

GUEST EDITORS' INTRODUCTION TO THE SPECIAL ISSUE: WHY IS THERE A RESOURCE-BASED VIEW? TOWARD A THEORY OF COMPETITIVE HETEROGENEITY

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Although the resource-based view (RBV) is one of the most popular and fruitful areas of strategy research, it often perplexes scholars from other disciplines. Also, it is unclear whether strategy scholars themselves agree on the RBV's basic issues and premises. To clarify the contribution of the RBV, in this paper we elaborate its basic tenets and relate them to other current research on interfirm performance variance. We suggest a more expansive discussion of sustained differences among firms and thereby develop a broad theory of competitive heterogeneity. Copyright © 2003 John Wiley & Sons, Ltd.

Over the past 15 years, the resource-based view (RBV) on the origins of competitive advantage has become one of the standard theories in strategy. It asks a major research question: Why do firms in the same industry vary systematically in performance over time? The RBV then sits at the epicenter of the field. A number of researchers have extended the theory's concepts, linking it to industry conditions and to innovation (e.g., Amit and Schoemaker, 1993; Dierickx and Cool, 1989; Mahoney and Pandian, 1992; Peteraf, 1993; Teece, Pisano, and Shuen, 1997). These extensions broaden the RBV's range and strengthen its position as the dominant explanation of interfirm performance differences. Though large in numbers, empirical research on the RBV has not evolved in a similar accretive way.¹ This lack of development

is disappointing. Although the RBV dominates the conceptual landscape, systematic falsification remains very difficult.

In this paper we posit that the RBV is one of many explanations for intra-industry performance differences (from here-on competitive heterogeneity) and describe alternative sources of them. In so doing we use a value–price–cost framework that clarifies key arguments. We also describe how a theory of competitive heterogeneity aids the RBV and the field of business strategy.

In our view, the problems of the RBV lie less with its propositions than with the expectations that are made of them. While the RBV has reemphasized the importance of organizations in strategy research, it offers little guidance on the key questions that should move this research forward. Part of the problem lies in operationalizing the RBV's concepts consistently across firms. A deeper problem exists in its relationship to data in general. Thus, many scholars argue that the theory is essentially a tautology (e.g., Bromiley and Fleming,

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¹ For instance, less than 4 percent of empirical articles published in six journals from 1990 to 2002 (*SMJ*, *ASQ*, *AMJ*, *MS*, *OS*, *JOM*) that reference the RBV in the article's theory section

include a research design that tests two or more of the core premises of the RBV.

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2002; Foss, Knudsen, and Montgomery, 1995; Priem and Butler, 2001).

Our view is that the RBV's accomplishments are clearer when viewed as part of a larger theory of competitive heterogeneity. Like the RBV, competitive heterogeneity refers to *enduring and systematic performance differences among relatively close rivals*. However, it has broader theoretical roots than the RBV and stimulates a wider range of empirical inquiry. We do not review and debate the vast RBV literature here. Instead, we identify some of the RBV's boundaries and then suggest how looking beyond the RBV might generate a more complete picture of the emergence and persistence of performance heterogeneity among close rivals.

THE RESOURCE-BASED VIEW

The RBV argues that the heterogeneous market positions of close competitors derive from each firm's unique bundle of resources and capabilities (Barney, 1986a, 1986b, 1991; Peteraf, 1993; Wernerfelt, 1984). Moreover, to be a source of sustained competitive advantage, resources and capabilities must be:

1. *Valuable*. A valuable resource enables a firm to improve its market position relative to competitors. For example, resources acquired at a price below their discounted net present value can generate rents (profits that do not attract entry) (Peteraf, 1993).
2. *Rare*. To be of value in sustaining competitive advantage resources must be available in short supply relative to demand.
3. *Isolated from imitation or substitution*. To be rare, resources need to be immobile, and costly to imitate or to replicate.

Of these three characteristics, only value and inimitability are ultimately important. Rareness is important only if a resource is valuable and exists only if the resource cannot be imitated by competitors. So concentrating on value and inimitability gets to the heart of the RBV.

Since Barney (1986a, 1986b, 1991) and Wernerfelt (1984) published their original papers, a distinction has emerged in the RBV literature between resources and capabilities. Makadok's

(2001) recent statement on this distinction is perhaps the clearest. In his view, a resource is an observable (but not necessarily tangible) asset that can be valued and traded—such as a brand, a patent, a parcel of land, or a license. A capability, on the other hand, is not observable (and hence necessarily intangible), cannot be valued, and changes hands only as part of its entire unit. A mixture of people and practices continuously enact capabilities like the American Airlines yield management system, Wal-Mart's docking system, and Dell's logistics system. Further, a capability can be valuable on its own or enhance the value of a resource (e.g., Nelson and Winter, 1982; Teece, 1986; Tripsas, 1997).² For example, Nike's marketing capability increases the value of its brand. Some scholars classify research on capabilities as distinct from research on the RBV. But here we consider the capabilities and resources literatures as one and the same.

