

IS THE RESOURCE-BASED "VIEW" A USEFUL PERSPECTIVE FOR STRATEGIC MANAGEMENT RESEARCH? YES

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Here I examine each of the major issues raised by Priem and Butler (this issue) about my 1991 article and subsequent resource-based research. While it turns out that Priem and Butler's direct criticisms of the 1991 article are unfounded, they do remind resource-based researchers of some important requirements of this kind of research. I also discuss some important issues not raised by Priem and Butler—the resolutions of which will be necessary if a more complete resource-based theory of strategic advantage is to be developed.

Priem and Butler's (this issue) critique of my 1991 *Journal of Management* article raises several important issues, about both the article and subsequent developments in the resource-based view (RBV) of the firm. While I disagree with most of these authors' criticisms, they clearly provide a service by creating a forum within which the creation, development, and future of resource-based models of competition can be discussed and debated.

Priem and Butler's criticisms fall into four broad categories: (1) that the resource-based theory I develop in the 1991 paper is tautological, (2) that my argument fails to acknowledge that many different resource configurations could generate the same value for firms and, thus, would not be sources of competitive advantage, (3) that the role of product markets is underdeveloped in the argument, and (4) that the theory developed in the article has limited prescriptive implications. I discuss each of these criticisms in turn. At the end of this response, I also discuss several important issues in the field of strategic management that are addressed neither in the 1991 paper nor in subsequent resource-based work. These issues, I think, constitute part of the research agenda that resource-based and other theorists must ad-

dress if the field of strategic management is to continue to progress.

THE TAUTOLOGY CRITIQUE

Priem and Butler's first and, in many ways, most important critique of the 1991 article is that the RBV presented is tautological—that its primary assertions are true by definition and, thus, not subject to empirical test (Williamson, 1999). Following Bacharach (1989), the authors attempt to demonstrate the tautological nature of the 1991 argument by substituting the definitions of value, rarity, and strategic advantage given there into what they characterize as one of the central empirical assertions of the RBV: only valuable and rare resources can be sources of competitive advantage. The assertions thus derived are clearly tautological. However, the fact that Priem and Butler are able to restate parts of the 1991 argument in ways that make it tautological is not the same thing as demonstrating that the argument is, in fact, tautological.

It is important to recognize that, at this definitional level, all strategic management theories are tautological in the way Priem and Butler describe. For example, Porter's (1980) assertions about the relationship between industry attractiveness and firm performance can be reduced to tautology by observing that firms in attractive industries will outperform firms in unattractive industries and by defining industry attractiveness in terms of the ability of firms to perform well. Transaction cost economics also can be reduced to tautology: hierarchical forms of governance will replace market forms of gover-

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nance when the costs of market governance are greater than the costs of hierarchical governance. Indeed, this is known as the Coasian tautology. Thus, *the ability to restate a theory in ways that make it tautological provides no insights about the empirical testability of the theory whatsoever.*¹

Of course, the critical issue is not whether a theory can be restated in such a way as to make it tautological—since this can always be done—but whether at least some of the elements of that theory have been parameterized in a way that makes it possible to generate testable empirical assertions. For example, Porter's theory is clearly not tautological since he specifies the conditions that make an industry more or less attractive independent of the performance of firms in that industry. Porter parameterizes industry attractiveness through the well-known "five forces" framework, a parameterization that enables Porter to make empirically testable assertions of the form, *firms operating in industries characterized by high rivalry, high threat of substitutes, high threat of entry, high buyer power, and high supplier power will perform at a lower level than firms operating in industries without these attributes.*

In a similar way, Williamson (1975) parameterizes the attributes of transactions in ways that make it possible to specify conditions under which the costs of market governance will be greater than the costs of hierarchical governance. Williamson has explored several versions of this parameterization, but the most critical transaction attribute he has identified seems to be transaction-specific investment. This parameterization enables Williamson to make empirically testable assertions of the form, *transactions characterized by high transaction-specific investment will be less costly to*

manage through hierarchical governance than through market governance.

Thus, the real theoretical challenge presented by Priem and Butler is not "Can the RBV presented in the 1991 paper be restated in a way that makes it tautological?" but is, rather, "Are some aspects of this resource-based theory parameterized in ways that can generate testable hypotheses?" In the next sections I examine the extent to which each of the components of this resource-based theory are parameterized in ways that can generate testable propositions.

Parameterizing Value

Clearly, of all the theory elements in the 1991 article, the value variable is the least fully parameterized. This is because, as Priem and Butler correctly observe, the determination of the value of a firm's resources is exogenous to the resource-based theory presented in the 1991 article. In fact, the exogenous nature of value determination is stated in the 1991 article:

These environmental models help isolate those firm attributes that exploit opportunities and/or neutralize threats, and thus specify which firm attributes can be considered as resources. The resource-based model then suggests what additional characteristics that these resources must possess if they are to generate sustained competitive advantage (Barney, 1991: 100; emphasis added).

Since the determination of the value of a resource is exogenous to the argument presented in the 1991 article, it is not surprising that the conditions under which resources will and will not be valuable are not fully specified there.

That said, it would be inappropriate to suggest that the 1991 article fails to give at least some guidance as to how the value of a resource can be determined. In particular, the article indicates that resource value must be determined by models of the competitive environment within which a firm competes. Indeed, since 1991, work has continued on using these kinds of models to estimate resource value.

This work falls into two large categories: (1) efforts to use structure-conduct-performance (S-C-P; Bain, 1956)-based theories to specify the conditions under which different firm resources will be valuable and (2) efforts to determine the value of firm resources that apply other theories

¹ Moreover, because a theory is tautological does not mean that it might not be insightful and even empirically fruitful. For example, all game theoretic models are tautological in the sense that the hypotheses they generate are completely determined by the assumptions adopted in the models and the laws of mathematics applied to these assumptions. However, these tautological models can sometimes generate quite counterintuitive insights that can, in principle, lead to important empirical research. Again, the issue is not tautology, per se, but, rather, whether the propositions derived from a tautology can be parametrized in a way that makes empirical testing possible.

derived from industrial organization models (I/O) of perfect and imperfect competition (Conner, 1991). In my own work I acknowledge the insights that can be generated from applying the S-C-P framework to understanding the value of firm attributes (Barney, 1991: 100), but I have focused more on non-S-C-P-based theories of the value of firm attributes.

