabilities. Ross (2018) argues that "[i]t may be time for a 'strategy bargaining program,' wherein the modeling community in strategy studies the microfoundations of bargaining ability" (p. 2871).

Our paper addresses this research gap, and thereby contributes to the understanding of firms' innovation strategy choices. We extend biform games (Brandenburger & Stuart, 2007)—a staple in the formal value-based literature—to include innovation strategies aimed at enhancing a firm's bargaining capabilities.[5] In doing so, we contribute to a nascent body of work (Bennett, 2013; Panico, 2017) that formally analyzes bargaining strategies in the value-based literature. We complement existing studies that focus on interactions within bilateral relationships by characterizing the choice of bargaining strategies among firms that are product-market rivals.

In our model, two rival firms choose between two uncertain innovation strategies: they can either attempt to enhance their value creation capabilities or their bargaining capabilities. A firm's relative level of value creation determines its added value for buyers across two market segments, and thereby the range of value that the firm can capture. Finally, the firm's bargaining capability determines its realized value capture within this range (Chatain & Zemsky, 2007).

A central assumption in our model is that organizational tradeoffs require firms to choose between focusing their innovation efforts on either enhancing their value creation or enhancing their bargaining capabilities. Organizational tradeoffs may arise due to firms' limited resources including managerial attention (Henderson, 1979; Ocasio, 1997; Penrose, 1959; Simon, 1947), which force managers to choose between strategic initiatives at a point in time. Our tradeoff between value creation and bargaining is highlighted, for instance, in Casadesus-Masanell and Heilbron's (2015) discussion of firms' business model and organization design choices; and implicitly in Michel's (2014) arguments about innovation blind spots in firms that focus on value

[3]While we use the terms *bargaining strategies* and *bargaining capabilities*, Ryall (2013) and Gans and Ryall (2017) use the terms *strategies with persuasive intent* and *persuasive resources* to refer to the same constructs.

[4]We thank an anonymous reviewer for this reference.

[5]In biform games, economic actors choose their strategies noncooperatively in a first stage and then, based on the first-stage outcomes of their strategies, jointly create value and bargain to capture a share of that value in a second stage. Typically, the first stage in biform games is used to model strategies that affect a firm's value creation possibilities, such as the development and acquisition of resources or differentiation (Ross, 2018: 2861). We incorporate the enhancement of bargaining capabilities as a strategic option for firms.

creation, thus overlooking potential innovations to their revenue-generating mechanisms.[6] More broadly, the existence of strategic tradeoffs is a classic theme in the literatures on competitive positioning and organization design (e.g., Burton, Obel, & DeSanctis, 2006; Porter, 1985).[7]

Our model has two features that are fundamental for understanding firm behavior and competitive outcomes. First, there is a *complementarity* between value creation and bargaining capabilities: the greater a firm's level of value creation for buyers, the greater its returns from increasing its bargaining capability, and vice versa. Hence, these are strategy choices where firms have incentives to address their weaknesses, not just to build on their strengths. Second, enhancements to a firm's value creation capability have a *negative competitive externality* on the rival's value capture by decreasing the rival's expected added value for buyers, whereas enhancements to a firm's bargaining capability do not have a direct externality on the rival.

Because of these two features, a property of rival firms' strategy choices is that they are *mutually reinforcing*. That is, when a firm chooses the value creation strategy, this decreases the other firm's expected added value and hence it reduces the other firm's incentive to pursue the bargaining strategy. Conversely, when a firm chooses the bargaining strategy, this does not decrease the other firm's expected added value and hence it does not reduce the other firm's incentive to pursue the bargaining strategy as well. Our model then exhibits a tendency for rival firms to pursue homogeneous strategies. This gives rise to the possibility of coordinated outcomes, where both firms choosing value creation and both firms choosing bargaining are simultaneously equilibria. Due to the negative competitive externality from value creation strategies, expected firm and industry profits are higher when firms coordinate on the bargaining equilibrium, even though expected buyers' value capture and industry value creation are lower.

Despite the tendency for strategic homogeneity, we show that it is still possible to have strategic heterogeneity, where one firm focuses on bargaining while the other focuses on value creation. In this case, the firm that chooses the bargaining strategy maximizes its expected value capture, but in doing so puts the sustainability of its competitive advantage at greater risk. We find that such a solo pursuit of bargaining is associated with initial asymmetries in bargaining capabilities, as the firm with the lower bargaining capability has a greater incentive to enhance it. We also find that strategic heterogeneity is associated with asymmetries in the size of home market segments, since the firm with the larger home segment has a greater incentive to enhance its bargaining capability, to extract a greater share of value from its larger customer base.

We characterize the influence of model parameters on firm and buyer value capture, and on industry value creation. Unexpectedly, we find that the effectiveness of value creation strategies, as measured by their probability of success and by the potential enhancement to value creation capabilities, has an ambiguous effect on firm value capture. In contrast, firm value capture is increasing in the effectiveness of bargaining strategies. This implies that, whereas greater

[6]Casadesus-Masanell and Heilbron (2015) state the following: "Our perspective on the importance of business models does not negate the importance of competitive advantage or answer the puzzle of how to achieve it. It does, however, bring the pursuit of competitive advantage into perspective by reminding managers that focusing solely on that dimension neglects a considerable amount of unspoken-for value that must be actively negotiated" (p. 19).

[7]Furthermore, relational tradeoffs between joint value creation and (price) bargaining are explicitly acknowledged in the negotiation literature (Bazerman & Neale, 1992; Fisher & Ury, 1981; Lax & Sebenius, 1986). In general, the negotiation literature highlights that an excessive focus on (price) bargaining can be an impediment to joint value creation, since it promotes an adversarial atmosphere with less trust, information sharing, and collaboration between the involved parties (Bazerman & Neale, 1992; Fisher & Ury, 1981; Lax & Sebenius, 1986; Sebenius, 2001). Such an adversarial atmosphere is not well suited to the open exploration of each party's underlying interests, activities, and processes which, in turn, would promote the discovery of opportunities for enhanced joint value creation and mutually beneficial compromises.

opportunities for bargaining innovations in an industry are likely to improve firm-level outcomes, this is not necessarily true of greater opportunities for value-creating innovations.

Echoing the innovation literature (e.g., Adner & Snow, 2010; Reinganum, 1983, 1989; Tripsas, 1997; Tushman & Anderson, 1986), there is an important distinction in our model between incremental and radical value-creating innovations. Incremental value-creating innovations are those for which the potential enhancement to value creation capabilities is sufficiently small that a firm can only increase its added value in its home market segment. Radical value-creating innovations are those for which that potential enhancement is sufficiently large that a firm may break into its rival's home market segment. Thus, the possibility of firms "stealing" each other's home market segments (and the buyers therein) is the key difference between the two types of value-creating innovations. In contrast, there is no analogous distinction between radical and incremental innovations for bargaining strategies.

The distinction between incremental and radical value-creating innovations proves critical in our main model extension, where we consider the possibility of firms choosing the riskiness of their value-based innovation strategies: *within* each value-based strategy, firms trade off a higher capability enhancement for a lower probability of innovation success, holding constant the *expected* capability enhancement. That is, firms face a classic risk-return tradeoff. We find that firms are risk-seeking in their value creation strategies when radical value-creating innovations are possible. In contrast, we find that firms are indifferent about the riskiness of their bargaining strategies. These aspects have a significant impact on firms' choice *between* value-based strategies, as a greater scope for risk-taking within radical value-creating innovations reduces the prevalence of the low-rivalry outcome where both firms pursue bargaining strategies.

The paper proceeds as follows. Section 2 presents the model and its main properties. Section 3 characterizes firms' strategy choices, while section 4 examines the resulting impact on value creation and capture. Sections 5 and 6 consider two model extensions. Finally, section 7 provides further discussion and concludes.

2 | THE MODEL

We consider a biform game where two rival firms first choose between two value-based innovation strategies with uncertain outcomes: one strategy to enhance their capabilities to create value; the other to enhance their capabilities to bargain for value. They then compete for buyers in two market segments. Figure 1 provides an overview of the model, highlighting both its stages and its key parameters, which we present in detail below.

2.1 | Players and the basic value creation mechanism

We begin by specifying the set of players and their joint value creation possibilities. In an industry, there are two firms indexed by $i = 1, 2$, competing to serve an arbitrary number of buyers $n \geq 2$. Let N be the set of all players—i.e., the two firms and the n buyers. Buyers belong to one of two market segments indexed by $m = X, Y$.[8] Buyers are identical within a segment but vary

[8]The consideration of multiple discrete market segments follows prior formal modeling in strategy (e.g., Adner & Zemsky, 2005, 2006; Levinthal & Wu, 2010). In general, it allows for richer strategic interactions than considering only one segment.

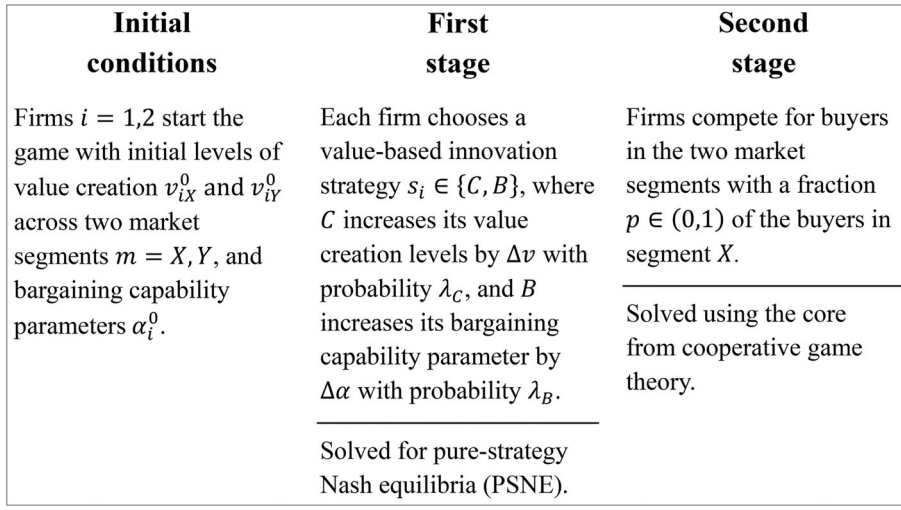

FIGURE 1 Timing and parameters of the model

across segments. Let $n_m \geq 1$ be the number of buyers in segment m, such that $n_X + n_Y = n$. Let $p = n_X/n$ be the fraction of buyers in segment X. Note that $p \in (0, 1)$.