Numerous special issues and edited volumes have integrated the RBV with other theories (e.g., Barney and Zajac, 1994; Barney, Wright, and Ketchen, 2001; Foss, 1997; Foss and Robertson, 2000; Spender and Grant, 1996; Helfat, 2000; Henderson and Mitchell, 1997; Teece and Pisano, 1994; Montgomery, 1995). How researchers measure resources and capabilities varies extensively. For example, as measures studies have used patent data (e.g., Henderson and Cockburn, 1994), survey responses (e.g., McGrath, MacMillan, and Venkataraman, 1995; McEvily and Zaheer, 1999), firm experience, market share (e.g., Levinthal and Myatt, 1994), human capital (e.g., Maijor and van Witteloostuijn, 1996; Kraatz and Zajac, 2001), investments in functional areas (e.g., Helfat, 1994; Yeoh and Roth, 1999), property rights (e.g., Miller and Shamsie, 1996), and reputation (e.g., Kraatz and Zajac, 2001). Given this variance, the models underlying the empirical literature often seem disjoint, and consequently so do their results. Peteraf raised this point in 1993. Surprisingly, 10 more years of empirical research has not resolved the issue. Still, some empirical studies have substantially informed our understanding of how firms develop valuable resources and capabilities (e.g., Henderson and Clark, 1990; Clark and Fujimoto, 1991; Iansiti and Clark, 1994; Hoopes and Postrel,

² See Winter (this volume) for a discussion and decomposition of the 'dynamic capabilities' concept.

1999; Makadok and Walker, 2000) and their subsequent effects on firms' market positions or performance (e.g., Collis, 1991; Henderson and Cockburn, 1994; Miller and Shamsie, 1996; Hoopes, 2001). For a recent review please see Barney and Arikan (2002).

The RBV states that a firm's resources can sustain superior economic performance only if the resources are inimitable. Three general isolating mechanisms prevent the imitation of resources and capabilities: property rights, learning and development costs, and causal ambiguity.³ Property rights apply most directly to resources. For example, a patent protects a firm against infringement by competitors. High learning and development costs inhibit the copying of both resources and capabilities. As the required investment for imitating a rival's resource increases, the probability others will attempt imitation decreases (Sutton, 1990). Last, ambiguity regarding a rival's capability increases the difficulty of imitating it, even when the process is observable (e.g., Lippman and Rumelt, 1982; King, 2001). Similarly, ambiguity about how a rival's resources and capabilities create superior performance impedes imitation. The RBV thus offers an important perspective on competitive heterogeneity.

Yet, the RBV seems to assume what it seeks to explain. This dilutes its explanatory power. For example, one might argue that the RBV *defines*, rather than *hypothesizes*, that sustained performance differences are the result of variation in resources and capabilities across firms. The difference is subtle, but it frustrates understanding the RBV's possible contributions.

Further, disconfirming the RBV is difficult. The theory is supported by any evidence that interfirm variation in resources and capabilities creates sustainable performance differences. Yet, evidence to the contrary indicates only that the resources or capabilities examined lack value.

Thus, the RBV's lack of clarity regarding its core premise and its lack of any clear boundary impedes fruitful debate. Given the theory's lack of specificity, one can invoke the definition-based or hypothesis-based logic any time. Again, we argue that resources and capabilities are but one potential source of competitive heterogeneity. Competitive heterogeneity can obtain for reasons other than sticky resources (or capabilities).

³ Also, see Rumelt (1984).

COMPETITIVE HETEROGENEITY

Focusing on competitive heterogeneity addresses the RBV's inherent theoretical and empirical problems. In our framework, resources and capabilities play a key role but do not explain all persistent performance differences. The framework links resources and capabilities to competitive advantage in a number of ways. Yet, it also examines other sources of heterogeneity. Moreover, we identify sources of sustainable heterogeneity other than barriers to imitation. If resources or capabilities associated with sustained performance heterogeneity are not protectable, then its persistence must be due to something other than costly imitation. In other words, barriers to imitation are one type of isolating mechanism. Other isolating mechanisms do not depend on a firm's resources or capabilities.⁴

Value, price, and cost (VPC) framework

To define superior performance independently of resources and capabilities, we adopt a bargaining model (see Tirole, 1988: 21–34). In this framework, a buyer and supplier bargain over the price (P) for a good that contributes a value (V) or benefit to the buyer and costs the supplier some amount (C) to produce. Value is the price a buyer is *willing to pay* for a good absent competing products or services yet within budget constraints and considering other purchasing opportunities. Most work considers costs in terms of marginal cost. The good's market price lies between value and cost. So, the buyer receives a surplus of value minus the price ($V - P$), and the supplier receives a profit of price minus cost ($P - C$). The supplier's resources and capabilities, in turn, influence the value of the good to the buyer and/or the cost of producing it.⁵

Strategy texts frequently use the VPC framework to define competitive advantage (Besanko,

⁴ We discuss switching costs below. Also, firms may have different preferences and beliefs regarding how to pursue their business. See Knott (this issue) and Hoopes and Johnson (this issue).