Consider, for example, my 1997 discussion of the ability of cost leadership strategies to generate sustained competitive advantages (Barney, 1997: Chapter 6). I begin this discussion by describing several firm attributes that may be associated with cost leadership (e.g., volume-derived economies of scale, cumulative volume-derived learning curve economies, policy choices, and so forth) and then show how these attributes can generate economic value in at least some market settings. The logic I use to demonstrate the value of these attributes is a market structure logic that is consistent with traditional microeconomics (see Figure 6.4 in Barney, 1997). Only after identifying the conditions under which cost leadership can generate economic value do I turn the discussion to the conditions under which cost leadership can be a source of competitive advantage (i.e., rare) and sustained competitive advantage (i.e., rare and costly to imitate).

Nor am I the only researcher that has followed up on the suggestions in the 1991 article for how to value firm resources. Theoretically, progress on this front can be found in Leonard-Barton (1992), Barney and Hansen (1994), McWilliams and Smart (1995), and Hunt (1997, 2000), among others. Empirically, two of the papers cited by Priem and Butler (i.e., Brush & Artz, 1999, and Miller & Shamsie, 1996) are important precisely because they address the value of resources question. Additional empirical work has been done by Barnett, Greve, and Park (1994), Makadok (1998, 1999), Poppo and Zenger (1998), and many others. In all high-quality resource-based work, researchers must begin by addressing the value of resources with theoretical tools that specify the market conditions under which different resources will and will not be valuable. Although additional work is required, I believe we are developing a more complete understanding of these conditions.

Thus, although the value variable in Barney (1991) is not fully parameterized, in the article there is recognition of the importance of doing

this and even a suggestion of some ways it might be done. While, strictly speaking, Priem and Butler's critique does not directly apply to the 1991 argument, it does apply to resource-based theorists who have tried to examine the implications of resource-based logic without considering the market conditions under which a firm's resources will and will not be valuable. Indeed, if I were to write the 1991 article today, I would definitely enhance the discussion of value along the lines outlined here. The brief discussion of value in the 1991 article could have indicated to some that determining the value of resources is less important than determining the rarity and imitability of resources—a point of view with which I clearly disagree.

Parameterizing Rarity

Priem and Butler also suggest that the term *rare* is not parameterized in the 1991 article and, thus, that any assertions including "rare" must be tautological. I certainly agree that since the concept of rarity is not exogenous to the RBV developed in the 1991 paper, if rare was not parameterized in that article, then any assertions made with this term must remain tautological. However, in fact, rare is parameterized in the 1991 article. Although this parameterization is not as complete as I would like, it is nevertheless specific enough to generate empirically testable assertions.

The parameterization of rare is discussed in the last paragraph of the section titled *Rare Resources*:

How rare a valuable firm resource must be in order to have the potential for generating a competitive advantage is a difficult question... In general, as long as the number of firms that possess a particular valuable resource... is less than the number of firms needed to generate perfect competition dynamics in an industry... that resource has the potential of generating a competitive advantage (Barney, 1991: 107).²

Of course, a complete parameterization of rare would enable a researcher to specify the maxi-

² As will become clear later, I wish I had not used the term *industry* in this parameterization of the concept of rarity. Rather, I should have focused simply on the number of firms that must possess a resource in order to generate perfect competition dynamics, independent of whether those firms operated in a particular industry.

mum number of competing firms that can possess a particular resource and still have perfect competition based on that resource not exist. However, in 1991 I was unaware of a sufficiently rigorous theory to specify such a number. I suspect, in fact, that such a theory would show that how rare a particular resource must be in order for perfect competition based on that resource to not exist will depend upon several attributes of the market structure within which firms are competing.

However, even though in the 1991 article I do not specify the maximum number of competing firms that can possess a resource beyond which perfect competition will exist, I do suggest that such a number exists. Moreover, even without a complete parameterization of resource rarity, it is still possible to observe that if only one competing firm possesses a particular valuable resource, perfect competition around this resource will not exist. In fact, this assertion is made in the 1991 article (Barney, 1991: 107). This makes it possible to generate testable assertions of the form:

If only one competing firm possesses a particular valuable resource (where the value of that resource is determined in ways that are exogenous to the theory developed in the 1991 article), then that firm can gain a competitive advantage (i.e., it can improve its efficiency and effectiveness in ways that competing firms cannot).

One example of this form of a testable assertion can be found in Barney (1986b). In that article I examine the ability of organizational culture to be a source of competitive advantage. Much of that argument can be summarized through an empirical assertion of the form:

If only one competing firm possesses a valuable organizational culture (where the value of that culture is determined in ways that are exogenous to the theory developed in the 1991 article), then that firm can gain a competitive advantage (i.e., it can improve its efficiency and effectiveness in ways that competing firms cannot).

Both these assertions are clearly testable. If a firm uniquely possesses a valuable resource and cannot improve its efficiency and effective-

ness in ways that generate competitive advantages, then these assertions are contradicted. One could test these assertions by measuring the extent to which a firm uniquely possesses a valuable resource (e.g., a valuable organizational culture), measuring the activities that different firms engage in to improve their efficiency and effectiveness, and then seeing if there are some activities a firm with the unique culture engages in to improve its effectiveness and efficiency—activities not engaged in by other competing firms.³

Of course, there are difficult measurement problems associated with testing assertions of this form. Measurement problems RBV researchers face, however, are similar to those other strategy researchers face, including those looking to test implications derived from transaction cost economics and agency theory (Godfrey & Hill, 1995). Moreover, Priem and Butler's argument is not that assertions derived from the 1991 are difficult to test but, rather, that they are, in principle, not testable.

