

# The development of the resource-based view of the firm: A critical appraisal

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Over the last 20 years, the resource-based view (RBV) has reached a pre-eminent position among theories in the field of strategy, but debate continues as to its precise nature. This paper contributes to the debate by critically reviewing the development of the RBV to date. The critical appraisal examines the development of the RBV in terms of theory, method, empirical evidence and practical insights. It is contended that the permeable and eclectic nature of the RBV stems from its being a theory about what firms are and how they function, and that its popularity is due to an absence of limiting behavioural assumptions. Finally, the authors provide their own subjective views on where they think RBV scholars should focus their efforts in the future.

## Introduction

In this paper we examine the body of theoretical and empirical work that encompasses the resource-based view of the firm (henceforth the RBV). Over the last 20 years, the RBV has risen to a pre-eminent position in strategy research. Although the relative weight attributed to different scholars' contributions may be subject to debate, it is clear that, over time, a series of papers have laid the intellectual foundations for a body of thought relating to the relationship between the opportunity set facing the firm, the strategic behaviour to be implemented by managers and the outcome in

terms of competitive advantage or performance (e.g. Barney 1986, 1991; Collis 1994; Dierickx and Cool 1989; Peteraf 1993; Rumelt 1984; Wernerfelt 1984).

The RBV views the firm as a historically determined collection of assets or resources which are tied 'semi-permanently' to the firm (Wernerfelt 1984). Some users of the RBV distinguish resources which are fully appropriable by the firm, such as physical capital or brand names, from less tangible assets, such as organizational routines and capabilities (Teece *et al.* 1997). Similarly, distinctions may be drawn between static and dynamic resources. The former are those that, once in place, may

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be considered to represent a stock of assets to be used as appropriate over a finite life (e.g. Barney 1986, 1991; Peteraf 1993; Rumelt 1984). Dynamic resources may reside in capabilities, such as an organization's capacity for learning, which generate additional opportunities over time (e.g. Collis 1994; Teece *et al.* 1997). Here, we follow Combs and Ketchen (1999) in noting that the crucial requirements of the RBV are that the relevant resources, whatever their nature (i.e. resources, capabilities or dynamic capabilities), are specific to the firm and not capable of easy imitation by rivals (Barney 1991). Therefore, such resources constitute the source of Ricardian rents that comprise a firm's competitive advantage and, to the extent that their replication by others *is* problematic, imply a sustainable advantage over the longer term. Because each firm's resource bundle is unique, being the consequence of its past managerial decisions and subsequent experience, it follows that so is each firm's opportunity set.

As empirical evidence relating to the decomposition of firm performance (e.g. McGahan and Porter 1997) typically finds that firm-specific effects are at least as important as industry characteristics, the RBV offers an obvious framework for analysing inter-firm variations in performance. As such, it acts as a natural complement to the external, market-based approach to competitive advantage that is grounded in industrial organization economics (IO) and synthesized in, for example, the work of Porter (1980).

The prominence of the RBV as a core theory in the area of management suggests that the time is right to reflect on its development. Given that a number of reviews on the RBV have already been published, which have either been focused towards descriptive accounts of the development of the RBV (e.g. Ambrosini 2007; Barney 1995; Barney 2001b; Barney and Arikan 2001; Barney *et al.* 2001) or have provided a summary of empirical approaches and evidence on the RBV (e.g. Armstrong and Shimizu 2007; Newbert 2007), we focus our attention on providing a critical

reflection on the state of health of the RBV research. Our intention is not to provide an exhaustive interpretation of all papers that have been written about the RBV; rather, we reflect on how the core elements of the theory and its application have developed over time, to explain how we have arrived at the position we have today. In doing so, we examine five interrelated facets of the RBV: (i) theory, (ii) method, (iii) empirical evidence, (iv) practical insights and (v) the RBV looking forward. The paper unfolds by examining each of the facets in turn.

### The Resource-based View: Theory

In this section we examine the theoretical development of the RBV. The central tenets of the RBV are path dependence and firm heterogeneity (Lockett 2005; Lockett and Thompson 2001). The RBV is a theory about the nature of firms, as opposed to theories such as transaction cost economics which seeks to explain why firms exist (see Coase 1937). As such, the RBV requires minimal limiting assumptions about the nature of strategic behaviour. In effect, the RBV is a statement about how firms actually operate. The minimalistic nature of the RBV's assumptions (i.e. its two central tenets) makes formalization difficult. Ultimately, the RBV's message that firms' performance differs because of different resource endowments is probably incapable of falsification. However, theoretical insights have been developed from these central tenets. Below, we provide an overview of the main theoretical insights, employing the game of poker (where relevant) as an illustration.