⁵ For instance, resources like a brand or a proprietary technology and capabilities like superior quality management or customization skills can enhance buyer value. Traditional value drivers include quality (durability, design), technology (functionality), delivery, customization, service, product line breadth, geography (location or breadth), risk assumption (e.g., warranties), brand or reputation, network externalities, and complements. Alternatively, a resource, such as a location with lower transportation costs or capabilities that result in economies of scope or scale

Dranove, and Shanley, 1999: chapter 13; Ghemawat, 1991: chapter 4; Walker, 2004: chapter 2; see also Postrel, 2002). In this framework, the firm that produces the largest difference between value and cost has an advantage over rivals. It can either attract buyers due to the better surplus its product offers ($V - P$) or make a higher profit ($P - C$) or both.⁶

The VPC framework illustrates that simply having costly to imitate resources and capabilities does not necessarily produce a competitive advantage. Consider two firms that have different resources and capabilities and hence offer different value at different costs. Yet, V minus C is the same for both firms. Next, assume industry-wide constraints on bargaining over price. Then the dissimilar resources and capabilities of these firms produce the same economic return ($P - C$). This means that a resource or capability is valuable only when it increases the difference between a firm's value and cost ($V - C$) compared to rivals.⁷ That is, a valuable resource makes a firm more productive in the context of competition.⁸

The VPC framework also allows us to separate competitive heterogeneity from resources and capabilities. More importantly, the framework relies on a substantially simpler set of assumptions than those invoked by the RBV.⁹ For example, a firm's network relationships may enable it to tap into resources that increase value (V) or lower cost (C). On the value side, a firm's network ties may provide it with information about future opportunities for enhancing product quality. Restricted access to the network may prevent rivals from acquiring information about these opportunities. Defendable resources or unique capabilities need

not be the source of such relationships, yet these relationships may influence the timing of entry and ongoing investment. Indeed, a broad stream of research over the past 20 years shows the contributions of networks to firm heterogeneity (e.g., Granovetter, 1985; Burt, 1992; Walker, Kogut, and Shan, 1997; Gulati, Nohria, and Zaheer, 2000).¹⁰ These effects, labeled by Gulati (1999) as 'network resources,' lie outside the RBV's boundaries but provide important sources of value and cost differences among firms (e.g., Ahuja, 2000; McEvily and Zaheer, 1999).¹¹ Some scholars argue that these network effects largely are inimitable (e.g., Gulati *et al.*, 2000) but how persistent the performance differences associated with network resources are remains an open issue.

Considering cost drivers more specifically, holding value constant, cost differences among firms may obtain because of variation in the costs of inputs, such as those associated with regional differences in factor markets. These differences allow heterogeneity in performance in a population of close competitors. More specifically, firms that operate in a low-cost region outperform those that do not. From the perspective of competitive heterogeneity, input cost differences among firms clearly lead to differences in profitability.¹² A related stream of research shows that firms may benefit in both value and cost by locating in a region or locale where a cluster of firms operate (e.g., Saxenian, 1994; Sorenson and Audia, 2000). Thus, the $V - C$ profile of a member of a cluster likely differs from that of a close rival who is not a member.

independent of technology can result in greater efficiency. Representative cost drivers include economies of scale and scope, the learning curve, input costs, and firm-specific practices.

⁶ Models of sustainable heterogeneity typically focus on differences among firms in efficiency, rarely on differences in customer benefit, and even more rarely in differences in both efficiency and customer benefit simultaneously (Lippman and Rumelt, 1982; Jovanovic, 1982; Pakes and Ericson, 1998).

⁷ This point was central to Barney's (1986b) argument regarding strategic factor markets.

⁸ For instance, Besanko, Gupta, and Jain (1998) show that even a firm that is 'stuck in the middle' can achieve a higher economic surplus than rivals, based on a larger difference between its product value and the marginal cost to produce it compared to that of rivals. With the VPC framework, there is no 'stuck in the middle.'

⁹ Lippman and Rumelt (this issue; 2003) identify problems that the RBV, and strategy research in general, has inherited from microeconomics.

¹⁰ More specifically, Baum, Calabrese, and Silverman (2000) show that initial differences in start-ups' alliance networks generate heterogeneity during the early stages of start-ups' development. Dyer and Nobeoka (2000) conclude that a distinct network identity facilitates close interfirm interaction, thereby providing a firm with a performance advantage relative to its rivals. Ingram and Roberts (2000) find that friendship ties among rivals can provide performance benefits not attained by rivals that lack friendship ties. In addition, variance in network characteristics, such as the degree of relational or structural embeddedness, may provide sources of competitive advantage (Rowley, Behrens, and Krackhardt, 2000).

¹¹ Network resources include factors like network structure, network membership, and tie modality (see Gulati *et al.*, 2000).

¹² Our framework focuses on close competitors, such as those competing for the same scarce resources to serve similar market needs. For a study examining how heterogeneity in the spatial distribution of resources affects population segmentation and industry dynamics, see Lomi (1995).

These two types of regional effects are region not firm specific.¹³

One might question whether these types of advantages truly reflect competitive heterogeneity. The answer, at least statistically, must be that they do. Heterogeneity does not require that all firms are different from each other—only that some firms differ—and that these differences are sustainable. This observation is consistent with the recent stream of variance analysis studies (for a review, see Bowman and Helfat, 2001).