All this said, it is clear that additional work is needed to complete the parameterization of the concept of rarity. Indeed, unlike the theoretical work and empirical work that have enabled a more complete parameterization of resource value, there has been less work on developing a more complete parameterization of the rarity variable. In most empirical and theoretical work on rarity since the 1991 article, researchers have either implicitly focused on the competitive implications of valuable and unique resources (Barney, 1988) or have been rather imprecise in specifying how rare a resource must be among competing firms to still generate competitive advantages. Priem and Butler certainly provide an important service by reminding us of the importance of further refining the parameterization of the concept of rarity, even though their specific critique of the concept of rarity in the 1991 article as tautological is incorrect.

Parameterizing Imitability

Ironically, Priem and Butler do not comment on the extent to which arguments in the 1991 article can be used to derive empirically test-

³ This discussion temporarily sets aside substitutability considerations.

able assertions about the relationship between the imitability of valuable and rare firm resources and sustained competitive advantage. At one point in their article, Priem and Butler state, "For ease of exposition, we examine those terms associated with competitive advantage first and set aside issues associated with sustainability" (p. 27). But tautology questions are never subsequently raised concerning the imitability variable.⁴

This is, of course, because the concept of imitability is clearly parameterized in the 1991 article. This parameterization makes it possible to generate testable assertions of the form:

A firm that possesses a particular valuable resource (where the value of that resource is determined in ways that are exogenous to the theory developed in the 1991 article) that is rare (possessed by fewer firms than required to generate perfect competition dynamics) and obtained in unique historical circumstances can gain a sustained competitive advantage (i.e., can improve its efficiency and effectiveness in ways that competing firms cannot and in ways that competing firms cannot imitate over time).

Additional empirical assertions about the relationship between firm resources and sustained competitive advantages can be generated by substituting the other attributes of resources that can lead to costly imitation cited in the 1991 article for "unique historical conditions"—that is, causal ambiguity and social complexity.

Indeed, even if Priem and Butler were correct about assertions that included the terms *valuable* and *rare* being tautological, which they are not, the fact that empirical assertions can be derived from the 1991 article's analysis of imitability and sustained competitive advantage undermines their general assertion that the RBV developed in the 1991 article is tautological. After all, in few theories do researchers fully pa-

rameterize all the concepts they use to derive empirical assertions. However, if at least some of these concepts are parameterized, then it is possible to deduce testable empirical assertions from these theories.

Porter (1980), for example, parameterizes industry attractiveness but does not provide theoretical tools for determining when an industry does or does not exist (Caves & Porter, 1977). It is still possible, however, to deduce testable empirical assertions from Porter's work. In the same way, Williamson (1975) parameterizes the attributes of transactions that can have the effect of making hierarchical governance less costly than market governance, but he does not initially provide theoretical tools for examining the impact of production costs on governance choices (Riordan & Williamson, 1985). Porter and Williamson, like all theorists, make choices about which aspects of their theory to parameterize, and which aspects not to parameterize, based primarily on decisions about which aspects of the theory being developed seem most likely to generate important testable empirical assertions.

In the 1991 article I gave the parameterization of imitability the most attention because I believed the empirical assertions derived from this concept were likely to be among the most important to come out of resource-based theory. After all, what is most new about resource-based theory is not an explanation of temporary competitive advantages for firms. These competitive advantages can be understood simply as disequilibrium phenomena in a more traditional I/O theoretical framework. Following Lippman and Rumelt (1982), I concluded that what was most new about resource-based theory was the ability to specify conditions under which firms would possess competitive advantages in equilibrium. Thus, reasons why a firm's valuable and rare resources can be costly to imitate become very important in the 1991 article.

Indeed, the RBV research cited by Priem and Butler since the 1991 article seems to be consistent with these expectations. Research on the competitive implications of such firm resources as knowledge, learning, culture, teamwork, and human capital, among others, was given a significant boost by resource-based theory—a theory that indicated it was these kinds of resources that were most likely to be sources of sustained competitive advantage for firms.

⁴ Indeed, in their discussion of the prescriptive limits of the RBV, Priem and Butler acknowledge that those resource attributes associated with the sustainability of competitive advantages identified in Barney (1991) do have prescriptive implications and, thus, are not tautological in the ways they assert resource value and rarity are.

Thus, while Priem and Butler clearly demonstrate that it is possible to restate the RBV developed in the 1991 article in a way that is tautological, their critique that the argument in the 1991 article is itself tautological is unfounded. At its core, these authors' critique fails to acknowledge the ways that the key variables in the 1991 article are parameterized.

Empirical Tests of the RBV

Of course, logical debates about whether the 1991 argument is tautological would be moot in the face of rigorous empirical tests. Indeed, as Priem and Butler suggest, in numerous subsequent works—many of them empirical—researchers have cited the 1991 paper. However, many of these citations are used primarily to help establish the context of some empirical research—for example, that the focus is on the performance implications of some internal attribute of a firm—and are not really direct tests of the theory developed in the 1991 article. Nonetheless, there is some empirical work that constitutes quite direct tests of the resource-based theory I developed in the 1991 paper.

Consider, for example, Henderson and Cockburn's (1994) examination of the impact of "component competence" and "architectural competence" on the research productivity of pharmaceutical firms. Henderson and Cockburn measure the value of these competencies by estimating their impact on the research productivity of pharmaceutical firms, under the assumption that pharmaceutical firms with more productive research efforts will outperform pharmaceutical firms with less productive research efforts. They measure the rarity of these competencies by showing that their level varies across competing pharmaceutical firms, and they measure the imitability of these competencies by showing that firm differences in the level of these competencies remain very stable over time. To the extent that high levels of research productivity are valuable in the pharmaceutical industry, Henderson and Cockburn's results are consistent with the RBV developed in my 1991 article.