### *Resources and Performance: Sustainable Competitive Advantage*

The sustainable competitive advantage (SCA) approach to the RBV is exemplified by the work of Barney (1986, 1991), Peteraf (1993) and Rumelt (1984). Employing the resource as the unit of analysis the theory seeks to explain the extent to which a firm may be able

to sustain a position of competitive advantage. Sustainable competitive advantage is based on the ownership of firm-specific resource(s) that, following Barney (1991), has the following attributes: (1) it must be valuable; (2) it must be rare; (3) it must be inimitable; (4) it must be non-substitutable. These conditions are what Barney (1991) terms VRIN – valuable, rare, inimitable and non-substitutable. Valuable resources can be used to exploit opportunities and/or neutralize threats in a firm's environment. Rare resources are those that are limited in supply and not equally distributed across a firm's current and potential competition. Inimitability refers to the extent to which resources are difficult to replicate by other firms, which may be due to factors such as social complexity (Dierickx and Cool 1989), causal ambiguity and specific historical circumstances (Barney 1991). Non-substitutability of resources implies that one resource cannot be simply replaced (or substituted) by another one.

Other authors writing on this issue have highlighted the importance of limits to competition – both *ex ante* and *ex post* – in resource markets as a necessary condition for SCA (see Peteraf 1993), and the importance of isolating mechanisms as a necessary condition for SCA (see Rumelt 1984).

The RBV is in essence a theory of rents based upon resource market imperfections (Amit and Schoemaker 1993). At one level it may be considered both tautological and even trivial. Consider a firm earning

$$\Pi_j = P_j Q_j - \sum p_{ij} r_{ij}$$

Where  $\Pi_j$ , the profit of the firm on product  $j$ , is defined as the difference between the revenue received (price of product  $j$  [ $P_j$ ] multiplied by the quantity of product  $j$  [ $Q_j$ ]) and the sum of the resource inputs consumed in producing product  $j$  [ $r_{ij}$ ] multiplied by their actual or shadow prices [ $p_{ij}$ ].

If we assume for simplicity that there is either no product differentiation or, equivalently, that differentiation is completely determined

by the resource inputs, non-zero  $\Pi_j$  (i.e. a competitive advantage) in the face of competitive rivalry in the market for  $j$  indicates that our firm has access to at least one resource input on more favourable terms than its rivals. If it is also the case that  $\Pi_j > 0$  persists in the longer term (i.e. that a competitive advantage is sustainable), this resource advantage must also persist over time. Viewed in this light, any SCA is simply a rent conferred by one or more imperfections in the resource market that prevents at least one input being available on equal terms to all actual or would-be competitors.

Thus, the RBV at its most basic offers an interpretation of the existence of profits in equilibrium based on firm heterogeneity. If that were all it offered, it would be essentially trivial. It would amount to a statement that firms differ in performance because they differ in attributes. True but hardly informative! It is scarcely surprising that critics of the RBV (e.g. Priem and Butler 2001a,b) have accused its proponents of tautological reasoning by attributing the generation of competitive advantage to possession of those resources whose own value reflects these scarcity rents. However, contributors to the RBV literature have sought to generate testable hypotheses concerning those characteristics of such inputs that are likely to render them strategic resources in the sense of being a source of sustainable rents. Barney's (1991) VRIN framework, outlined above, sets out the broad conditions necessary for a resource's comparative scarcity to elevate it to strategic significance. Peteraf and Barney (2003), among others, begin with the assumption of resource heterogeneity and then consider which (if any) of a given collection of resources satisfy the VRIN conditions outlined above. They point out that resources differ in their impact on the firm's ability to generate cost or differentiation advantages, and hence performance. Moreover, if the cost of a resource reflects the full potential rents it may generate, it cannot, by definition, be a source of a competitive advantage.

A resource market imperfection may be exogenous, in the sense that it results from the

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firm's possession of some superior physical, organizational or intangible resource that has been accumulated as a result of the firm's unique historical evolution. Alternatively, it may be endogenous, in the sense that it results from a conscious strategic decision by the firm's managers. Such a decision might apply to the acquisition of a resource to facilitate the firm's own production and/or to secure its advantage over a rival. For example, a department store corporation's decision to become the 'anchor' for a new shopping mall complex is both a move to secure a resource (market access) for the firm and a means of pre-empting a rival. This parallels the distinction between structure and conduct in the SCP paradigm in industrial economics. Here market structure has been traditionally treated as exogenously determined by the underlying industry characteristics. Firm conduct, on the other hand, is the endogenous outcome of managerial decision-taking, albeit within bounds set by structural characteristics. Thus, collusion, for example, which is usually considered to be facilitated by high concentration, is imperfectly predictable without further modelling.