Whether protecting resources is necessary for sustainability also depends on market segmentation. In particular, in some markets buyers' switching costs vary. Hence, their supplier loyalty also varies. Switching from products based on value drivers, such as quality, customization, and service, entails higher search, learning, and transition costs. This raises customer retention rates. In this situation, it is not sufficient that rivals match the buyer surplus provided by the current supplier. They must also cover the buyer's switching costs. Otherwise, the buyer has little incentive to switch to the rival supplier. Buyer switching costs, essentially unrelated to the imitability of a supplier's resources or capabilities, can thus protect its market position. Higher customer retention thereby may allow a sustainable market position independent of barriers to imitation.

Market segmentation also can be a source of heterogeneity based on differences in the prices firms charge. Reitman (1991) shows that in congestible markets, where customers vary in their tolerance for congestion, homogeneous firms will vary in their prices. This leads to stable differences in profitability and, thereby, competitive heterogeneity. Likewise, heterogeneity in profits, based on price differences, can exist in markets where customers vary in their search costs (Fishman and Rob, 1995). Customer preferences regarding the purchasing process thus result in price differences across firms. As long as differences in these preferences endure, so will this form of competitive heterogeneity, which lies outside the boundary of the RBV.

¹³ An advantage based, say, on product line breadth, which is highly imitable, and on geographically based input costs, which apply to the firms in a region, has very little to do with a firm's specific resources and capabilities. Hyundai's on- and off-shore energy services business might fit this profile.

DYNAMIC CAPABILITIES, VALUE, PRICE, AND COST

The value–price–cost framework also integrates industry evolution, firm evolution, dynamic capabilities, and competitive heterogeneity. Through a dynamic growth cycle, firms improve their market positions ($V - C$) over time via repeated innovation and imitation. This growth cycle, a (rather severely) modified version of Nelson and Winter's model of innovation and growth (1982: chapter 12), shows how dynamic capabilities can generate competitive heterogeneity.

The cycle begins when a start-up first develops or adopts a value-increasing or cost-decreasing product or process innovation. This innovation activity has two effects. First, it induces growth by attracting customers. Assuming positive returns to scale, the innovation activity also improves a firm's productivity and, thereby, its margins ($P - C$). Higher margins lead to higher profitability and provide cash for capacity expansion, increasing the firm's size. Second, the firm exploits its larger size by increasing investment in innovation, which improves the firm's market position ($V - C$) (Rumelt, 1987). This second half of the growth cycle requires a firm to develop a dynamic capability as innovation opportunities arise. This capability is located in those activities where key innovations improve the value or cost of a firm's products or services. Lacking this capability, a firm cannot overcome the onslaught of subsequent start-up innovations and thereby cannot develop a $V - C$ profile consistently superior to rivals' profiles.

The dynamic growth cycle implies that a firm grows through two types of investment: first in capacity expansion that increases firm size; second, in developing a dynamic capability that supports productivity innovation (e.g., innovation that increases V and/or lowers C). Each type of investment is necessary for the other. A firm must have the financial and organizational resources associated with large size to develop or adopt innovations that improve its productivity. At the same time, the financial gain achieved through productivity improvements is required to expand a firm's scale of operations.

This dynamic growth cycle is located within a more general process of industry evolution. This process includes three stages: growth, shakeout, and maturity (e.g., Klepper and Graddy, 1990).

The growth stage of all new industries begins with a product innovation that, compared to substitutes, offers a superior buyer surplus ($V - P$). A novel design, innovative components, and the availability of new complements typically deliver this surplus. Early in a new industry, entrants vary substantially in their value and cost drivers. This reflects different bets on what buyers value.¹⁴ Moreover, the haphazard nature of entrants' experimentation efforts creates wide variance in their market positions (Tushman and Anderson, 1986; Mitchell, 1989; Dosi, 1982; Henderson and Clark, 1990). These characteristics result in a greater degree of heterogeneity among rivals during the early stages compared to later stages of industry development (Madsen and Walker, 2002).

As the industry ages, buyers' preferences become better formed and stable market segments emerge. Early entrants observe these shifts in buying behavior and adjust their value and cost drivers. These adjustments increase demand for their products or services and, for more successful firms, lead to dominant market positions. The result is a convergence towards the most successful combinations of value and cost drivers and thereby reduced interfirm heterogeneity. Still, repeated investment in innovative value and cost drivers is necessary. This is because the contributions to value and cost of the early entrants' innovations likely erode as the industry develops. Shifts in demand as the market expands and decreasing returns to scale generally cause such erosion.