Firms and buyers cannot create value in isolation. That is, a firm and a buyer need to be matched for value to be created. Each buyer has demand for one unit of output and hence it is to be matched with only one of the two firms. The value creation when firm i is matched with a buyer in segment m is denoted $v_{im} \geq 0$. This value creation reflects the gap between the buyer's willingness-to-pay for firm i's product or service and firm i's marginal cost of production. Thus, differences in the value creation of firm i for buyers across the two segments (v_{iX} and v_{iY}) reflect, not only heterogeneity in buyers' willingness-to-pay for firm i's product or service, but also possible differences in firm i's marginal cost of serving buyers across segments. Note that, with v_{im} constant across buyers in a segment, we assume that firms face no significant capacity constraints that would cause their marginal costs to rise, as is the case in software markets.[9,10]

2.2 | Market outcomes

Following seminal contributions in the value-based literature (Brandenburger & Stuart, 1996; MacDonald & Ryall, 2004), we assume that market outcomes are determined by the *core* of a cooperative game between firms and buyers. The core is a standard solution concept in

[9]Generally, the assumptions that underlie the constant marginal value creation parameter v_{im} are the following: (i) each firm has constant marginal costs of serving buyers in a segment (MC_{im}); (ii) each firm has a production capacity of at least n; and (iii) all buyers in a segment have the same willingness-to-pay for a given firm's product (WTP_{im}). Then, we have $v_{im} = WTP_{im} - MC_{im}$.

[10]A class of markets that fits well our assumptions is B2B software, such as systems for customer relationship management and enterprise resource planning. These are markets in which bargaining between suppliers' salespeople and buyers matters for value capture, that commonly comprise multiple segments (defined by buyers' size and industry sector), and where supplier capacity constraints tend to be secondary concerns.

cooperative game theory that ensures feasible, efficient, and stable allocations of value among players (see the online companion to the paper for more details).[11]

We denote the total value that is jointly created by the N players in the industry—and that is available to be divided among them—by $v(N)$. In the core, the process through which value is created is assumed to be efficient, such that the N players jointly achieve the maximum possible value creation. In our setting, this means that a buyer in segment m is matched with the firm that creates the most value for her/him, yielding value creation $max\{v_{1m}, v_{2m}\}$. Total value creation in the industry is then given by $v(N) = n_X max\{v_{1X}, v_{2X}\} + n_Y max\{v_{1Y}, v_{2Y}\}$.

We denote the share of value creation that firm i captures by Π_i, and the share of value creation that a buyer in segment m captures by u_m. Firm and buyer value capture are the labels that are commonly used in the value-based literature for the standard microeconomic concepts of producer and consumer surplus, respectively.

The core typically defines a *range* of possible allocations of the jointly created value for each player. A player's realized value capture within that range is then determined by bargaining with the other players. The upper bound on what a player can capture is given by its added value, which is defined as the increase in total value creation made possible by the presence of that player in the game. In our model, we can break the total added value of firm i down into its added value for a single buyer from segment m, which is given by $AV_{im} = max\{v_{im} - v_{-im}, 0\}$. Note that at most one of the two firms will add value in a segment. Firm i's total added value across the two segments is then $n_X AV_{iX} + n_Y AV_{iY}$.

The lower bound on what a player can capture is a function of its added value for alternative coalitions of players. In our model, because firm i is already matched by default with all buyers for whom it has positive added value, the lower bound on its value capture is zero. We follow Adner and Zemsky (2006) and equate a firm's added value in a segment to its level of *competitive advantage* in that segment.

Since in the core players typically negotiate over a range of possible allocations of jointly created value, using the core as a solution concept naturally captures the importance of bargaining for the value that is captured by firms and buyers. We follow Chatain and Zemsky (2007) and introduce a bargaining capability parameter $\alpha_i \in (0, 1)$ that determines how much firm i captures from its added value for each buyer.[12] This leads to the following expressions for firm i's value capture (Π_i) and for the value capture of a buyer in segment m (u_m):

$$\Pi_i = n_X \alpha_i AV_{iX} + n_Y \alpha_i AV_{iY},$$

$$u_m = max\{v_{1m}, v_{2m}\} - \alpha_1 AV_{1m} - \alpha_2 AV_{2m}.$$

[11]This means that highly competitive and frictionless interactions determine the matching of buyers to suppliers and the allocation of the value that is jointly created by them. The value-based literature has almost exclusively used the core as a solution concept. Efficiency in the core equates to players cooperating to realize the maximum joint value creation possible, and only then competing to divide the value created among themselves. In our model, the threat of a buyer switching to a firm that creates less value for her/him (to try to capture more value) is accounted for in the core, but it is not realized in equilibrium. This is because of the highly competitive and frictionless interactions that are assumed to exist between players, which ensure that the firm that creates the most value for the buyer counters (and tops) the offers from firms that create less value. Formally, the core is determined by the characteristic function $v(G)$ that gives the value creation by any group of players $G \subseteq N$.

[12]Chatain and Zemsky (2007) show that, for a broad class of characteristic functions that establish well-defined added values for each pair of players, it is natural to interpret α_i as a bargaining index for pairwise negotiations between suppliers and buyers. In those cases, Chatain and Zemsky (2007) also show that the bargaining parameter α_i does specify consistent allocations of value across players that always lie in the core. This is the case in our model.

In words, the value capture of a firm (i.e., firm profit or producer surplus) in a segment is the product of its added value for each buyer in that segment (AV_{im}) and the firm's bargaining capability parameter (α_i), scaled by the number of buyers in the segment (n_m).[13] Due to the efficiency of the core, a firm can only capture any value if it adds value for some buyers. The value capture of a given buyer in a market segment is equal to the value created when that buyer transacts with the firm that creates the most value for her/him ($max\{v_{1m}, v_{2m}\}$), minus the value captured by the firm within the transaction. The total value capture of buyers (i.e., consumer surplus) is then given by $U = n_X u_X + n_Y u_Y = v(N) - \Pi_1 - \Pi_2$.

2.3 | The value creation strategy

Firm i's initial value creation capability allows it to achieve a level of value creation of $v_{im} = v^0_{im} \geq 0$ for each buyer in segment m. The value creation strategy $s_i = C$ is aimed at enhancing firm i's value creation capability and succeeds with probability $\lambda_C \in (0, 1)$.[14] If it succeeds, firm i's value creation level increases to $v_{im} = v'_{im} = v^0_{im} + \Delta v$, where $\Delta v \geq 0$ is the *value creation capability enhancement*. If it fails, firm i's value creation level remains at $v_{im} = v^0_{im}$. In practice, the C strategy considers anything that increases the willingness-to-pay of buyers for a firm's product or service or lowers the firm's marginal costs. Therefore, it encompasses both product and process innovations, as well as actions like advertising and improving aftersales service. In the smartphone industry, for example, the release of a new phone with improved hardware or a new version of an operating system would be an example of the C strategy.

2.4 | The bargaining strategy

Firm i's initial bargaining capability allows it to capture a share $\alpha_i = \alpha^0_i \in (0,1)$ of its added value for each buyer. The bargaining strategy $s_i = B$ is aimed at enhancing firm i's bargaining capability and succeeds with probability $\lambda_B \in (0, 1)$. If it succeeds, firm i's share increases to $\alpha_i = \alpha'_i = \alpha^0_i + \Delta\alpha$, where $\Delta\alpha \geq 0$ is the *bargaining capability enhancement*. If it fails, firm i's share remains at $\alpha_i = \alpha^0_i$. In practice, the B strategy includes actions such as the training of sales staff, changes to a firm's negotiation function, the restructuring of a firm's relationships with its transacting partners, or tighter control over a firm's points of sale. In the carbonated soft drinks industry, the renegotiation of contracts between concentrate producers (i.e., Coca-Cola and Pepsi) and downstream regional bottlers is an example of the B strategy (Yoffie & Kim, 2011).

2.5 | Timing and solution concepts

The stages of the model are as shown in Figure 1. In the first stage, firms simultaneously choose their value-based innovation strategies. Specifically, firm i can choose either the value creation

[13]Note that this focus on bargaining capabilities within the value-based approach is contrasting to more traditional approaches within industrial organization economics, which instead focus on determining equilibrium prices and on how surplus is consequently divided between firms and buyers. Also note that, in the context of this model, firm i's bargaining capability is independent of the number of buyers served.

[14]This may reflect, not only uncertainty about a firm's successful development of a value-creating innovation, but also demand uncertainty about whether buyers will value that innovation.

strategy ($s_i = C$) or the bargaining strategy ($s_i = B$).[15] When firm i pursues C, its bargaining capability parameter remains at $\alpha_i = \alpha_i^0$. Similarly, when firm i pursues B, its value creation levels remain at $v_{im} = v_{im}^0$. In the second stage, the outcomes of firms' strategies (i.e., success or failure) are realized and market outcomes are then determined. The probabilities of successful innovation in C and B (λ_C and λ_B, respectively) are assumed independent across firms.

As is standard in biform games, we start by solving the second-stage cooperative game using the core, considering all possible combinations of firms' first-stage strategies and their success or failure outcomes. We then solve for pure-strategy Nash equilibria (PSNE) of the first stage, where firms simultaneously and non-cooperatively choose their value-based innovation strategies. In the first stage, each firm i chooses a pure strategy s_i to maximize its expected second-stage value capture $E(\Pi_i|s_i,s_{-i})$, taking its rival's strategy choice s_{-i} as given. For tractability, we do not consider mixed-strategy equilibria.

2.6 | Incremental and radical value-creating innovations

Much theorizing on innovation within strategy and economics separates *radical* (or drastic) from *incremental* innovations. One of the critical distinctions between the two is that radical innovations entail such large performance enhancements to a firm's offering that they enable the firm to displace its rivals from market segments by "stealing" those rivals' buyers (e.g., Adner & Snow, 2010; Reinganum, 1989; Tripsas, 1997; Tushman & Anderson, 1986). In contrast, performance enhancements from incremental innovations are not large enough to fundamentally shift market structure. Building on prior formalizations of technology disruption (Adner, 2002; Adner & Zemsky, 2005), we restrict the model parameters related to value creation in a way that naturally captures this distinction between radical and incremental innovations.

Specifically, we assume that each firm has a home market segment where it has an initial competitive advantage (or positive added value):

$$v_{1X}^0 = v_{2Y}^0 = v_h > v_l = v_{2X}^0 = v_{1Y}^0.$$

That is, firm 1's home segment is X, where its added value for each buyer is $AV_{1X} = v_h - v_l > 0$; while firm 2's home segment is Y, where its added value for each buyer is also $AV_{2Y} = v_h - v_l > 0$. This implies that initially a firm does not have added value in the other firm's home segment (i.e., $AV_{2X} = AV_{1Y} = 0$).[16]

Since a successful C strategy increases a firm's value creation level, it may allow a firm to break into its rival's home market segment with positive added value, if the value creation capability enhancement Δv is large enough. In our model, *incremental value-creating innovations* are then those for which $\Delta v \leq v_h - v_l$, so that C can only increase a firm's added value in its home segment. In contrast, *radical value-creating innovations* are those for which $\Delta v > v_h - v_l$, and thus C may allow a firm to have positive added value in both segments and thereby to "steal" the rival's home segment. Hence, even though market segments are defined exogenously and a firm has an

[15]Given the potential benefits stemming from C and B and no costs of implementing either strategy, a possible third strategy of doing nothing (D) is then (at least weakly) dominated. In the online companion to the paper, we extend the model to allow for costs of strategy implementation, which make D relevant as well.

