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Unraveling The Resource-Based Tangle

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Resource-based theory (RBT) is a prime example of a theory that integrates a management perspective with an economics perspective. As such, its challenge is to keep its arguments logically consistent and clear, despite the risk of their becoming entangled, due to competing and possibly conflicting theoretical influences. We argue, in this paper, that to meet this challenge, it is essential to understand the limits to the domain of RBT. Unless RBT is understood as a resource-level and efficiency-oriented analytical tool, its contribution cannot be understood and appreciated fully. Incorporating aspects of economic theory that fall outside this domain will not increase its power and will only add to the confusion.

Continued efforts to increase the analytic precision of RBT and to elaborate its economic logic, however, are worthwhile pursuits. To these aims, then, we provide a sharper definition of competitive advantage, linking this term to value creation and to demand side concerns. Similarly, we provide an economically meaningful definition of value and more precise definitions of critical resources and of economic rents. This allows us to trace a clearer trail of logic, consistent with both the management and the economics perspectives, leading from critical resources to the generation of rents.

INTRODUCTION

Foss and Knudsen (2002) (F&K henceforth), propose an ambitious overhaul of resource-based theory (RBT). By clarifying definitions, articulating implicit assumptions, and elevating the theory's logical structure, they hope to provide a more precise foundation than that offered by either of our papers (Barney, 1991; Peteraf, 1993) which they take for 'authoritative summary statements of the (resource-based view)' (F&K, p. 2). Toward this aim, we offer our encouragement and support.

In brief, F&K argue that the various conditions for sustainable competitive advantage, set forth in our papers (Barney, 1991; Peteraf, 1993), can be reduced to two even more fundamental conditions: namely, *uncertainty* and *immobility*. Their argument rests on two main supporting points—one regarding the definition of sustainable competitive advantage and one regarding the derivation of heterogeneity. Our (even briefer) response to these points is that, while they have much to recommend them, they are not relevant to the questions with which our two original papers dealt. Moreover, we are concerned that F&K's reformulation of our frameworks may minimize or sideline the role of heterogeneous resources in resource-based theory. We view this as a serious issue.

Despite our qualms about embracing the more radical elements of F&K's proposal, we are in full agreement with their desire for greater definitional clarity. In particular, we agree that it would be very useful to address more deeply the issue of what constitutes a competitive advantage. As F&K observe, there are some substantive differences in the way that each of us employed this term in our original papers. We are grateful to F&K for drawing attention to this issue and for affording us with the opportunity to revisit this topic. We are thankful as well for the chance to highlight the commonalities across our original papers and to

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bring our respective approaches into even closer alignment. We extend our appreciation to our esteemed colleagues, Nicolai Foss, Thorbjorn Knudsen, and the editors of this special issue, for drawing us into this very useful and informative discussion.

Our paper is constructed as follows. In the next section, we provide a concise explanation of why we feel that F&K's arguments are not directly relevant to our resource-based approaches to sustainable competitive advantage. We proceed in the following section to delimit the domain of resource-based theory. We then take the opportunity to revisit the vexed issue of competitive advantage. From this point, we go on to provide some additional clarification of terms and to reflect on some remaining issues of interest before concluding our essay in the final section.

OUR RESPONSE TO F&K'S PROPOSAL

As noted above, the arguments of F&K center on a few key issues that require some resolution. The first is the very fundamental issue of what RBT is meant to explain. The second issue involves the nature of the explanation and, in particular, the derivation of the condition of heterogeneity.

The Dependent Variable Issue

The issue of what RBT explains can be further broken down into three closely related but, arguably, separable sub-issues. The broadest of the three sub-issues is what primary question(s) RBT addresses. As F&K ask, is RBT primarily a theory of competitive advantage or a theory of rents or both? The second issue is how a sustainable competitive advantage is to be defined. As F&K suggest, there are multiple meanings for this term and there is no clear agreement on a single, unambiguous definition. The last issue is over what F&K refer to as RBT's 'dependent variable'. This is the question of what RBT can be used to predict.

F&K's resolution of these issues is to position RBT as a theory of sustainable competitive advantage (SCA) and to define SCA in terms of the dependent variable suggested by Peteraf (1993). Accordingly, they define SCA as 'strictly positive differential profits in excess of opportunity costs (including the costs of capital) that are sustained in equilibrium, *where the relevant differentials may be inter-industry as well as intra-industry*' (F&K, p. 2). Note however, that the italicized segment of this definition is not part of Peteraf's (1993) original conception, but rather the addition of F&K. And while it may seem like a minor change, broadening the realm of the dependent variable to include inter-industry comparisons has major implications for the scope and substance of RBT.

By broadening the realm of the performance comparison, F&K essentially define the dependent variable as supra-normal economic returns, of any sort and from any source. This includes not only excess returns due to heterogeneous factors, but also those attributable to contextual factors such as industry level structural forces. As F&K (p. 2) note, 'This rather general understanding of SCA may be somewhat contrary to the RBV emphasis on firm-level imitation barriers…'. We concur with this observation, but disagree with their conclusion that there is 'no compelling reason why the RBV should be confined to the analysis of intra-industry profit differentials…(F&K, p. 2)'.

In our view, there is an extremely compelling reason to define the dependent variable of RBT more narrowly. Our frameworks (Barney, 1991; Peteraf, 1993) were developed to provide an explanation of performance differences among competing firms, attributable to the differences in their resources. Without this focus, RBT ceases to be a *resource-based* theory! And while it is true that sources of inter-industry differentials may, at times, be found on the resource level as well, F&K's proposal provides no way to distinguish those sources that are resource-based from other possible sources.

Our response to F&K is that RBT loses rather than gains power if it is expected to explain all types of profitability differentials. We address the issue of the domain of resource-based theory more fully in the following section. We argue that RBT is a theory of rents as well as a theory of sustainable competitive advantage. We agree that RBT could benefit from convergence around a single definition of sustainable competitive advantage. Toward this end, we provide a definition of competitive advantage, in the fourth section, that is consistent with our views on RBT. We define this term in a way that allows for a greater separation between the notion of competitive advantage and outcome variables of interest, such as rents and intra-industry performance differentials.

