The Resource-based View: Origins and Implications

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The field of strategic management, like other social science disciplines, is organized around a central research question. That question is: “Why do some firms persistently outperform others?” This question does not presume that there will always be persistent performance differences between firms. Rather, it presumes only that it may be the case that, in some situations, persistent performance differences will exist between firms, and that those differences cannot be explained by traditional economic theories of firm performance. These traditional economic theories suggest, in general, that performance differences between firms should be unusual, will almost certainly not be persistent, and if they exist, are most likely a manifestation of anti-competitive collusive or monopolistic actions on the part of firms.1

The resource-based view (RBV) has emerged as one of several important explanations of persistent firm performance differences in the field of strategic management. After passing through an intense period of theoretical development and proliferation in the early 1990s, basic RBV logic was established and began to have an impact on empirical research in the field. At the same time, resource-based logic began to influence theoretical and empirical work in other non-strategic management disciplines including human resource management, marketing, management information systems, operations research, and so forth.

The purpose of this paper is to describe the theoretical history of the RBV, its major theoretical tenants and how they differ from other explanations of persistent firm performance differences, some of the empirical tests – both within the field of strategic management and in other disciplines – of the RBV, the managerial implications of the RBV, and finally, to discuss some unresolved issues about the RBV and its empirical and practical implications. We begin by discussing the theoretical history of the RBV.

The Theoretical History of the RBV

The resource-based view, like any theory, draws on prior theoretical work in developing its predictions and prescriptions. In the case of the RBV, important prior theoretical
work comes from at least four sources: (1) the traditional study of distinctive competencies; (2) Ricardian economics; (3) Penrosian economics; and (4) the study of the anti-trust implications of economics. Each of these prior theories will be briefly discussed in turn.

**Traditional work on distinctive competencies**

Since at least 1911, scholars have tried to answer the question, “Why do some firms persistently outperform others?” Before economic approaches to answering this question began to dominate this discussion (beginning with Porter, 1979 and continuing with Porter, 1980, 1981, 1985), this effort focused on what were known as a firm’s distinctive competencies. Distinctive competencies are those attributes of a firm that enable it to pursue a strategy more efficiently and effectively than other firms (Hrebiniak and Snow, 1982; Hitt and Ireland, 1985, 1986; Learned et al., 1969).

Among the first distinctive competencies identified by those trying to understand persistent performance differences between firms was general management capability. General managers are managers in firms who have multiple functional managers reporting to them. Typically, general managers have full profit and loss responsibility in a firm, and when they do not have profit and loss responsibility, general managers are likely to lead cost centers. Whether profit center or cost center managers, general managers can have a significant impact on the strategies a firm decides to pursue and on the ability of a firm to implement the strategies it develops.

Given the impact that general managers can have on a firm’s strategy, it naturally follows that firms that have “high quality” general managers will usually outperform firms that have “low quality” general managers. In this context, choosing high quality general managers is the most important strategic choice that can be made by a firm, and training high quality general managers is the most important mission of business schools (Pierson, 1959; Gordon and Howell, 1959).

The emphasis on general managers as distinctive competencies was important not only in the field of strategic management, but in closely related fields as well. For example, through the early 1950s, the study of business history was confined largely to the study of individual business people and firms. Traditionally, business historians were reluctant to generalize beyond individual biographies and firm histories to discuss broader trends in the economy that may have led to different forms of business organization, let alone the efficiency characteristics of these different organizational forms. For business history, like strategic management, explanations of the growth and success of firms was no more than the biographies of those who created and managed those firms (Chandler, 1984).

Indeed, there is little doubt that general managers can have a very significant impact on firm performance. There continues to be a tradition of leadership research that examines the skills and abilities of leaders and documents their impact on the performance of firms. Some of the best of this work focuses on general managers as change agents and emphasizes the impact that these “transformational leaders” can have on a firm’s performance (Tichy and Devanna, 1986). Most observers can point to specific general managers that have been instrumental in improving the performance of the firms within which they work. These general managers include Lee Iaccoca at Chrysler, Jack Welch at General Electric, and Lou Gerstner at IBM (Labich and Ballen, 1988). The continuing popularity of books, articles, and seminars (e.g., Bennis, 1989; Covey, 1989)
that describe the attributes of individuals that enable them to become leaders in their firms is a testament to the popularity of the belief that leaders, and in particular, general managers, are the most important determinant of a firm’s performance.

Unfortunately, there are some very important limitations of this general management approach to explaining persistent performance differences among firms. First, even if one accepts the notion that general management decisions are the most important determinants of firm performance, the qualities and characteristics that make up a “high-quality” general manager are ambiguous and difficult to specify. In fact, the qualities of a “good” general manager are just as ambiguous as the qualities of “good” leaders (Yukl, 1989). In the case literature, general managers with widely different styles are shown to be quite effective. For example, John Connelly, former president of Crown Cork & Seal, was intensely involved in every aspect of his organization (Hamermesh and Rosenbloom, 1989). Other successful CEOs tend to delegate much of the day-to-day management of their firms (Stodgill, 1974). Yet both types of general managers can be very effective.

Second, general managers are an important possible distinctive competence for an organization, but they are not the only such competence. An exclusive emphasis on general managers as an explanation of superior performance ignores a wide variety of firm attributes that may be important for understanding firm performance. For example, it may be the case that a firm possesses very highly skilled general managers but lacks the other resources it needs to gain performance advantages. Or it may be the case that a firm has other resources that enable it to gain performance advantages, even though it does not have unusual managerial talent. In the end, general managers in organizations are probably similar to baseball managers: they receive too much credit when things go well and too much blame when things go poorly.

A sociologist named Phillip Selznick was among the first scholars to recognize that general management skill was only one of several distinctive competencies that a firm might control. In a series of articles and books, culminating in his book Leadership in Administration (Selznick, 1957), Selznick examined the relationship between what he called institutional leadership and distinctive competence.

According to Selznick, institutional leaders in organizations do more than carry out the classic general management functions of decision-making and administration. In addition, they create and define an organization’s purpose or mission (Selznick, 1957). In more contemporary terms, institutional leaders help create a vision for an organization around which its members can rally (Collins and Porras, 1997; Finkelstein and Hambrick, 1996). Institutional leaders also organize and structure a firm so that it reflects this fundamental purpose and vision. With this organization in place, Selznick suggests, institutional leaders then focus their attention on safeguarding a firm’s distinctive values and identity – the distinctive vision of a firm – from internal and external threats. This organizational vision, in combination with organizational structure, helps define a firm’s distinctive competencies – those activities that a particular firm does better than any competing firms.

Selznick did not go on to analyze the competitive or performance implications of institutional leadership as a distinctive competence in any detail. However, it is not difficult to see that firms with distinctive competencies have strengths that may enable them to obtain superior performance, and that leaders as visionaries and institution builders, rather than just as decision makers and administrators, may be an important source of this performance advantage (Selznick, 1957).
Selznick’s analysis of distinctive competence has much to recommend it, but it has limitations as well. Most important of these is that Selznick’s analysis focuses only on senior managers (his institutional leaders) as the ultimate source of competitive advantage for a firm and on a single tool (the development of an organizational vision) that senior managers can use to create distinctive competencies. Although these are important possible explanations of performance differences across firms, they are not the only possible such explanations.

**Ricardian economics**

Research on general managers and institutional leaders as possible explanations of differences in firm performance focuses exclusively on top managers, but the next major influence on the evolution of the RBV – Ricardian Economics – traditionally included little or no role for managers as possible sources of superior performance. Instead, David Ricardo was interested in the economic consequences of the “original, unaugmentable, and indestructible gifts of Nature” (Ricardo, 1817). Much of this early work focused on the economic consequences of owning land.

Unlike many factors of production, the total supply of land is relatively fixed and cannot be significantly increased in response to higher demand and prices. Such factors of production are perfectly inelastic, since their quantity of supply is fixed and does not respond to price changes. In these settings, it is possible for those that own higher-quality factors of production with inelastic supply to earn an economic rent. An economic rent is a payment to an owner of a factor of production in excess of the minimum required to induce that factor into employment (Hirshleifer, 1980).

Ricardo’s argument concerning land as a factor of production is summarized in figure 5.1. Imagine that there are many parcels of land suitable for growing wheat. Also, suppose that the fertility of these different parcels of land varies from high fertility (low costs of production) to low fertility (high costs of production). The long-run supply curve for wheat in this market can be derived as follows: at low prices, only the most fertile land will be cultivated; as prices rise, production continues on the very fertile land and additional crops are planted on less fertile land; at still higher prices, even less fertile land will be cultivated. This analysis leads to the simple market supply curve presented in panel A of figure 5.1. Given market demand, $P^*$ is the market-determined price of wheat in this market.

Now consider the situation facing two different kinds of firms. Both of these firms follow traditional profit-maximizing logic by producing a quantity ($q$) such that marginal cost equals marginal revenue. However, this profit-maximizing decision for the firm with less fertile land (in panel B of figure 5.1) generates zero economic profit. On the other hand, the firm with more fertile land (in panel C of figure 5.1) has average total costs less than the market-determined price and thus is able to earn an economic rent.

In traditional economic analysis, the economic rent earned by the firm with more fertile land should lead other firms to enter into this market, to obtain some land and begin production of wheat. However, all the land that can be used to produce wheat in a way that generates at least zero economic profits given the market price $P^*$ is already in production. In particular, there is no more very fertile land left, and fertile land (by assumption) cannot be created. This is what is meant by land being inelastic in supply.
FIGURE 5.1 Ricardian rents and the economics of land with different levels of fertility

Thus the firm with more fertile land and lower production costs has a higher level of performance than farms with less fertile land, and this performance difference will persist, since fertile land is inelastic in supply.

Of course, at least two events can threaten this sustained performance advantage. First, market demand may shift down and to the left. This would force firms with less fertile land to cease production, and it would also reduce the economic rent of the firm with more fertile land. If demand shifted far enough, this economic rent may disappear altogether.

Second, firms with less fertile land may discover low-cost ways of increasing their land’s fertility, thereby reducing the performance advantage of the firm with more fertile land. For example, firms with less fertile land may be able to use inexpensive fertilizers to increase their land’s fertility, and they may be able to reduce their production costs to be closer to the costs of the firm that had the more fertile land initially. The existence of such low-cost fertilizers suggests that although land may be in fixed supply, fertility may not be. If enough firms can increase the fertility of their land, then the rent originally earned by the firm with the more fertile land will disappear, and firms competing in this market can expect to earn only zero economic rents.

Traditionally, most economists have implicitly assumed that relatively few factors of production have inelastic supply (Hirshleifer, 1980). Most economic models presume that if prices for a factor rise, more of that factor will be produced, increasing supply and ensuring that suppliers will earn only normal economic rents. However, the RBV suggests that numerous resources used by firms are inelastic in supply and are possible sources of economic rents. Thus although labor per se is probably not inelastic in supply, highly skilled and creative laborers may be. Although individual managers are probably not inelastic in supply, managers who can work effectively in teams may be. And although top managers may not be inelastic in supply, top managers who are also
institutional leaders (as suggested by Selznick and others) may be. Firms that own (or control) these kinds of resources may be able to earn economic rents by exploiting them.

One issue that Ricardo did not examine, but which becomes very important in RBV logic is: “How did farms with more fertile land end up with that land?” Or, more precisely, “What price did farms with more fertile land pay for that land?” Resource-based logic suggests that if the price that farmers pay to gain access to more fertile land anticipates the economic rents that that land can create, then the value of those rents will be reflected in that price, and even though it may appear that farms with more fertile land are outperforming farms with less fertile land, this is not the case. This argument, originally developed in Barney (1986a) and extended by Dierickx and Cool (1989), is discussed in more detail below.

**Penrosian economics**

In 1959 Edith Penrose published a book entitled *The Theory of the Growth of the Firm*. Penrose’s objective was to understand the process through which firms grow and the limits of growth. Traditional economic models had analyzed firm growth using the assumptions and tools of neoclassical microeconomics (Penrose, 1959). Most important of these, for Penrose, was the assumption that firms could be appropriately modeled as if they were relatively simple production functions. In other words, traditional economic models assumed that firms simply observed supply and demand conditions in the market and translated these conditions into levels of production that maximized firm profits (Nelson and Winter, 1982).

This abstract notion of what a firm is, had and continues to have utility in some circumstances. However, in attempting to understand constraints on the growth of firms, Penrose (1959) concluded that this abstraction was not helpful. Instead, she argued that firms should be understood, first, as an administrative framework that links and coordinates activities of numerous individuals and groups, and second, as a bundle of productive resources. The task facing managers was to exploit the bundle of productive resources controlled by a firm through the use of the administrative framework that had been created in a firm. According to Penrose, the growth of a firm is limited (1) by the productive opportunities that exist as a function of the bundle of productive resources controlled by a firm, and (2) the administrative framework used to coordinate the use of these resources.

Besides looking inside a firm to analyze the ability of firms to grow, Penrose made several other contributions to what became the RBV. First, she observed that the bundles of productive resources controlled by firms can vary significantly by firm — that firms, in this sense, are fundamentally heterogeneous even if they are in the same industry. Second, Penrose adopted a very broad definition of what might be considered a productive resource. Where traditional economists (including Ricardo) focused on just a few resources that might be inelastic in supply (such as land), Penrose began to study the competitive implications of such inelastic productive resources as managerial teams, top management groups, and entrepreneurial skills. Finally, Penrose recognized that, even within this extended typology of productive resources, there might still be additional sources of firm heterogeneity. Thus in her analysis of entrepreneurial skills as a possible
productive resource, Penrose observed that some entrepreneurs are more versatile than others, that some are more ingenious in fund raising, that some are more ambitious, and that some exercise better judgment.

The anti-trust implications of economics

As a field of study, economics has always been interested in the social policy implications of the theories it develops. One of the most important ways that economics has been used to guide social policy is in the area of anti-trust regulation. Based on the conclusion that social welfare is maximized when markets are perfectly competitive, economists have developed various techniques for describing when an industry is less than perfectly competitive, what the social welfare implications of this imperfect competition are, and what remedies, if any, are available to enhance competitiveness and restore social welfare (Scherer, 1980).

One of the most obvious ways that an industry may be less than perfectly competitive is if that industry is dominated by only a single firm (the condition of monopoly) or by a small number of cooperating firms (the condition of oligopoly). In both these settings, according to traditional economic analyses, prices will be higher than what would exist in a competitive market, and thus social welfare will be less than what would be the case in a more competitive market.