[16]For analytical tractability and ease of exposition, we have imposed symmetry in that each firm has the same initial level of competitive advantage in its home segment. There remains an important asymmetry in firms' positions though, as the size of their home segments can vary.

initial competitive advantage in one segment by default, radical value-creating innovations allow those segments (and the buyers therein) to shift across firms.

2.7 | Strategic interdependencies

Are there interdependencies across the strategy choices of firms in our model? To address this question, we now characterize each firm's best response to a given strategy of its rival. This is also a necessary input to the analysis of firms' equilibrium strategy choices.

We use the level of $\Delta\alpha$, the potential bargaining capability enhancement, to characterize firms' possible strategy choices. Following from our definition of the two strategies, a firm's returns from the B strategy are increasing in $\Delta\alpha$, while its returns from the C strategy are unchanged. Hence, it is intuitive that a firm optimally chooses the B strategy only when $\Delta\alpha$ is sufficiently large. Lemma 1, besides highlighting this property, also characterizes the interdependencies that exist between rival firms' choices of value-based innovation strategies.

Lemma 1. *Rival firms' strategy choices are mutually reinforcing in that, if one firm chooses C, then the set of model parameters for which the other firm optimally chooses C is expanded. Similarly, if one firm chooses B, then the set of model parameters for which the other firm optimally chooses B is expanded. Formally, there is a threshold level of $\Delta\alpha$ such that a firm optimally chooses C (B) if and only if $\Delta\alpha$ is below (above) it. This threshold level of $\Delta\alpha$ is higher if the rival firm chooses C than if it chooses B.*

Proof: All proofs are in the online companion to the paper.

Lemma 1 shows that there is a property of mutual reinforcement of firms' strategy choices. To see why, consider the impact of a rival firm's strategy choice on the value capture of a focal firm. On the one hand, we have that $\frac{\partial \Pi_i}{\partial \alpha_{-i}} = 0$, so there is no effect on firm i's value capture from an enhancement to the rival's bargaining capability through its choice of B. This implies no effect on the incentive of firm i to increase its bargaining or value creation capabilities. On the other hand, an enhancement to the rival's value creation capability through its choice of C imposes a negative competitive externality on firm i, by reducing firm i's added value and hence its value capture in the market segment(s) where it has a competitive advantage:

$$\frac{\partial \Pi_i}{\partial v_{-im}} = \begin{cases} -n_m \alpha_i & \text{if } v_{im} > v_{-im}, \\ 0 & \text{if } v_{im} < v_{-im}. \end{cases}$$

Given that $-n_m\alpha_i$ is proportional to firm i's bargaining capability α_i, the rival's value creation enhancement serves to reduce the returns to firm i from enhancing its bargaining capability through B. Thus, there is an increase in the relative incentive of firm i to follow the same strategy of its rival, and try to enhance its value creation capability through C as well.[17] As a result, the choice of value-based innovation strategies by rival firms is mutually reinforcing.

[17]This intuition applies more directly to incremental value-creating innovations. For radical value-creating innovations there is an added complicating effect, since the potential value creation capability enhancement Δv from strategy C may allow a firm to break into its rival's home market segment. In this case, enhancements to the rival's value creation capability reduce the firm's returns from (and likelihood of) breaking into its rival's home segment with strategy C. Despite this added effect, the mutually reinforcing nature of firms' strategy choices is maintained for radical value-creating innovations, as shown in the proof of Lemma 1.

Prior research in the negotiation literature and in the value-based tradition has highlighted the nature of bilateral relationships as a significant driver of the choice between value creation and bargaining strategies (e.g., Bennett, 2013; Lax & Sebenius, 1986; Panico, 2017). Lemma 1 shows how competitive interactions with market rivals can also be an important driver.

3 | WHETHER TO CREATE OR TO BARGAIN

What determines the choices of rival firms between the value-based innovation strategies of value creation and bargaining? To what extent do we see strategic homogeneity versus heterogeneity among rival firms? We can now address these fundamental questions by characterizing the equilibrium configurations of firm strategy choices.

Proposition 1. *Depending on the model parameters, there is either a symmetric equilibrium where both firms choose the same strategy (*i.e.*, strategic homogeneity), or an asymmetric equilibrium where one firm chooses B and the other firm chooses C (*i.e.*, strategic heterogeneity). It is possible that (C, C) and (B, B) are both equilibria for a given set of model parameters. Formally*:

(i) There exists a threshold $\Delta\bar{\alpha}_{(C,C)} \geq 0$ *such that* (C, C) *is an equilibrium if and only if* $\Delta\alpha \leq \Delta\bar{\alpha}_{(C,C)}$;

(ii) There exists another threshold $\Delta\bar{\alpha}_{(B,B)} \geq 0$ *such that* (B, B) *is an equilibrium if and only if* $\Delta\alpha \geq \Delta\bar{\alpha}_{(B,B)}$, *where* $\Delta\bar{\alpha}_{(B,B)}$ *can be greater or smaller than* $\Delta\bar{\alpha}_{(C,C)}$;

(iii) Either (B, C) *or* (C, B) *is the unique equilibrium if and only if* $\Delta\bar{\alpha}_{(C,C)} \leq \Delta\alpha \leq \Delta\bar{\alpha}_{(B,B)}$.

Results (i) and (ii) follow naturally from Lemma 1 and establish that the two firms pursue the same strategy when the relative returns from that strategy are sufficiently high. The (C, C) equilibrium may be illustrated by the fledgling smartphone industry upon the introduction of the iPhone by Apple in 2007, with the following years witnessing competitive interactions between Apple and Samsung characterized by a relentless focus on adding new value-creating features to successive generations of their smartphones. The (B, B) equilibrium may be illustrated by the mature carbonated soft drinks industry, where renegotiations of contracts with downstream bottlers have become an increasingly important locus of strategic initiatives for Coca-Cola and Pepsi from the late 1970s (Yoffie & Kim, 2011). In the context of an industry's value chain, the (C, C) outcome captures a situation where rival firms focus on competing between themselves, whereas the (B, B) outcome captures a situation where rival firms focus on competing with members of other value chain layers, such as buyers in our model.[18]

In some instances, we find that there are multiple symmetric equilibria, such that firms can coordinate their strategy choices on either (C, C) or (B, B). This possibility of strategic coordination follows directly from the property of mutual reinforcement from Lemma 1. Formally, this happens when the $\Delta\bar{\alpha}_{(B,B)}$ threshold is smaller than the $\Delta\bar{\alpha}_{(C,C)}$ threshold. Then, for $\Delta\alpha$ in between the two thresholds, both (C, C) and (B, B) are equilibria.

Panel A in Figure 2 illustrates how firm strategy choices vary with the levels of the capability enhancements $\Delta\alpha$ and Δv. It considers a case in which rival firms are in symmetric initial positions, both in terms of their bargaining capabilities ($\alpha_1^0 = \alpha_2^0 = 0.5$) and home market segment sizes ($p = 0.5$). The equilibrium regions are defined by the critical values of $\Delta\bar{\alpha}_{(C,C)}$ and $\Delta\bar{\alpha}_{(B,B)}$ from Proposition 1 and change monotonically in the figure with Δv. The dashed vertical line

[18]We thank an anonymous reviewer for highlighting this connection.

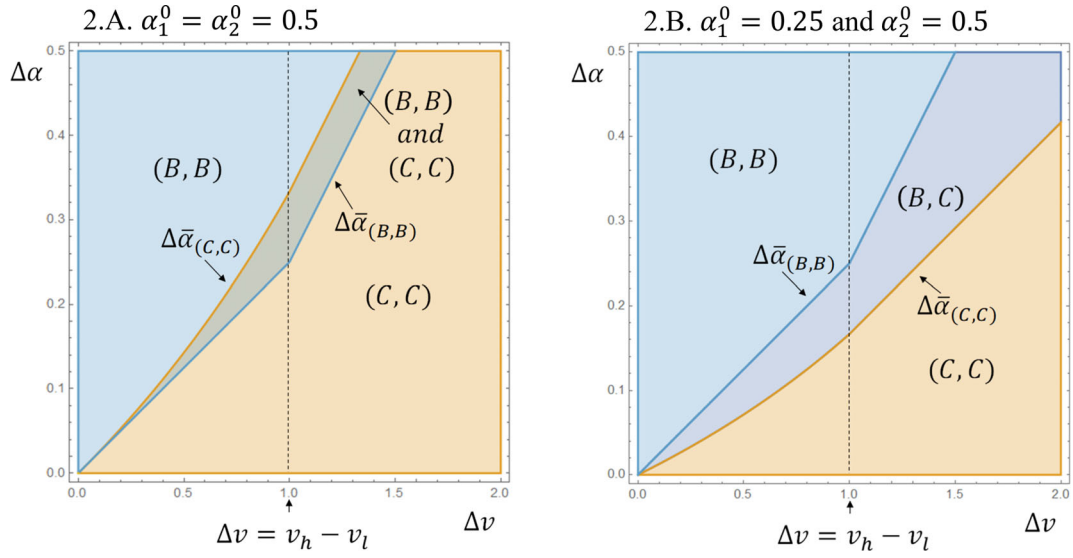

FIGURE 2 Equilibrium plots in terms of $\Delta\alpha$ and Δv for different values of α_1^0 and α_2^0, based on the following other parameter values: $\lambda_B = 0.5; \lambda_C = 0.25; v_h = 2; v_l = 1; p = 0.5$

demarcates the transition between incremental and radical value-creating innovations. Note the kink in $\Delta\bar{\alpha}_{(B,B)}$ at this transition. This kink arises because, when value-creating innovations are radical, a successful *C* strategy potentially allows a firm to capture value across the two market segments (in contrast to incremental value-creating innovations). As a result, with radical value-creating innovations, further increases in Δv increase the attractiveness of *C* relative to *B* more than with incremental value-creating innovations, leading the (*B*, *B*) region to shrink faster.

Panel A illustrates how, when there is symmetry in firms' initial conditions, only symmetric equilibria exist. In addition, because of the property of mutual reinforcement, Panel A displays a region where both (*C*, *C*) and (*B*, *B*) are possible equilibria.