Makadok (1999) authored another paper in which the argument developed in the 1991 paper is tested. In his article Makadok examines the impact of differential levels of economies of scale on the ability of money market mutual

funds to increase their market share. He measures the value of these economies of scale by first estimating the impact of the size of a family of funds on both its weighted-average, risk-adjusted gross yield and its weighted-average expense ratio, and then shows that these yields and expenses affect the market share of the family of funds. Makadok measures the rarity of economies of scale by showing that they vary across families of funds, and he examines the imitability of these scale differences by examining their impact on the market shares of families of funds over time. Consistent with the 1991 article, because economies of scale are not path dependent, causally ambiguous, or socially complex, Makadok does not expect these capability differences to be a source of sustained competitive advantage. In fact, the impact of scale differences on market share becomes smaller over time—results that are again consistent with the 1991 argument.

Moreover, not all empirical tests of the 1991 argument are consistent with that argument. For example, Poppo and Zenger (1998) examined some implications of the 1991 paper (developed by Conner & Prahalad, 1996) and found results that are inconsistent with resource-based expectations and more consistent with transaction cost expectations. Unfortunately, data limitations make it difficult to understand exactly where the resource-based argument falls short: is it around the value of resources, their rarity, or their imitability? However, such contrary empirical results would certainly not be possible if resource-based theory in general and the 1991 argument in particular were purely tautological.

Thus, Priem and Butler demonstrate that it is possible to restate the 1991 argument as if it were tautological, but they fail to demonstrate that the argument is, in fact, tautological. Indeed, it is possible to derive empirically testable assertions from the 1991 article—assertions that have, in fact, been tested.

EQUIFINALITY IN THE RBV

Although Priem and Butler do not label it as a major limitation of the RBV, they do suggest that another weakness of this logic, as developed in the 1991 article, is the problem of equifinality: there may be many different resource configurations that could generate the same value for firms and, thus, would not be sources of compet-

itive advantage. Their solution to this supposed problem is to adopt what they describe as a more "traditional" definition of competitive advantage: a firm "systematically creating above average returns" (Schoemaker, 1990: 1179). This leads them to suggest that it is not the value and rarity of a resource that generates competitive advantage (as defined by Schoemaker, 1990) but, rather, the relative value of different resources and capabilities.

However, in the 1991 article I explicitly recognized the potential problem of equifinality. In fact, that is why I introduced the substitutability variable into the 1991 argument. Substitutability is defined with respect to strategic equivalence:

"Two valuable firm resources...are strategically equivalent when they can each be exploited separately to implement the same strategies" (Barney, 1991: 111).

The general conclusion is that even if a resource is valuable, rare, and costly to imitate, if it has strategically equivalent substitutes that are themselves not rare or not costly to imitate, then it cannot be a source of sustained competitive advantage. The existence of strategic substitutes indicates that strategic equifinality exists in a competitive situation and, thus, that competitive advantage cannot exist. If strategic substitutes do not exist, then strategic equifinality does not exist, and competitive advantages are possible. Thus, substitutability deals with ambiguities that may be introduced into empirical assertions derived from the RBV because of the problem of equifinality.

Although the equifinality critique presented by Priem and Butler is unfounded, their decision to adopt "systematically creating above average returns" as the appropriate definition of competitive advantage in this part of their critique is interesting. This definition implicitly reintroduces the concept of industry into the discussion of competitive advantage. In order to know whether a firm's returns are above average, an average must be calculated. That average almost certainly would be calculated on the basis of returns of firms in a particular industry. Thus, in their definition of competitive advantage, Priem and Butler compare a particular firm's performance with the performance of other firms in that industry.

In the 1991 article I chose a definition of competitive advantage that did not depend on de-

fining a firm's industry for three reasons. First, determining the theoretically appropriate boundaries of a particular industry can be very difficult. On the margin, decisions about which firms to include within the boundary of an industry, and which to exclude, are quite arbitrary. Moreover, these decisions can have very important implications for the calculated average returns in an industry and, thus, important implications for determining whether a particular firm has a competitive advantage.⁵ This can introduce a significant degree of arbitrariness into research on competitive advantage.

Second, defining industry boundaries assumes a level of stability in technology and competition that, in many situations, is inappropriate. It was often inappropriate in 1991. It is even more inappropriate in the twenty-first century, when traditional industry boundaries are being destroyed and when competition can come from numerous sources, not just from firms within the well-defined boundaries of an industry. In the new economy it will often be inappropriate to adopt a definition of competitive advantage that builds on concepts assuming a technological and competitive stability that does not exist. In the long run, I suspect that the tradition of introducing industry controls into the empirical analysis of firm performance will be replaced by a tradition of introducing controls for the competitiveness of the context within which a firm is operating—a context that can only be imperfectly described using the concept of industry.

Third and finally, resource-based logic takes as its unit of analysis the firm. To maintain theoretical consistency, it was important for me to adopt a firm-level dependent variable. Thus, rather than adopt a definition of competitive advantage that required the concept of an in-

⁵ For example, when Alcoa attempted to acquire Rome Cable, the combined firm's "competitive advantage" depended significantly on how this firm's industry was defined. If this industry was defined as "insulated wire and cable," the combined firm's market share was only 1.6 percent, and its market power-based competitive advantage was quite small. If this industry was defined as "insulated aluminum wire and cable," the combined firm's market share was 16.3 percent. In this setting it presumably enjoyed a much more substantial market power-based competitive advantage (Scherer, 1980: 552). Unfortunately, both these definitions of industry were quite reasonable.

dustry, I defined competitive advantage at the firm level.