This approach to analyzing social welfare and anti-trust has developed into what is called the “structure-conduct-performance” (or SCP) paradigm (Bain, 1956). The SCP paradigm suggests that the structure of a firm’s industry defines the range of activities that a firm can engage in – so-called “conduct” – and, in turn, the performance of firms in that industry. Firms that operate in industries with structures that are different than the perfectly competitive ideal in important ways may have conduct options that will enable them to obtain levels of performance that reduce social welfare in significant ways. In the extreme, this view of the determinants of firm performance suggests that any persistent superior performance enjoyed by a firm must, by definition, reflect non-competitive firm conduct that is antithetical to social welfare.

In developing his theory of why some firms persistently outperform other firms, Porter (1979, 1980) turned SCP theory “on its head” by suggesting that firms seeking persistent superior performance should choose to enter and operate only in industries that are imperfectly competitive. Thus, in Porter’s theory of persistent superior firm performance, choosing the industries in which to operate is the most important strategic choice a firm can make.

Beginning in the early 1970s, a small group of anti-trust scholars began to question this SCP, and related, approaches to anti-trust regulation. Among the first of these was Harold Demsetz. In 1973, Demsetz published an article in the *Journal of Law and Economics* that argued that industry structure was not the only determinant of a firm’s performance. Even more fundamentally, Demsetz (1973) argued that a firm earning persistent superior performance cannot be taken as prima facie evidence that that firm was engaging in anti-competitive activities. Indeed, anticipating the RBV, Demsetz argued that some firms may enjoy persistent performance advantages either because they are lucky, or because they are more competent in addressing customer needs than other firms. Demsetz (1973: 3) argues:
Superior performance can be attributed to the combination of great uncertainty plus luck or atypical insight by the management of a firm . . . Even though the profits that arise from a firm’s activities may be eroded by competitive imitation, since information is costly to obtain and techniques are difficult to duplicate, the firm may enjoy growth and a superior rate of return for some time . . .

Superior ability also may be interpreted as a competitive basis for acquiring a measure of monopoly power. In a world in which information is costly and the future is uncertain, a firm that seizes an opportunity to better serve customers does so because it expects to enjoy some protection from its rivals because of their ignorance of this opportunity or because of their inability to imitate quickly.

While developed in the context of discussions of anti-trust regulation, Demsetz clearly anticipates some important tenets of resource-based logic. As interesting, Demsetz develops his arguments as an alternative to SCP-based theories of anti-trust. And since Porter (1979, 1980) traces the theoretical roots of his work back to the SCP paradigm, in an important sense, Demsetz also anticipates the theoretical debates that have emerged between the RBV and the Porter framework.

Thus we see that the RBV, far from emerging out of nowhere to become an important explanation of persistent superior firm performance in the field of strategic management, has deep theoretical roots in both economics and sociology. These theoretical streams have been united and modified to develop what has become the resource-based view.

**The Development of Resource-based Theory**

*Early resource-based contributions*

Perhaps the first resource-based publication in the field of strategic management identified as such was by Wernerfelt (1984). Ironically, Wernerfelt’s resource-based arguments did not grow out of any of the four theoretical traditions identified above. Rather, Wernerfelt’s argument is an example of dualistic reasoning common in economics. Such reasoning suggests that it is possible to restate a theory originally developed from one perspective with concepts and ideas developed in a complementary (or dual) perspective. For example, in microeconomics, it is possible to develop economic theories of decision making using either utility theory, revealed preference theory, or state preference theory; in finance, it is possible to estimate the value of an investment using the Capital Asset Pricing Model or Arbitrage Pricing Theory. Wernerfelt (1984) attempted to develop a theory of competitive advantage based on the resources a firm develops or acquires to implement product market strategy as a complement or dual of Porter’s (1980) theory of competitive advantage based on a firm’s product market position.

This approach to developing a theory of competitive advantage supposes that the portfolio of product market positions that a firm takes is reflected in the portfolio of resources it controls. Competition among product market positions held by firms can thus also be understood as competition among resource positions held by firms. In principle, for every concept that enables the analysis of the competitiveness of a firm’s product market (e.g., barriers to entry), there should exist a complementary concept that
enables the analysis of the level of competition among resources controlled by different firms (e.g., barriers to imitation).

One of Wernerfelt’s (1984) primary contributions was recognizing that competition for resources and among firms based on their resource profiles can have important implications for the ability of firms to gain advantages in implementing product market strategies. In this way, Wernerfelt anticipated some of the critical elements of the RBV as it developed in the 1990s.

In the same year that Wernerfelt (1984) published his paper, Rumelt (1984) published a second resource-based paper in a book of readings coming out of a conference on strategic management. While these papers addressed similar kinds of issues, they did not refer to each other. Where Wernerfelt (1984) focused on establishing the possibility that a theory of firm performance differences could be developed in terms of the resources that a firm controls, Rumelt began describing a strategic theory of the firm, that is, a theory explaining why firms exist, that focused on the ability of firms to generate economic rents. At its most general level, such a theory would suggest the conditions under which firms, as an example of hierarchical governance (Williamson, 1975, 1985), would be a more efficient way to create and appropriate economic rents than other forms of governance, including markets. Rather than firms existing as efficient ways to minimize the threat of opportunism in transactions – as suggested by the transactions cost theorists (Williamson, 1975) – Rumelt (1984) was exploring the rent generating and appropriating characteristics of firms.

This theme of linking rent generation, transactions costs, and governance emerges much later, in the work of Conner and Prahalad (1996), Grant (1996), Liebeskind (1996), and Spender (1996), in efforts to develop a resource-based or knowledge-based theory of the firm. It also anticipates a very important issue that may ultimately serve as a theoretical link between resource-based theories of firm performance and transactions cost theories of governance. In particular, both theories point to the importance of transaction specific investments as independent variables that explain their different dependent variables. For resource-based theorists, transaction specific or firm specific investments can be thought of as resources that are most likely to have the ability to generate economic rents (see Barney, 2001: chapter 12). For transactions cost theorists, transactions-specific investments create problems of opportunism that must be resolved through governance choices. Teece (1980) brings these two ideas together explicitly by arguing that the kinds of relations among businesses that are most likely to be a source of economic profits for firms pursuing a corporate diversification strategy are also the kinds of relations that will be difficult to manage through non-hierarchical forms of governance. Thus, for Teece, resource-based theories and transactions cost theories, together, constitute a theory of corporate diversification.

The strategic theory of the firm that Rumelt (1984) develops has many of the attributes that will later be associated with the resource-based view. For example, Rumelt defines firms as a bundle of productive resources and he suggests that the economic value of these resources will vary, depending on the context within which they are applied. He also suggests that the imitability of these resources depends on the extent to which they are protected by an “isolating mechanism.” He even develops a list of these isolating mechanisms and begins to discuss the attributes of resources that can enhance their inimitability.
The third resource-based article published in the field of strategic management is Barney (1986a). Similar to Wernerfelt (1984), Barney (1986a) suggests that it is possible to develop a theory of persistent superior firm performance based on the attributes of the resources a firm controls. However, Barney (1986a) moves beyond Wernerfelt (1984) by arguing that such a theory can have very different implications than theories of competitive advantage based on the product market positions of firms.

Barney (1986a) introduces the concept of strategic factor markets as the market where firms acquire or develop the resources they need to implement their product market strategies. He shows that if strategic factor markets are perfectly competitive, the acquisition of resources in those markets will anticipate the performance those resources will create when used to implement product market strategies. This suggests that, if strategic factor markets are perfectly competitive, even if firms are successful in implementing strategies that create imperfectly competitive product markets, those strategies will not be a source of economic rents. Put differently, the fact that strategic factor markets can be perfectly competitive implies that theories of imperfect product market competition are not sufficient for the development of a theory of economic rents. This, of course, contradicts one of the central tenets of Porter’s theory of industry attractiveness – that the ability of firms to enter and operate in attractive product markets is an explanation of persistent superior firm performance. In the extreme, Barney’s argument suggests that if strategic factor markets are always perfectly competitive, that it is not possible for firms to earn economic rents.

Of course, strategic factor markets are not always perfectly competitive. Barney (1986a) suggests two ways that such markets can be imperfectly competitive and thus two ways that firms can acquire or develop the resources they need to implement product market strategies in ways that generate economic rents. First, following Demsetz (1973), in the face of uncertainty, firms can be lucky. That is, if all the firms competing in a particular strategic factor market expect that resources acquired there will generate $v$ levels of value in product markets, the price for those resources will quickly rise to $v$. However, if the actual value these resources can generate is $v + x$, where $x$ is some positive number, then firms that acquire this resource for $v$ will earn an economic rent.

Second, also following Demsetz (1973), it may be the case that a particular firm has unusual insights about the future value of the resources it is acquiring or developing in a strategic factor market. Firms with these special insights will generally not overpay for a resource (when the market determined price for that resource is greater than its actual value in implementing a product market strategy) and will generally be able to acquire or develop undervalued resources (when the market-determined price for that resource is less than its actual value in implementing a product market strategy). By avoiding errors and taking advantage of opportunities, firms with special insights can earn economic rents. Barney then shows that many other apparent competitive imperfections in strategic factor markets are actually special cases of these other two competitive imperfections.

Barney (1986a) concludes his paper by suggesting that the resources a firm already controls are more likely to be sources of economic rents for firms than resources that it acquires from external sources. This is because the resources a firm already controls were acquired or developed in a previous strategic factor market where their price was a function of the expected value of those resources in that market. However, if a firm can find new ways to use a resource to implement product market strategies, this new
resource use would not have been anticipated in the original factor market and thus can be a source of economic rents.

Dierickx and Cool (1989) extended Barney’s (1986a) argument by describing what it is about the resources a firm already controls that may make it possible for that resource to generate economic rents. Following Rumelt’s (1984) discussion of isolating mechanisms, Dierickx and Cool (1989) suggest that resources that are subject to time compression diseconomies, that are causally ambiguous, that are characterized by interconnected asset stocks, or that are characterized by asset mass efficiencies are less likely to be subject to strategic factor market competition than other kinds of resources. Many of the attributes of a firm’s resources that make them not subject to strategic factor market competition identified by Dierickx and Cool (1989) are later discussed and applied by Barney (1991a).

Together, these three papers – Wernerfelt (1984), Rumelt (1984), and Barney (1986a) as extended by Dierickx and Cool (1989) – outline some of the basic principles of resource-based logic. These papers suggest that it is possible to develop a theory of persistent superior firm performance using a firm’s resources as a unit of analysis. Barney (1986a) goes furthest by suggesting that a theory of persistent superior firm performance must include some discussion of the conditions under which a firm’s resources are acquired or developed and that a theory of product market competitive imperfections is insufficient to develop a theory of rents. These three papers suggest some of the attributes that resources must possess if they are to be a source of sustained superior firm performance – Rumelt’s (1984) concepts of value and “isolating mechanisms” and Barney’s (1986a) notion that resources already controlled by a firm are more likely to be a source of economic rents than other kinds of resources. They also suggest that it is the bundle of unique resources possessed by a firm that may enable a firm to gain and sustain superior performance.

That these papers have much in common does not suggest that they have no important differences. Indeed, one of the differences manifested in these papers has been a characteristic of virtually all succeeding resource-based work. Barney (1986a) focuses on the processes by which a firm’s resources are developed or acquired and the implications of these processes for a firm’s performance. Because this paper examines the conditions under which the use of resources to implement product market strategies can generate more value than generally anticipated when they are acquired or developed, Barney (1986a) can be thought of as a theory of economic rents. Wernerfelt (1984) and Rumelt (1984), on the other hand, do not examine the conditions under which a firm’s resources are acquired or developed, but rather, following Ricardo (1817), take the heterogeneous distribution of resources across firms as given and then explore the competitive implications of this distribution. In this sense, these two articles can be thought of as theories of competitive advantage.4

Resource-based work subsequent to these first three papers tends to focus either on developing/testing a theory of economic rents, or developing/testing a theory of competitive advantage. Examples of papers that focus on economic rents include Conner (1991), Peteraf (1993), and Barney (1988). Examples of papers that focus on competitive advantage include Barney (1991a), Grant (1991), and Hendersen and Cockburn (1994). Clearly, both these types of work are important in developing a complete resource-based theory of persistent superior firm performance. However, there are differences between these traditions that are sometimes not fully appreciated.
For example, it can sometimes be the case that a firm can simultaneously enjoy a competitive advantage and earn an economic rent. Indeed, to the extent that a firm’s ability to uniquely implement a value-creating strategy enables it to use resources in ways that were not anticipated in the strategic factor market where it was acquired or developed, a firm’s competitive advantages can be a source of its economic rents.

On the other hand, it will not always be the case that a firm with a competitive advantage will also earn an economic rent. For example, if resources come in discrete bundles (e.g., as firms or as technologies) and if the number of these resources in a strategic factor market is limited, then only a small number of firms will be able to develop or acquire these resources, and product market strategies that firms pursue will likely be a source of competitive advantage. However, if those factor markets are perfectly competitive, then the price that a firm must pay to acquire or develop these resources will reflect their value in implementing a product market strategy. In this sense, a firm may enjoy a competitive advantage by being one of a small number of firms implementing a particular product market strategy, but not earn an economic rent, because the price paid to acquire or develop the resources needed to implement this strategy fully anticipates its value in the product market.

The conclusion that firms that enjoy a competitive advantage may not always earn economic rents is also consistent with the analysis of Ricardian rents presented in figure 5.1. Suppose that in this industry the market determined price (P*) is below the average total costs (ATC) of the lowest cost firm in the industry. In this setting, this low cost firm has a competitive advantage – because it is uniquely implementing a valuable strategy in its market place. This strategy’s value is reflected in the fact that this firm loses less money when it produces than its competitors. However, given the market determined price, this firm cannot earn an economic rent. Casual reading of the resource-based literature can lead to some confusion if the distinction between resource-based theories of economic rents and resource-based theories of competitive advantage is not appreciated.