Even though the mutual reinforcement of rival firms' strategy choices leads to a tendency for homogeneity in those choices, result (iii) of Proposition 1 establishes that strategic heterogeneity is also possible. In those cases, one firm looks to enhance its competitive advantage by focusing on value creation, while the other firm "milks" an existing competitive advantage (and puts its sustainability at greater risk) by focusing on bargaining. Panel B in Figure 2 illustrates this, by considering the same parameters as Panel A, except for a key difference: the initial bargaining capabilities vary across firms ($\alpha_1^0 = 0.25$, $\alpha_2^0 = 0.5$). With this asymmetry, strategic heterogeneity becomes possible. Now, instead of a region with multiple symmetric equilibria, there is a region where the firm with the higher initial bargaining capability pursues *C* while its rival pursues *B*. To see why, consider the marginal returns to firm *i* from increasing its bargaining and value creation capabilities:

$$\frac{\partial \Pi_i}{\partial \alpha_i} = \sum_{m=X,Y} n_m max\{v_{im} - v_{-im}, 0\},$$

$$\frac{\partial \Pi_i}{\partial v_{im}} = \begin{cases} n_m \alpha_i & if\ v_{im} > v_{-im}, \\ 0 & if\ v_{im} < v_{-im}. \end{cases}$$

The above expressions showcase the fundamental feature that value creation and bargaining capabilities are complementary for a given firm's returns. The greater firm *i*'s value creation capability, the greater the returns from increasing its bargaining capability; while the greater firm *i*'s bargaining capability, the greater the returns from increasing its value creation capability. Instances of strong complementarity between value creation and bargaining are very salient, for instance, in the pharmaceutical industry, where firms that are privileged suppliers of important patented drugs put a great strategic emphasis in their negotiations with healthcare providers and insurers. At times, this has led some pharmaceutical firms to make the news, and not for the best reasons, with the discovery of ethically questionable (and even illegal) bargaining practices.

Given this complementarity, we are dealing with strategy choices where firms have incentives to address their weaknesses, rather than just to build on their strengths. Hence, heterogeneity in initial bargaining capabilities can counter the mutually reinforcing nature of firms' strategy choices and give rise to strategic heterogeneity, as illustrated in Panel B. This formalizes the assertion in Michel (2014) and Casadesus-Masanell and Heilbron (2015) that value creation and competitive advantage, although essential for firm performance, should not always be the priority for firm management. Moreover, our findings contribute to the innovation literature (e.g., Arrow, 1962; Christensen, 1997; Hill & Rothaermel, 2003; Tripsas & Gavetti, 2000; Tushman & Anderson, 1986) by showing how low bargaining capabilities can be an added reason—beyond a large captive market and organizational inertia—for why some firms may not pursue value-creating innovations, thus possibly allowing other firms to overtake them.

We provide another illustration of strategic heterogeneity in Figure 3, which considers the same parameters as in Panel A of Figure 2, except for a larger home segment size of firm 1 ($p = 0.75$). Figure 3 shows how, for radical value-creating innovations, the firm with the smaller home segment (firm 2) may sometimes choose *C* even though its rival (firm 1) chooses *B*. The intuition comes again from the earlier expressions for the marginal returns of α_i and v_{im} to firm *i*. The marginal impact of α_i on firm *i*'s value capture is always proportional to the size of its home segment. In contrast, the marginal impact of v_{im} on firm *i*'s value capture is proportional to the size of its home segment only for incremental value-creating innovations. For radical value-creating innovations, firm *i* can potentially enter its rival's home segment and capture value there as well. This additional incentive is greater for the firm with the smaller home segment, and hence the possibility of strategic heterogeneity in this case. This aspect complements seminal work on disruptive technologies (Christensen, 1997; Christensen & Raynor, 2013), by highlighting that industry entrants with smaller initial market segments may have greater incentives to improve the value creation of their technologies, and that this can drive the disruption of existing market structures.[19]

Proposition 1 identifies two broad scenarios in terms of equilibrium configurations. One scenario involves only strategic homogeneity. In this case, there is a region of the parameter space where firms may coordinate their strategy choices on either the (*C*, *C*) or (*B*, *B*) equilibrium. The second scenario has a region of the parameter space with strategic heterogeneity and without equilibrium multiplicity, where either *only* (*B*, *C*) or *only* (*C*, *B*) happens. Leveraging our prior discussion of Figures 2 and 3, we now characterize the conditions for the first scenario (involving only strategic homogeneity) to occur.

[19]This is also connected to Arrow's (1962) historical argument, by which dominant incumbent firms would have weaker incentives to invest in (value-creating) innovations than entrants because the former would be innovating merely to "replace themselves" in the market—something that has become known in the literature on innovation as the *replacement effect*. In practice, a lower emphasis of dominant incumbent firms on (value-creating) innovations may also be associated with those firms' prioritization of bargaining strategies.

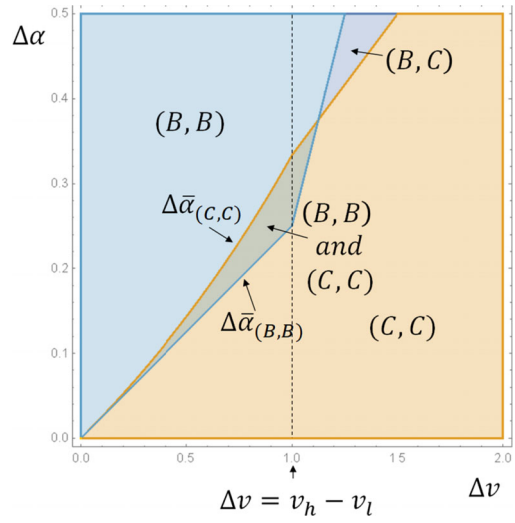

FIGURE 3 Equilibrium plot in terms of $\Delta\alpha$ and Δv with asymmetric segment sizes, based on the following parameter values: $\lambda_B = 0.5$; $\lambda_C = 0.25$; $\alpha_1^0 = \alpha_2^0 = 0.5$; $v_h = 2$; $v_l = 1$; $p = 0.75$

Proposition 2. *There is no possibility of heterogeneity in rival firms' strategy choices in equilibrium* (i.e., $\Delta\bar{\alpha}_{(B,B)} \leq \Delta\bar{\alpha}_{(C,C)}$):

(i) For incremental value-creating innovations, if and only if firms have sufficiently similar initial bargaining capabilities (i.e., α_i^0 close to α_{-i}^0);

(ii) For radical value-creating innovations, if firms have sufficiently similar initial bargaining capabilities and home market segment sizes (i.e., p close to $\frac{1}{2}$).

Thus, asymmetric market segment sizes can drive strategic heterogeneity for radical value-creating innovations but not for incremental ones. This is a crucial difference between radical and incremental value-creating innovations.

Figure 4 illustrates how strategy choices shift with p, the relative size of firm 1's home market segment, for cases in which rival firms are otherwise identical. Panel A displays a case in which value-creating innovations are incremental, with $\Delta v = 0.5$ ($<1 = v_h - v_l$). Only symmetric equilibria are possible in this case, as per Proposition 2 (i). Moreover, relative segment size p has no impact on equilibria. Panel B shows how firms' strategy choices shift dramatically when value-creating innovations are radical, with $\Delta v = 1.25$ ($>1 = v_h - v_l$). Note that the (C, C) region grows and the (B, B) region shrinks relative to Panel A. Moreover, p now matters for equilibria and, for sufficiently skewed p, asymmetric equilibria become possible, as per Proposition 2 (ii). Specifically, the greater p is, the larger the (B, C) region and the smaller the (C, B) region. Note that p has a nonmonotonic effect on both (C, C) and (B, B).[20]

[20]The intuition is as follows. For incremental value-creating innovations, since a firm can only capture value in its home segment, relative segment size p has no effect on firms' strategy choices. For radical value-creating innovations, since a firm may capture value in both segments, relative segment size p affects firms' strategy choices. In those cases, the greater the relative size of the rival firm's home segment, the greater the incentive of a firm to choose C over B, given the possibility of capturing value in the rival firm's (large) home segment. Because a greater relative size of the rival firm's home segment has the opposite effect on the rival's incentives, there is no clear overall effect on both (C, C) and (B, B).

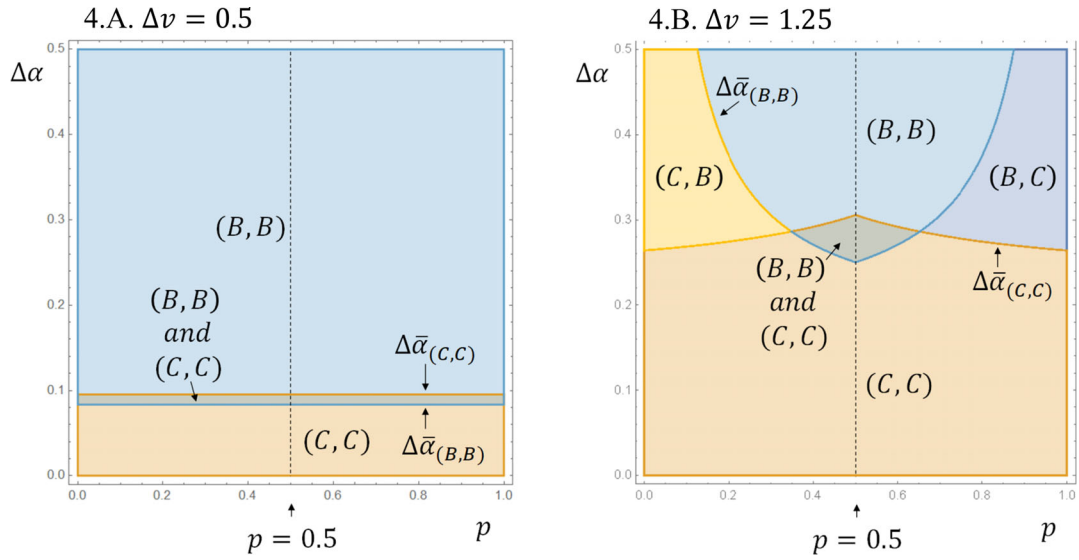

FIGURE 4 Equilibrium plots in terms of $\Delta\alpha$ and p for different values of Δv, based on the following other parameter values: $\lambda_B = 0.75$; $\lambda_C = 0.25$; $\alpha_1^0 = \alpha_2^0 = 0.5$; $v_h = 2$; $v_l = 1$

In the online companion to the paper, we offer a formal characterization of how the various model parameters affect the boundaries of each equilibrium (i.e., $\Delta\bar{\alpha}_{(B,B)}$ and $\Delta\bar{\alpha}_{(C,C)}$), and hence the prevalence of different firm strategy choices. Here, we report some key results. Beyond p, most parameters have clear impacts on the bounds of the symmetric equilibria (C, C) and (B, B). The greater the probability of success and the capability enhancement of a given strategy, the more prevalent the equilibrium where both firms choose that strategy and the less prevalent the equilibrium where both firms choose the other strategy. For example, the greater λ_B and $\Delta\alpha$, the more prevalent (B, B) and the less prevalent (C, C). Moreover, given the complementarity between value creation and bargaining for a firm's returns, the greater firms' initial bargaining capabilities (α_1^0 and α_2^0) and the smaller their initial home-segment competitive advantages ($v_h - v_l$), the stronger their incentives to choose C and the weaker their incentives to choose B. Therefore, the greater (smaller) the region of support for (C, C) ((B, B)).[21]

4 | VALUE CAPTURE AND INDUSTRY VALUE CREATION

We now turn to the implications of firms' strategy choices for firm and buyer value capture and for overall industry value creation. We first consider what is at stake when firms can coordinate their strategies on either value creation or bargaining. We then characterize the impact of different model parameters. Here, we take into account both (i) the *local* effects of a parameter within a given equilibrium configuration and (ii) the possible *transition* effects due to shifting play from

[21]The impact of model parameters on the asymmetric equilibria is more complex and tends to be nonmonotonic. While the support for the symmetric equilibria depends on shifts in a single bound— $\Delta\bar{\alpha}_{(C,C)}$ for (C, C) and $\Delta\bar{\alpha}_{(B,B)}$ for (B, B), the support for the asymmetric equilibria depends on shifts in both bounds, which usually move together. See the online companion to the paper for details.

one equilibrium to another. An overarching question is whether there are marked differences between the effects of parameters related to value creation and bargaining strategies.