The Derivation Issue

F&K's proposal to pare back RBT's set of necessary conditions for sustainable competitive advantage also depends upon an argument regarding the heterogeneity condition found in both of our frameworks (Barney, 1991; Peteraf, 1993). According to F&K, the condition of heterogeneity is not necessary for SCA because this condition can always be derived from the more basic conditions of uncertainty and immobility. In support of this assertion, they cite several studies in which heterogeneity (in the form of equilibrium efficiency differentials across firms) results from the combination of uncertainty and sunk costs.

While we agree that heterogeneity can result from uncertainty and immobility, we note that this condition can arise in other ways as well (Nelson, 1991). Some possibilities include path dependence, chance events, governmental largess, and unevenly distributed property rights. If 'exogeneity' is what distinguishes true causal conditions from others, then what makes the two conditions identified by F&K any more exogenous than these alternatives?

Moreover, the origins of heterogeneity, while germane to RBT in general, and to its dynamic offshoots in particular, are not the direct concern of the Barney (1991, 1997) and Peteraf (1993, 2001) frameworks. Indeed, these frameworks begin with an *assumption* of heterogeneity and proceed from that point. The various possible origins of the heterogeneity lie beyond the scope of these frameworks. Moreover, as F&K acknowledge, heterogeneous resources can result in sustained competitive advantage even when there is certainty, *ex post*, regarding the nature of the advantage. Just because it is possible to identify the cause of an advantage does not imply that it can be duplicated.

Consider, for example, a great reputation for quality experience goods or a patent for a product such as NutraSweet. Even *ex ante*, uncertainty is not necessary for RBT to apply. If the property rights to some scarce and valuable resource are gained through power relations or governmental largesse, the resource holder of such rights will command a sustainable competitive advantage, regardless of the certainty of its source.

But in some sense, all of these arguments fail to capture the essential point. In our view, this point is the following: So fundamental is the condition of heterogeneity to RBT, that it is the *sine qua non* of this theory. Without differentiable resources, RBT makes no contribution of its own and ceases to be a theory discrete from other analytical tools. With such resources, it adds a unique perspective to the literature on firm performance. There is nothing to be gained by assuming that this condition is not 'necessary'. It is the genesis of all of our subsequent arguments in the resource-based vein.

In the following section, we describe our view of what distinguishes RBT from other theories of firm performance.

THE DOMAIN OF RESOURCE-BASED THEORY

Efficiency-Based Theory

A critical defining feature of RBT is that it is an efficiency-based explanation of performance differences, rather than one relying purely on market power, collusion, or 'strategic' behaviors (Barney, 1991; Conner, 1991). In RBT, competitive advantage derives from firm-specific resources that are scarce (rare) and superior in use, relative to others (Barney, 1991, 1997; Peteraf, 1993, 2001). Performance differences are viewed as derived from rent differentials, attributable to resources having intrinsically different levels of efficiency (Barney, 1991; Peteraf, 1993). Superior resources are more 'efficient' in the sense that they enable a firm to produce more economically and/or better satisfy customer wants. In other words, firms with superior resources can deliver greater benefits to their customers for a given cost (or can deliver the same benefit levels for a lower cost). Note that this is a broad view of 'efficiency' in that it is concerned not just with lowering costs, but also with creating greater value or *net* benefits (Peteraf, 2001).

This feature places RBT among the ranks of theories of strategy and theories of the firm, such as transaction cost economics, that emphasize 'economizing' over 'strategizing' (Williamson, 1991). In Williamson's (1991) parlance, 'economizing' is concerned principally with efficiency, while 'strategizing' is concerned with market power, strategic ploys, and efforts to blunt competition. Strategizing often requires a firm to commit itself to what seems to be against its best interest in order to influence the choices of rivals (Besanko *et al.*, 2000). Economizing is largely an

internally oriented activity, while strategizing is largely oriented externally toward rival firms and the competitive environment. Economizing concerns optimizing one's own productive performance rather than hobbling one's rivals and blunting their competitive force.

While Williamson's (1991) notion of economizing is somewhat narrower than the efficiency perspective outlined above, the similarities are clear. RBT is about efficiency in the sense of maximum benefits produced for the dollar spent. This is the essence of efficient production. RBT concerns efficiency in broader terms as well. To a degree, it is concerned with efficient organization and operation, as well as efficient production, as Barney's (1997) VRIO model and Ghemawat's (1991) concern with 'slack' make clear[1]. In broad terms, it is also concerned with effective adaptation, as the dynamic capability version of RBT suggests (Teece *et al*., 1997).[2] To the degree that RBT pertains to the elimination of waste and effective adaptation, it treats the type of 'first-order economizing' issues that Williamson (1991) says are often neglected.

RBT also encompasses the more conventional type of efficiency concerns that worry economists, in which output and prices deviate from the competitive ideal. RBT does not depend upon any artificial restriction of output to raise prices, or upon collusive, anti-competitive behavior. It does not require tacit collusion or non-cooperative strategic interactions that result in similar product market outcomes. It is consistent with perfectly competitive output markets, although this condition is not required. (See Peteraf, 1993; Winter, 1995). As a theory of competitive advantage, it extends the insights of Demsetz (1973), who noted that efficiency differences might explain performance differences better than market power or collusive behaviors. It operates more in the Chicago School tradition than many other theories of performance (Conner, 1991).

Resource-Level Analysis

A second defining feature of RBT is that it provides a *resource-level* and *enterprise-level* explanation of sustained performance differences among firms. By this, we mean that RBT focuses on the resources and capabilities, controlled by an enterprise, that underlie persistent performance differentials among firms. RBT's contribution is distinct from other explanations of performance involving other levels of analysis, such as industry level analysis (Porter, 1980), group level analysis (Dranove *et al*., 1998), and dyad-level analysis (Grimm and Smith, 1997).[3] In contrast with RBT, other levels of analysis attribute performance outcomes more directly to external factors, such as market structure, institutional factors, or strategic interactions, rather than to internal or enterprise-level factors.