At the same time, new firms enter and refresh the industry with innovations, some of which increase the level of competition while others fail. Indeed, research shows that the timing of entry, such as before or after an industry disruption or during different stages of an industry's development, contributes to variance in how firms compete (e.g., Klepper, 2002; Madsen and Walker, 2002; Walker, Madsen, and Carini, 2002).¹⁵ Because the surviving innovative entrants grow and develop dynamic

capabilities at different rates, the level of heterogeneity in performance among these firms tends to increase. The incumbent firms (composed of the surviving early entrants) adapt to the new rivals via innovation and imitation. This process generates variation in the value and cost drivers adopted by the incumbent firms.¹⁶ The incumbents and entrants, in turn, compete both by offering buyers alternative sources of value and by developing different cost drivers to deliver it. For instance, a rival's economies of scale can counter another firm's efficient practices. The outcome of this competition depends on the relative productivities of the capabilities that generate value and cost. Variation in the incumbent firms' growth cycle rates (driven by their rates of innovation, imitation, and expansion) coupled with variation in the entrants' growth cycle rates determine the heterogeneity in market positions during an industry's growth stage.

An important question related to the evolution of competitive heterogeneity concerns the long-term benefit of early entry. In many industries, such a benefit exists for two reasons. For one, to become market leaders, early entrants must establish and defend strong market positions. Their value and cost drivers must be scaleable as the market matures, and their isolating mechanisms must be durable. Second, exposed longer to opportunities for growth and innovation, early entrants can grow larger and invest in more innovations than later entrants. If a first mover does not seize these opportunities and develop a dynamic capability, it is just as likely to fail as a later entrant, whose options may be fewer. So, the combination of competitive advantage in the short term and dynamic capability in the long term determines whether a first mover can sustain its superior position as an industry evolves.

Importantly, value and cost drivers vary in their effectiveness and, in turn, in their contribution to competitive heterogeneity during firm

¹⁴ Research also shows that factors such as variance in firms' pre-entry experience (Boeker, 1989; Carroll *et al.*, 1996; Klepper, 2002; Klepper and Simons, 2000; Holbrook *et al.*, 2000) or variance in firms' decisions at founding (e.g., Baron, Burton, and Hannan 1999) contribute to differences in how firms compete.

¹⁵ Even as the timing of entry matters for competitive heterogeneity, cohorts of firms starting up in the same time in an industry's history are likely to have common developmental patterns due to environmental imprinting effects (Stinchcombe, 1965; Carroll and Hannan, 2000; Klepper, 2002). While members of the same cohort may be more homogeneous than heterogeneous, the

developmental patterns of different cohorts will vary as a function of the conditions present at each cohort's formation. Even so, differences may emerge among a cohort's members when they vary in their founding characteristics (e.g., Baron *et al.*, 1999; Baum and Oliver, 1991; Bruderl and Schussler, 1990; Holbrook *et al.*, 2000; Stinchcombe, 1965).

¹⁶ Because some innovations are more costly to imitate than others, imitation does not automatically decrease the heterogeneity in performance among firms (Mansfield, Schwartz, and Wagner, 1981; Levin *et al.*, 1987). Imitation also does not necessarily generate exact replication given that firms' copying routines or imitation practices differ (Haunschild and Miner, 1997).

and industry evolution. For instance, market penetration in the growth stage of industry evolution requires more value drivers than technology alone. A start-up's initial value driver is commonly an advanced product technology with which the firm competes against substitutes. Early adopters are interested primarily in technological advances and value functionality. Later adopters, however, require additional value drivers. These customers especially prefer those drivers related to wide market acceptance. The purchasing criteria of buyers will determine which value drivers are added. On the cost side, during the growth stage start-ups must rely on practices and low cost inputs to increase productivity. At low volumes these are the only cost drivers available. Maintaining returns to scale can preserve these drivers. It is more common, though, that practices developed at low volumes become less efficient as a firm's size increases.¹⁷ In sum, variation in the effectiveness of different cost and value drivers over the course of firm and industry evolution, evolving buyers' demands, and differences in the rates of firms' dynamic growth cycles substantially affect the degree of heterogeneity in an industry over time.

Toward the end of the growth stage, firms that are more productive can attract buyers through higher value at a given price or a lower price at a given value. This forces weaker firms out of the market, increasing the exit rate. When the rising exit rate exceeds the entry rate, a shake-out in the industry begins, leading eventually to the third stage of evolution: industry maturity.

The forces that determine competitive heterogeneity change as the industry moves into the mature stage. When competition involves sunk costs, such as developing brand equity or technology platforms, a significant degree of industry concentration is likely (Sutton, 1990). In this case, the size distribution of firms is highly skewed, with large dominant incumbents serving the core market at one tail of the distribution and a host of small

firms serving a range of niches in the other tail. The market positions of these two sets of firms differ radically. Through isomorphic mimesis over the course of an industry's development, large incumbents are likely to be similar in their strategic and organizational characteristics. In contrast, to survive, small firms develop market positions that match the preferences of their niche customers. These firms possess a broad range of resources and capabilities. Thus, competitive heterogeneity in the mature stage of an industry typically derives from two sources: (1) variation in the small firm population and (2) differences between the small firm population and the large firm population.