Other early resource-based contributions

The three papers cited above – Wernerfelt (1984), Rumelt (1984), and Barney (1986a) – set the stage for the development of what came to be known as resource-based theory. However, several other early contributions were important in the development of this set of ideas. For example, Barney (1986b) developed a resource-based explanation of why an organization’s culture can be a source of sustained competitive advantage, and Barney (1988) applied the logic developed in Barney (1986a) to mergers and acquisitions to show that strategic relatedness, per se, was not sufficient for bidding firms to earn economic rents from acquiring target firms. Rather, strategic relatedness had to be either unique and private or unique and costly to imitate in order to generate such returns. Conner (1991) explored the relationship between the resource-based view and other traditions in microeconomics. Building on Rumelt (1984), she also began to explore some of the theory of the firm implications of resource-based logic. Castanias and Helfat (1991) showed how the creation and appropriation of economic rents aligned the interests of a firm’s managers and equity holders and thus how resource-based logic helped to address incentives problems identified in agency theory (see Alchian and Demsetz, 1972; Jensen and Meckling, 1976). Barney (1991a) published a paper that outlined the basic assumptions
of resource-based logic and how those assumptions could be used to develop testable assertions about the relationship between a firm’s resources and its competitive advantages.5 Rumelt (1991) published an empirical paper that showed that firm level effects explained more variance in firm performance than either corporate or industry level effects, a result consistent with resource-based logic and a result that contradicted earlier published work that showed that industry effects were a more important determinant of firm performance than firm effects (Schmalensee, 1985; Wernerfelt and Montgomery, 1986). Hansen and Wernerfelt (1989) published a paper that demonstrated that the characteristics of a firm’s organizational culture had a more significant impact on its performance than the attributes of the industry within which it operated – results that were also consistent with resource-based expectations. Peteraf (1993) published a paper that thoroughly grounded resource-based logic in microeconomics, and Mahoney (1993) published an article that compared and contrasted resource-based logic with other theories of competitive advantage. Grant (1996) published an article that, among other things, began to explore the managerial implications of resource-based logic.

Together, these and many other papers, created the foundation of what has become known as the resource-based view. The major assumptions, assertions, and predictions of this body of theory are examined in a subsequent section of this paper.

Parallel streams of “resource-based” work

As this resource-based theory was developing, scholars in other research traditions were developing theories of competitive advantage that had numerous similarities to resource-based logic but were developed largely independent of the work cited earlier. Two of the most important of these parallel streams were the theory of invisible assets (Itami, 1987) and work on competence-based theories of corporate diversification (e.g., Prahalad and Bettis, 1986; Prahalad and Hamel, 1990).

Accumulating and managing invisible assets. As described by Itami (1987: 12), invisible assets are information-based resources such as technology, customer trust, brand image, and control of distribution, corporate culture, and management skills. For Itami, physical (visible) assets must be present for business operations to take place but invisible assets are necessary for competitive success. Invisible assets are the real sources of competitive power and adaptability because they are hard and time-consuming to accumulate, can be used in multiple ways simultaneously, and are both inputs and outputs of business activity. People are both accumulators and producers of invisible assets.

Itami classifies information as being environmental, corporate, and internal. Environmental information flows from environment to the firm, creating invisible assets related to the environment, such as production skills and customer information. Corporate information, such as corporate reputation, brand image, corporate image, and marketing know-how, flows from the firm to its environment. Internal information, such as corporate culture, morale of workers, and management capability, originates and terminates within the firm. In each category, the amount of information gathered, its nature, as well as the channels through which it is gathered, are all invisible assets.

Invisible assets are accumulated either directly – where a firm takes explicit actions such as choosing a technology for research and development – or indirectly – where
assets are accumulated as by-products of daily operations. According to Itami (1987), the accumulation and maintenance of invisible assets indirectly through operations can take more time than direct efforts, but the results of this process are more reliable. For example, word-of-mouth customer appreciation is much more effective than a television advertisement in convincing potential customers to buy a firm’s products. However, this is not to suggest that the direct route has to be completely abandoned but rather that a balance between these two methods of invisible asset accumulation is necessary.

Given the role of both visible and invisible assets of the firm, firms should choose projects that are within the firm’s area of expertise and appropriate to its skills (Itami, 1987: 159). However, firms intending to grow have to create deviations from this ideal fit to accumulate new invisible assets. Firms that choose to accumulate new invisible assets need to understand that they usually will not be able to compete in a new business as effectively as they have competed in their original market. However, this temporary loss of effectiveness may be necessary if a firm is to continually develop new invisible assets it can use to grow and prosper.

*Competence theories of corporate diversification.* With respect to competence-based theories of corporate diversification, it has already been suggested that Teece (1980) was among the first scholars to begin to apply resource-based logic to the problem of corporate diversification. In an effort that paralleled Teece’s work, Prahalad and his colleagues (Prahalad and Bettis, 1986; Prahalad and Hamel, 1990) also began developing an approach to understanding corporate diversification that, while never explicitly labeled as a “resource-based approach” had a great deal in common with resource-based logic as it was developing through the 1990s. Where most previous corporate strategy work had focused on the importance of shared tangible assets across the multiple businesses a diversified firm had begun operating in (see, for example, Rumelt, 1974; Montgomery, 1979), Prahalad began emphasizing the potential importance of sharing less tangible assets across businesses and the role that this sharing could play in creating value through diversification.

In Prahalad and Bettis (1986: 491), these shared intangible assets were called a firm’s dominant logic. They define a firm’s dominant logic as “a mind set or a world view or conceptualization of the business and the administrative tools to accomplish goals and make decisions in that business.” Clearly, dominant logic, as an economic justification for corporate diversification, emphasizes intangible, even cognitive, bases for diversification. Certainly, one of the advantages of such bases of diversification, compared to more tangible bases is that competing corporations would have more difficulty imitating these intangible bases of diversification.

Prahalad and Hamel (1990) extended the concept of dominant logic in a very influential paper that defined the notion of a corporation’s “core competence.” Prahalad and Hamel (1990: 82) defined a corporation’s core competence as “the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies.” Here again, Prahalad and his co-authors focus on intangible rather than tangible assets as a basis for competitive advantage in choosing and implementing corporate strategy.

While developed independently of resource-based logic, this emphasis on the economic value of the intangible is common to both Prahalad’s work and the resource-based view
as it was developing in the 1990s. Indeed, since these early contributions by Prahalad, Bettis, and Hamel, most scholars that have either further developed the ideas of a firm’s “dominant logic” (Grant, 1988) or “core competence” or tested the empirical implications of these ideas have approached this work in ways that are consistent with resource-based logic (e.g., Wernerfelt and Montgomery, 1988; Robins and Wiersema, 1995). Indeed, resource-based theories of corporate diversification, as will be shown below, have been one of the most popular ways to empirically test resource-based logic.6

**RESOURCE-BASED THEORY**

Beginning in the 1980s, and continuing through the 1990s, resource-based theory has been developed through the publication of numerous papers in a wide variety of journals. Some of the key definitions, assumptions, assertions, and predictions of this body of literature are presented here.7

### Definitions

Because resource-based theory is a theory, it is important to begin by defining some of its critical terms. First among these is the term *resources*. While this term has been defined elsewhere (e.g., Wernerfelt, 1984; Rumelt, 1984; Barney, 1991b; 2001a) current use of the term suggests the following definition:

*Resources* are the tangible and intangible assets firms use to conceive of and implement their strategies.

As was suggested earlier, firms develop or acquire resources in *strategic factor markets*. These markets may or may not be perfectly competitive.

As defined here, the concept of resources is closely related to the concept of routines first introduced in Nelson and Winter (1982). For Nelson and Winter (1982: 14), organizational routines are “all regular and predictable behavioral patterns of firms. They are a persistent feature of the organism and determine its possible behavior . . . they are heritable . . . and they are selectable . . .” Indeed, this common emphasis on intangible assets within the boundaries of a firm as a primary determinant of firm behavior/strategy has suggested to some authors an important link between resource-based theory and evolutionary theories of the firm (Barney, 2001b).

The economic and strategic value of these tangible and intangible resources also varies. In general, resources are valuable when they enable a firm to develop and implement strategies that have the effect of lowering a firm’s net costs and/or increasing a firm’s net revenues beyond what would have been the case if these resources had not been used to develop and implement these strategies. The value of resources can also be determined by their ability to enable firms to conceive of and implement strategies that are appropriate to the market within which a firm operates.

Notice that a firm that possesses valuable resources does not always gain superior performance, persistent or otherwise. For example, if competing firms in an industry possess the same resources and use them to conceive of and implement the same strategies, these resources will not be a source of superior performance, even if the costs
of all these firms are lower and revenues higher than what would have been the case if these resources had not been used to conceive of and implement these strategies. In this sense, setting aside the role of luck, possessing valuable resources is a necessary, but not sufficient, condition for firms to obtain superior performance.

Of course, the tangibility of firm resources is a matter of degree. Resources that are typically more tangible include, but are not limited to, a firm’s financial capital (e.g., equity capital, debt capital, retained earnings, leverage potential) and physical capital (e.g., the machines and buildings it owns). Resources that are typically less tangible include, but are not limited to, a firm’s human capital (e.g., the training, experience, judgment, intelligence, relationships, and insights of individual managers and workers in a firm) and organizational capital (e.g., attributes of collections of individuals associated with a firm, including a firm’s culture, its formal reporting structure, its reputation in the market place, and so forth).

Through the 1990s, various authors have tried to develop typologies of these tangible and intangible assets in an effort to suggest that different types of assets can have different competitive effects for firms. For example, Wernerfelt (1984) and Barney (1991a) simply called these assets “resources” and made no effort to divide them into any finer categories. Prahalad and Hamel (1990) developed the concept of “core competencies” and, building on Selznick (1957) and others, added the term “competence” to the resource-based lexicon. Stalk, Evans, and Shulman (1992) argued that there was a difference between competencies and capabilities, and thus this term (capabilities) was added to the terminological fray. Teece, Pisano, and Shuen (1997) emphasized the importance of the ability of firms to develop new capabilities, a perspective emphasized by their choice of the term “dynamic capabilities.” Most recently, several authors have suggested that knowledge is the most important resource that can be controlled by a firm and have developed what they call a “knowledge based theory” of sustained superior firm performance (see, for example, Grant, 1996; Liebeskind, 1996; and Spender, 1996).

In principle, distinctions among terms like “resources,” “competencies,” “capabilities,” “dynamic capabilities,” and “knowledge” can be drawn. For example, in their textbooks, Hill and Jones (1992) and Hitt, Ireland, and Hoskisson (1999), distinguish between resources and capabilities by suggesting that resources are a firm’s “fundamental” financial, physical, individual, and organizational capital attributes, while capabilities are those attributes of a firm that enable it to exploit its resources in implementing strategies. Teece et al.’s (1997) concept of dynamic capabilities tends to focus on the ability of firms to learn and evolve (Lei, Hitt, and Bettis, 1996). General practice suggests that the concept of competencies is most often applied in the context of a firm’s corporate diversification strategy. Knowledge is clearly a special case – albeit an important one – of some of these other terms.

However, while these distinctions among types of resources can be drawn and can be helpful in understanding the full range of resources a firm may possess, the effort to make these distinctions has had at least one unfortunate side effect: those who have developed new ways to describe a firm’s resources have often labeled their work as a “new” theory of persistent superior performance. Thus, the strategic management literature currently has proponents of “resource based theories of superior performance,” “capability theories of superior firm performance,” “dynamic capability theories of superior performance,”
“competence theories of superior performance,” and “knowledge-based theories of superior performance.”

While each of these “theories” have slightly different ways of characterizing firm attributes, they share the same underlying theoretical structure. All focus on similar kinds of firm attributes as critical independent variables, specify about the same conditions under which these firm attributes will generate persistent superior performance, and lead to largely interchangeable empirically testable assertions. Battles over the label of this common theoretical framework are an extreme example of a classic academic “tempest in a teapot” — “full of sound and fury but signifying nothing.”

What the label of this framework should be is actually not very important. In this paper, the first label, developed by Wernerfelt (1984), has been adopted. However, the content of this paper would not change at all if it had focused on “the capabilities view,” the “dynamic capabilities view,” the “competence view,” or the “knowledge-based view.” While work should continue expanding our understanding of the different kinds of firm attributes that can have an impact on firm performance, labeling each of these insights as a “new theory” of firm performance is very counterproductive.

There are terms in the definition of resources presented above that deserve further clarification. For example, the term strategy has been defined in numerous ways in the literature (see, Barney, 1986c). Following Drucker (1994), the definition of strategy adopted in this paper is

\[ \text{Strategy} \text{ is a firm’s theory of how it can gain superior performance in the markets within which it operates.} \]

This definition of strategy has several attractive properties (Barney, 2001a). For example, this definition includes both emergent and intended strategies (Mintzberg, 1990), it can be applied at both the business and corporate level, it introduces firm performance explicitly into the discussion, and it suggests that, before a strategy is actually implemented, it represents a “prediction” made by a firm about the economic processes that exist in a particular market or markets and how those processes can be used to gain superior performance. This definition can even be applied to firms that have no strategy — at least as defined in a traditional way. In this setting, a firm’s theory of how to gain superior performance in the markets within which it operates is to not make explicit predictions about how that market operates.

In the definition of the term strategy, there are, once again, some additional terms that require definition. In particular, superior performance requires careful definition. It has already been suggested that resource-based logic can be used to understand the sources of a firm’s economic rents and its competitive advantages. Economic rents exist when firms generate more value with the resources they have acquired or developed than was expected by the owners of those resources; competitive advantages exist when a firm is implementing value creating strategies not currently being implemented by competing firms.

These ways of characterizing a firm’s performance can also be temporary or persistent. Economic rents are temporary when expectations of owners adjust to incorporate the higher than expected level of value created by a firm. Economic rents are persistent when a firm is able to consistently generate higher than expected value from the resources it controls. Competitive advantages are temporary when they are duplicated by competing
firms. Competitive advantages are *persistent* when competing firms have ceased efforts to duplicate the advantages of a particular firm.

Taken together, these concepts – resources, strategic factor markets, strategy, superior performance, temporary and sustained economic rents, and – are fundamental in resource-based theory.

**Assumptions**

Resource-based theory, like all theories, adopts several assumptions. Many of these assumptions are consistent with other theories of persistent superior firm performance, and thus will not receive particular attention here. For example, resource-based logic adopts the assumption that firms are profit-maximizing entities\(^9\) and that managers in firms are boundedly rational. Over and above these basic assumptions, resource-based logic makes two additional assumptions that distinguish it from other strategic management theories: the assumption of *resource heterogeneity* and the assumption of *resource immobility* (Barney, 1991a). These assumptions are:

*Resource heterogeneity*: competing firms may possess different bundles of resources.

*Resource immobility*: these resource differences may persist.