This distinction among levels of analysis is an important one. It is the basis for the stream of empirical work, begun by Schmalensee (1985), which attempts to ascribe separate portions of the variation in profitability rates to different levels of analysis, including the industry level, the business group level, and the business level or firm level. (See, for example, Montgomery and Wernerfelt, 1988; Rumelt, 1991; McGahan and Porter, 1997; Brush and Bromiley, 1997; Khanna and Rivkin, 2001).

Two important lessons can be drawn from this research stream. First, the results suggest that *multiple* levels of analysis contribute meaningfully to profitability differences. Variation in profitability is explained, in part, by forces occurring at levels other than the enterprise level, such as the industry level and business group level. Second, business unit level factors, while not explaining everything, appear to offer a very high degree of explanatory power (Rumelt, 1991). Corporate level factors seem to be important as well (Helfat and Bowman, 2001). While the effects of the resource-level have not been analyzed directly, the combined results of the business-unit and corporate levels may reflect much of its power. This lends some support for RBT, without denigrating other theories of performance involving other levels of analysis.

Understanding RBT as a resource-level and enterprise-level analytical tool is critical for comprehending exactly what phenomena it can explain and what it cannot. RBT is not a substitute for industry-level analytic tools, such as 5-forces analysis (Porter, 1980) and game theory. It is not a substitute for strategic group analysis or for analysis of the macro environment. Rather, it is a complement to these tools. It looks within the enterprise and down to the factor market conditions that the enterprise must contend with, to search for some possible causes of sustainable competitive advantage. It does not consider

changes in product market conditions in isolation from their effects on (and effects resulting from) these lower-level forces. Rather, it takes the product market conditions as given and assumes that there are no frictions in that realm. It does so for the purpose of sharpening and facilitating its own special focus. Similarly, RBT does not consider other external environmental forces or the nature of interactions among multiple actors. Once again, it holds constant all of these other factors, assuming frictionless competition outside its own narrow realm[4]. In essence, it operates under a set of *ceteris paribus* assumptions.

In the following section, we present a resource-based theory of performance differences that, while broadly consistent with our earlier writings, provides further definitional clarity, additional explication, and a level of analytic precision fully consistent with economic understandings. We provide a framework that both accommodates and reconciles differences in the Barney (1991) and Peteraf (1993) frameworks. In brief, we argue that RBT is, at once, a theory of sustainable competitive advantage and a theory of rents. We begin by acknowledging the ambiguities in the term 'competitive advantage' and by proposing a solution to this problem, as it pertains to RBT.

As Winter (1995, p. 168) observes:

> 'Competitive advantage' is typically defined as superior financial performance. Beyond this point, however, conceptual clarity starts to fade. The idea of superior financial performance may be evoked by a range of phrases such as 'above normal returns', high quasi-rents', value-creation', and other near-synonyms for 'making money'.

Of these different usages, F&K choose to define competitive advantage in terms of 'above-normal returns', arguing that this seems to be the convention. While this may be an appropriate choice for certain purposes, we feel that it has the downside of leading to confusion over level of analysis issues. For example, the phrase 'above-normal returns' describes the profitability outcomes of homogeneous players engaging in certain types of strategic interactions, as readily as it describes the returns of a unique player, competing on the basis of rare, value-generating resources. Similarly, it lumps together efficiency-based explanations of performance and market power explanations. Observe that 'above normal returns' are likely whenever there is explicit collusion among players with identical resources. Indeed, it is the sweeping inclusiveness of their definition of competitive advantage that leads F&K to conclude that RBT has been remiss in not incorporating more of what we term industry-level, dyad-level, or group-level analysis.

In contrast, we propose a considerably more narrow definition of competitive advantage. While there are other alternatives, this one has the virtue of providing a clearer connection to the core or critical resources of a firm. It emphasizes the role of these resources in value creation and preserves the focus of RBT on efficient outcomes and resource-level analysis. It facilitates the reconciliation of earlier efforts to develop theory (Barney, 1991, 1997; Peteraf, 1993, 2001). In addition, it allows for a clearer understanding of the connection between resources, economic value, and the generation of the kind of persistent rents to which an enterprise has some legitimate claim.

Note, however, that we define competitive advantage not in terms of a profitability advantage, but in terms of a more fundamental type of competitive edge. The extent of a firm's competitive advantage, in our terms, is an indicator of the firm's *potential* to best its rivals in terms of rents, profitability, market share, and other outcomes of interest. It is not an outcome itself and should not be thought of the 'dependent variable' to which F&K refer. Rather, it reflects the initial positions of market participants and provides a critical litmus test for whether a resource-based outcome advantage is at all possible. Once this litmus test is passed, then other parts of the RBT framework can be applied to address the questions of whether this initial advantage is likely to be sustained and whether there is any hope for a sustainable profit advantage. As we argue in greater detail below, this is the condition that must be met for rent generation. It does not determine whether the rents can be sustained or how they will be divided among claimants.

A RESOURCE-BASED VIEW OF COMPETITIVE ADVANTAGE

Competitive advantage is a term that is generally used to describe the relative performance of rivals in a given (product) market environment, however

broadly or narrowly that market may be defined. We employ the term in that fashion here and assume that, for the purposes of our analysis, the boundaries of the market are given. By taking a different perspective of the market boundaries and reapplying the framework, different but complementary insights may emerge. We restrict our attentions, in this article, to the application of RBT to the issues of competitive advantage and rent generation in a given product market, noting that our framework can be extended in a straightforward fashion to the multiproduct realm (Collis and Montgomery, 1997).

We begin by defining 'competitive advantage' as follows:

Definition 1a:
An enterprise has a *Competitive Advantage* if it is able to create more economic value than the marginal (breakeven) competitor in its product market.[5]

This definition is consistent in spirit with the definition of competitive advantage provided by Barney (1986, 1991) and with the usage of this term by Porter (1985). It is consistent, as well, with the value-based approach to competitive advantage presented in Peteraf (2001)[6]. It resembles the value-creation frameworks of Brandenburger and Stuart (1996) and of (Besanko *et al*., 2000), although it differs in terms of its reference point. Its precise meaning, of course, depends upon a clear definition of what it means to 'create economic value'. Thus we define 'economic value' in concert with the definition above:

Definition 1b:
The *Economic Value* created by an enterprise in the course of providing a good or service is the difference between the perceived benefits gained by the purchasers of the good and the economic cost to the enterprise.