COMPETITIVE HETEROGENEITY AND INDUSTRY STRUCTURE

It is also relatively straightforward to relate the competitive heterogeneity framework to popular models of industry structure, such as the Five Forces (Porter, 1980) and the Value Net (Brandenburger and Nalebuff, 1996). For example, buyer power can raise a product's value or lower its price or both. Supplier power means a firm receives lower value for the same input price or the same value for a higher input price. The issues for competitive heterogeneity are: (1) Do the effects of industry forces vary across firms in an industry? (2) Given such variation, how can industry forces lower or raise the heterogeneity in performance among firms?

The answer to the first question in many industries is yes. For example, suppose firms vary in the strength of their market positions and isolating mechanisms but cannot neutralize the price pressure imposed by current and potential rivals. Still, firms that are more productive suffer less from price competition and bargaining with powerful buyers and suppliers than their close competitors. These productive firms also can compete more effectively against substitutes, whose effects on firm performance are similar to buyers. Note that defending against industry forces does not depend on a firm's value or cost position per se, as Porter (1980) argues, but on the difference between the firm's value offering and its cost (e.g., the firm's $V - C$ profile).

Staying with this example, the answer to the second question is that, given competitive heterogeneity, industry forces lower or raise performance

¹⁷ An important question for industry development is whether a drop in value is more than offset by a reduction in cost. The answer to this question in many industries has generally favored scale and standardization (Chandler, 1990). In other industries, however, scale-based cost drivers decrease value so much that they hurt firm performance and lower competitive heterogeneity. These industries remain fragmented since small firms have larger economic contributions (higher $V - C$) compared to rivals whose positions are based on achieving efficiency through scale and scope economies.



variance only in special circumstances, for example, when strong firms face buyers (or suppliers) that are proportionately more powerful than those faced by weaker competitors. Strong firms' investments in productivity innovations that increase value or decrease cost generate heterogeneity in the firms' resources and capabilities. Yet given the powerful buyers' propensity for extracting a higher economic surplus from the strong firms (i.e., $P - C \rightarrow 0$), the firms' heterogeneity in resources and capabilities does not yield differences in performance.¹⁸

COMPETITIVE HETEROGENEITY: EXTANT RESEARCH

A number of empirical studies and analytical models contribute to our understanding of the origins of firm differences. For the most part, however, the extant research lacks empirical specifications for the sources of *persistent* differences in firm performance. We do not provide a critique or a comprehensive review of the literature here. Instead, we identify studies that have contributed significantly to research on heterogeneity in firm performance.

Modeling

There is a wide variety of analytical models of competitive heterogeneity. Eaton and Lipsey (1978), elaborating on Kaldor (1935), demonstrate how the introduction of geography and scale effects allows for economic profits in equilibrium. Jovanovic (1982) presents a model that begins with heterogeneous costs. A selection mechanism that allows free exit and entry sustains this heterogeneity. Lippman and Rumelt (1992) derive competitive heterogeneity in a situation characterized by industry-specific capital, sunk costs, and

¹⁸ This situation can arise when initially weak firms establish strong market positions to reduce the pressure from their exacting buyers and suppliers. Yet as these strong competitors emerge, weaker firms must create high switching costs to retain their customers. Otherwise, the strong firms attract the more compliant buyers and the influence of industry forces on heterogeneity in performance declines. In other words, when the buyers decide to respond to the strong firms' productivity investments, a reactive situation emerges between the buyers and the strong firms. The firms respond to the buyers' actions by becoming increasingly different (in V-C) but so do the buyers. How industry forces affect heterogeneity in performance thus depends on how an industry has evolved.

demand uncertainty. Other research derives heterogeneity among firms assuming only demand uncertainty and two technologies, one with higher fixed costs and one with lower marginal costs (Lippman, McCardle, and Rumelt 1991). Building on this work, Caglayan and Usman (2000) explain sustained performance variance using a model that couples demand with costly information acquisition. Pakes and Ericson (1998), expanding on Jovanovic (1982) and Lippman and Rumelt (1982), model the different types of heterogeneity that best suit retail and manufacturing industries. Makadok's models (Makadok, 2001; Makadok and Barney, 2002) show how resources and capabilities relate and differ in their effects on performance (also, see Makadok, this issue). Finally, a recent study by Knott (2003) shows that heterogeneity fuels growth and that persistent heterogeneity may emerge without isolating mechanisms.

Empirical studies

Analysis of variance in performance among firms

Studies analyzing interfirm performance heterogeneity have become an increasing part of strategic management research (e.g., Brush and Bromiley, 1997; Brush, Bromiley, and Hendrickx, 1999; James, 1998; McGahan and Porter, 1997, 1999, 2002; Roquebert, Phillips, and Westfall, 1996; Rumelt, 1991; Schmalensee, 1985). These studies examine performance variance attributable to different classes of analysis: industry, parent corporation, and business unit. Research initially focused on the contribution of a firm's industry to variance in performance (Schmalensee, 1985), consistent with the theory that industry structure drives firm conduct and, in turn, firm performance (Scherer, 1980: 4; Tirole, 1988: 1–2). Research since then has emphasized the contributions of the corporate ownership and business unit levels of analysis (e.g., Bowman and Helfat, 2001; Brush and Bromiley, 1997; James, 1998; McGahan and Porter, 1997, 2002; Rumelt, 1991). By far the most consistent result across these studies is that, when estimated over time, the business unit class of analysis explains the most variance in performance (Brush and Bromiley, 1997; James, 1998; Roquebert *et al.*, 1996; Rumelt, 1991).