Note that these two assumptions suggest that resource heterogeneity and immobility *may* exist. These assumptions do not suggest that all firms will always be unique in ways that are strategically relevant. Rather, these assumptions suggest that some firms, some of the time, may possess resources that enable them to more effectively develop and implement strategies than other firms, and that these resource differences can last.

The concept of heterogeneity incorporates two attributes of firm resources: scarcity and non-substitutability (Barney, 1991a). A firm’s resource is *scarce* when the demand for that resource is greater than its supply. A resource is *non-substitutable* when no other resources can enable a firm to conceive of and implement the same strategies as efficiently or effectively as the original resource. The concept of immobility suggests that some resources, some of the time, may be *inelastic in supply*, that is, more of a particular resource is not forthcoming even though demand for that resource is greater than its supply. Firm resources may vary in the extent to which they are scarce, non-substitutable, and inelastic in supply.

**Propositions**

Armed with these definitions and assumptions, resource-based theory develops a series of propositions. While numerous propositions have been developed, four are particularly important to resource-based logic (Peteraf, 1993). Each of these propositions is discussed below.

*Factor market competition and temporary rents.* Proposition 1 focuses on the relationship of the competitiveness of the market within which a firm acquires or develops a resource and the ability of that resource to generate at least a temporary economic rent.

*Proposition 1:* Firms that acquire or develop valuable resources in imperfectly competitive strategic factor markets can gain at least temporary economic rents by using them to develop and implement strategies.
As suggested in Barney (1986a), when strategic factor markets are perfectly competitive, the cost of acquiring or developing a resource will equal the value of that resource in enabling a firm to conceive of and implement a strategy. Since the cost of acquiring or developing a resource equals its value in conceiving of or implementing a strategy, these resources will not be a source of economic rent. However, to the extent that these factor markets are imperfectly competitive, a rent can be generated by acquiring or developing a resource and implementing a strategy. This rent will only be temporary, since expectations about a firm’s performance will adjust upward, and any unanticipated value creation will be anticipated whenever a firm acquires or develops additional resources to implement the same strategies in the future.

Resource heterogeneity and temporary competitive advantages. Proposition 2 focuses on the relationship between heterogeneous firm resources and temporary competitive advantages:

**Proposition 2**: Firms that control valuable, scarce and non-substitutable resources can gain at least temporary competitive advantages by using them to develop and implement strategies.

This proposition is a straightforward application of the Ricardian economic logic presented earlier.

Resource heterogeneity and immobility and persistent competitive advantages. Proposition 3 is a temporal extension of Proposition 2:

**Proposition 3**: Firms that control valuable, scarce, and non-substitutable resources that are inelastic in supply can gain persistent competitive advantages by using them to develop and implement strategies.

When resources that are a source of temporary competitive advantage (i.e., resources that are scarce and non-substitutable) are also inelastic in supply, the superior performance they generate does not lead to competitive duplication, since firms without the resources necessary to conceive of and implement a strategy efficiently and effectively will find it costly to acquire or develop them.

Factor market competition and sustained economic rents. In general, expectations about the value of a resource to enable a firm to develop and implement strategies will adjust to reflect previously unanticipated levels of value. However, to the extent that a firm can continue to find ways of generating value with the resources it controls that were not anticipated, based on previous levels of performance, a firm can continue to generate economic rents.

**Proposition 4**: Firms that continue to use valuable resources to develop and implement strategies in ways others cannot anticipate can gain sustained economic rents.

Parameterizing resource-based propositions

These four propositions are suggestive. However, empirical tests require that the concepts and relationships in them be parameterized. How each of these propositions has been parameterized in the literature is discussed below.
Parameterizing the competitiveness of strategic factor markets. Barney (1986a) suggests that strategic factor markets can be imperfectly competitive when (1) commonly held expectations about the future value of resources in enabling a firm to develop and implement a strategy underestimate the actual value of those resources in choosing and implementing product market strategies or (2) when some firms have more accurate expectations about the future value of those resources than other firms.

In order for the first form of imperfect competition to exist in a strategic factor market, there must be significant uncertainty about the actual future value of a resource. In this sense, the level of uncertainty that exists in a strategic factor market can be an indicator of the extent to which that market is imperfectly competitive.

In order for the second form of imperfect competition to exist in a strategic factor market, different firms must possess different expectations about the future value of a resource. Barney (1991a) and Dierickx and Cool (1989) suggest that different expectations about the future value of a resource reflect the other resources that a firm already controls. Thus, for example, the value of an acquisition, as a resource a firm needs to conceive of and implement a corporate diversification strategy, depends on the resources that a firm already possesses and the relationship between those resources and the firm it is going to acquire (Barney, 1988).

Because heterogeneous expectations in strategic factor markets are derived from prior heterogeneously distributed firm resources, the parameterization of this form of imperfect competition in a strategic factor market is actually a special case of parameterizing the concept of firm resource heterogeneity – through the parameterization of scarcity and non-substitutability – discussed later in this chapter.

Parameterizing the value of firm attributes. Not all the attributes of firms are strategically relevant. In fact, firm attributes, whether they are tangible or intangible, are only strategically relevant if they enable a firm to efficiently and effectively develop and implement a strategy that, in turn, generates superior performance. Firm attributes that do not enable such actions are not valuable resources. In this context, an important question becomes: when will a firm’s attributes be valuable resources and when will those attributes not be valuable?

There are several different ways that the strategic value of a firm’s attributes can be evaluated. For example, to the extent that a firm’s attributes enable it to develop and implement strategies that have the effect of reducing a firm’s net costs or increasing its net revenues compared to what would have been the case if those attributes had not been used to develop and implement those strategies, those attributes can be thought of as strategic resources. By examining the impact of using a firm’s resources to conceive of and implement a strategy on a firm’s net costs or net revenues, which attributes of a firm actually constitute strategically valuable resources can be determined.

Also, it is possible to describe the market structure within which a firm operates, the kinds of strategies that are likely to be sources of superior performance in that market, and the kinds of resources that enable firms to conceive of and implement these strategies. For example, in monopolistically competitive markets (Chamberlain, 1933), product differentiation can be a source of superior performance, and the creativity and innovativeness of a firm in developing new products can have an important impact on the ability of firms to conceive of and implement product differentiation strategies. To
the extent that product differentiation is a source of superior performance in a monopolistically competitive market, and to the extent that creativity and innovativeness around new products enable a firm to conceive of and implement product differentiation strategies, then a firm’s creativity and innovativeness can be understood as resources.

Notice that creativity and innovativeness focusing on the development of new products may not be equally valuable resources in all market settings. In markets with limited product differentiation opportunities, the ability to conceive of and implement strategies that reduce costs may be more appropriate. In this setting, relevant resources may include a firm’s volume of production (to exploit economies of scope), its cumulative volume of production (to exploit learning curve economies), and so forth. In a very uncertain market setting, the ability of a firm to remain flexible and rapidly change strategies may be valuable firm attributes (Kogut, 1991; Trigeorgis, 1995, 1996).

In general, the extent to which a firm’s attributes enable it to develop and implement strategies that lead to superior performance cannot be evaluated independently of the market context within which a firm is operating. Such firm attributes are intrinsically neither good nor bad, neither valuable nor non-valuable. Rather, their value depends entirely on their ability to enable firms to conceive of and implement strategies that generate superior performance. These observations suggest that resource-based explanations of superior performance cannot be developed independently of understanding the market and competitive context within which a firm operates. While some authors have suggested that models of opportunities and threats in a firm’s competitive environment are theoretically very different than resource-based models of organizational strengths and weaknesses, it is nevertheless the case that resource-based logic requires some way of characterizing the market context with which resources are used to conceive of and implement strategies.

Parameterizing scarcity. Resources are scarce to the extent that demand for them outstrips supply. One simple way of characterizing the scarcity of resources is simply to count them. When only one competing firm possesses a resource, that resource is scarce. More generally, as long as the number of firms that possess a resource is less than the number required to generate perfect competition around the strategies whose choice and implementation is facilitated by a resource, that resource is scarce.

Parameterizing non-substitutability. Resources are non-substitutable to the extent that they can be uniquely used to help conceive of and implement a strategy. To the extent that such a one-to-one correspondence exists between a resource and a strategy, that strategy is non-substitutable.

The one-to-one correspondence approach to parameterizing non-substitutability can be complicated by two factors. First, it may not be single resources that enable a firm to develop and implement a strategy, but rather bundles of such resources. Isolating bundles of resources, and characterizing the extent to which they uniquely enable a firm to develop and implement a strategy can complicate this parameterization effort.

Second, it may be that different firms can use different resources to help develop and implement the same strategy. In this context, the task of parameterizing non-substitutability is to isolate all those resources that, separately or in combination, can enable a firm to develop and implement a strategy. These resources then constitute at least partial
substitutes for each other. If the number of firms that possess these substitute resources is large, then the strategies that are associated with them are not rare, and thus not a source of superior performance. If the number of firms that possess these substitutes is small, they can still have competitive advantage implications.

Parameterizing supply inelasticity. Several authors have parameterized the concept of supply inelasticity. For example, Dierickx and Cool (1989) suggest that resources are inelastic in supply when they are subject to time compression diseconomies, are causally ambiguous, are characterized by high interconnectedness among asset stocks, or subject to asset mass efficiencies or asset erosion. Barney (1991a) suggests that resources are inelastic in supply when they are path dependent, causally ambiguous, or socially complex. Itami (1987) suggests they are inelastic in supply when they are invisible.

While these different ways of parameterizing the extent to which resources are inelastic in supply vary somewhat in detail, they also overlap. Clearly, resource-based logic suggests that resources that are developed or acquired over long periods of time, that link numerous individuals and technologies, and that are based on often taken-for-granted intangible relationships within a firm and between a firm and its stakeholders are more likely to be inelastic in supply than resources without these attributes. Barney (2001a) applies these concepts in evaluating when different sources of cost leadership, product differentiation, vertical integration, corporate diversification, and other strategies are more or less likely to be sources of persistent superior performance.

Deriving testable hypotheses

Given the parameterization of the resource-based variables outlined here, it is possible to develop a series of testable hypotheses from resource-based logic. Examples of these hypotheses include10:

Hypothesis 1: Firms that acquire or develop valuable resources under conditions of high uncertainty can gain temporary economic rents.

Hypothesis 2: Firms that acquire or develop valuable resources in ways that exploit rare and non-substitutable resources they already control will gain temporary economic rents.

Hypothesis 3: Firms that exploit valuable, rare, and non-substitutable resources in choosing and implementing strategies will gain temporary competitive advantages.

Hypothesis 4: Firms that exploit valuable, rare, and non-substitutable resources in choosing and implementing strategies, where those resources are also path dependent, causally ambiguous, or socially complex will gain persistent competitive advantages.

Hypothesis 5: Firms that continue to acquire or develop valuable resources in consistently uncertain settings can gain persistent economic rents.

Hypothesis 6: Firms that continue to acquire or develop valuable resources in ways that exploit rare and non-substitutable resources they already control, where those resources are also path dependent, causally ambiguous, or socially complex will gain persistent economic rents.
Empirical Tests of Resource-based Logic

These, and other hypotheses, have been examined in the strategic management and other literatures. A partial list of this research, organized by discipline and major topic area, is presented in table 5.1. In the next several sections, the major trends and findings in each of these areas of work will be briefly described.

Strategic management research

Not surprisingly, strategic management scholars have conducted the most empirical tests of resource-based logic. These tests examine several important assertions derived from the theory, including: (1) that firm effects should be more important than industry effects in determining firm performance; (2) that valuable, rare, and costly-to-imitate resources should have a more positive impact on firm performance than other kinds of resources; (3) that corporate strategies (including mergers, acquisitions, and diversification) that exploit valuable, rare, and costly-to-imitate resources should generate greater returns than corporate strategies that exploit other kinds of resources; (4) that international strategies that exploit valuable, rare, and costly-to-imitate resources will outperform international strategies that exploit other kinds of resources; (5) that strategic alliances that exploit valuable, rare, and costly-to-imitate resources will outperform other kinds of alliances; and (6) that there cannot be a “rule for riches” derived from strategic management theory.

Industry versus firm effects on firm performance. Initial work done by Schmalansee (1985) and Wernerfelt and Montgomery (1988) on industry versus firm effects in explaining variance in firm performance was inconsistent with resource-based expectations. In particular, this work suggested that industry effects were more important than firm effects. However, in 1991, Rumelt published an article that contradicted these earlier findings. Rumelt (1991) argued that previous work had applied the wrong methods or had used inadequate data to evaluate the relative impact of industry and firm effects on firm performance. After solving these problems, Rumelt’s results were consistent with resource-based expectations. Several authors have replicated Rumelt’s results (e.g., Brush and Bromiley, 1997; McGahan and Porter, 1997; Mauri and Michaels, 1998). Some of these are critical of Rumelt’s findings, but primarily in terms of the small corporate effect that Rumelt (1991) identified (Brush and Bromiley, 1997). However, all these replications continue to document that firm effects are a more important determinant of firm performance than industry effects, although the relative size of these effects can vary by industry.

Resources and firm performance. The bulk of empirical resource-based work in the field of strategic management has focused on identifying resources that have the attributes that resource-based theory predicts will be important for firm performance and then examining whether or not the predicted performance effects exist. The performance effects of a wide variety of different types of firm resources have been examined, including a firm’s
TABLE 5.1 Empirical tests of the RBV
Those articles marked with an asterisk generate results that are at least partially inconsistent with resource-based logic.