Several things about this definition are notable. First, it is a *net* benefits approach to value creation. It is the benefits produced by a firm's undertakings, net of their costs. This is somewhat broader than Porter's (1985) approach, wherein he defines 'value' only in terms of the benefits side of the equation[7]. It is closer in spirit to his more general approach to competitive advantage, which holds that the starting point for an outcome advantage is superior differentiation and/or lower costs.

Second, it is a view of value creation closely aligned with fundamental economic principles. Value is expressed in terms of the difference between perceived benefits, or customer willingness-to-pay, on the one hand, and economic costs on the other. This is, in essence, the same as the economic concept of *total surplus*, which equals the sum of the economic rents (*producer surplus*) and customers' 'value for the money' or *consumer surplus*.[8] The definition supports the notion that the value that an enterprise creates has the potential to enhance the welfare of all of its stakeholders. It is independent of the price of the product, although prices serve to allocate the surplus. (See Figure 1.)

Third, it emphasizes *perceived* benefits, suggesting that the perceptions of consumers, rather than some absolute notion of quality differentials, are what really matter. This is consistent with a marketing view of how value is created. Finally, greater value implies greater *efficiency*. To create more value than its rivals, an enterprise must either produce greater benefits for the same cost or the same benefits for a lower cost. Thus it supports an efficiency view of RBT.

Taken together, these two definitions (of competitive advantage and of economic value) provide a precise picture of what a competitive advantage consists of, as well as how it may be achieved, in the most general terms. Competitive advantage is expressed in terms of the ability to create relatively more economic value. To create more value than its rivals, an enterprise must produce greater net benefits, through superior differentiation and/or lower costs. The benchmark for comparison is the

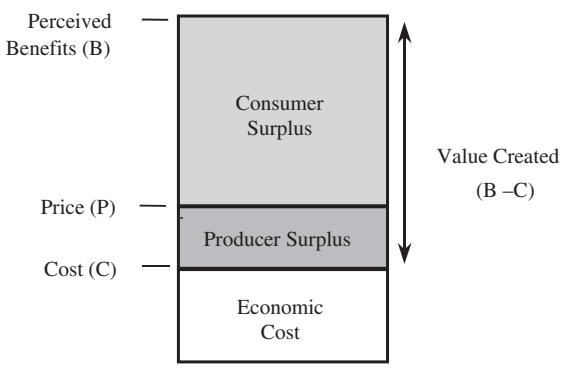

Figure 1. Prices allocate the value created.

marginal competitor. This implies that a competitive advantage may be held by several or even many firms in a given industry and suggests that there may be several different routes to competitive advantage. It simply requires an enterprise to be a superior value generator, relative to the least efficient competitor capable of breaking even. An enterprise with competitive advantage need not be the very best performer in all dimensions.

From A Value-Based Advantage to Rent Generation

In this section, we trace the path of logic leading from a competitive advantage in terms of economic value to the generation of rents. By providing such a path, we legitimize RBT as a factor-based, efficiency-oriented, and firm-level explanation of performance differences. In so doing, we distinguish the contributions of RBT more clearly from that of theories that operate at other levels of analysis and are concerned more directly with market power.

To trace this path, we compare the situation of two single-business firms competing in a product market, one of which has a competitive advantage over the other. (See Figure 2) For illustrative purposes, we assume that the focal firm, firm A, creates \$180 of economic value for each unit of output that it provides the market, while its rival, firm B, creates only \$150 of value per unit of output. Note that economic value can be expressed in monetary terms, since the level of perceived benefits is reflected in the customers' maximum willingness-to-pay for the good, while economic costs have a corresponding dollar counterpart. Now recall that product price determines how much of this value is distributed to customers, in terms of benefits received over and above their cost to the consumer (price paid). If each firm delivers the same level of benefits to consumers, say \$100, firm A will have a pool of *residual value* that exceeds that of firm B by \$30 (\$80–\$50).

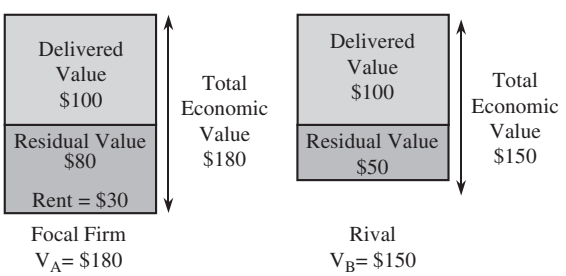

Figure 2. Greater economic value supports the generation of rent.

What is residual value? It is what is left over after the consumers have been allocated a share of the total value. This is the share of total value that remains to be divided among other claimants, including the firm. In Figure 2, the residual value available to firm A is \$80, while firm B has only \$50 of total value left to allocate. Firm A has a positive differential in residual value of \$30 (\$80–\$50). What does this positive differential in residual value represent? This, of course, is firm A's competitive advantage over firm B and it provides a protective cushion for A against competition from B.

To see this, imagine that fierce price competition breaks out in this product market. Under such conditions, each firm will continue to lower prices in an effort to attract one another's customers until prices reach that point at which one of the firms is no longer willing to supply. For either firm, that will occur at the point that its residual value dips below zero. (When the residual pool of value is zero, there is nothing left for the firm to claim over and above its economic costs. When the residual value is negative, the firm cannot even recover its costs.) Since B will reach that point first, B will become the marginal, breakeven competitor and prices will stabilize. Firm A can continue to produce profitably, due to its cushion of \$30 per unit.

Alternatively, the competition between A and B could take place on the cost side, through, say, greater advertising or auxiliary services. This kind of competition will also whittle away at the residual value. Once again, the limit to this competition occurs when the residual value of the least efficient firm is completely dissipated. That firm again is firm B, leaving A with a residual of \$30 per unit.