Given the uncertainty associated with value-based innovation strategies, we are interested in the *expected* value capture of firm i conditional on equilibrium strategies, $E\left(\Pi_i|s_i^*,s_{-i}^*\right)$, and in the expected buyers' value capture, $E\left(U|s_i^*,s_{-i}^*\right)$. We are also interested in the expected industry value creation with all N players, $E\left(v(N)|s_i^*,s_{-i}^*\right)$.

When firms can coordinate on either value creation or bargaining, we have the following:

Proposition 3. *When* (C, C) *and* (B, B) *are both equilibria* (i.e., $\Delta\bar{\alpha}_{(B,B)} \leq \Delta\alpha \leq \Delta\bar{\alpha}_{(C,C)}$):

(i) Expected firm value capture is higher when firms coordinate on bargaining strategies (i.e., $E(\Pi_i \mid B, B) > E(\Pi_i \mid C, C)$*);*

(ii) Expected buyers' value capture and industry value creation are higher when firms coordinate on value creation strategies (i.e., $E(U \mid C, C) > E(U \mid B, B)$ and $E(v(N) \mid C, C) > E(v(N) \mid B, B)$*).*

The intuition for result (i) comes largely from the observation that a firm's expected value capture is always higher if its rival chooses B rather than C, due to the negative competitive externality that the firm may suffer in the latter case. This justifies why expected firm value capture is higher in the (B, B) equilibrium since, by focusing on enhancing their bargaining capabilities instead of their value creation capabilities, firms are not mutually eroding each other's home-segment competitive advantage. Now consider result (ii). In (C, C) both firms actively seek to enhance their value creation capabilities and industry value creation (of which buyers capture a share), compared to neither firm doing so in (B, B). Moreover, in (B, B) firms are increasing their expected value capture at the expense of buyers.

Result (i) highlights that the possibility of pursuing bargaining strategies can affect, not only bilateral outcomes between the negotiating parties, but also competitive interactions between rivals. Coordination on (B, B) may be interpreted as an additional avenue for rival firms to reduce the competitive pressures they face, beyond factors like barriers to entry (e.g., Porter, 1980) or uniquely valuable and hard-to-imitate resources and capabilities (e.g., Barney, 1991; Peteraf, 1993) that are typically the focus of the strategy literature. By coordinating on "milking" their respective buyers, rivals avoid direct competition between themselves, and thus the mutual erosion of each other's added value that happens when they compete based on value creation.

Proposition 3 is illustrated by Figure 5, which shows the impact of shifts in the value creation enhancement Δv on the expected value capture of firms and buyers.[22] Panel A includes a region where both (C, C) and (B, B) are equilibria. In that region, expected firm value capture is higher in (B, B), but expected buyers' value capture is higher in (C, C).

Figure 5 also shows the importance of considering both local and transition effects of parameter shifts. In Panel A, within (B, B) and (C, C), increases in Δv either do not affect or increase firm value capture. However, an increase in Δv that triggers a transition from (B, B) to (C, C) causes a discrete fall in firm value capture. Panel B illustrates the impact of shifts in Δv when initial asymmetries in bargaining capabilities create a region with strategic heterogeneity. In Panel B, the local effects of Δv are to increase firm 2's value capture within equilibria (B, C) and (C, C). However, there is a discrete fall in firm 2's value capture when the increase in Δv triggers a transition from (B, C) to (C, C). In contrast to the overall ambiguous effects of Δv on firm value capture, the value

[22]Figure 5 uses the same parameter values as Figure 2, except that the bargaining capability enhancement $\Delta\alpha$ takes on a specific value ($\Delta\alpha = 0.22$).

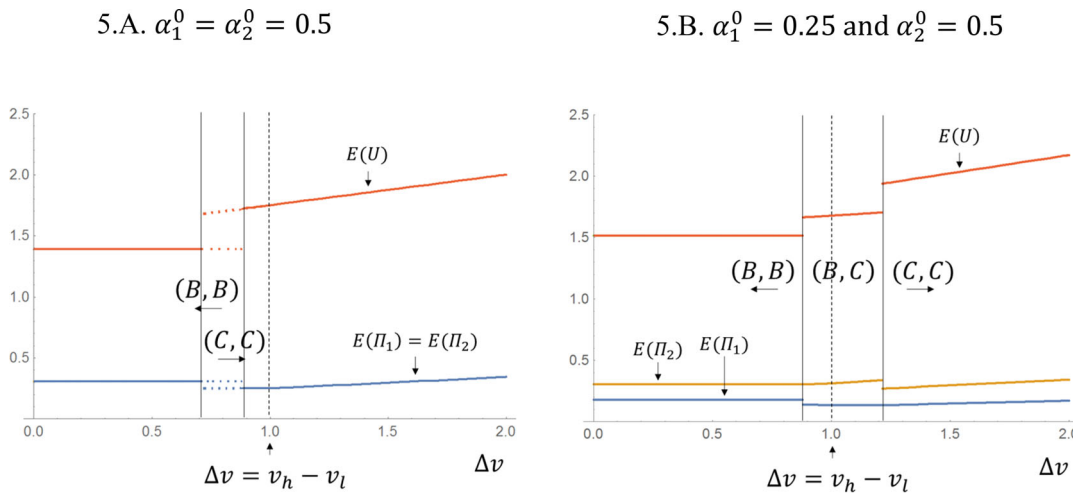

FIGURE 5 Expected firm value capture $E(\Pi_i)$ and expected buyers' value capture $E(U)$ with shifts in Δv for different values of α_1^0 and α_2^0, based on the following other parameter values: $\Delta\alpha = 0.22$; $\lambda_B = 0.5$; $\lambda_C = 0.25$; $v_h = 2$; $v_l = 1$; $p = 0.5$[23]

capture of buyers is (weakly) increasing in Δv in Panel A and Panel B. The same is true of industry value creation (not shown).

We now characterize how value capture by firms and buyers, as well as overall industry value creation, shift with model parameters. We focus on the parameters that determine the effectiveness of the two value-based innovation strategies: their probabilities of success (λ_B and λ_C) and their potential capability enhancements ($\Delta\alpha$ and Δv). We also consider the effect of the initial level of home-segment competitive advantage ($v_h - v_l$).

Proposition 4.

(i) Expected firm value capture $E(\Pi_i|s_i^*, s_{-i}^*)$ is (weakly) increasing in $\Delta\alpha$ and λ_B and non-monotonic in Δv and λ_C. Expected buyers' value capture $E(U|s_i^*, s_{-i}^*)$ and industry value creation $E(v(N)|s_i^*, s_{-i}^*)$ are (weakly) decreasing in $\Delta\alpha$ and λ_B and (weakly) increasing in Δv and λ_C;

(ii) Expected firm value capture is increasing in $v_h - v_l$ for incremental value-creating innovations, but non-monotonic in $v_h - v_l$ for radical value-creating innovations. Expected buyers' value capture and industry value creation are non-monotonic in $v_h - v_l$.[24]

In Proposition 4 (i) we state that the parameters that determine the effectiveness of the B strategy—$\Delta\alpha$ and λ_B—have clear effects on firm value capture. In terms of local effects, for a firm choosing the B strategy, increases in its effectiveness make the firm better off. Moreover, increases in the effectiveness of the B strategy may also increase the firm's expected value capture through transition effects, by increasing the relative attractiveness of the B strategy and leading either (i) the rival firm to shift from C to B, or (ii) both firms

[23]In Figures 5 and 6, we have normalized $E(\Pi_i)$ and $E(U)$, by dividing them by the total number of buyers n.

[24]For completeness, the proof of Proposition 4 in the online companion to the paper provides an account of the impact of all model parameters on expected firm and buyers' value capture and on expected industry value creation.

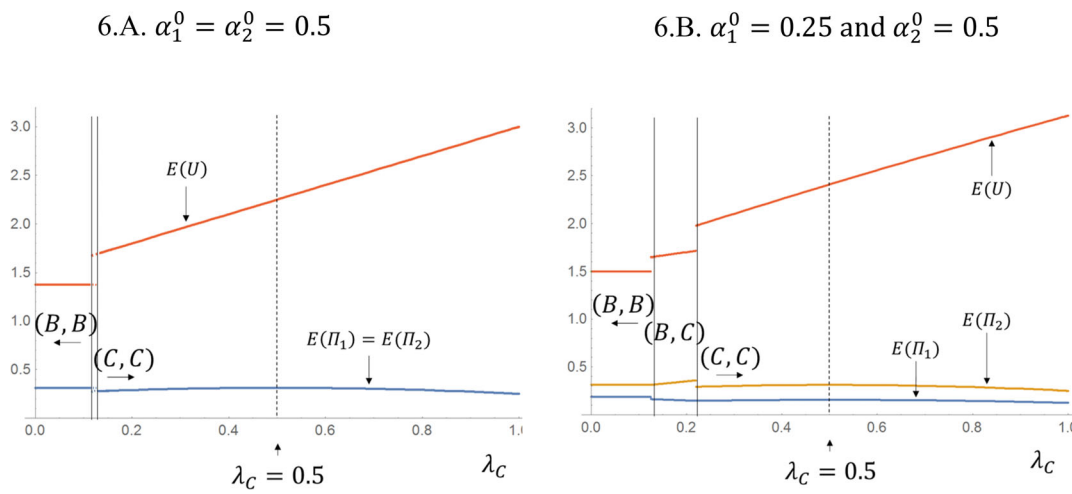

FIGURE 6 Expected firm value capture $E(\Pi_i)$ and expected buyers' value capture $E(U)$ with shifts in λ_C for different values of α_1^0 and α_2^0, based on the following other parameter values: $\Delta\alpha = 0.25$; $\Delta v = 1.5$; $\lambda_B = 0.5$; $v_h = 2$; $v_l = 1$; $p = 0.5$

to shift from C to B, which increases both firms' expected value capture, as established in Proposition 3 (i).