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<th>Area of Research:</th>
<th>STRATEGIC MANAGEMENT</th>
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<td>Specific Topic:</td>
<td>1. Firm vs. Industry Effects – The RBV suggests that firm effects should have a larger impact on firm performance than industry effects. This research examines the relative impact of industry attributes and firm attributes on firm performance.</td>
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<p>| Wernerfelt and Montgomery, 1988 | Industry attractiveness is not a universal dimension; instead what is attractive depends on a firm’s relative advantage. |
| Hansen and Wernerfelt, 1989 | Inter-firm variance in profit rates is regressed against industry and firm variables. Both sets of factors are roughly independent and firm factors explain about twice as much variance in profit rates as economic factors. |
| Rumelt, 1991 | Business-specific factors explain more variance in firm performance than does industry membership, and industry membership explains more than corporate parentage. |
| Swaminathan, 1996 | A study of US brewery and Argentine newspaper firms reveals that firms founded in adverse environments have higher mortality rates. However, among those that survive, beyond a certain age, firms founded in adverse environments have lower mortality rates than firms that are founded in less adverse environments. |
| Brush and Bromiley, 1997 | Business-specific factors explain more variance in firm performance than does industry membership, and industry membership explains more than corporate parentage. |
| Ingram and Baum, 1997 | A study of US hotel chains finds that (a) firms benefit from experiences initially but are harmed in the long run, (b) specialist firms are more strongly affected by their own experiences than generalist firms, (c) firms benefit from their operating experience in an industry, accumulated both before and after the firm’s entry to the market, and (d) an industry’s competitive experiences influence the firm only after its entry to the industry. |</p>
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<td>1. Firm vs. Industry Effects – continued</td>
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<tr>
<td>McGahan and Porter, 1997</td>
<td>An examination of the importance of year, industry, corporate-parent, and business-specific effects on the profitability of US public corporations within four-digit SIC categories show that industry, corporate-parent, and business-specific effects account for 19%, 4%, and 32%, respectively, of the aggregate variance in profitability. Industry effects account for a smaller portion of profit variance in manufacturing but a larger portion in lodging/entertainment, services, wholesale/retail trade, and transportation.</td>
</tr>
<tr>
<td>Mauri and Michaels, 1998</td>
<td>A variance component analysis of 264 single-business companies from 69 industries suggest that firm effects are more important than industry effects on firm performance, but not on core strategies such as technology and marketing.</td>
</tr>
<tr>
<td>Marcus and Geffen, 1998</td>
<td>Societal forces such as governments and markets influence a firm’s capacity to search for talent, technology, and ideas, and to harmonize what it learns internally. These then contribute significantly to the acquisition and creation of new competencies.</td>
</tr>
<tr>
<td>Nickerson and Silverman, 1998</td>
<td>High profitability buffers firms in the for-hire trucking industry from density-driven competitive pressures and this effect is moderated by the firm’s strategic positioning choice.</td>
</tr>
<tr>
<td>Sharma and Vredenburg, 1998</td>
<td>Strategies of proactive environmental responsiveness to deal with the uncertain environmental complications were associated with unique organizational capabilities that affect firm competitiveness.</td>
</tr>
<tr>
<td>Makadok, 1998</td>
<td>First-movers and early-movers in money market mutual fund industry enjoy both highly sustainable pricing advantage and a moderately sustainable market share advantage although the industry can be described as having low barriers to entry/imitation.</td>
</tr>
<tr>
<td>Karagozoglu and Lindell, 1998</td>
<td>Motives behind internationalization of small and medium-sized technology based firms can be explained more with firm-specific characteristics rather than uniform patterns.</td>
</tr>
<tr>
<td>Deephouse, 1999</td>
<td>Firms should be as different as legitimately possible, and follow intermediate levels of strategic similarity that balance the pressure of competition and legitimation.</td>
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<td>Area of Research:</td>
<td>STRATEGIC MANAGEMENT</td>
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<tr>
<td>Specific Topic:</td>
<td>2. The Impact of Resources and Capabilities – RBV suggests that valuable, rare, and costly-to-imitate resources can be sources of sustained competitive advantages. This research examines a variety of different resources that have these attributes to varying degrees, and examines their impact on performance.</td>
</tr>
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<tr>
<th>Author</th>
<th>Year</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Collis, 1991</td>
<td>Firm specific administrative heritage, core competencies, and implementation capabilities determine product market position and global competition in bearing industry.</td>
<td></td>
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<tr>
<td>Hall, 1992</td>
<td>Based on a survey in the UK, executives verified that intangible resources (i.e. patents, licenses, reputation, and employee know-how of operations) lead to a firm’s sustainable competitive advantage and create capability differentials.</td>
<td></td>
</tr>
<tr>
<td>Hall, 1993</td>
<td>The intangible resources most commonly identified as being a source of sustainable competitive advantage are: (1) company reputation, (2) product reputation, (3) employee know-how, (4) perception of quality standards, and (5) the ability to manage change.</td>
<td></td>
</tr>
<tr>
<td>Barnett, Greve, and Park, 1994</td>
<td>Banks in Illinois that are single units and were able to survive difficult competitive conditions in their history, on average, are able to enjoy higher levels of performance in their current competitive situation.</td>
<td></td>
</tr>
<tr>
<td>Rao, 1994</td>
<td>Firms’ reputation is a socially constructed phenomenon that evolves over time. In the US auto industry, some firms were able to win “legitimacy contests” and were able to obtain a “head start” in building reputational advantage, which improved their chances of survival.</td>
<td></td>
</tr>
<tr>
<td>Henderson and Cockburn, 1994</td>
<td>The research productivity in different pharmaceutical firms depends mostly on differences in research strategy, in firm and program-specific resources, and in organizational capability. Moreover, the “right” bundle allows firms to explore product development strategies that are not available to their competitors.</td>
<td></td>
</tr>
<tr>
<td>Pisano, 1994</td>
<td>Among pharmaceutical companies involved in either chemical-based or biotechnology-based processes, there is no one best approach (learning-by-doing vs. learning-before-doing), but that it depends on the firm-specific knowledge environment.</td>
<td></td>
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<tr>
<td>Area of Research:</td>
<td>STRATEGIC MANAGEMENT</td>
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<tr>
<td>Specific Topic:</td>
<td>2. The Impact of Resources and Capabilities – continued</td>
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</table>

- **McGrath, MacMillan, and Venkataraman, 1995**
  Empirical results from 160 new initiatives in 40 organizations from 16 countries suggest that there are two important antecedents of competence and competitive advantage: the comprehension of the management team working on developing a competence and the deftness of their task execution. Findings support the idea that firms deploy characteristic patterns of process (or routines) which over time, might lead to enduring heterogeneity.

- **Zander and Kogut, 1995**
  The ease of codifying and communicating a manufacturing capability affect not only the time to its transfer, but also the time to imitation of the new product. The determinants of the time to imitation are found to be the extent to which knowledge of the manufacturing processes are common among competitors and the degree of continuous recombination of capabilities leading to improvements of the product or the manufacturing process.

- **Bates and Flynn, 1995**
  Innovation capability rests on accumulated expertise and skills. Findings suggest that there is a strategy of building resources through manufacturing innovation over an extended period of time.

- **Poppo and Zenger, 1995**
  No significant relationship between firm-specificity and the performance of internally governed activities is found. Also firms are more likely to outsource activities which require extensive skill sets. Moreover as skill sets become more extensive, firms benefit more from outsourcing rather than internally controlled activities.

- **Miller and Shamsie, 1996**
  Among major US film studios, property-based resources (in the form of long-term exclusive contracts with stars and theaters) helped performance in stable environments during 1930–50. In contrast, knowledge-based resources (production and coordinative talent and budgets) improved performance after the 1950s.

- **Reed, Lemak, and Montgomery, 1996**
  TQM programs that do not focus on the right firm-specific content issues but only emphasize a firm’s environmental conditions will be unlikely to provide a positive return on investment and may in fact create losses.

- **Maijoor and Witteloostuijn, 1996**
  In the Dutch audit industry, the largest firms and their partners appropriated rents from human capital. The sustainability of these rents requires both product and factor markets to be imperfect.
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<tr>
<th>Author(s)</th>
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<th>Summary</th>
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<tbody>
<tr>
<td>McGrath, Tsui, Venkataraman, and MacMillan</td>
<td>1996</td>
<td>The antecedents of achieving rent generating innovations are causal understanding, innovative proficiency, emergence and mobilization of new competencies, and creation of competitive advantage.</td>
</tr>
<tr>
<td>Dougherty and Hardy</td>
<td>1996</td>
<td>The inability to connect new products with firm resources, processes, and strategy impeded innovation in large and mature firms, mostly due to the innovators' lack of power.</td>
</tr>
<tr>
<td>Haunschild and Miner</td>
<td>1997</td>
<td>Distinct modes of selective interorganizational imitation are frequency, trait, and outcome. Results show that all three imitation modes occur independently in the context of an important decision: which investment banker to use as an adviser of an acquisition. However, only highly salient outcomes react to imitation.</td>
</tr>
<tr>
<td>Schoenecker and Cooper</td>
<td>1998</td>
<td>Technological and marketing resources are found to be associated with early entry. Also, early entry is predicted by organizational attributes such as commitment to a threatened market and firm size.</td>
</tr>
<tr>
<td>Glunk and Wilderom</td>
<td>1998</td>
<td>Top management capital (inspiration, competence, and communication) and organizational capital (external, professional, employee orientation and networking, financial management, market focus) are the major predictors of organizational performance.</td>
</tr>
<tr>
<td>Maskell</td>
<td>1998</td>
<td>In a low-tech furniture manufacturing industry in Denmark the firms are agglomerated to have access to intangible, localized, capabilities, which increases their survival probability and sustained competitiveness.</td>
</tr>
<tr>
<td>Ruiz-Navarro</td>
<td>1998</td>
<td>A case study of a shipyard illustrates the successful identification and acquisition of complementary capabilities for a firm that used to compete in the military and related mature industries.</td>
</tr>
<tr>
<td>Judge and Douglas</td>
<td>1998</td>
<td>The level of integration of environmental management concerns in the strategic planning process affects financial and environmental performance. Concern for environmental issues may yield positively competitive advantage in the marketplace.</td>
</tr>
<tr>
<td>Moingeon, Ramanantsoa, Metais, and Orton</td>
<td>1998</td>
<td>A case study of Salomon, sports company, reveals that the firm has unique project management techniques, tacit knowledge of outdoor sports, and a culture that supports manufacturing of sports equipment.</td>
</tr>
</tbody>
</table>
Sherer, Rogovsky, and Wright, 1998* In a taxicab firm, hourly employment gave the organization the capability to provide a reliable service under environmental uncertainty. Older organizations used significantly more employees. Employees ensured quality. Owner-drivers cooperate with one another in response to external competition, but turn rivalrous once their organization captured the market. To ensure internal cooperation, such organizations require revenue as well as cost sharing.

Baum and Berta, 1999 For interorganizational learning, firms target others that are high-status, socially proximate, and strategically similar, as well as those outside their local population but within their industry.

DeCarolis and Deeds, 1999 Knowledge generation, accumulation, and application may be the source of superior performance. Location, products in the pipeline, and firm citations are significant predictors of firm performance in the biotechnology industry.

Greve, 1999 Non-local learning in firms related by branch affiliations exists in the radio broadcasting industry and is harmful for the performance of such firms.

Hoopes and Postrel, 1999 Gaps in shared knowledge due to lack of integration generate significant excess costs in product development efforts of a software company.

McEvily and Zaheer, 1999 A firm’s embeddedness in a network of ties is an important source of variation in the acquisition of competitive capabilities.

Stevens and Bagby, 1999 Since economic and contractual imperatives of business may not conform to traditional research, instructional, and service roles of universities, there may be conflict in the transfer of intellectual property from universities to companies that seek to develop sustainable competitive advantage.

Lorenzoni and Lipparini, 1999 Relational capability (the ability to interact with other companies) accelerates a firm’s knowledge access and transfer. This affects company growth and innovativeness in the packaging machine industry. Results show that managers can deliberately shape and design the interfirm network (supplier relationships) to develop the capability to integrate knowledge residing both internal and external to the firm’s boundaries.

Maskell and Malmberg, 1999 Proximity between firms plays an important role in the interactive learning processes. Knowledge creation is supported by the institutional embodiment of tacit knowledge.
Henderson, 1999  
Technology strategy has two important influences on the impacts of firm age: (a) standards-based strategies exhibited a liability of adolescence in their failure rates, while proprietary strategies exhibited a liability of obsolescence, (b) rates of sales growth increased with age for proprietary strategies, yet so did their risks of failure. Overall, multiple patterns of age dependence may simultaneously exist within a single population.

Brush and Artz, 1999  
Gimeno, 1999  
Contingent combinations of firm-specific resources determine the performance of veterinary practices. Evidence from the airline industry suggests that airlines utilize their location in rivals’ hub markets as a resource to reduce the competitive pressure from those rivals in their own hubs and thus to be able to sustain their dominant position in those markets.

Afuah, 2000  
Post-technological change performance decreases with the extent to which the technological change renders a competitor’s capabilities (suppliers, customers, and complementers) obsolete.

McGuire, 2000  
Firms with higher growth potential make greater use of managerial equity ownership and long term incentives and have higher proportions of insiders on their boards of directors.

Oktemgil, Greenley, and Broderick, 2000  
Isolating mechanisms, which are idiosyncratic features of a firm’s management that create barriers to competitive imitation, contribute to competitive advantage and company performance, and are intellectual constructs that explain competitive barriers at the individual firm level.

Area of Research: STRATEGIC MANAGEMENT  
Specific Topic: 3. Corporate Strategies – This research examines resources and capabilities as a source of advantage in implementing corporate diversification strategies, including merger and acquisition strategies. Resource-based logic suggests that both tangible and intangible resources can be important in these strategies, but that only valuable, rare, costly-to-imitate, and non-substitutable resources can be a source of sustained competitive advantage for firms implementing merger, acquisition, and diversification corporate strategy.