This pool of excess residual value is also significant in that is equal to the *economic rents* attributable to the more efficient factors of firm A. We define *economics rents* as *returns to a factor in excess of its opportunity costs*.[9] To understand why we view this excess value as rent, we must consider the connection between a firm's competitive advantage and its factors. More specifically, we focus on a subset of the entire range of factors deployed by the firm in implementing its product market strategy.

While factors, in general, may range from pedestrian and poor quality factors, to those that are rare and special (Wernerfelt, 1984; Montgomery, 1995), we hone in on those factors that enable a firm to participate in its product market *relatively more* efficiently and effectively (Barney, 1991).[10] That is, we focus on those factors that have a significant positive effect on either the economic costs or perceived benefits associated with an enterprise's products (Peteraf, 2001). Wernerfelt (1989) refers to these resources as *critical resources*, a term which includes both resources and capabilities.

Critical resources are critical in two important senses. First, they are essential to the firm's effort to generate differentially greater value. Without such resources, the value would disappear, as the comparison with marginal players suggests. Second, they are the limiting factors in determining how much of market demand the focal firm is able to satisfy. As limiting factors, then, they are scarce in the sense that their supply is insufficient to cover the demand for their services. Because of this scarcity of superior factors, marginal factors are drawn into production as well in order to meet the demand. The scarcity of the critical resources may be a temporary phenomenon, due to some limitations on how quickly they can be replicated, or a more permanent state, due to an absolute fixity of resource supply.

In either case, the greater value that is generated is properly viewed as a *rent* to these scarce critical resources. It is a 'return' to resources in the sense that the production of the rent is dependent upon the efficiency differences among the resources in use. Without the more efficient resources, the rent would cease to exist. It is a return above the opportunity costs of resources of this general type, in that it exceeds the opportunity cost of the marginally productive resources. It is greater than the return necessary to draw resources of this general type into production. It is not, however, a 'return' to the resource in the sense that the resource holder necessarily receives the surplus value. How this excess residual value is divided among the firm and other claimants requires further analysis (Peteraf 1993, 2001). See Figure 3 for a summary of the connection between resources, residual value, and rents.

We emphasize the following points. First, this is the first step of the RBT framework only. It is a crucial step, however, because if greater value is not created due to the use of superior resources, then RBT is not applicable to the situation at hand. Second, because it is just the first step, it does not tell the whole story. The rents that are generated may be fleeting and of limited consequence. What is more interesting is whether the rents can be sustained for some period of time and whether the firm has any hope of claiming them in the form of superior profits. These questions are addressed by the other aspects of our frameworks (Barney, 1991; Peteraf, 1993). We reserve comment on these issues for another forum. Last, there is no *necessary* connection between any advantage that a firm has in terms of its ability to generate rents and superior profitability. See Winter (1995), Peteraf (1994, 2001) and Coff (1999) for more detailed explanations of this final point.

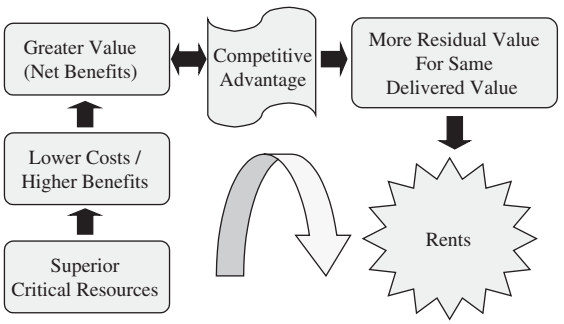

Figure 3. The chain of logic from resources to rents.

FURTHER CLARIFICATION OF TERMS

By clarifying some of the terms employed in our earlier work, we can show how the model above relates to our earlier writings and how those writings relate to one another. This enables us to further mitigate any confusion and address a number of F&K's other points.

As F&K observe, resource 'heterogeneity' is not unambiguously defined in either Barney (1991) or Peteraf (1993). One difficulty is that Barney (1991) and Peteraf (1993) use this term to mean different things, which is reflected in the different positions this term occupies in their respective models. In Barney (1991, 2001), 'resource heterogeneity' is one of the two basic assumptions supporting his model of sustainable competitive advantage. It precedes the 'value-rareness-imperfect imitability and substitutability' conditions (Barney, 1991) and his well-known VRIO framework (Barney, 1997, 2001).

Accordingly, his meaning of this term is quite broad. It signifies, simply, that strategic resources are distributed unevenly across firms, or that different firms possess different bundles of strategically relevant resources. The subtle part of this definition requires understanding what is meant by 'strategic' or 'strategically relevant' resources. Drawing on Wernerfelt (1984), Barney (1991, p. 102) defines them as 'those attributes of a firm's physical, human, and organizational capital that ... enable a firm to conceive of and implement strategies that improve its efficiency and effectiveness...'

In Peteraf's (1993) framework, resource 'heterogeneity' occupies a much more central position, as one of four 'cornerstones' of sustainable competitive advantage. Indeed, resource heterogeneity is the source of rents in her model, whether they are short-lived or long lasting. Accordingly, she employs this term to signify a great deal more than just input differentials across firms.

She describes her full meaning of 'resource heterogeneity across firms' as follows (Peteraf, 1993, p. 180):

> 'One might describe productive factors in use as having intrinsically differential levels of 'efficiency'. Some are superior to others. Firms endowed with such resources are able to produce more economically and/or better satisfy customer wants. Heterogeneity implies that firms of varying capabilities are able to compete in the marketplace and, at least, breakeven. Firms with marginal resources can only expect to breakeven. Firms with superior resources will earn rents.'

In other words, for Peteraf (1993), resource heterogeneity implies that some firms have resources that generate more *value* than others. Those that support more value creation will generate rents, due to the scarcity of such resources relative to demand for their services.[11]

In relation to the definition of competitive advantage offered above, Peteraf's (1993) framework suggests that competitive advantage can be traced to resource heterogeneity. More specifically, firms with superior resources in terms of their ability to generate more value will have a competitive advantage in terms of differential residual value. We know, from Figures 2 and 3 that greater residual value translates into a rent advantage. If the superior resources are 'scarce in the sense that they are insufficient to satisfy demand for their services' (Peteraf, 1993, 180), then the surplus is indeed properly viewed as rent. This is true whether the resources are strictly limited in supply or whether they are 'quasi-fixed', in the sense that their supply can only be expanded slowly.