In contrast, we find that the parameters that determine the effectiveness of the C strategy—Δv and λ_C—have more nuanced effects on firm value capture, especially λ_C. Figure 6 illustrates the impact of λ_C on the expected value capture of firms and buyers. The local effects of λ_C on expected firm value capture within the (B, B) and (B, C) equilibria are qualitatively similar to those of Δv from Figure 5, as are the various transition effects. For example, in (B, C) the expected value capture of firm 2 is increasing in λ_C, while the expected value capture of firm 1 is decreasing. There is one striking difference, though: the local impact of λ_C on expected firm value capture is non-monotonic within (C, C) with radical value-creating innovations. This happens because a firm's *ex-post* value capture in (C, C) is larger when it successfully innovates while its rival does not—and therefore when the firm "steals" the rival's home segment—, and this is a more likely outcome for intermediate probabilities of success of the C strategy.[25]

Shifts in strategy effectiveness have unambiguous effects on buyers' value capture and industry value creation. Since increases in the effectiveness of B increase the expected share of added value that firms capture with that strategy and decrease the likelihood that firms choose C, there is a negative impact on expected buyers' value capture and industry value creation. Since increases in the effectiveness of C increase both the expected value creation from that strategy and the likelihood that firms choose it, there is a positive impact on expected buyers' value capture and industry value creation.

[25]In the (C, C) equilibrium with incremental value-creating innovations, expected firm value capture is invariant to λ_C. In the (C, C) equilibrium with radical value-creating innovations, increases in λ_C have a positive (negative) local effect on a focal firm's expected value capture when $\lambda_C < 0.5$ (>0.5), because they increase (decrease) the probability that the focal firm succeeds with C while the rival firm does not (i.e., $\lambda_C(1-\lambda_C)$).

Result (ii) of Proposition 4 considers the impact of the initial home-segment competitive advantage $v_h - v_l$. We find that $v_h - v_l$ has a positive impact on expected firm value capture in most equilibria, by contributing to the increase in firms' expected added values. In addition, and similarly to the effects of λ_B and $\Delta\alpha$, we also find that increases in $v_h - v_l$ may increase a focal firm's expected value capture by increasing the relative attractiveness of the *B* strategy and leading either (i) the rival firm to switch from *C* to *B*; or (ii) both firms to switch from *C* to *B*.[26] Finally, we find that increases in $v_h - v_l$ have a non-monotonic effect on expected buyers' value capture and industry value creation. This happens since increases in $v_h - v_l$ reduce the likelihood that either firm chooses *C*, despite increasing expected industry value creation within any equilibrium (assuming there is some increase in v_h, and not just a decrease in v_l).

5 | EXTENSION: RISK-TAKING WITHIN VALUE-BASED STRATEGIES

We now extend our model to expand the scope for firm agency, by allowing firms to shape the nature of their value-based innovation strategies. Specifically, for each strategy, a firm can now trade off a lower probability of success for a greater potential capability enhancement. Thus, in addition to the tradeoff *between* value creation and bargaining strategies, firms also face a classic risk-return tradeoff *within* each strategy.[27] In doing so, we contribute to prior work in strategy that seeks to understand the distribution of firm-level innovation outcomes and the drivers of breakthrough ideas (e.g., Conti, Gambardella, & Mariani, 2014; Fleming, 2001).[28]

We show that firms are risk-seeking in shaping their value creation strategies when the pursuit of radical value-creating innovations is possible. In contrast, we find that firms are indifferent about their risk-taking within bargaining strategies, and within value creation strategies when only incremental value-creating innovations are possible. We also find that the greater the scope for risk-taking within radical value-creating innovations, the lower the prevalence of the low-rivalry equilibrium where both firms pursue bargaining strategies.

5.1 | Model specification

In the base model, the parameters defining the effectiveness of each strategy (λ_C, Δv, λ_B, and $\Delta\alpha$) are fixed and the same across firms. We now relax these assumptions by allowing each firm to shape the risk-return profile of its chosen value-based strategy. We assume that both firms still have the same *expected* level of capability enhancement from a strategy, denoted by Δv^e or $\Delta\alpha^e$, but now a given firm i can trade off a lower probability of success (λ_{iC} or λ_{iB}) for a greater capability enhancement (Δv_i or $\Delta\alpha_i$). Firm i then faces a risk-return tradeoff defined by

[26]Interestingly, in equilibria where a focal firm chooses the *C* strategy with radical value-creating innovations, increases in $v_h - v_l$ may decrease its expected value capture if its home segment is small enough relative to the rival firm's home segment. The reason is that, in our model, $v_h - v_l$ also represents the *competitive disadvantage* that the focal firm must overcome to add value in the rival firm's larger home segment.

[27]We thank the anonymous reviewers for comments that inspired this extension.

[28]This literature has considered the role of many factors including the nature of search processes (Fleming, 2001), leader-laggard competitive dynamics (Cabral, 2003), clauses in employment contracts (Conti, 2014), and the experience of individual innovators (Conti et al., 2014). We consider a novel factor: how competition across market segments affects risk-taking by rival firms.

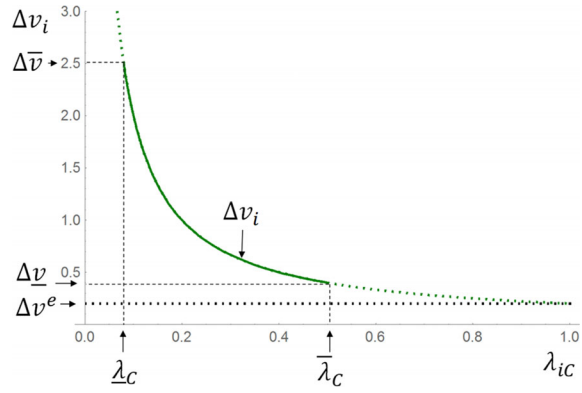

FIGURE 7 Illustration of the risk-return tradeoff within strategy C in terms of λ_{iC} and Δv_i (model extension with risk-taking within value-based strategies), with $\lambda_{iC}\Delta v_i = \Delta v^e = 0.2$; $\underline{\lambda}_C = 0.08$; $\overline{\lambda}_C = 0.5$

$\Delta v^e = \lambda_{iC}\Delta v_i$ for strategy C, and another risk-return tradeoff defined by $\Delta \alpha^e = \lambda_{iB}\Delta \alpha_i$ for strategy B.

We assume that firms choose the probability of success of a strategy within a range. That is, firm strategies can neither be entirely certain nor arbitrarily risky. For the B strategy we assume $\lambda_{iB} \in [\underline{\lambda}_B, \overline{\lambda}_B]$ with $0 < \underline{\lambda}_B < \overline{\lambda}_B < 1$, and for the C strategy we assume $\lambda_{iC} \in [\underline{\lambda}_C, \overline{\lambda}_C]$ with $0 < \underline{\lambda}_C < \overline{\lambda}_C < 1$. Figure 7 illustrates the resulting risk-return tradeoff for the C strategy, where the capability enhancement Δv_i falls with increases in the probability of success λ_{iC}.

5.2 | Results

We find that the distinction between radical and incremental value-creating innovations is crucial for risk-taking choices within strategy C.[29] Recall that with incremental innovations a firm can only capture value in its home market segment, while with radical innovations it can capture value in both market segments when it successfully innovates and its rival does not. In its home segment, the fact that the firm starts with a competitive advantage means that a value creation capability enhancement Δv_i should be *fully* translated into increased added value for the firm. This implies that, when only incremental innovations are possible, the firm just cares about the expected value creation capability enhancement Δv^e and is then indifferent about its level of risk-taking λ_{iC}. In contrast, in the rival's home segment, at least some of Δv_i is lost to overcoming the firm's initial competitive disadvantage. This fixed loss implies that, for the same Δv^e, the firm prefers to enter with a lower probability and a greater Δv_i. The firm then prefers the riskiest approach within C ($\underline{\lambda}_C$) whenever it allows for radical innovations.

All that ever matters for the profit impact of strategy B is the expected bargaining capability enhancement $\Delta \alpha^e$, since a firm's expected value capture is always proportional to its expected bargaining capability. The firm is then indifferent about its risk-taking level λ_{iB}.

We find that risk-seeking within radical value-creating innovations can have a dramatic impact on firms' overall strategy choices between bargaining and value creation. Figure 8 illustrates. Panels A and B consider the same parameters, with the exception that market segment sizes are symmetric in Panel A ($p = 0.5$) and asymmetric in Panel B ($p = 0.8$). Both panels show how firms' choices shift as they are allowed to increase the riskiness of their value-

[29]The formal propositions and proofs for this extension are in the online companion to the paper.

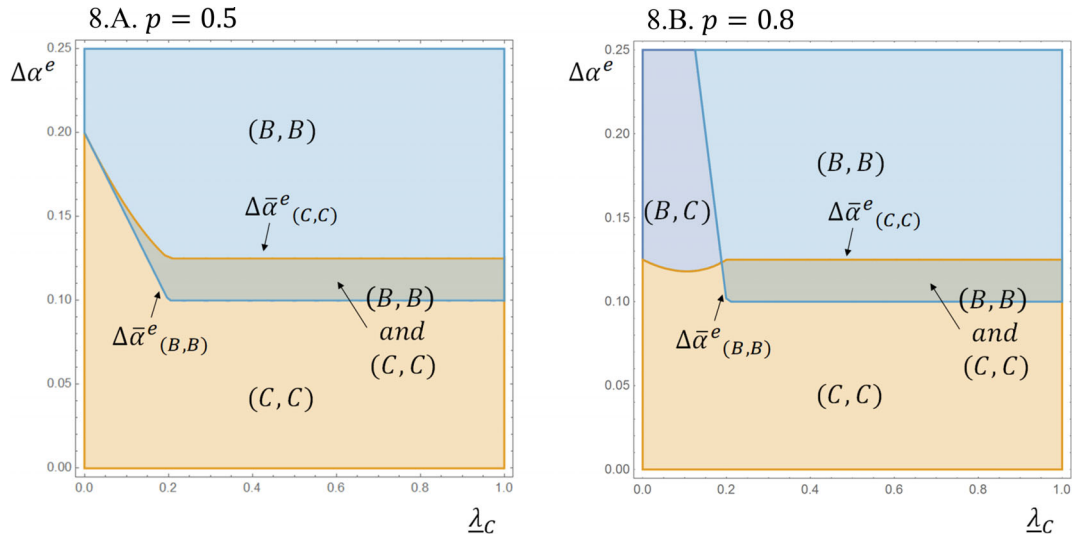

FIGURE 8 Equilibrium plots in terms of $\Delta\alpha^e$ and $\underline{\lambda}_C$ for different values of p (model extension with risk-taking within value-based strategies), based on the following other parameter values: $\lambda_B = 0.5$; $\alpha_1^0 = \alpha_2^0 = 0.5$; $\Delta v^e = 0.2$; $v_h = 2$; $v_l = 1$

creating innovations (given by lower values of $\underline{\lambda}_C$ on the horizontal axis). For $\underline{\lambda}_C > 0.2$, value-creating innovations are incremental, and both panels show no impact on strategy choices from greater risk-taking possibilities. Given the symmetry in firms' initial bargaining capabilities in both panels, the only two possible equilibria are (B, B) and (C, C), depending on the size of the expected bargaining capability enhancement $\Delta\alpha^e$.[30]

For $\underline{\lambda}_C < 0.2$, firms have access to radical value-creating innovations. Both panels display a reduction in the prevalence of (B, B) with increases in the riskiness of value-creating innovations (i.e., decreases in $\underline{\lambda}_C$). This happens because a firm's expected value capture from playing C in response to B increases with the riskiness of value-creating innovations, through the same mechanism that explains the firm's preference for riskier radical innovations.[31]

Which outcomes then become more prevalent with riskier radical value-creating innovations? In Panel A, where market segments are symmetric, (C, C) becomes more likely. Note that firms are not only switching to value creation strategies, but also to the riskiest radical value-creating innovations possible. In Panel B, where market segments are asymmetric, the shifts are very different. There is a limited and non-monotonic impact on the prevalence of the (C, C) equilibrium. Instead, the availability of riskier radical value-creating innovations gives rise to strategic heterogeneity, by which the firm with the smaller home segment (firm 2) shifts from B to C in an attempt to break into the larger segment, while the other firm (firm 1) continues to try to "milk" its initial competitive advantage in its larger home segment through B. Even

[30]Since all that matters for the profit impact of strategy B is the expected bargaining capability enhancement $\Delta\alpha^e$ and firms will be indifferent about the riskiness of their approach within strategy B as long as $\Delta\alpha^e$ is the same, we use $\Delta\alpha^e$ on the vertical axis of each panel in Figure 8.