In general, there are at least two ways to define competitive advantage at the firm level. First, as is done in the 1991 article, a firm's competitive advantage can be defined with respect to the actions of other firms—either current or potential competitors. In this approach, a firm is said to have a competitive advantage when it is engaging in activities that increase its efficiency or effectiveness in ways that competing firms are not, regardless of whether those other firms are in a particular firm's industry.

Second, a firm's competitive advantage can be defined with respect to return expectations of that firm's owners. Stockholders, as residual claimants, develop expectations about the returns a firm will generate. In this definitional approach, firms that generate higher returns than were expected by stockholders (at constant levels of risk) have a competitive advantage. This definition of competitive advantage is often called an economic rent and is the definition of competitive advantage explored in Barney (1986a).

Although these two firm-level approaches to defining competitive advantage are different, they can be related. For example, one reason a firm may be able to generate an economic rent is that it is able to increase its efficiency and effectiveness in ways that other firms are not. If expectations about firm returns are based on firms that do not possess this competitive advantage, this competitive advantage can generate an economic rent. Also, sustainability is possible in both of these definitional approaches. According to the first definition of a competitive advantage, a firm possesses a *sustained* competitive advantage when it is improving its efficiency and effectiveness in ways that competing firms are not and when these other firms have ceased efforts to imitate these activities. In the second definition a firm creates a *sustained* economic rent when it is able to consistently exceed the performance expectations of its owners, despite that these expectations will be adjusted given a firm's prior performance levels. In this sense, a sustained economic rent reflects the creative and entrepreneurial ability of firms to constantly discover how to generate value with their resources in ways that outside owners cannot anticipate.

That these two definitions of competitive advantage can be related, however, does not mean that they will always be. A firm may possess a

competitive advantage by exploiting valuable, rare, costly to imitate, and nonsubstitutable resources, but whether this competitive advantage is a source of economic rents depends on the conditions under which the resources controlled were acquired or developed. If the cost of acquiring or developing these special resources equals the value they create when used to conceive of and implement a strategy, they will not be a source of economic rent (Barney, 1986a). This kind of analysis is difficult to do if competitive advantage is defined in terms of a firm experiencing "above average returns" in an industry, because in this definition the causes of competitive advantage are not distinguished from the effects.

Given the proliferation of different definitions of competitive advantage in the strategic management literature, it might be time to abandon this term altogether. Rather than refer to the definitionally ambiguous "competitive advantage," researchers should specify exactly what it is they are trying to explain: above-industry-average profits (as in Priem & Butler), a firm improving its efficiency and effectiveness in ways that competing firms are not (what might be called "strategic advantage," as in Barney, 1991), or economic rents (as in Barney, 1986a).

Finally, Priem and Butler's argument that it is a resource's relative value and not its value and rarity that determines the extent to which a resource can be a source of above-industry-average profits, I think, confuses cause and effect. Clearly, the competitive actions two firms engage in might have very different consequences for the relative value of these firms. All resource-based logic suggests is that these differences reflect differences in the underlying resources of firms that enable them to engage in some competitive actions and not others. That is, if the relative value of a firm's competitive actions are effects, then resource-based logic indicates that attributes of firm resources—their value, rarity, imitability, and substitutability—are the causes.

THE PRODUCT MARKET CRITIQUE

Priem and Butler's next critique of the 1991 article focuses on the underdeveloped role of product markets in the RBV I develop there. I have already acknowledged that the question of value is exogenous to the RBV developed in the

1991 paper. Indeed, in that article I argue that a complete model of strategic advantage would require the full integration of models of the competitive environment (i.e., product market models) with models of firm resources (i.e., factor market models). In fact, in their article Priem and Butler present a very simple model of factor and product markets that partially accomplishes this integration (see their Figure 1), but observe that this simple model fails to recognize the role of "entrepreneurial insights concerning future demand shifts in product or factor markets" and "first mover advantage [that] would result, because follow-on competitors could only acquire . . . factors [of production] at higher cost" (p. 31).

I, of course, agree with all these points. In fact, I wrote an article in 1986 in which I made them (Barney, 1986a). In this sense, the 1991 article really needs to be understood within the context of the 1986 paper. In the 1986 article I develop just the kind of factor market/product market model that Priem and Butler think is important. In the 1991 article I then focus only on the factor market side of the equation—not because the factor market/product market issues are not important, but because I had addressed them in a previous article.

THE INAPPLICABILITY CRITIQUE

Priem and Butler also critique the RBV developed in the 1991 article by stating that it has limited prescriptive ability. They cite four aspects of RBV theory that limit its applicability: (1) the attributes of resources that can generate strategic advantages and sustained strategic advantages identified by the theory are not amenable to managerial manipulation, (2) the context within which the theory applies is not specified, (3) the definition of resources is all inclusive, and (4) the theory is static and not dynamic. I examine each of these alleged weaknesses of the RBV developed in the 1991 article below.

Managerial Manipulation of Resources

Priem and Butler correctly observe that many of the attributes of resources that make them likely to be sources of sustained strategic advantage—especially path dependence and social complexity—are not amenable to manage-

rial manipulation. However, the fact that the kinds of firm resources that are most likely to be sources of sustained strategic advantage are not amenable to manipulation does not imply that resource-based logic has no managerial implications. This implies only that the nature of those managerial implications might be different from those Priem and Butler would prefer (Mosakowski, 1998).

In fact, resource-based logic has several very important practical implications for managers. For example, this logic can be used to help managers in firms experiencing strategic disadvantages to gain strategic parity through identifying those valuable and rare resources their firm currently does not possess and pointing out that the value of these resources can be duplicated either by imitation or substitution. In this sense, resource-based logic can be used to provide a theoretical underpinning to the process of benchmarking in which many firms engage.

Resource-based logic can also be used to help managers in firms that have the potential for gaining sustained strategic advantages, but where that potential is not being fully realized, to more fully realize this potential. Resource-based logic can help managers more completely understand the kinds of resources that can generate sustained strategic advantages, help them use this understanding to evaluate the full range of resources their firm may possess, and then exploit those resources that have the potential to generate sustained strategic advantage. It can help identify what the most critical resources controlled by a firm are and thereby increase the likelihood that they will be used to gain sustained strategic advantages.