Barney's (1991, 1997) framework, though different from Peteraf's (1993), also ties in neatly to the more explicit definitions of 'competitive advantage' and 'value' provided above. The inferences that Peteraf (1993) draws from her notion of 'resource heterogeneity' correspond very closely to Barney's (1991, 1997) more explicit requirements that superior resources be 'valuable' and 'rare'. Barney (1991, p. 106) explains that 'resources are valuable when they enable a firm to conceive of or implement strategies that improve its efficiency or effectiveness'. This is very much like our definition of value above, if improved 'efficiency or effectiveness' imply greater net benefits or economic value. Thus, for Barney (1991), competitive advantage is the result of having more valuable resources than other firms in an industry where there is a heterogeneous distribution of resources. Barney's requirement of resource *rarity* emphasizes the scarcity component of the model. The economics underlying this final condition is precisely the same as those underlying Peteraf's (1993) discussion of scarcity. For both authors, rents are due to an inability to rapidly expand the supply of the scarce resource in response to greater demand.

In sum, the frameworks of both authors are consistent with the more explicit definitions of 'competitive advantage' and 'value' and 'rent' provided above. Moreover, the frameworks of both authors are consistent with and supportive of one another. Whereas competitive advantage is the product of Peteraf's (1993) nuanced conception of heterogeneity, it is likewise the product of Barney's (1991, 1997) notion of more valuable resources among a heterogeneous set. Whereas rents reflect the attribute of 'rareness' in the Barney (1991, 1997) framework, so they reflect a 'limited supply relative to demand' or 'scarcity' in Peteraf (1993). While the language in these two models may not correspond exactly, the meaning is very nearly the same and supports the updated definitions offered above.

MORE REFLECTIONS AND CONNECTIONS

The Roles of the Value and Rareness Conditions

Resource scarcity alone is not sufficient to produce rents, unless the definition of scarcity is more narrowly restricted. Indeed, resources may be scarce without creating any value at all. If resources are scarce with respect to one possible usage, but are even more highly desired for another use, then the opportunity cost of employing the resource for the first use will be high. If the opportunity cost is sufficiently high with respect to the perceived benefits produced from the first usage, then the net benefits will be low or even negative. In this case, little or no value will be created, despite the scarcity of the resource.

On the other hand, resources may be valuable without being scarce. By our definition of 'value', even a common resource, such as water, can provide great economic value, since the perceived benefits from this commodity far outweigh its economic cost for most users. But competitive advantage requires creating not just value per se, but *more* value than the marginal competitor. This is where scarcity or rareness comes in. Only if a firm has access to value-generating resources that are *uncommonly employed* can it expect to produce the kind of value differential upon which competitive advantage depends. Smith's (1937) famous 'diamond–water paradox' testifies to this.

The condition of scarcity is important for another reason as well. Scarcity implies a natural restriction of supply in relation to demand for a resource's services. It implies that the limitations on the productive output of the firm occurs as a result of resource limitations rather than a firm's profit maximizing choice to restrict output. It implies that there are no incentives for the firm to impose additional restrictions on their supply of output (Winter, 1995). This is in contrast to the sort of artificial restriction of output that occurs when market power is exercised by intention. RBT's primary concern with naturally scarce resources is what makes it an efficiency-oriented theory of performance, as we have argued above. It is the emphasis on resources that are heterogeneous in terms of efficiency differentials that distinguishes RBT from other theories. Moreover, it is what makes RBT a theory of *rents*.

Schumpeterian Versus Ricardian Rents

Scarcity need not be a long-lived condition. A newly invented production process, for example, is a scarce resource prior to its diffusion. Whether and how long it remains scarce depends upon its rate of diffusion.[12] If the firm utilizing this process can enforce strict secrecy, it may remain scarce for a long period. Such has been the case, for example, with many of the processes employed by the Lincoln Electric Company (Berg, 1975). Similarly, if the process is firm-specific in nature, so that it may not be utilized readily in other settings, it may remain scarce. On the other hand, if it is easily observed and copied, it will not remain scarce for long.

Rents attributable to a resource are always a product of scarcity in some sense. What differentiates short-lived Schumpeterian or entrepreneurial rents (Rumelt, 1987) from longer-lived Ricardian rents is whether or not the resource can be imitated *in principle* (Winter, 1995).[13] If they can be imitated, at least in principle, then the rents are Schumpeterian and are likely to be short-lived. If there are barriers to imitation, then the rents are Ricardian and may be longer-lasting.

Our discussions of competitive advantage, value, and scarcity, above, apply regardless of whether or not the rents obtained are Schumpeterian or Ricardian. That is to say, a resource-based theory of competitive advantage and rent generation applies to the case of Schumpeterian competition in the midst of rapidly changing conditions, as well as to the case of Ricardian rents in a more stable environment. In either case, superior resources are at the root of a firm's competitive advantage, however temporary. This is because such resources enable a firm to provide a greater amount of perceived benefits for its customers for a given economic cost. In this manner, they enable a firm to create more value than its average rival, which by definition gives the firm a competitive advantage. As Figures 2 and 3 remind us, a competitive advantage in value is a necessary precondition for the production of scarcity rents. If the competitive advantage is not readily imitable, the rents are Ricardian in nature. If the advantage is inherently imitable, the rents are Schumpeterian. See Winter (1995) for a more complete discussion of this distinction.

In either case, scarce resources are involved. This makes it appropriate to view the differential

residual value produced as a rent to the scarce resource. In the case of Schumpeterian rents, the scarcity is a temporary phenomenon. In the case of Ricardian rents, it is a longer lasting phenomenon, either due to fixity of resource supply, or due to a constraint over how rapidly the supply can be expanded. If the resource supply is fixed, the rents are pure Ricardian rents; if the supply is constrained, so that it remains limited relative to demand for this general type of resource for some non-trivial period of time, the rents are quasi-rents.