These studies, however, vary substantially in how they treat intertemporal heterogeneity. Some researchers interact year and industry classes of

analysis to separate industry effects into stable and transient components (Rumelt, 1991). Others separate the stable and transient parts of intertemporal persistence (McGahan and Porter, 1997; Chang and Singh, 2000).

Focusing on a different set of research questions, studies in industrial organization (I/O) economics have examined whether differences in profits above the industry norm persist or converge (e.g., see Cubbin and Geroski, 1987; Mueller, 1977, 1986; Waring, 1996). Building on this work, other strategy scholars offer alternative explanations for persistent performance differences among firms (Roberts, 1999, 2001; Wiggins and Ruefli, 2002). McGahan and Porter (1999) bridge strategy and industrial economics by comparing the rates of persistence of incremental industry, corporate, and business segment classes of analysis.¹⁹ Finally, other researchers examine whether performance heterogeneity among incumbent firms persists after an exogenous shock to an industry (Walker *et al.*, 2002).

Collectively, these studies show that firm effects or firm classes of analysis contribute to variance in performance among firms; this contribution, and its persistence, varies as a function of the industry studied and the stages of industry and firm evolution. This research has another common attribute: the studies all lack evidence for the factors that enable or underlie persistent performance differences. Recently, research in this area has shifted attention away from comparing industry, corporate parent, and firm classes of analysis. New work unpacks the firm class of analysis (e.g., James, 1998; Walker *et al.*, 2002). This work is distinct from research that examines how resources or capabilities contribute to firm performance or firm survival chances. Instead, it explains how such factors influence performance variance among close rivals, and in doing so helps develop a broad theory of competitive heterogeneity.

CONCLUSION

Why is there a resource-based view? The answer: the RBV is in part a reaction to strategy theories

¹⁹ Some scholars use different terminology for these effects, such as *permanent* instead of *fixed*, and *short-run* instead of *incremental* (see Mueller, 1986, and Waring, 1996). Following McGahan and Porter (1999), we use *fixed* and *incremental* because they do not imply an effect's duration.

based on I/O economics and simple applications of microeconomics (Nelson and Winter, 1982; Rumelt, 1984). Combining economics (Demsetz, 1973; Penrose, 1959), organization theory (Selznick, 1957), and traditional business policy (Andrews, 1971), the RBV suggests how, in a competitive environment, firms maintain unique and sustainable positions.

The purpose of this special issue is to encourage, develop, and expand discussions regarding important sources of sustained differences between and among firms. The RBV has served as the dominant explanation for firm differences in the strategy literature. It has also inspired a great deal of work on the importance of resources and capabilities to firm performance and survival. Yet, the RBV has not served well as a foil for alternative explanations of competitive heterogeneity. Indeed, its hegemony frustrates a number of scholars. We argue that distinguishing the issue of competitive heterogeneity from the RBV clarifies and enhances the discussions surrounding the RBV, sustainable competitive advantage, and the RBV's relationship to other important theories.

THE SPECIAL ISSUE

The papers cluster into three groups: limits and apparent paradoxes in the RBV, dynamic capabilities, and competitive heterogeneity. The first set shows limits to the RBV, but also suggests some uses for and clarifications of the RBV. The second set emphasizes the importance of capability research, and particularly dynamic-capability research, to anyone interested in RBV-type logic. This is a particularly important theme. The significant body of empirical work on capabilities defies many of the criticisms hurled at the RBV and its proponents. The third and last section takes a broader look at competitive heterogeneity. Papers in this group build on market-based, agency, industry structure, and cognitive theories of the firm.

As mentioned, the first group of papers examines limitations or apparent paradoxes in resource-based thinking. Steven Lippman and Richard Rumelt set the stage by arguing that the RBV (and economics-based strategy in general) suffers from ambiguous theoretical constructs imported from microeconomic theory. Opportunity costs and economic rent currently dominate our concepts of

sustained competitive advantage. Yet, there is little agreement on how to define opportunity cost or rent. Lippman and Rumelt recommend that strategy scholars focus on the payments (costs) to a resource. Strategy entails finding the most valuable combinations of resources and bargaining over the marginal contribution of combining the resources. Focusing on the payments necessary to pull a resource into use and the marginal increases in value of combining resources avoids the ambiguities of traditional partial-equilibrium definitions. Lippman and Rumelt's conclusions from a comprehensive review of the economics literature have important implications for how we should evaluate the economic benefit ($V - C$) of the 'factors of production' and, thereby, competitive heterogeneity.