Harrison, Hitt, Hoskisson, and Ireland, 1991  
Differences not similarities in resource allocations between targets and acquirers led to higher post-merger performance.
<table>
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<tr>
<th>Area of Research:</th>
<th>STRATEGIC MANAGEMENT</th>
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<tr>
<td>Specific Topic:</td>
<td>3. Corporate Strategies – continued</td>
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<th>Author(s) and Year</th>
<th>Description</th>
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<tr>
<td>Tallman, 1991</td>
<td>Strategic grouping in the auto industry significantly explained the structural decisions of host country production subsidiaries. Firm-specific factors in a particular host environment were more powerful in explaining performance than the measures of worldwide, broad skills of the parent company.</td>
</tr>
<tr>
<td>Harrison, Hall, and Nargundkar, 1993</td>
<td>Consistency (measured as similarities in financial resource allocation) across businesses in the emphasis given to R&amp;D is positively related to the performance. But there was no support for capital intensity as a source of superior performance for diversified firms.</td>
</tr>
<tr>
<td>Ingham and Thompson, 1995</td>
<td>Diversification in service industries is not an entirely random process (or a reflection of executive idiosyncrasies) but follows a firm-specific and product-specific characteristics as well as firm size.</td>
</tr>
<tr>
<td>Robins and Wiersema, 1995</td>
<td>Resource-based measure of “portfolio relatedness” in terms of shared strategic assets such as know-how or capabilities significantly accounts for the differences in performance of large diversified firms.</td>
</tr>
<tr>
<td>Markides and Williamson, 1996</td>
<td>Related diversification enhances performance only when it allows a business to obtain preferential access to strategic assets that are rare, valuable, and highly imitable. To sustain these supernormal profits, a firm has to build new strategic assets more quickly and efficiently than the competitors. But inter-unit transfer and sharing of these competencies are a necessary condition.</td>
</tr>
<tr>
<td>Anand and Singh, 1997</td>
<td>Based on resource-based view, paper examines the performance differences between diversification-oriented and consolidation-oriented acquisitions in the defense sector – a sector that has experienced significant declines. Results show that consolidation-oriented acquisitions outperform diversification moves. There is also a positive relationship between Tobin’s $q$ and corporate focus. Assets from declining industries are better redeployed through market mechanisms rather than within the firm.</td>
</tr>
<tr>
<td>Birkinshaw, Hood, and Jonsson, 1998</td>
<td>A multinational subsidiary can help create firm-specific advantage through combining their resources with initiative and an entrepreneurial subsidiary culture. This process is enabled by subsidiary autonomy and a lower level of local competition.</td>
</tr>
<tr>
<td>Capron, Dussauge, and Mitchell, 1998</td>
<td>The magnitude of redeployment of resources that are subject to market failure in horizontal acquisitions between the European and North American firms increases with the asymmetry of the merging companies’ relative strength on the resource dimensions (R&amp;D, manufacturing, marketing, managerial, and financial).</td>
</tr>
<tr>
<td>Author</td>
<td>Year</td>
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<tr>
<td>Farjoun, 1998</td>
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<tr>
<td>Capron, 1999</td>
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<td>Chatterjee and Singh, 1999</td>
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<td>Coff, 1999</td>
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<td>Silverman, 1999</td>
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<td>Gupta and Govindarajan, 2000</td>
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## STRATEGIC MANAGEMENT

### 4. International Strategies

This research examines the role of resources in an international context and is a theoretical extension of diversification research. This work also examines the impact of national differences on firm capabilities.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Summary</th>
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</thead>
<tbody>
<tr>
<td>Kogut and Zander, 1993</td>
<td>Firms specialize in the transfer of knowledge that is difficult to understand and codify. Results show that firms are able to transfer these technologies at a lower cost to wholly owned subsidiaries than to third parties. The advantage of a firm is its relative efficiency in transferring idiosyncratic technologies.</td>
</tr>
<tr>
<td>Karnoe, 1995</td>
<td>The competence-building Danish firms and US firms in the wind energy industry are culturally shaped and embedded in a firm’s routines and behavioral norms of engineers and workers.</td>
</tr>
<tr>
<td>Kotha and Nair, 1995*</td>
<td>Both firm strategies and the environment in the Japanese machine tool industry are significantly related to firm profitability, but only environmental variables are associated with firm growth. In contrast to results from US-based studies, capital expenditures and technological change are not negatively associated with firm profitability. Rather technological change is positively associated with firm growth.</td>
</tr>
<tr>
<td>Arora and Gambardella, 1997</td>
<td>Theory of imperfect competition implies that market size has a more important role when the performance is based on narrow, product-specific competencies, rather than generic competencies. The study tests this assertion by comparing the service industries that supplies engineering, and construction contracting to oil-refining and petrochemical plants in the US (larger market) and Western Europe and Japan (smaller and fragmented markets). Results suggest that market size is important even if there are no economies of scale. If the firms have heterogeneous competencies that persist over time then the larger markets will have more efficient firms. This effect is more pronounced for firms with narrow, product-specific competencies.</td>
</tr>
<tr>
<td>Hitt, Hoskisson and Kim, 1997</td>
<td>Early effects of international diversification on performance are found to be positive. However, increased international diversification at some point will become highly complex and hard to manage, which would hurt performance. Also product diversification moderates the curvilinear relationship between international diversification and performance. Single-business firms because they have not built the capability to manage multi-product firms are less likely to cope with the complexity of managing international diversification.</td>
</tr>
</tbody>
</table>
Mutinelli and Piscitello, 1998
Study of Italian firms in 1986–93 reveals that joint venture is the best mode of entry of the MNEs seeking to enhance/utilize tacit skills and technological opportunities. The probability of establishing wholly-owned subsidiaries increases with the accumulated internationalization experience.

Appleyard, 1996
Public sources of technical data play a larger role in knowledge diffusion in Japan than in the United States and in semiconductors relative to steel.

Athanassiou and Nigh, 1999
A firm’s extent of internationalization and linkages across its host countries are positively related to the top management team’s IB advice network density. This density is measured as the team members demand for IB expertise and propensity to contribute to that expertise. There is idiosyncratic knowledge embedded in the TMT that is related to the internationalization process.

Delios and Beamish, 1999
The geographic scope of Japanese firms was positively associated with firms’ profitability, even when the competing effect of proprietary assets on firm performance was considered. Also, performance was not related to the extent of product diversification, although investment in rent-generating, proprietary assets was related to the extent of product diversification.

Jarvenpaa and Leidner, 1999
A local Mexican company’s dynamic capabilities of strategic foresight and flexibility as well as the core competency of trustworthiness are found to be critical in affecting internal and external change in the unstable environment of the local information industry.

Luo and Peng, 1999
Intensity and diversity of host country experience is an important predictor of subunit performance in China. However the effect of intensity of host country experience diminishes over time, while diversity effect is constant. If the environment can be described as dynamic, complex, and hostile the positive effects of experience on performance increases.

Nachum and Rolle, 1999
The findings from a sample of advertising agencies from the UK, France, and US suggest that above and beyond home country characteristics, firm-specific characteristics also play a role in determining a firm’s competitive position in the international market.

Geringer, Tallman, and Olsen, 2000
While diversification strategies of Japanese companies between 1977–93 vary between keiretsu and non-keiretsu firms, performance is not much different. International diversification has negative profitability and positive growth consequences in some periods. Product diversity has weak effects on firm performance only in one time period.
<table>
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<tr>
<td>Zou and Ozsomer, 1999</td>
<td>Coordination of R&amp;D, which is influenced by global emphasis and human resource flexibility, is a key determinant of the firm’s global strategic positioning.</td>
<td>Wagner and Baldauf, 2000; Cravens, 2000; Certo, 2000; Dalton, 2000; Firm size, management’s motives to internationalize, and the use of a differentiation strategy positively affect export performance of companies operating in small open economies, specifically in Austria. International experience of CEOs interacts with the degree of internationalization as well as the CEO succession, and significantly explains the corporate financial performance.</td>
</tr>
<tr>
<td>McGee and Dowling, 1995; Megginson, 1995</td>
<td>New high-tech ventures that have management teams with more functional expertise in the area that is most closely related to their choice of competitive strategy (e.g., marketing, R&amp;D) were most successful in their cooperative agreements. Skill-sharing R&amp;D cooperation can be competition-enhancing, but cost-sharing R&amp;D can be competition-suppressing. Also, the skill-sharing motive of partners increases R&amp;D investment. An overlap of firm-specific technological capabilities predicts alliance formation. Once the alliance is formed, it affects the firm’s technological portfolios.</td>
<td>Sakakibara, 1997; Mowery, Oksay, and Silverman, 1998; Lane and Lubatkin, 1998; The similarity of the partners’ basic knowledge, lower management formalization, research centralization, compensation practices, and research communities were positively related to interorganizational learning.</td>
</tr>
</tbody>
</table>
Combs and Ketchen, 1999
Publicly-held restaurant chains emphasize resource-based concerns over considerations of cost-minimizing when deciding whether to engage in interfirm cooperation. However, some firms suffer loss of performance due to this emphasis.

Gulati, 1999
Accumulated network resources arising from firm participation in the network of prior alliances (embeddedness) are influential in firms’ decisions to enter into new alliances.

Luo, 1999
After controlling for international strategic alliances’ distinctive resources and discretionary managerial decision variables, industry structure is an important source of explaining the variations in International Strategic Alliance performance in the transitional economy of China.

Shenkar and Li, 1999
Absorptive capacity is the principal mechanism governing the relationship between knowledge possession and knowledge search among prospective partners. The possession of complementary knowledge is a prerequisite for knowledge search. Furthermore, equity joint ventures are the vehicle of choice for firms seeking transfer of tacit, embedded knowledge.

Hitt, Dacin, Levitas, Arregle, and Borza, 2000
This study looks at the international strategic alliance partner selection with a focus on the differences in partner selection criteria between emerging and developed market firms. The emergent market firms more strongly emphasized partners’ financial assets, technical capabilities, intangible assets, and willingness to share expertise than did the developed market firms. On the other hand, developed market firms emphasized the partners’ unique competencies and market knowledge and access than did the emergent market firms.

Dussauge, Garrette, and Mitchell, 2000
Partners are more likely to reorganize or take over the link alliances (different capabilities); scale alliances (similar capabilities) are more likely to continue without material change. Link alliances lead to greater levels of learning than do scale alliances, but there is no difference in the length of duration between the two types.

McGaughhey, Liesch, and Poulson, 2000
Although a particular Australian manufacturing firm engaged in a joint venture with a firm in Hong Kong did not formally safeguard its intellectual property, it could still prevent the dissipation of intellectual property rights due to its novel bundles of firm-specific resources and capabilities.
<table>
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<tr>
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<tr>
<td>Specific Topic:</td>
<td><strong>6. Rules for Riches</strong> – RBV logic suggests that there can be no rule for generating persistent superior performance, that such performance depends instead on valuable, rare, and costly-to-imitate resources.</td>
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<tr>
<td>Mansfield, Schwartz, and Wagner, 1981</td>
<td>Imitation costs are as high as the innovation costs when the innovator has a technological “know-how” edge over its rivals. Such technological “know-how” usually is not divulged in patents and is relatively inaccessible to potential imitators.</td>
</tr>
<tr>
<td>Lieberman, 1982, 1987</td>
<td>Learning can be duplicated rapidly in most industries as firms increase their cumulative output and move down the learning curve.</td>
</tr>
<tr>
<td>Mansfield, 1985</td>
<td>Decisions to introduce new products leak out within 12 to 18 months. The rivals know the detailed nature and operation of a new product/process within a year. Overall, differences in the rate of diffusion of technological information across industries do not have any explanatory power regarding the interindustry differences in the ease with which innovations can be imitated.</td>
</tr>
<tr>
<td>Tripsas, 1997</td>
<td>The balance and interaction of three factors were shown to drive commercial performance of incumbents vs. new entrants in the typesetter industry in 1886–1990: investment, technical capabilities, and appropriability through specialized complementary assets. An analysis that examined investment or technical capabilities in isolation would have led to misleading results.</td>
</tr>
<tr>
<td>Schankerman, 1998</td>
<td>Patent protection across different technology fields is a significant but not a major source of private returns to R&amp;D. These characteristics vary across technology fields and nationalities (Japan, France, US, Germany, UK).</td>
</tr>
<tr>
<td>Miller and Toulouse, 1998</td>
<td>Environmental uncertainty and environmental scanning are both negatively related to the simplicity of strategies (the focus on a few competencies). Paradoxically, scanning is likely to reduce simplicity if the environment is stable, and uncertainty is especially likely to reduce simplicity in the absence of scanning. Thus, it is not possible to deduce a fixed strategy based only on environmental variables.</td>
</tr>
<tr>
<td>Segev, Raveh, and Farjoun, 1999</td>
<td>Between the 25 leading business schools’ MBA programs, the structure content (the particular mix of core and concentration areas) is, in itself, not a source of superior performance as measured in the 1994 rankings.</td>
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<td>Author(s)</td>
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<tr>
<td>Makadok, 1999</td>
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<td>Brews and Hunt, 1999</td>
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<td>Walston, Burns, and Kimberly, 2000</td>
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**Area of Research:**  **HUMAN RESOURCES**