Managers can also use resource-based logic to ensure that they nurture and maintain those resources that are sources of a firm's current strategic advantages. As suggested in the 1991 article, strategic advantages for firms are often based on bundles of related resources. Some of these resources are likely to be valuable but either not rare, not imperfectly imitable, or not nonsubstitutable. Others of these resources are likely to have these competitively important attributes. Nurturing and protecting this second class of resources are important, if a firm is to maintain its sustained strategic advantage.

For example, suppose a firm possesses a nurturing organizational culture. In some market settings, such a culture may be valuable. If only

one competing firm possesses this culture, it is rare, and, thus, perfect competition dynamics around this culture are not likely to develop. Moreover, because an organizational culture develops over long periods of time (the role of history) and is socially complex, it is likely to be costly to imitate. Finally, there are few obvious close strategic substitutes for an organizational culture. In this situation it is likely that a firm's culture will be a source of sustained strategic advantage. However, even if it takes many decades for an organizational culture with these specific attributes to develop, that culture can be destroyed very quickly by senior managers in a firm if they make decisions inconsistent with that culture. Resource-based logic helps identify this kind of culture as a potentially important source of sustained strategic advantage. Armed with this understanding, managers in an organization might be less inclined to make decisions that have the effect of destroying the very resource that is generating a sustained strategic advantage for their firm.

However, while it is clear that resource-based logic can have very important managerial implications, this logic also indicates that there are important prescriptive limits associated with resource-based theories of strategic advantage. First, to the extent that a firm's strategic advantage is based on causally ambiguous resources, managers in that firm cannot know, with certainty, which of their resources actually generate that strategic advantage. This can significantly limit prescriptions derived from the theory.

Second, no theories of sustained strategic advantage can be used by managers in firms having no potential for generating sustained strategic advantages to create them. That is, resource-based logic cannot be used to create sustained strategic advantages when the potential for these advantages does not already exist. Any theory that purports to be able to accomplish this is proposing a "rule for riches," and, as is well known, there can be no "rule for riches." If the application of a theory to a firm without any special resources can be used to create strategic advantages for that firm, then it could be used to create strategic advantages for any firm, and the actions undertaken by any one of these firms would not be a source of sustained strategic advantage. Even if a "rule for riches" created economic value, that value would be fully ap-

propriated by those who invented and marketed this rule.

Thus, although the resources identified by resource-based logic as being most likely to generate sustained strategic advantages frequently are not amenable to managerial manipulation, it certainly does not follow that there are no prescriptive implications of that resource-based logic. Indeed, that resource-based logic is consistent with causal ambiguity and "rules for riches" constraints on theory-derived prescription provides an important external validity check on this logic.⁶

Context Nonspecification

Priem and Butler also suggest that prescription from the RBV developed in the 1991 article is limited because there is no specification of the context within which the RBV is valid. This, of course, is simply a different way of saying that the determination of the value of a firm's resources is exogenous to the RBV developed in the 1991 article. This concern about the RBV has already been addressed and so will not be discussed further here.

All-Inclusive Definition of Resources

Priem and Butler argue that since the definition of firm resources, as articulated in Barney (1991) and Wernerfelt (1984), includes almost any firm attribute, little prescriptive guidance can

⁶ Although their critique is not as developed as related critiques about the managerial implications of the RBV, Priem and Butler do observe that luck plays an important role in determining a firm's strategic advantage or economic rents. They seem to believe that any firm advantages attributable to luck cannot have managerial implications. Clearly, a firm's path-dependent and socially complex resources may be a manifestation of a firm's good luck. However, even if a firm is lucky, it must still understand how it is lucky in order to take full advantage of its fortunate circumstances. The RBV can be important in specifying when a firm is and is not lucky. Also, acknowledging the role of luck in determining a firm's competitive position is important in guiding a firm's future investment strategies. If most of a firm's success can be attributed to its good luck, then a reasonable prescription might be to extract the full value of that good luck and then move on, reducing nonessential investments as much as possible. A firm also may be lucky in developing causally ambiguous resources. As before, the prescriptive implications of these kinds of resources are limited.

be derived from the RBV. There is little doubt that the definition of resources presented in these two papers is, in fact, very inclusive. That inclusiveness, however, actually enhances rather than reduces the prescriptive implications of the RBV.

Resource-based theorists do not pretend to be able to generate a list of critical resources every firm must possess in order to gain sustained strategic advantages. This is because, as has already been suggested, the value of particular resources depends on the specific market context in which they are applied. However, theorists do describe the attributes that these valuable resources must have if they are going to be sources of sustained strategic advantage for firms. After managers ascertain whether or not a particular resource is valuable, they can then use resource-based logic to anticipate strategic advantages that a resource might create. Rather than limit its prescriptions to specific resources that can be identified, *a priori*, managers can apply resource-based logic to any resource whose value can be determined from the market context within which the resource is to be applied.

Indeed, this characteristic of resource-based theory undermines Priem and Butler's assertion that recent advances of resource-based theory, including Miller and Shamsie's (1996) analysis of resources in the motion picture industry and Conner and Prahalad's (1996) and Kogut and Zander's (1996) efforts to develop a "knowledge-based" theory of the firm, do not actually apply RBV logic. In fact, at least one contribution of RBV logic to these research efforts has been to indicate those kinds of resources most likely to be sources of sustained strategic advantage for firms. Given that RBV logic was instrumental in pointing to the kinds of variables that should be included in this recent work (different kinds of assets in Miller and Shamsie and tacit knowledge in Conner and Prahalad and Kogut and Zander), it is difficult to understand what Priem and Butler mean when they say that this work makes significant contributions "without the RBV itself making an elemental contribution" (p. 33).