The next four papers address the tension between two fundamental issues in the RBV. (1) What factors impede the imitation of valuable resources and capabilities? (2) How do firms develop inimitable resources and capabilities when their competitors cannot? The first paper asks how *explicit* routines can create value and generate heterogeneity among firms. Anne Marie Knott empirically examines how franchisors, in an industry where name brand holds little value, 'sell' explicit routines to their franchisees while isolating these same routines from competitors. Her findings raise two fundamental insights: (1) tacitness is not necessary for routines to add value and (2) close rivals, for a variety of reasons, will not always imitate (or adopt) routines they acknowledge are important. Heterogeneity in performance among close rivals therefore may endure independent of barriers to imitation.

Next, Catherine Maritan and Thomas Brush's study of flow manufacturing at an industrial products (IP) firm shows how intrafirm differences impede the internal transfer of a superior capability. As suggested by Nelson and Winter (1982) and Teece (1982), capabilities that are hard to imitate are also hard to develop and transfer internally. Maritan and Brush's careful examination of a firm's capability development activity illustrates the difficulties of developing and transferring important and complex capabilities internally, even codified capabilities. For instance, the study finds wide variance in capability implementation across the firm's plants. Given the findings, it is easy to imagine how competitors might vary in their capabilities even in the presence of codified knowledge.

Their study identifies multiple sources of heterogeneity that exist within and among a firm's plants and how these sources, and their interactions, generate heterogeneous outcomes within the firm.

In a related paper, Danny Miller introduces the sustainability–attainability paradox: If capabilities are so difficult to copy, how do firms develop them in the first place? In Miller's words, 'sustainable resources are not attainable and vice versa.' Miller observes that some firms overcome this paradox by leveraging seemingly unimportant asset asymmetries. These firms develop unique capabilities by exploiting their own unique characteristics—which previously were of little value to the firms.

The paper by Jerker Denrell, Christina Fang, and Sidney G. Winter suggests concepts remarkably similar to Miller's findings. Denrell, Fang, and Winter develop an economic theory of factor markets arguing that firms need not necessarily find an undervalued resource. Instead, firms can transform their unique resources (valuable or not) into valuable resources and capabilities. Their theory also suggests that 'serendipity' characterizes the identification of unique resources or capabilities.²⁰ Firms can find valuable sources of competitive heterogeneity in the presence of 'efficient' factor markets.

Sidney G. Winter's paper, 'Understanding Dynamic Capabilities,' is the first of our dynamic capabilities papers. This note offers an articulate and useful distinction between operational capabilities and dynamic capabilities. In decomposing the general concept of dynamic capabilities, Winter underscores the construct's importance. He also points out that circumstances may arise where investments in dynamic capabilities are too costly.

Next, Connie Helfat and Margie Peteraf, in 'The Dynamic Resource-Based View: Capability Lifecycles,' apply the lifecycle concept to develop a general theory of how capabilities evolve. This work integrates much of the extant research on capabilities and, like Winter's paper, discriminates between different types of capabilities. Importantly, Helfat and Peteraf describe six different evolutionary paths capabilities might take at the mature stage of their lifecycle. In this process,

²⁰ As Pasteur (1979) said, 'Where observation is concerned chance favors only the prepared mind.'

they provide a variety of resource-based explanations for competitive heterogeneity. Their theory emphasizes the dynamic features of the RBV and the usefulness of integrating evolutionary and resource-based theories.

Ron Adner and Connie Helfat, in 'Corporate Effects and Dynamic Managerial Capabilities,' raise the issue of dynamic corporate-level capabilities. Building on interfirm performance–variance work, Adner and Helfat argue that understanding corporate-level capabilities and the importance of corporate management requires a dynamic framework. Their study tests how corporate decisions affect competitive heterogeneity over time. The authors also offer a research agenda for future work on managerial capabilities.

The next paper, by Margaret Peteraf and Mark Bergen, bridges the first set of papers and the last set, which focuses on the inherent dynamics of competition and competitive heterogeneity. Whereas most economics-based strategy scholars focus on 'close competitors,' Peteraf and Bergen develop a framework for identifying both potential and actual substitutes. Their starting point is that the competition confronting firms from outside their immediate industry may offer a qualitatively different (and perhaps superior) product or service. Identifying these potential substitutes thereby may have significant implications for sustaining a firm's market position. Their framework complements the current resource-based thinking.

The last two papers focus explicitly on competitive heterogeneity. First, Richard Makadok models resource uniqueness and agency to explain the complementarities of these perspectives. Makadok demonstrates the importance of distinguishing between what a firm should do from how a firm might get it done. Although one might argue that the ability to implement agency theory is a capability, calling it a capability does little to explain the agency issue or how it might be resolved. Makadok's model emphasizes the importance of governance to competitive heterogeneity.

Finally, using theories that can complement or substitute for the RBV, Douglas Johnson and David Hoopes examine how managerial cognition and industry structure affect competitive heterogeneity. Much work has emerged that discusses the relationship between managerial cognition and industry structure. This literature focuses on industry-wide cognition rather than technology (e.g., scale economies or sunk costs). Johnson and

Hoopes acknowledge the importance of managerial cognition by embedding attributes of managerial cognition in a competitive framework. Using simulations, they identify conditions under which we might expect industry structure to result from organizational enactment and conditions under which we might expect competition to impose itself on how firms engage their environment.

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