[31]In Panel A, we can also see a progressive decrease in the multiplicity region where (B, B) and (C, C) overlap. The reason for this is that, since $\underline{\lambda}_C$ is lower, there is a lower probability that rival firms impose a negative competitive externality on each other through C, which decreases the strength of the property of mutual reinforcement of their strategies, and thus the importance of their coordination for equilibrium outcomes.

though riskier radical value-creating innovations improve the attractiveness of breaking into the rival's segment with *C* for both firms, the lower probability that firm 1's larger home segment is taken over by firm 2 may actually reinforce firm 1's preference for *B*.

How does the availability of riskier value-creating innovations (i.e., lower $\underline{\lambda}_C$) affect value capture and value creation outcomes in an industry? If *radical* innovations are possible, we find clear local impacts. The availability of riskier value-creating innovations increases both firms' expected value capture in (*C*, *C*). This is due to the greater returns from a firm breaking into its rival's home segment, as highlighted above, and to the lower probability that the firm's home segment is disrupted by the rival. The availability of riskier radical value-creating innovations also increases expected industry value creation in (*C*, *C*). This is because riskier strategies reduce the joint probability that the two firms are successful with radical innovations which, despite being the situation where value creation is higher *ex post*, is inefficient from the standpoint of *ex-ante* expected value creation, since the enhancement to the value creation capability of a given firm does not add value in the rival firm's home segment.[32] With strategic heterogeneity (i.e., one firm choosing *B* and the other choosing *C*) and radical value-creating innovations, the availability of riskier value-creating innovations also has a positive impact, not only on both firms' expected value capture (as argued above), but also on expected industry value creation. These positive local impacts on expected industry value creation are reinforced by any transitions away from (*B*, *B*), which is the equilibrium with the lowest level of value creation. However, such transitions also reduce the firms' total expected value capture, thus countering the positive local impacts from greater risk-taking possibilities on firm performance.[33]

This extension illustrates how our model of value-based innovation strategies can be fruitfully leveraged to address other fundamental strategy questions, in this case the distribution of innovation outcomes and the pursuit of breakthrough ideas.

6 | EXTENSION: INITIAL VALUE CREATION CAPABILITY ADVANTAGE

In the base model, firms may have different initial bargaining capabilities, while their value creation capabilities are similar, in that each firm has the same competitive advantage in its home segment. Given the importance of firm heterogeneity in value creation for the strategy field, in this extension we analyze the impact of one firm having an initial value creation capability advantage. Due to the complementarity between value creation and bargaining for a firm's returns, we expected to find that the advantaged firm would have a greater incentive to "milk" its higher value creation by focusing on bargaining, while the disadvantaged firm would have a

[32]When both firms pursue radical value-creating innovations through strategy *C*, if only one firm successfully innovates, then its enhanced value creation capability adds value in both segments. In contrast, if the two firms successfully innovate, then a given firm's enhanced value creation capability adds value in its home segment but not in the rival firm's home segment, as the rival firm will still create more value for buyers there. Thus, even though *ex-post* industry value creation is higher when both firms successfully innovate with the *C* strategy, there are also greater redundancies in value creation, as a greater portion of firms' value creation enhancements are not translated into added value. These greater redundancies make it such that, from the *ex-ante* standpoint of expected industry value creation, it is more efficient when firms pursue the riskiest radical value-creating innovations possible (i.e., $\lambda_{iC}=\underline{\lambda}_C$), thus minimizing the joint probability that both successfully innovate (i.e., $\lambda_{iC}\lambda_{-iC}$).

[33]While these transition effects increase buyers' expected value capture, the local effects of riskier radical value-creating innovations on buyers are ambiguous: although expected industry value creation increases, this can be more than offset by increases in firms' expected value capture.

greater incentive to focus on value creation. That is, the advantaged firm would put the sustainability of its initial value creation advantage at greater risk to maximize its value capture. The actual results proved to be more nuanced than we anticipated.

Formally, we extend our base model as follows. Firm 1's initial value creation in each market segment is increased by $v_C > 0$, such that $v^0_{1X} = v_h + v_C$ and $v^0_{1Y} = v_l + v_C$, whereas firm 2's initial value creation remains the same as before (i.e., $v^0_{2X} = v_l$ and $v^0_{2Y} = v_h$). We set $0 < v_C < v_h - v_l$, so that firm 2 still has positive (albeit reduced) initial added value for buyers in its home segment Y ($AV_{2Y} = v_h - v_l - v_C$).

We confirmed our conjecture for incremental value-creating innovations: the advantaged firm 1 does have a greater incentive to choose strategy *B*, while the disadvantaged firm 2 has a greater incentive to choose strategy *C*. However, we find that this need not happen for radical innovations. The reason is that the initial advantage also increases firm 1's returns from breaking into firm 2's home segment, possibly leading firm 1 to have a greater incentive to choose *C* over *B* when firm 2's home segment is sufficiently large. Thus, a firm need not be more prone to "milking" a value creation advantage by focusing on bargaining when there are opportunities to enter large market segments. A case in point here could be that of Anheuser-Busch (AB) in the early 1970s. AB's value creation advantages over rivals in standard beers—based on greater efficiencies in production and distribution—allowed it to enter and compete more effectively in the more attractive premium segment (Gadiesh & Gilbert, 1998).

7 | CONCLUDING DISCUSSION

In response to empirical findings (e.g., Bennett, 2013; Grennan, 2014) and calls in recent surveys of the value-based literature (Gans & Ryall, 2017; Ross, 2018), we offer a theoretical exploration of how the choice between value-based innovation strategies affects competitive interactions and value capture among rival firms. Specifically, we extend biform games to include strategies that are aimed at enhancing firms' bargaining capabilities (e.g., the development of new sales techniques) and that can be chosen instead of the more commonly studied strategies aimed at enhancing value creation (e.g., product or process improvements). We show that the option to pursue bargaining strategies matters for market outcomes and find important differences in the drivers and impacts of value creation and bargaining strategies. Moreover, we extend the analysis to show how risk-taking possibilities can be an important added determinant of these strategy choices when radical value-creating innovations are possible.

We now reflect on the connections between our work and prior research. Our model is most directly related to an emerging body of value-based research that analyzes bargaining strategies (Bennett, 2013; Panico, 2017).[34] Bennett (2013) draws on a biform game formulation to show empirically that negotiated vehicle prices were higher for auto dealerships with sales systems in which junior sales staff escalated challenging customers to experienced colleagues. Panico (2017) also studies bilateral bargaining interactions, in his case between alliance partners.[35] His formal

[34]Outside the formal value-based literature, our work is also connected to formal research on bilateral relationships in the tradition of the property rights theory. For instance, Rajan and Zingales (2000) analyze the incentives of distinct economic actors involved in a bilateral relationship to make (noncontractible) investments that either contribute to joint value creation or translate into an improved ability to grab future rents from the relationship. We are thankful to an anonymous reviewer for pointing this out.

[35]Despite not being a cooperative game theory model, Panico's (2017) model can be considered as belonging to the value-based literature due to its focus on value creation and bargaining.

model shows that synergies and more symmetric control in alliances can increase the incentives of alliance partners to both contribute to joint value creation and devote more effort to bargaining. Our analysis of bargaining strategies differs from these studies since it emphasizes the role of market competition between rival firms, rather than focusing on bilateral bargaining relationships. We highlight that bargaining strategies can have implications for value capture that go beyond the redistribution of surplus between the counterparties that are directly negotiating. For example, we show that the availability of bargaining strategies can shift rival firms away from mutually harmful competition based on value creation.

Moreover, our work builds a bridge between the classic notion of generic strategies and modern value-based analysis. Since they were introduced by Michael Porter (1980, 1985), the broad generic strategies of "Differentiation" (i.e., higher willingness-to-pay) and "Cost Leadership" have been prominent in economic approaches to strategy (e.g., Besanko, Dranove, Shanley, & Schaefer, 2017). However, these *Porterian* strategies arguably lose appeal in the context of the value-based literature, where value creation depends more on the gap between willingness-to-pay and opportunity costs than on the absolute level of either. We see our value creation and bargaining strategies as more natural generic strategies from the perspective of the value-based literature.

The fact that we explicitly consider uncertainty in firm strategies is also noteworthy, as it is something that is underdeveloped in the received value-based literature. This allows us to interpret the generic value-based strategies in our model as risky innovation efforts. Furthermore, it opens connections to prior research on business model innovation. Scholarly treatments of business models emphasize the need for firms to create value through innovations to their cost structures and customer value propositions (Johnson, Christensen, & Kagermann, 2008; Lecocq, Demil, & Warnier, 2006; Osterwalder & Pigneur, 2010; Zott & Amit, 2008). However, as in our model, this literature also recognizes that firms need to discover how to best appropriate value through innovations to their revenue-generating mechanisms (Casadesus-Masanell & Zhu, 2013; Chesbrough, 2007, 2010; Michel, 2014; Teece, 2010). This is well illustrated in the domain of smartphone software applications ("apps"). While app developers work to increase the functionality and ease of use of their apps (i.e., value creation), they have also been experimenting with a range of revenue models (e.g., fixed fees, in-app purchases, subscriptions, and *freemium*), to increase the value they extract from users. See, for example, Apple's website for developers (Apple, 2021).