Static Resource-Based Logic

Finally, Priem and Butler suggest that RBV prescription is limited because much of the work subsequent to the 1991 article is static rather than dynamic in character. They do admit that

early RBV work is dynamic, citing Penrose (1959), Wernerfelt (1984), and Dierickx and Cool (1989), but they fail to cite the 1991 article as an example of dynamic RBV, even though later in their critique they recognize that "Barney's (1991) definition of sustainable competitive advantage as occurring when competitors have ceased attempts at imitation also lends itself to temporal theory building" (p. 35).

Certainly, the quality of resource-based work published subsequent to the 1991 article varies. The very worst of it is clearly tautological—where those firm resources that can generate a sustained strategic advantage are identified by their ability to generate a sustained strategic advantage. In general, static theoretical and empirical work is more likely to be tautological in this sense than dynamic work.

I also agree with Priem and Butler that dynamic research—where the conditions under which resources are developed or acquired in one period have implications for the strategic advantages of firms in subsequent periods—is particularly important in studying strategic advantages, and particularly important for studying resource-based theories of strategic advantage. Empirically, in this research scholars need to adopt time series approaches similar to those used by Miller and Shamsie (1996), Makadok (1999), and others. Theoretically, researchers need to adopt either an equilibrium or evolutionary approach to analysis.

In economics the traditional way to develop dynamic theory has been to engage in equilibrium analysis. By describing an economic system's equilibrium and then comparing that equilibrium to a system's actual state, theorists can predict how that economic system will change over time. Thus, while equilibrium analysis has often been criticized as static, in reality, theorists focus on equilibrium arguments in order to more fully understand the dynamics of systems that are not in equilibrium. In this context, observations that most economic systems rarely reach equilibrium conditions miss the point of equilibrium analysis.

More recently, an alternative to equilibrium analysis, rooted in what has become known as evolutionary economics, has been proposed (Nelson & Winter, 1982). Instead of focusing on an economic system's equilibrium and comparing this equilibrium to a system's current state, system dynamics are studied by comparing the

state of a system at one time with the state of that system at a later time. One of the advantages of this evolutionary approach is that it is possible to study the dynamics of systems with equilibria that can only be specified by adopting heroic (and often unrealistic) assumptions.

Both of these approaches to dynamic analysis have been applied in a resource-based context. For example, Lippman and Rumelt (1982), Barney (1986a), and Makadok and Barney (in press) all apply equilibrium analysis to studying sustained strategic advantages from a resource-based perspective. Barnett et al. (1994), Levinthal and Myatt (1994), Foss, Knudsen, and Montgomery (1995), Hunt (1997), and Teece, Pisano, and Shuen (1997) adopt evolutionary approaches to studying sustained strategic advantages from a resource-based perspective.

Whether it is through equilibrium or evolutionary analysis, Priem and Butler are correct to emphasize the importance of dynamic analysis of sustained strategic advantage, for it is only through this kind of analysis that the full implications of resource-based logic for the sustained strategic advantages of firms can be understood.

DISCUSSION

As indicated earlier, Priem and Butler's criticisms of the 1991 article are unfounded. Some of their criticisms fail when examined in light of the totality of the argument presented in the 1991 paper. Some of their criticisms focus on underdeveloped aspects of the 1991 article, even though in the article there is an acknowledgment of the importance of these aspects of the argument and even suggestions of ways they can be developed. These suggestions have turned out to be fruitful approaches in further developing the RBV. Finally, some of Priem and Butler's criticisms focus on subsequent work to the 1991 article and therefore do not constitute criticisms of the 1991 paper per se.

Yet, although Priem and Butler's primary criticisms of the 1991 article are unfounded, their observations remind us of important attributes of the RBV—attributes that many applications of this logic have not fully appreciated. For example, Priem and Butler remind us that the value of a firm's resources must be understood in the specific market context within which a firm is operating. While some authors have begun to

develop a more complete theory of resource value, too many authors have simply assumed away this question and, thus, have failed to help develop a more complete theory of firm advantages. Fully parameterizing the rarity of firm resources has actually received less attention subsequent to the 1991 article than fully parameterizing the value of those resources.

Priem and Butler's critique also reminds us of the logical limits of prescriptions derived from theories of sustained firm advantage. These theories often have important managerial implications, but those implications are limited by the "rules for riches" paradox. Efforts to develop theories that, when applied, will always generate sustained strategic advantages clearly are foolish.

Priem and Butler remind us as well that a comprehensive list of potential sources of sustained strategic advantage for firms cannot be derived from resource-based logic. This logic, however, does make it possible to specify the attributes that can lead some of these resources to be sources of sustained strategic advantage. This type of theory can generate both testable empirical assertions and concrete managerial prescriptions, even though it cannot generate a comprehensive list of potential sources of sustained strategic advantage.

Finally, Priem and Butler remind us of the important role dynamic analysis plays in resource-based logic. In order to avoid tautology problems, authors of empirical resource-based work must usually adopt time series or some other form of dynamic analysis. Theoretically, either equilibrium or evolutionary analysis can be applied to resource-based logic to understand the implications of competition for resources in one time period for competition among firms in another.

However, although Priem and Butler have reminded us of some important attributes of the RBV, they fail to raise some of the very important questions in the field of strategic management that are fully addressed neither in the 1991 article nor in subsequent resource-based work. These questions include: (1) Where do a firm's strategic alternatives come from? (2) How are the rents created through strategies appropriated? and (3) How are these strategies to be implemented? I discuss each of these questions briefly below.

Strategic Alternatives

Resource-based theory, as developed in and subsequent to the 1991 article, includes a very simple view about how resources are connected to the strategies a firm pursues. It is almost as though once a firm becomes aware of the valuable, rare, costly to imitate, and nonsubstitutable resources it controls, the actions the firm should take to exploit these resources will be self-evident. That certainly may be true some of the time. For example, if a firm possesses valuable, rare, costly to imitate, and nonsubstitutable economies of scale, learning curve economies, access to low-cost factors of production, and technological resources, it seems clear that the firm should pursue a cost leadership strategy (Barney, 1997: Chapter 6).