Alternative Views of Competitive Advantage

F&K argue that it is standard for competitive advantage to be defined in performance terms. Indeed, it is not uncommon for strategists trained in economics to think of competitive advantage in such terms. Ghemawat and Rivkin (1999, p. 49), for example, state 'A firm ... that earns superior financial returns within its industry (or strategic group) over the long run is said to enjoy a *competitive advantage* over its rivals.' Similarly, Thomas (1986, p. 3) asserts 'Firms with persistent high relative profitability are said to possess competitive advantage...'. Besanko *et al*. (2000) define competitive advantage as an advantage in economic profits relative to the average competitor in an industry. Profits refer to economic profits, which equal sales revenue minus economic (opportunity) costs. Why, then, do we suggest defining competitive advantage in terms of value creation instead?

First, it should be understood that a definition such as ours is neither unprecedented nor unreasonable. Winter (1995) alludes to defining competitive advantage in terms of value creation as one of several defensible alternatives. Oster (1999) defines competitive advantage in terms of the characteristics that allow a firm to outperform rivals in the same industry. This is less specific than our definition, but similar in spirit. While Porter (1985, xvi) provides no explicit definition of competitive advantage, he states 'competitive advantage grows fundamentally out of the value a firm is able to create for its buyers.' His view of 'value' is somewhat less broad than ours, but the parallel in thinking is clear.[14] Ghemawat (1991, p. 68), in contrast to Ghemawat and Rivkin (1999), echoes our approach more precisely in characterizing competitive advantage as 'the extent to which the benefit-cost gap for its product exceeds the benefit-cost gaps for competitors' products'.

The principal reasons that we think that our definition is preferable for resource-based work, however, are the following. Our definition provides for greater conceptual separation between differential value creation, and the distribution or appropriation of that differential value. This is consonant with F&K's desire to increase the distance between the assumptions and outcomes associated with RBT. Even more importantly, it allows us to focus on the role of resources in creating value differentials. It facilitates the consideration of how resource characteristics, such as their specificity and imitability, affect the prospects for the sustainability or appropriability of that differential.

Moreover, by emphasizing the critical initial step of creating value, apart from the distribution of that value, our approach makes RBT of interest to a variety of types of organizations, including non-profits. The critical endeavor for all enterprises is to create value. This is what ultimately allows them to survive and grow. The amount of value created also determines the size of the surplus to be distributed among the stakeholders, including customers, management, and the community at large. Exactly how the surplus will be distributed, however, is beyond the bounds of this paper.

Finally, by associating resources with competitive advantage in terms of value creation, our framework more clearly identifies RBT as a firm-level, efficiency-oriented theory. It thus better distinguishes RBT from theories of market power and from other levels of analysis. In contrast, other definitions of competitive advantage are more inclusive. They can accommodate the group level of analysis and admit cases of pure market power. For example, if competitive advantage is defined as profitability that exceeds the industry average, then the coordinative actions among strategic group members provide such an advantage (Peteraf and Shanley, 1997; Dranove *et al*., 1998). We prefer to consider the result of such actions as separable from RBT and the proper domain of group-level or industry-level analysis. In our view, RBT holds constant the contributions of other levels of analysis toward understanding profitability. It employs the *ceteris paribus* assumption regarding these other effects.

The Tautology Issue

One of most frequent criticisms of the RBT is that it is, essentially, tautological. See, for the example, the debate between Priem and Butler (2001) and Barney (2001). For some further discussion of this issue, see Foss *et al*., (1995), Mosakowski and McKelvey, (1997), Bromiley and Fleming (2000), and Peteraf (2001). In light of the new definitions that we propose here, this issue should be revisited.

For most critics, the tautology problem stems from the fact that resources are often defined in terms of the performance outcomes associated with them. This criticism is well taken, for if resources are defined as rent-producing assets and capabilities, then we cannot hope to falsify the prediction that rents stem from such resources.[15] Since critical resources, as we have argued here, are clearly the source of both value and rent differentials, the question arises as to whether this makes RBT a tautological theory.

To this, we have several responses. First, critical resources are not defined in terms of value differentials or rents. Instead, they are those resources and capabilities that have a marked positive effect on the costs or benefits associated with an enterprise's product. That is, they have a significant cost-lowering or benefit-enhancing effect. Since value is defined in terms of a product's costs and benefits, such resources clearly affect how much value an enterprise generates, but not in a deterministic way. For example, a critical resource can have a large positive effect on the perceived benefits of a product, but be very costly to employ. As such, it will not generate a great deal of value. We choose to include these types of resources in the set of critical resources (in addition to those that are pure value enhancers) since they enable managers to identify those resources that are potential value creators and to see what needs to be changed to bring out this potential. Such a definition of critical resources also deflects the tautology charge.

While we define competitive advantage in terms of value, at least two other things intervene to prevent our framework from becoming tautological. First, competitive advantage is a *relative* term and therefore requires an exogenous basis for comparison. That comparison base is the amount of value (or net benefits) produced by the marginal, or least efficient, rival in the industry. Secondly, the main outcomes of interest in our RBT frameworks (Barney, 1991; Peteraf, 1993) are the sustainability of competitive advantage and the appropriability of the resulting rents. It is not competitive advantage as we define it here per se, nor is it rent generation alone. In this way, there is sufficient distance between assumptions and outcomes to satisfy the concerns over tautology problem.

Relatedly, we note that while RBT is concerned with performance differentials, our frameworks (Barney, 1991; Peteraf, 1993) are most useful for identifying resource-based *indicators* of a *potential* for greater profitability. There is no absolute causal chain in RBT, leading directly from greater value to greater profitability. There are a variety of other intervening factors that may influence performance results, as F&K suggest. And while some of these issues are treated by RBT, many of the more power-based determinants of how value is distributed among claimants fall outside the scope of RBT entirely. (See Coff, 1999; Peteraf, 2001). Moreover, it should be understood that the term 'rents', with which RBT is concerned, is not synonymous with profits. To understand this distinction more fully, see the discussion of this issue in Peteraf (1994) and Winter (1995).