We conclude by highlighting possible theoretical and empirical research opportunities building on our work. One fruitful avenue for theoretical research could be to allow for bargaining interactions to vary by market segment, to reflect differences in buyer bargaining capabilities or in the structure of distribution channels. One could then also look at competing investments in bargaining by both suppliers and buyers, thus echoing Panico's (2017) formalization while retaining the market rivalry from our model. Moreover, there could be scale effects influencing bargaining, with a firm's bargaining effectiveness shifting with the number of buyers served.[36] Beyond bargaining, future theoretical work could also explore the impact

[36]We thank an anonymous reviewer for this insightful comment. For example, fixed investments and cumulative experience could improve the efficiency of a firm's negotiation function, and thereby give rise to positive effects of the number of buyers served on a firm's bargaining capability. In contrast, capacity constraints on a firm's salesforce could impair the firm's performance in bargaining with individual buyers if the number of buyers served increased beyond a certain point.

of the cost of implementing value-based innovation strategies on the emergence of commitment and pre-emption dynamics in competition.[37]

In terms of empirical work, an important contribution would be the assembly of datasets that code firms' innovation strategy choices in terms of their impacts on value creation or bargaining capabilities. It would then be interesting to examine the extent to which competing firms tend to imitate each other's strategy choices, and how those behaviors are moderated by firm heterogeneity. Our results suggest that it could also be interesting to consider patterns in firms' strategy choices over time. Given the complementarity between bargaining and value creation for a given firm's returns, we would expect firms that have succeeded with value creation enhancements in the past to then switch to focusing on bargaining, and vice versa. Clear empirical patterns could spur and guide much needed further theorizing around the choice of value-based innovation strategies by firms.

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DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article, as no datasets were generated or analyzed.

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REFERENCES

Adegbesan, J. A., & Higgins, M. J. (2011). The intra-alliance division of value created through collaboration. *Strategic Management Journal*, *32*(2), 187–211.

Adner, R. (2002). When are technologies disruptive? A demand-based view of the emergence of competition. *Strategic Management Journal*, *23*(8), 667–688.

Adner, R., & Snow, D. (2010). Old technology responses to new technology threats: Demand heterogeneity and technology retreats. *Industrial and Corporate Change*, *19*(5), 1655–1675.

Adner, R., & Zemsky, P. (2005). Disruptive technologies and the emergence of competition. *The RAND Journal of Economics*, *36*(2), 229–254.

Adner, R., & Zemsky, P. (2006). A demand-based perspective on sustainable competitive advantage. *Strategic Management Journal*, *27*(3), 215–239.

Apple. (2021). *Choosing a business model*. Retrieved from https://developer.apple.com/app-store/business-models/.

[37]In the online companion to the paper, we develop a generalized model specification that allows parameters related to bargaining and value creation capabilities to fully vary across firms and segments and to shift arbitrarily with a successful value-based innovation strategy. Furthermore, we allow the probabilities of strategy success to vary across firms to capture firm heterogeneity in innovation capabilities and include the possibility of firm-specific costs of implementing each strategy. By taking this generalized specification and assuming some specific parameter values we arrive, not only at the base model, but also at the second extension presented in this paper and at another extension presented in the online companion that considers strategy implementation costs.

Arrow, K. (1962). Economic welfare and the allocation of resources for invention. In R. R. Nelson (Ed.), *The rate and direction of inventive activity: Economic and social factors* (pp. 609–625). Princeton, NJ: Princeton University Press.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120.

Bazerman, M. H., & Neale, M. A. (1992). *Negotiating rationally*. New York, NY: Free Press.

Bennett, V. M. (2013). Organization and bargaining: Sales process choice at auto dealerships. *Management Science*, *59*(9), 2003–2018.

Besanko, D., Dranove, D., Shanley, M., & Schaefer, S. (2017). *Economics of strategy* (7th ed.). John Wiley & Sons: Hoboken, NJ.

Bradley, S. P., Ghemawat, P., & Foley, S. (1994). *Wal-Mart Stores, Inc. Harvard Business School Case 9-794-024*. Boston, MA: Harvard Business School.

Brandenburger, A. M., & Stuart, H. W. (1996). Value-based business strategy. *Journal of Economics & Management Strategy*, *5*(1), 5–24.

Brandenburger, A. M., & Stuart, H. W. (2007). Biform games. *Management Science*, *53*(4), 537–549.

Burton, R. M., Obel, B., & DeSanctis, G. (2006). *Organizational design: A step-by-step approach*. New York, NY: Cambridge University Press.

Cabral, L. M. (2003). R&D competition when firms choose variance. *Journal of Economics & Management Strategy*, *12*(1), 139–150.

Casadesus-Masanell, R., & Heilbron, J. (2015). The business model: Nature and benefits. In C. Baden-Fuller & V. Mangematin (Eds.), *Advances in strategic management* (Vol. 33, pp. 3–30). Bingley, UK: Emerald Group Publishing Limited.

Casadesus-Masanell, R., & Zhu, F. (2013). Business model innovation and competitive imitation: The case of sponsor-based business models. *Strategic Management Journal*, *34*(4), 464–482.

Chatain, O., & Zemsky, P. (2007). The horizontal scope of the firm: Organizational tradeoffs vs. buyer-supplier relationships. *Management Science*, *53*(4), 550–565.

Chatain, O., & Zemsky, P. (2011). Value creation and value capture with frictions. *Strategic Management Journal*, *32*(11), 1206–1231.

Chesbrough, H. (2007). Business model innovation: It's not just about technology anymore. *Strategy & Leadership*, *35*(6), 12–17.

Chesbrough, H. (2010). Business model innovation: Opportunities and barriers. *Long Range Planning*, *43*(2–3), 354–363.

Christensen, C. M. (1997). *The innovator's dilemma: When new technologies cause great firms to fail*. Boston, MA: Harvard Business School Press.

Christensen, C. M., & Raynor, M. (2013). *The innovator's solution: Creating and sustaining successful growth*. Boston, MA: Harvard Business School Press.

Conti, R. (2014). Do non-competition agreements lead firms to pursue risky R&D projects? *Strategic Management Journal*, *35*(8), 1230–1248.

Conti, R., Gambardella, A., & Mariani, M. (2014). Learning to be Edison: Inventors, organizations, and breakthrough inventions. *Organization Science*, *25*(3), 833–849.

Fisher, R., & Ury, W. (1981). *Getting to yes: Negotiating agreement without giving in*. Penguin Group: New York, NY.

Fleming, L. (2001). Recombinant uncertainty in technological search. *Management Science*, *47*(1), 117–132.

Gadiesh, O., & Gilbert, J. L. (1998). Profit pools: A fresh look at strategy. *Harvard Business Review*, *76*(3), 139–147.

Gans, J., & Ryall, M. D. (2017). Value capture theory: A strategic management review. *Strategic Management Journal*, *38*(1), 17–41.

Grennan, M. (2014). Bargaining ability and competitive advantage: Empirical evidence from medical devices. *Management Science*, *60*(12), 3011–3025.

Henderson, B. D. (1979). The product portfolio: Growth share matrix of the Boston consulting group. In H. Mintzberg & J. B. Quinn (Eds.), *The strategy process* (pp. 678–680). Essex, UK: Pearson.

Hill, C. W., & Rothaermel, F. T. (2003). The performance of incumbent firms in the face of radical technological innovation. *Academy of Management Review*, *28*(2), 257–274.

Jia, N. (2013). Competition, governance, and relationship-specific investments: Theory and implications for strategy. *Strategic Management Journal*, *34*(13), 1551–1567.

Johnson, M. W., Christensen, C. M., & Kagermann, H. (2008). Reinventing your business model. *Harvard Business Review*, *86*(12), 57–68.

Lax, D., & Sebenius, J. K. (1986). *The manager as a negotiator: Bargaining for cooperation and competitive gain*. New York, NY: Free Press.

Lecocq, X., Demil, B., & Warnier, V. (2006). Le business model, un outil d'analyse stratégique. *L'Expansion Management Review*, *123*(4), 96–109.

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.

MacDonald, G., & Ryall, M. D. (2004). How do value creation and competition determine whether a firm appropriates value? *Management Science*, *50*(10), 1319–1333.

Michel, S. (2014). Capture more value. *Harvard Business Review*, *92*(10), 78–85.

Ocasio, W. (1997). Towards an attention-based view of the firm. *Strategic Management Journal*, *18*(S1), 187–206.

Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: A handbook for visionaries, game changers and challengers*. Hoboken, NJ: John Wiley & Sons.

Panico, C. (2017). Strategic interaction in alliances. *Strategic Management Journal*, *38*(8), 1646–1667.

Penrose, E. T. (1959). *The theory of the growth of the firm*. New York, NY: John Wiley & Sons.

Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, *14*(3), 179–191.

Porter, M. E. (1980). *Competitive strategy: Techniques for analyzing industries and competitors*. New York, NY: Free Press.

Porter, M. E. (1985). *The competitive advantage: Creating and sustaining superior performance*. New York, NY: Free Press.

Rajan, R. G., & Zingales, L. (2000). The tyranny of inequality. *Journal of Public Economics*, *76*(3), 521–558.

Reinganum, J. F. (1983). Uncertain innovation and the persistence of monopoly. *American Economic Review*, *73*(4), 741–748.

Reinganum, J. F. (1989). The timing of innovation: Research, development, and diffusion. In R. Schmalensee & R. D. Willig (Eds.), *Handbook of industrial organization* (Vol. 1, pp. 849–908). New York, NY: North-Holland.

Ross, D. G. (2018). Using cooperative game theory to contribute to strategy research. *Strategic Management Journal*, *39*(11), 2859–2876.

Ryall, M. D. (2013). The new dynamics of competition. *Harvard Business Review*, *91*(6), 80–87.

Ryall, M. D., & Sorenson, O. (2007). Brokers and competitive advantage. *Management Science*, *53*(4), 566–583.

Sebenius, J. K. (2001). Six habits of merely effective negotiators. *Harvard Business Review*, *79*(4), 87–97.

Simon, H. A. (1947). *Administrative behavior: A study of decision-making processes in administrative organization*. New York, NY: MacMillan.

Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, *43*(2–3), 172–194.

Tripsas, M. (1997). Unraveling the process of creative destruction: Complementary assets and incumbent survival in the typesetter industry. *Strategic Management Journal*, *18*(S1), 119–142.

Tripsas, M., & Gavetti, G. (2000). Capabilities, cognition, and inertia: Evidence from digital imaging. *Strategic Management Journal*, *21*(10–11), 1147–1161.

Tushman, M. L., & Anderson, P. (1986). Technological discontinuities and organizational environments. *Administrative Science Quarterly*, *31*(3), 439–465.

Yoffie, D., & Kim, R. (2011). Cola wars continue: Coke and Pepsi in 2010. In *Harvard Business School Case 9-711-462*. Harvard Business School: Boston, MA.

Zott, C., & Amit, R. (2008). The fit between product market strategy and business model: Implications for firm performance. *Strategic Management Journal*, *29*(1), 1–26.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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