However, it may often be the case that the link between resources and the strategies a firm should pursue will not be so obvious. For example, sometimes it might happen that a firm's resources will be consistent with several different strategies, all with the ability to create the same level of competitive advantage. In this situation, how should a firm decide which of these several different strategies it should pursue?

Even more important, there may be times when choosing a strategy consistent with the resources a firm controls is a creative and even entrepreneurial act. This might occur, for example, when a firm possesses valuable, rare, costly to imitate, and nonsubstitutable resources broadly seen as consistent with one strategy, and the firm is able to conceive of and implement a very different strategy that exploits these same resources, but in very different ways.

To the extent that developing strategic alternatives a firm can use to exploit the resources it controls is a creative and entrepreneurial process, resource-based models of strategic advantage may need to be augmented by theories of the creative and entrepreneurial process. These theories could then be applied to understand the strategic alternatives a firm might be able to pursue, given the resources it controls. While I am currently unaware of such a highly developed theory, these observations suggest a very close relationship between theories of strategic advantage and theories of creativity and entrepreneurship.

Rent Appropriation

As has already been suggested, resource-based theory can be used to evaluate the competitive potential of the different strategic alternatives firms face. However, this logic, as developed in the 1991 article and as it has evolved since, does not address how the economic rents a strategy might create are appropriated by a firm's stakeholders. It might be the case, for example, that implementing a particular strategy generates real economic rents for a firm but that those rents are fully appropriated by a firm's employees, its customers, or even its suppliers.

Some scholars have begun to examine this rent appropriation process (e.g., Coff, 1999). Their work focuses on the relative bargaining power of a firm's stakeholders and the role of team production (Alchian & Demsetz, 1972) in determining how rents are distributed among a firm's stakeholders. While this work is promising, it still does not constitute a complete theory of the rent appropriation process. For example, how do different stakeholders come to enjoy different bargaining positions? Why isn't the value of a stakeholder's bargaining position reflected in the cost of the investments necessary to create that position? Under what conditions will team production reduce the ability of employees to appropriate rents created by a firm's strategies? Why would employees agree to employment conditions that significantly reduce their ability to appropriate the rents created when a firm implements its strategies?

Strategy Implementation

Finally, in the 1991 article, issues of strategy implementation do not receive sufficient attention. As a theoretical convenience, I adopted the simple view that once a firm understands how to use its resources to implement strategies that can be sources of sustained strategic advantage, implementation follows, almost automatically. This view is inconsistent both with agency theory arguments taken from organizational economics (Jensen & Meckling, 1976) and a huge body of organizational behavior literature on motivation, cooperation, and managerial decision making.

In general, there have been two approaches to addressing strategy implementation issues in

the context of resource-based theory. First, some have suggested that the ability to implement strategies is, itself, a resource that can be a source of sustained strategic advantage. Work on the role of "cooperative capabilities" in implementing strategic alliance strategies (e.g., Hansen, Hoskisson, & Barney, 2000) and the impact of "trustworthiness" on exchange opportunities for a firm (Barney & Hansen, 1994) is consistent with this first approach.

Second, it has also been suggested that implementation depends on resources that are not themselves sources of sustained advantage but, rather, are strategic complements to the other valuable, rare, costly to imitate, and nonsubstitutable resources controlled by a firm (Barney, 1995, 1997).

Which of these approaches ultimately is most fruitful in bringing the analysis of strategy implementation into resource-based logic is an open question. It is clear, however, that additional work is required.

CONCLUSION

There is little doubt that Priem and Butler have provided an important service to the field of strategic management in general and to resource-based theorists in particular. Throughout their article they highlight those aspects of resource-based theory that require further development and refinement and end up calling for increased efforts to understand its theoretical and empirical implications. In this sense, Priem and Butler end up answering the question posed in the title of their own paper—"Is the resource-based 'view' a useful perspective for strategic management research?"—with a resounding yes.

In addition, Priem and Butler have given me a rare opportunity to go back and think about a paper I wrote over a decade ago. In this process I have asked myself the question "Would I write the same paper today?" Certainly, some aspects of the 1991 article have, I think, stood the test of time. The notions of resource heterogeneity and resource immobility remain, I think, important contributions, as do the discussions of rarity, imitability, and substitutability.⁷ While still controversial among many strategy researchers, I

believe that the equilibrium approach to understanding sustained strategic advantage in the 1991 paper is very powerful. I also believe the 1991 article was helpful in reintroducing firm attributes into strategic management research after a period in which work focused almost exclusively on industry determinants of firm performance. I have also been very gratified to see at least portions of the 1991 argument being applied in nonstrategic management disciplines (e.g., human resource management, management information systems, and marketing) and to strategic management questions (e.g., knowledge-based theories of competitive advantage, resource-based theories of the firm, resource-based theories of innovation, and resource-based theories of interfirm cooperation) in ways I did not anticipate.

That said, I think I would make some changes to the article if I wrote it today, and many of those changes involve the issues that Priem and Butler focus on. For example, I think I would spend more time on the question of value and how to parameterize it and how value is related to market structure. I would adopt a simpler definition of resources (i.e., resources are the tangible and intangible assets a firm uses to choose and implement its strategies). I would link the argument much more closely to other economic traditions, including Ricardian (Ricardo, 1817) economics and evolutionary economics. And I would explicitly raise the issue of tautology, suggest how this issue could be avoided, and strongly argue for the importance of temporal empirical tests of the argument.

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⁷ Some observers have concluded that, taken to its extreme, the RBV indicates that all firms are unique. However, the 1991 article only suggests that resources may be heter-

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