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<tr>
<td>Gupta and Govindarajan, 1984</td>
<td></td>
<td>There are no consistent managerial characteristics, such as tolerance for ambiguity and willingness to take risks, that would guarantee effective strategy implementation by SBUs.</td>
</tr>
<tr>
<td>Schuler and MacMillan, 1984</td>
<td></td>
<td>Companies can create competitive advantage by aligning HRM practices to formulated strategy and helping their suppliers and distributors with their HRM practices.</td>
</tr>
<tr>
<td>Womack, Jones, and Roos, 1990</td>
<td></td>
<td>An extensive study of over 70 plants in the global automotive industry revealed that only 6 of those plants had, simultaneously, cost leadership and very high quality. All of these 6 plants had the best manufacturing technology hardware available, in addition to policies and procedures that implemented a range of highly participative, group-oriented management techniques.</td>
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<td>Huselid, 1995</td>
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<td>Investments in high performance work practices (HPWP) are associated with lower employee turnover and greater productivity and corporate financial performance. However, despite the strong theoretical expectation that better fit between HPWP with competitive strategy would be reflected in better financial performance, the results did not support the contention that fit has any incremental value over the main effects associated with the use of high performance work practices.</td>
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<tr>
<td>MacDuffie, 1995</td>
<td></td>
<td>Innovative human resource practices (HR) affect performance not individually but as interrelated elements in an internally consistent HR “bundle” or system, and that these HR bundles contribute most to assembly plant productivity and quality when they are integrated with manufacturing policies under the “organizational logic” of a flexible production system.</td>
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<tr>
<td>Area of Research:</td>
<td>HUMAN RESOURCES —continued</td>
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<tr>
<td>Delery and Doty, 1996</td>
<td>Findings suggest relatively strong support for a universalistic perspective (profit sharing, results-oriented appraisals, and employment security) and some support for both the contingency (participation, results-oriented appraisals, and internal career opportunities) and configurational perspectives (market-type employment).</td>
<td></td>
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<tr>
<td>Delaney and Huselid, 1996</td>
<td>There is a positive relationship between HRM practices, e.g., training and staffing selectivity, and perceptual firm performance.</td>
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<tr>
<td>Koch and McGrath, 1996</td>
<td>Positive and significant effects on labor productivity are found, especially in capital intensive firms that utilize more sophisticated human resource planning, recruitment, and selection strategies.</td>
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<tr>
<td>Younutt, Snell, Dean, and Lepak, 1996</td>
<td>An HR system focused on human capital enhancement was directly related to multiple dimensions of operational performance (i.e., employee productivity, machine efficiency, and customer alignment). However this main effect was due to the linking of human-capital enhancing HR systems with a quality manufacturing strategy as well as other manufacturing strategies.</td>
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<tr>
<td>Welbourne and Andrews, 1996</td>
<td>The results indicate that HR value and organization-based rewards predict initial investor reaction and long-term survival. The rewards variable negatively affects initial performance but positively affects survival.</td>
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<tr>
<td>Huselid, Jackson, and Schuler, 1997</td>
<td>HR management effectiveness was associated with capabilities and attributes of the HR staff. Also, HR management’s effectiveness had a positive effect on productivity, cash flow, and market value.</td>
<td></td>
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<tr>
<td>Truss, Gratton, Hope-Hailey, McGovern, and Stiles, 1997</td>
<td>The two most widely adopted models of HRM are hard and soft versions reflecting opposing views of human nature and managerial control strategies based on theory X and theory Y respectively. In-depth case studies of 8 firms revealed that there was no pure example of either case.</td>
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<tr>
<td>Huselid and Becker, 1997</td>
<td>The impact of the presence of high performance work systems (a skilled, motivated, and able workforce), and its effectiveness and fit with a firm’s competitive strategy, has a positive effect on shareholder wealth.</td>
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<tr>
<td>Bennett, Ketchen, and Schultz, 1998</td>
<td>The integration of the HR function with strategic decision making were found to be associated with strategic type and whether or not top management views employees as strategic resources, but labor market munificence and organizational growth were not. Paradoxically, integration is associated with a lower evaluation of the HRM function by top management.</td>
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<td>Author(s)</td>
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<tr>
<td>Wright, MacMahan, McCormick, and Sherman, 1998</td>
<td>Higher involvement of HR in firm strategy was strongly associated with the perception of HR effectiveness. This relationship was strongest when refineries pursued a product innovation strategy and viewed skilled employees as their core competence. HR involvement was unrelated to refinery performance, but it was negatively related when refineries emphasized efficient production as their core competence.</td>
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<td>Pennings, Lee, and Witteloostuijn, 1998</td>
<td>The effects of human capital (firm tenure, industry experience, and graduate education) and social capital (professionals' ties to potential clients) on dissolution reveal that the absolute value of firm-level human and social capital has a negative effect on survival of Dutch accounting firms in the period between 1880 and 1990. The relative value (determined by uniqueness and non-appropriability) of firm-level human and social capital has a positive effect on firm survival.</td>
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<tr>
<td>Boxall and Steeneveld, 1999</td>
<td>Engineering consultancy firms in New Zealand adopted similar structural, competitive, operational, and HR responses associated with their evolving “industry recipe.” The study could not establish an HR practice that would lead to superior performance but commented on the possibility of it.</td>
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<td>Harel and Tzafrir, 1999</td>
<td>The HRM practices of firms in Israel have a significant impact on both the perceived organizational performance (training has the most explanatory power) and market performance (training and employee selection practices had explanatory power).</td>
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<tr>
<td>Klaas, McClendon, and Gainey, 1999</td>
<td>The relationship between the degree of outsourcing and perceived benefits generated is moderated by reliance on idiosyncratic HR practices, uncertainty, firm size, and cost pressures.</td>
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<td>Lee and Miller, 1999</td>
<td>Porter’s strategies (1980) of cost leadership, marketing differentiation, and innovative differentiation are found to be executed more effectively where organizations exhibit a high level of commitment to their employees in Korea. Also in an organization where one of Porter’s strategies is employed, strong employee commitment has a direct effect on ROA.</td>
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<tr>
<td>Fey, Bjorkman, and Pavlovskaya, 2000</td>
<td>Based on 101 firms operating in Russia, the study tested the model of HR outcomes (motivation, retention, and development) as mediators between HR practices and firm performance. Non-technical training and high salaries will have a positive impact on managers, whereas job security is the most important predictor of HR outcomes for non-managerial employees. There is also a direct positive relationship between managerial promotions based on merit and firm performance for managers and job security and performance for non-managers.</td>
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<td>Area of Research:</td>
<td>HUMAN RESOURCES – continued</td>
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<td>Field, Chan, and Akhtar, 2000</td>
<td>Greater reliance on internal development and promotion tends to increase uncertainty above having an adequate supply of managers, and greater competition tends to reduce training investments. Both of these findings might explain the high mobility of managers in the Hong Kong labor market.</td>
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<td>Harmsen, Grunert, and Declerck, 2000</td>
<td>R&amp;D skills and market skills were not found to be the explanatory factors in the food processing industry with a low R&amp;D expenditure; however, product development is important.</td>
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<tr>
<td>Khatri, 2000</td>
<td>The findings of a study of 200 industrial firms in Singapore suggest that firm strategy affects HR practices, and the strategy-HR interaction accounts for more variation in firm performance than the main effect of HR.</td>
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<td>Richard, 2000</td>
<td>Racial diversity interacted with business strategy in determining firm performance measured in three different ways: productivity, return on equity, and market performance. The results demonstrate that cultural diversity does, in fact, add value and, within the proper context, contributes to firm competitive advantage.</td>
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<th>Area of Research:</th>
<th>MARKETING</th>
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<tr>
<td>Hooley, Cox, Shipley, Fahy, Beracs, and Kolos, 1996</td>
<td>This paper examines the impact of foreign direct investment of firms in Hungary. Hungarian firms seek marketing resources and capabilities from their investors that can then be deployed to create competitive advantage over rivals in the domestic market.</td>
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<tr>
<td>Ghingold and Johnson, 1997</td>
<td>Higher levels of technical knowledge are linked to more desirable decision styles and decision outcomes, suggesting that managers’ technical knowledge is an important asset for firms with manufacturing or process operations that allow those firms to offer “bundled” products to gain competitive advantage.</td>
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<td>Gatignon, Robertson, and Fein, 1997</td>
<td>This study finds that faster reactions to a new entrant have a positive impact on the perceived success of an incumbent’s defense strategy. However, the greater the breadth of reaction (number of marketing mix instruments used), the less successful is the defense. The ability of an incumbent to maintain its market position is also significantly affected by industry characteristics and the degree of competitive threat posed by the new product entry.</td>
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Li and Calantone, 1998 Market knowledge competence (processes that generate and integrate market knowledge) is positively related to product market performance. Also, the perceived importance of market knowledge by top management has the largest impact on the processes of market knowledge competence.

Johnson, 1999 Dependence, flexibility, continuity expectations, and relationship age encouraged the industrial equipment distributors’ strategic integration in industrial distribution channels, which enhanced distributor financial performance. Uncertainty did not play any role.

Menon, Bharadwaj, Adidam, and Edison, 1999 Innovative culture is the fundamental antecedent to an effective marketing strategy-making process (components of which are situation analysis, comprehensiveness, emphasis on marketing assets and capabilities, cross-functional integration, communication quality, consensus, and resource commitment). Furthermore, individual components of a marketing strategy-making process may not be valuable by themselves but the combination of these elements contributes a firm-specific capability.

Maignan, Ferrell, and Hult, 1999 Both market-oriented and humanistic cultures lead to proactive corporate citizenship, which in turn is associated with improved levels of employee commitment, business performance, and customer loyalty. Corporate citizenship can be a source of competitive advantage in internal and external marketing.

Capron and Hulland, 1999 RBV is used to determine the extent to which three marketing resources (brands, sales force, and general marketing management) are redeployed after horizontal acquisitions. Highly immobile resources are more likely to be asymmetrically redeployed from the acquirer to the target rather than vice versa. The effects of redeployment on performance measures of product costs, product quality, product line breath, geographic coverage, market share, and profitability are tested. There is no evidence of cost-based synergies, but there is support for revenue-based synergies.

Area of Research: ENTREPRENEURSHIP

Dean, Turner, and Bamford, 1997 Availability of niches, high sunk costs, high levels of unionization, and high industry concentration appear to assist the post-entry new firm across multiple industries.

Michael and Robbins, 1998 Retrenchment, as a common but not universal response to recession, can enhance the recovery of small-medium sized firms from declining performance if it focuses on factors that are easily tradable in the market (i.e., not firm-specific assets).
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<th>Area of Research:</th>
<th>ENTREPRENEURSHIP -continued</th>
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<tr>
<td>Brush and Chaganti, 1999</td>
<td>In small service and retail businesses, resources, in particular human and organizational resources, may play a greater role in explaining performance than strategy. Also, the combination of these resources will vary across age and size. Although separately each resource (owner commitment, planning, systems, and staff skills) had positive effects on cash flow, when combined they had negative effects.</td>
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<tr>
<td>Rangone, 1999</td>
<td>Three basic capabilities of small and entrepreneurial firms are innovativeness, production, and market management (marketing).</td>
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<tr>
<td>Borch, Huse, and Senneseth, 1999</td>
<td>Firm-specific resources in small and entrepreneurial firms are human resources (experience, education), structure (governance structure), social resources (networks), and technology (proxy for non-imitable resources, operationalized as patents). Education and technology are positively related to employing product and growth strategies. Firms that have a formal structure and use social network pursue market and product strategies.</td>
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<td>Chrisman, 1999</td>
<td>Depending upon how start-up is defined significantly higher percentage of individuals who indicated entrepreneurial intent and received outside assistance started a business when compared to the individuals who indicated intent yet did not receive outsider assistance. Significant regional differences were observed in start-up propensities (measured as properties of boundary, resources, and exchange).</td>
</tr>
<tr>
<td>Deeds, DeCarolis, and Coombs, 2000</td>
<td>Location is an important choice variable affecting the availability and quality of technical personnel. This study shows that non-saturated locations, such as San Diego, are preferable to Silicon Valley for biotech start-ups. The quality of scientific personnel, measured as past research citations, has a strong effect on a firm’s productivity. Prior experience of a CEO in managing a commercial research facility enhances a firm’s product development capability. However, having the scientific team as management detracts focus from product development.</td>
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<th>Area of Research:</th>
<th>MANAGEMENT INFORMATION SYSTEMS</th>
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<td>Dent-Micallef and Powell, 1998</td>
<td>IT investment in and of itself has no effect on performance in the retail service industry. However, retail firms have gained a competitive advantage when combined with intangible, difficult-to-imitate complementary resources, such as a flexible culture, strategic planning, IT-integration, and supplier relationships.</td>
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Li and Ye, 1999  IT investment appears to have a stronger positive effect on financial performance when there are greater environmental changes, more proactive company strategy, and stronger CEO/CIO ties.

Broadbent, Weill, and Neo, 1999  More extensive IT infrastructure capability was found in firms where: (a) products changed quickly, (b) synergies across business units were aimed, (c) there was greater planned integration of information and IT needs, and (d) there was greater emphasis on tracking the implementation of long-term strategies.

Ray, 2000  Service climate and managerial IT knowledge have a significant impact on customer service performance, after controlling for investments in IT and customer service, and firm size. Only firm specific managerial IT knowledge can be a source of sustainable competitive advantage.

Area of Research:  OPERATIONS MANAGEMENT

Powell, 1995  Most TQM tools and techniques such as quality training, process improvement, and benchmarking do not generally produce competitive advantage, but certain tacit, behavioral, imperfectly-imitable features such as an open culture, employee empowerment, and executive commitment can be a source of competitive advantage.

Knights and McCabe, 1997  A conformance-to-requirements approach towards TQM cannot fully address quality because (a) there can never be a precise conformance, and (b) it neglects customers and employees.

Morita and Flynn, 1997  If manufacturing strategy is a source of competitive advantage, then the choices of manufacturing processes and other related characteristics are contingent on one another, and there is a positive relationship between “best practices” and performance.

Klassen and Whybark, 1999  An environment technology portfolio – the pattern of investments in environmental technologies of a plant over time – is developed based on RBV and manufacturing strategy in the furniture industry. A significantly better manufacturing performance was observed in cases where management invested in the environmental technology portfolio and allocated resources toward pollution prevention technologies. Performance worsened as the proportion of pollution control technologies increased.
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<th>Area of Research:</th>
<th>TECHNOLOGY AND INNOVATION MANAGEMENT</th>
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<tr>
<td>Chang, 1995</td>
<td>Optimal patent policy would extend broad protection to those inventions that have very little value (standing alone) relative to the improvements that others may subsequently invent.</td>
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<td>Stuart and Podolny, 1996</td>
<td>Evolution of firms’ technological positions is derived from firm-specific ability to innovate in particular technological subfields that partly shapes their competitive success. The authors propose relational constructions of technological positions such that firms that have developed portfolios consisting of similar technologies are located near to one another. Firms’ search behavior is locally bounded, and enables firms to be positioned and grouped according to the similarities in their innovative capabilities.</td>
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<td>Helfat, 1997</td>
<td>In response to rising oil prices, firms with larger amounts of complementary technological knowledge and physical assets also undertook larger amounts of R&amp;D on coal conversion (a synthetic fuels process). Dynamic capabilities enable firms to stay competitive through changing market conditions.</td>
</tr>
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<td>Morris, 1997</td>
<td>Pollution is negatively related to firm’s cost advantage, suggesting that firms that pollute, on average, suffer from absence of modern manufacturing capabilities that would have reduced other manufacturing costs through enhanced productivity.</td>
</tr>
<tr>
<td>Irwin, Hoffman, and Lamont, 1998</td>
<td>There is a positive and significant relationship between acquisition of medical technological innovation and hospital financial performance; the relationship is strongest when these technological innovations are simultaneously valuable, imperfectly imitable, and rare.</td>
</tr>
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<td>Del Canto and Gonzales, 1999</td>
<td>Of the firm’s resources and capabilities (financial, physical, and intangible), a study of 100 Spanish firms reveals that intangible factors are the main determinants of the probability of a firm carrying out internal R&amp;D.</td>
</tr>
<tr>
<td>Albino, Garavelli, and Schiuma, 1999</td>
<td>Knowledge transfer between customers and suppliers in industrial districts is a strategic issue for firms. This case study revealed that when the knowledge transfer has to be fast and reliable between customer and supplier, it has to be codified, but as the codification level increases, knowledge can be easily shared with other district suppliers.</td>
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<td>Area of Research:</td>
<td>OTHER DISCIPLINES</td>
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<tr>
<td>Russo and Fouts, 1997</td>
<td>Environmental performance and economic performance are positively related and this relationship is strengthened in high-growth industries.</td>
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<tr>
<td>Smart and Wolfe, 2000</td>
<td>An exploratory study of Pennsylvania State University’s football program led to the conclusion that the resources responsible for its sustained competitive advantage are the history, relationships, trust, and organizational culture that have developed within the coaching staff.</td>
</tr>
<tr>
<td>Bourke, 2000</td>
<td>This case study involving medical education aims to determine the factors of the international service trade in higher education. Information about the foreign institution is the most influential variable in determining the student’s choice of the foreign country and the school for higher education.</td>
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history (e.g., Collis, 1991; Barnett, Greve, and Park, 1994; Rao, 1994), employee know-how (e.g., Hall, 1992, 1993; Glunk and Wilderom, 1998), its integrative capability (e.g., Henderson and Cockburn, 1994), its innovativeness (e.g., Bates and Flynn, 1995; McGrath et al., 1996), its culture (e.g., Moingeon et al., 1998), and its network position (e.g., McEvily and Zaheer, 1999; Baum and Berta, 1999), to name just a few. A wide variety of different methods have been used to examine the performance effects of firm resources including large sample surveys, small sample surveys, case studies, and simulations. Overall, results are consistent with resource-based expectations.