Finally, as Williamson (1999) makes clear, the surest route out of the tautology trap is a relentless commitment to operationalizing the theory. To this end, greater definitional clarity and lucid analytical logic, consistent with economic theory, are critical first steps. While it is not our mission to address the empirical implications of RBT is this paper, it is our hope that the definitions and interpretations provided here will contribute to these objectives.

CONCLUSION

In sum, we argue that RBT would not benefit from incorporating other aspects of economic theory of the sort that F&K propose. This is because RBT is fundamentally a firm-level and efficiency-oriented analytical tool. These are among its defining features. Awareness of these features is essential to comprehending this theory and fully appreciating the uniqueness and the power of its contributions. RBT is not meant to substitute for 5-forces analysis, strategic groups theory, game theory, or any other tools employing different levels of analyses. It is complementary to these theories,

each of which provides a different lens for understanding firm behavior and performance outcomes. RBT should not be expected to incorporate the analytics of these other theories into its framework. It essentially holds these other levels of analysis constant, in order to shine its analytical beam, without obstruction, on resource-level and enterprise-level phenomena. RBT does not pretend to be the long-sought 'grand unified theory' or a 'theory of everything'.

To facilitate these understandings, we provide a sharper definition of competitive advantage, linking this term to value creation. Similarly, we provide an economically meaningful definition of value and more precise definitions of critical resources and of rents. This allows us to trace a more accessible trail of economic logic, leading from critical resources to economic rents, with competitive advantage in value appearing as an intermediate outcome. We emphasize that while competitive advantage leads to rent creation, it does not necessarily ensure that a firm can capture those rents in the form of higher returns. Capturing the value that is created depends upon another set of analytical factors, beyond the domain of this paper.

Our approach to competitive advantage is but one of several defensible choices. While other choices may be preferred for other purposes, we advocate the use of our definition in resource-based work. Its advantages are several. First, basing competitive advantage on the capacity to create differential value links the concept more closely to the resource heterogeneity that is at the heart of the theory. Second, it stresses the efficiency orientation of RBT and differentiates it more clearly in terms of its enterprise-level focus. Third, by allowing for the analytical separation of value creation and value distribution, it broadens the applicability of RBT, making it more useful for non-profit organizations and those with a stakeholder orientation. Finally, it loosens the tight connection between resources and performance outcomes, which has led to concerns that RBT might be tautological.

We close with the following observations regarding levels of analysis issues (Klein *et al.*, 1994). To facilitate unraveling the 'resource-based tangle', we stress the firm-level nature of the resource-based theory of persistent performance differentials and note RBT's *ceteris paribus* assumption, regarding other levels of analysis. To incorporate the tools of other levels of analysis into RBT would only muddle its message. Moreover, it would unnecessarily complicate the task of operationalizing the model and conducting empirical work.

That different levels of analysis are best treated separately does not, however, imply that there are no linkages among the levels. Linkages do exist and may be important. The most obvious example of this is the fact that RBT is readily extended from the firm level to the corporate level of analysis (Collis and Montgomery, 1997). Our focus in this paper, however, is on the performance of business units or other types of enterprises operating in a single market. Corporate level factors are among those we hold in abeyance.

Nor does it imply that elements of RBT may not be incorporated usefully into models that operate primarily at more macro-levels of analysis. Recent work on strategic groups, for example, has employed a resource-based perspective on the origin of such groups. Industry boundaries may be usefully considered from a resource-based perspective (Peteraf and Bergen, 2003; Bergen and Peteraf, 2002). Game theoretic models may benefit from a consideration of the role that asymmetric resource distribution plays. (See, for example, Kreps, 1990). It is important to recognize that macro-forms, such as strategic groups and industries, are ultimately composed of, and structured by, firms. The role of heterogeneous resources, then, in the evolution of the structure and behavioral conventions of such forms may be well worth studying. Klepper and Simons's (2000) fascinating study of the television receiver industry suggests the fruitfulness of this approach. Helfat (2000) suggests the potential richness of this area of study.

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NOTES

1. Peteraf (1992) explains why Ghemawat's (1991) work on commitment should be viewed as a contribution to the resource-based stream of literature.
2. We take the position that the dynamic capabilities literature is entirely consistent with RBT and should

not be viewed as a separate theory. It is simply an extension of RBT to a dynamic setting.
3. Game theory is another important example of a primarily dyad-level theory.
4. This assumption of frictionless competition in other realms provides, in essence, the starting point for resource-based analysis. Once the mechanisms whereby RBT operates are understood, RBT can also contribute to understanding situations in which these binding assumptions are relaxed.
5. We employ the term 'enterprise' here to represent single business companies, as well as single business units that may be part of larger, multi-business companies, as well as any other organizational form, such as a joint venture, that competes in a given product market.
6. Indeed, much of the conceptual material in this paper is based on Peteraf (2001).
7. Porter (1985, p. 3) asserts that 'superior value stems from offering lower prices than competitors for equivalent benefits or providing unique benefits that more than offset a higher price.' This suggests that Porter defines value as benefits net of *price paid*, rather than cost produced. This is, in essence, a definition of delivered benefits or consumer surplus.
8. Economists also view total surplus as a measure of societal welfare and use the terms welfare and total surplus interchangeably. See, for example, Carlton and Perloff (2000, p. 71–74).
9. See Peteraf (1994) for a more extensive lexicon of possible types of rents.
10. By effectively, we mean with respect to pleasing its customers.
11. As she explains, this assumes that heterogeneity is due to the scarcity of the superior resources, in the sense that the excess demand for superior resources will bring inferior resources into production as well.
12. It also depends more generally upon the rate of replication as well. See Winter (1995).
13. For example, innovations in strategy by small enterprises are often imitable, in principle, but ignored by established rivals until their effects on growth and profitability command attention.
14. Recall that Porter defines value as benefits net of *price paid*, rather than cost produced, so that it refers, more limitedly, to the consumer surplus portion of total surplus (or total value in our terms).
15. Note that if we expand the predictive domain of RBT to include all forms of supranormal returns, as F&K suggest, then the notion of 'resources' becomes implicitly more expansive as well. This would open the theory up to the charge that a 'resource' is simply anything that generates superior returns (a tautological definition of resources).

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