There are, however, a few studies that generate results that are inconsistent with resource-based expectations. For example, Poppo and Zenger’s (1995) analysis of vertical integration is more consistent with transactions cost economics than resource-based theory. Also, Sherer, Rogovsky, and Wright (1998) do suggest that compensation policy can have an effect on cooperation among a firm’s employees, but that environmental conditions are a more important determinant of this cooperation. These and similar results suggest that the conditions under which different resources are and are not valuable requires further development in resource-based theory (Priem and Butler, 2001).

Resources and corporate strategy. The impact of resources on corporate strategies has also been examined empirically. One of the most important findings in this area is that SIC-code based measures of strategic relatedness must be augmented by resource-based measures to capture the full performance effects of diversification strategies (e.g., Robins and Wiersema, 1995; Farjoun, 1998). Moreover, only when the basis of a diversification strategy is valuable, rare, and costly to imitate can firms expect such a strategy to generate superior firm performance (Markides and Williamson, 1996). Moreover, while finance scholars have identified an important discount in the value of firms when they begin to diversify (Lang and Stulz, 1994), resource-based theorists have shown that this discount either does not exist or is consistent with shareholder’s interests when the characteristics of the resources on which a firm’s diversification strategies are based are accounted for (Miller, 2000). Similar results have been found in studies on the return to mergers and acquisitions (e.g., Coff, 1999).

International strategies. Resource-based work on international strategies is a logical extension of the work on diversification strategies cited earlier. However, some attributes of resource-based arguments are highlighted in an international context. For example, this work shows that a firm’s resources reflect its country of origin, and that these country differences are long lasting (e.g., Karnoe, 1995; Jarvenpaa and Leidner, 1999). This work also examines the role of different forms of governance in realizing cross-border economies of scope and suggests that the tacitness of the resources used to realize these economies is an important determinant of governance choices (e.g., Zou and Oszomer, 1999).

Resources and strategic alliances. Closely related to resource-based international research is work that focuses on the impact of resources of strategic alliances. In particular, this work focuses on how firms can use alliances to either exploit their pre-existing resources or to develop new resources. This latter work integrates insights from research on learning with resource-based logic (e.g., Shenkar and Li, 1999; Dussauge, Garrette, and Mitchell, 2000).
Rules for riches. Finally, resource-based logic suggests that it is not possible to deduce “rules for riches” from strategic management theories. “Rules for riches” are rules that any firm can apply to gain sustained competitive advantages and economic rents. The implications of this assertion for managerial practice are discussed later in this paper. However, in the empirical work listed in table 5.1, the impossibility of deriving “rules from riches” from strategic management theory is examined in the context of the difficulty of sustaining competitive advantages through the application of well-known, widely understood, managerial practices. These include the use of re-engineering, learning curve logic, the structure of training programs, formal long range planning, and patenting procedures (Mansfield, 1985; Schankerman, 1998).

Human resource management research

While the bulk of empirical research on the resource-based view of the firm focuses on strategic management implications of the theory, the theory has had implications in related fields as well. Among the most important of these is human resource management. Resource-based logic suggests that socially complex resources and capabilities should be among the most important sources of sustained competitive advantages for firms. Human resources are examples of socially complex resources and thus it is not surprising that human resource theorists have drawn heavily on resource-based logic to examine the impact of human resources and human resource policies on firm performance (Wright and McMahan, 1992; Wright, McMahan, and McWilliams, 1994; Barney and Wright, 1998).

Some of the earliest work in this area focused on the impact of human resources on cost and quality in manufacturing (Womack, Jones, and Roos, 1990; MacDuffie, 1995). More recently, this work has focused on various bundles of human resource practices that can have the effect of creating significant firm-specific human capital investments (e.g., Huselid and Becker, 1997; Harel and Tzafrir, 1999). While some of this work has been criticized (Becker and Gerhart, 1996), there is little doubt that resource-based logic has had an important impact on human resources research.

Other disciplines

Several other disciplines have begun to explore the empirical implications of resource-based logic. These include marketing, entrepreneurship, management information systems, operations management, and technology and innovation management. While research approaches vary by discipline, in all these different settings, research examines how various kinds of functional resources affect firm performance in ways that are consistent with resource-based logic.

Research exemplars

A few of the articles cited in table 5.1 can be seen as exemplars of how resource-based research can be done. 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.

Makadok (1999) wrote another paper that rigorously tests the RBV. Makadok examines the impact of differential levels of economies of scale on the ability of money market mutual funds to increase their market share. Makadok 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 a family of funds. He 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 RBV, 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. And, in fact, the impact of scale differences on market share becomes smaller over time – results that are again consistent with the RBV.

**Managerial Implications of the Resource-based View**

The resource-based view has generated empirically testable hypotheses. Many of these hypotheses have, in fact, been tested. However, consistent with the tradition of strategic management as a field, resource-based logic can also have important implications for management practice (Mosakowski, 1998).

For example, this logic can be used to help managers in firms that are experiencing strategic disadvantages to gain strategic parity by 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 through 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 (Fuld, 1995; Bisp, Sorenson, and Grunert, 1998).

Resource-based logic can also be used to help managers in firms that have the potential for gaining sustained competitive advantages, but where that potential is not being fully realized, to more fully realize this potential. This is done by helping managers more completely understand the kinds of resources that can generate sustained competitive advantages, using this understanding to evaluate the full range of resources a firm may possess, and then exploiting those resources a firm possesses that have the potential to generate sustained competitive advantage more completely. Resource-based logic 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 competitive advantages.
Resource-based logic can also be used by managers to ensure that they nurture and maintain those resources that are sources of a firm’s current competitive advantages. Competitive advantages for firms are often based on bundles of related resources. Some of these resources are likely to be valuable, but either not rare, or not imperfectly imitable, or not non-substitutable. Others of these resources are likely to have these competitively important attributes. Nurturing and protecting this second class of resources is important if a firm is to maintain its sustained competitive advantage.

For example, suppose a firm possesses a nurturing organizational culture. In some settings, such a culture may be valuable (Barney, 1986b). 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 inelastic in supply. 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 competitive 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 making decisions that are inconsistent with that culture. Resource-based logic identifies this kind of culture as a potentially important source of sustained competitive advantage. Armed with this understanding, managers in an organization may be less inclined to make decisions that have the effect of destroying the very resource that is generating a sustained competitive advantage for their firm.

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

Second, no theories of sustained competitive advantage can be used by managers in firms without the potential for generating sustained competitive advantages to create sustained competitive advantages. That is, resource-based logic cannot be used to create sustained competitive 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.”

As is well known, there cannot be a “rule for riches.” If the application of a theory to a firm without any special resources can be used to create competitive advantages for that firm, then it could be used to create competitive advantages for any firm, and the actions undertaken by any one of these firms would not be a source of sustained competitive advantage. Even if a “rule for riches” created economic value, that value would be fully appropriated by those that invented and marketed this rule.

Thus, while the resources identified by resource-based logic as being most likely to generate sustained competitive advantages are frequently 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.
REMAINING ISSUES IN THE DEVELOPMENT AND TESTING OF THE RBV

While the RBV has emerged as an important and influential theory of persistent superior performance in the strategic management literature, there remain issues at the heart of this theory that have not yet been fully resolved. Three of the most important of these areas discussed here.

Generating strategic alternatives

Resource-based theory has a very simple view about how resources are connected to the strategies that a firm pursues. It is almost as if once a firm becomes aware of the valuable, rare, costly to imitate, and non-substitutable resources it controls, that the actions it 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 non-substitutable economies of scale, learning curve economies, access to low-cost factors of production, and technological resources, it seems clear that it should pursue a cost leadership strategy (Barney, 2001a: Chapter 7). 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 be the case 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 importantly, there may be times when choosing a strategy consistent with the resources a firm controls is a creative and even entrepreneurial act. This could occur, for example, when a firm possesses valuable, rare, costly-to-imitate, and non-substitutable resources which most agree are 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 that a firm can use to exploit the resources it controls is a creative and entrepreneurial process, resource-based models of competitive advantage may need to be augmented by theories of the creative and entrepreneurial process. The application of these theories could then be used to understand the strategic alternatives a firm might be able to pursue, given the resources it controls. While we are currently unaware of such a highly developed theory, these observations suggest a very close relationship between theories of competitive advantage and theories of creativity and entrepreneurship.11

We recently taught a class where six groups analyzed the rent generating potential of an acquisition. Five of the groups accepted the assignment as given and applied the resource-based view and financial theory to estimate how much value this acquisition would create and how this value would be distributed between the bidding and target firm. One group concluded that this was the wrong question and developed an analysis that suggested that the bidding firm, in fact, should liquidate itself and distribute its value among its shareholders. Most of us who listened to these group presentations became convinced that the last group had the best analysis. After class, several class members
asked, “Why was this one group able to consider a strategic alternative – liquidation – that the other groups had not even thought of?” Currently, strategic management theory does not provide a satisfactory answer to that question.

**Rent appropriation**

As has already been suggested, resource-based theory can be used to evaluate the competitive potential of different strategic alternatives facing firms. However, this logic, as it was developed in the Barney (1991a) article, and as it has evolved since, does not address how the economic rents that 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 work has begun to examine this rent appropriation process (e.g., Coff, 1999). This work focuses on the relative bargaining power of a firm’s stakeholders and the role of team production (Alchian and Demsetz, 1972) in determining how rents are distributed among a firm’s stakeholders. And 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 that are created when a firm implements its strategies?

**Strategy implementation**

Finally, in the 1991a paper, issues of strategy implementation do not receive sufficient attention. The paper seems to adopt the remarkably naive view that once a firm understands how to use its resources to implement strategies that can be sources of sustained competitive advantage, that implementation follows, almost automatically. This view is inconsistent both with agency theory arguments taken from organizational economics (Jensen and Meckling, 1976) and a huge organizational behavior literature on motivation, cooperation, and managerial decision-making.

Of course, that issues of strategy implementation are not emphasized in the 1991a paper does not imply that these issues are unimportant. It only implies that other issues received more attention in that paper than implementation issues. However, more work is needed before the full range of strategy implementation issues not included in the 1991a paper are integrated with a resource-based theory of competitive advantage.

**Conclusion**

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 competitive advantage. Work on the role of “cooperative capabilities” in
implementing strategic alliance strategies (e.g., Hansen, Hoskisson, and Barney, 2000) and the impact of “trustworthiness” on exchange opportunities for a firm (Barney and 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 non-substitutable resources controlled by a firm (Barney, 1995, 2001a).

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

NOTES

1 See Scherer (1980) and Nelson and Winter (1982) for reviews of this traditional economics literature. Scherer’s review is largely sympathetic to this traditional literature, while Nelson and Winter, in the process of developing an evolutionary theory of the firm, are not at all sympathetic. Nelson and Winter’s critiques are similar to those developed in this paper.

2 The contributions of, and relationships among, these early resource-based papers are subject to significant personal interpretation. The history described here is one interpretation, but certainly not the only interpretation, of those contributions and relationships. It is also the case that the history described here is not meant to emphasize some contributions over others. Our view is that, collectively, authors like Barney, Cool, Dierickx, Hamel, Montgomery, Prahalad, Rumelt, Teece, and Wernerfelt were all very important in the creation and development of the resource-based view, broadly interpreted.

3 Barney (1986a) was inspired by a not very well-known paper by Rumelt and Wensly (1981) published only in the Proceedings of the Academy of Management. In that paper, Rumelt and Wensly suggest the existence of the “market for market share” and argue that if the market for market share is perfectly competitive, increases in market share will not lead to increases in firm performance. Rumelt and Wensly also provide some rigorous empirical support for this assertion. If pressed to describe the “very first” resource-based paper published, a good argument could be made for Rumelt and Wensly (1981).

4 A firm has a competitive advantage when it is implementing valuable product market strategies not currently being implemented by several other competing firms. A firm has a sustained competitive advantage when it is implementing valuable product market strategies not currently being implemented by several other competing firms and where efforts to imitate those strategies have ceased.

5 Conner (1991), Castanias and Helfat (1991), and Barney (1991a) were all published in a special theory forum in the Journal of Management edited by Barney. See Barney (1991b). Interestingly, Peteraf (1993) and Teece, Pisano, and Shuen (1997) were both originally submitted to this special theory forum. Later, they were each published in the Strategic Management Journal.

6 This said, conversations with Prahalad suggest that he does not see this work as an example of resource-based logic. Some other of Prahalad’s work, however, is explicitly cast in resource-based terms, e.g., Conner and Prahalad (1996).

7 It is necessarily the case that the state of the theory summarized in this section will reflect the tastes and biases of the current authors. Thus, there may be some scholars who label themselves as resource-based who will disagree with this characterization. We have made an effort to incorporate as many different perspectives as possible but acknowledge that there may still be some disagreements with the way the theory is summarized.
Imagine, for example, if every application of the law of gravity was labeled as a “new” theory, e.g., the theory of the earth’s rotation around the sun, the theory of the moon’s rotation around the earth, the theory of the solar system’s rotation around the galaxy. While each of these “theories” would vary with respect to details in calculation and application, they would all be applying the same underlying theoretical framework. Such “theoretical proliferation” currently exists in the field of strategic management.

This assumption sets aside important agency problems that are discussed later in the paper. For expositional convenience, these hypotheses temporarily set aside issues about the effectiveness with which firms implement their strategies. These organizational issues are discussed later in the paper.

Recent work on real options (McGrath and MacMillan, 2000) and innovation management (Brown and Eisenhardt, 1998; Christensen, 1997, 1999; McGrath, MacMillan, and Venkataraman, 1995).

REFERENCES


References


logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review*, 49, 197–221.