In acknowledging that resources are tied 'semi-permanently' to the firm, in the phrase of Wernerfelt (1984), the RBV recognizes that, in the short run, the resource set confronting particular managers is largely exogenously determined. However, it also concedes a role for the manager in perceiving opportunities, matching these to the available resources and, within limits, augmenting the latter with such additional resources as are necessary to implement its strategy. Thus, the role of a manager in the RBV is akin to that of a card player. The player is provided with a dealt hand of cards, with the value of each card being broadly determined *ex ante* by the rules of the game. Success depends upon the relative skill with which that hand, augmented by any cards subsequently acquired, is played in competition against rivals. However, whereas each hand of cards starts out with a completely new deal, managers are typically engaged in an evolving game in which over time the

resource base, and hence the opportunity set, can be shifted.

### *Resources and the Role of Managers*

Viewing the RBV as we have outlined above enables us to gain a better understanding of how managers may be able to exploit market imperfections, in both resource and product markets, to advance firm performance. Not merely does it cede a substantial role to managers, but it also links the internal and external environments in which they operate. In this way, it also distinguishes the academic study of strategic management from that of industrial organization economics. The latter has made considerable progress in analysing the firm's optimal response to its external environment, including the behaviour of its rivals, but it tends to retain its traditional characterization of the firm's internal workings as a 'black box' beyond scrutiny. Moreover, managers are largely treated as optimizing algorithms. Under the RBV, managerial responsibilities include the need to reposition the firm as opportunities change and its resource set evolves. By contrast, industrial organization economics sees the managers' role as responsive. Thus, managers in the RBV are both adaptive and proactive, i.e. they are 'enactors' (Lado and Wilson 1994), while their counterparts in industrial organization economics have a role analogous to that of managers in a regulated utility, whose decisions largely concern marginal adjustments to output and input levels.

It is the sources of market imperfections, allied to the roles managers play, which makes the RBV an interesting theory. Managers, through the decisions they make, change the nature of competition in markets. The decisions that managers take are inextricably linked to their perceptions about the internal characteristics of their own firms and also of the external environment in which they compete (Penrose 1959). Managerial perceptions become important in relation to three central elements of the RBV: resource functionality,

resource recombination and resource creation, which we discuss next.

### *Resource Functionality*

The issue of resource functionality has a long tradition in the RBV literature. Penrose (1959) proposed that the size of a firm's productive opportunity set imposes a limit on its growth. She defined the productive opportunity set of the firm as 'all of the productive possibilities that its "entrepreneurs" see *and can take advantage of*' (Penrose 1959, 31, our italics). That is, the effective set of productive opportunity is determined by both managerial perceptions and the resources at their disposal. Penrose further suggested that the search for novel uses of existing resources may expand the firm's opportunity set. Where a firm's resources are incompletely used and there is always some slack, there is a potential opportunity for firm growth. In order for any excess capacity of existing resources to be exploited, the resources may need to be combined with other available resources in order to generate productive services; we return to this issue below. Penrose also highlights that firms attempt to discover more about the potential uses of their existing resource via research and other types of proactive searches. She represents this by arguing that managers frequently reflect: 'there ought to be some way in which I can use that' (Penrose 1959, 77). Penrose, in effect, raises the issue about what the functionality of a resource is.

The issue of what resources actually do was revisited by Wernerfelt (1984), who employed the concept of duality to discuss the relationship between resources and the products and services that result from their usage. According to Wernerfelt, firms can be defined either in terms of products/services or in terms of resources. The two are the different sides of the same coin.

It is not the resource type *per se* that matters, it is the functionality of the resource and how the resource is employed (Penrose 1959; Peteraf and Bergen 2003; Wernerfelt

1984). Resources may have a number of different functions, which may enable them to be employed across a number of different markets over time. An important role for managers is to determine the most profitable usage for the resources at their disposal. Consequently, resource usage is influenced by the subjective perceptions of managers. Furthermore, resource usage shapes the competitive landscape. It is the managers of firms who employ their resources in similar ways to their competitors that determine the boundaries of industry membership. If we take the example of the manager (landlord) of a public house, he/she will view their premises as a key resource for the retailing of their drinks and other consumables. The building, however, could have multiple uses. For example, the building could be used as a pet shop. It is *how* the resource is used that determines the industry to which the business belongs.

As outlined above, an important role of managers is the search for the most profitable use of the resources at their disposal. A bundle of resources will have different values according to their usage across different markets. Revisiting our analogy of the game of poker, this makes the rules of the game much more permissive and hence the game much more complex. If we permit resources to be employed across a range of different markets, this is akin to a poker player being able to take his hand of cards and play across a number of different games on different tables. The rules of the game will vary between tables, and so the value of the poker players' cards will vary accordingly. The role of the poker player is quickly to assess which games he/she wants to play in, i.e. to assess where their cards can be deployed most effectively.

The problem facing managers, therefore, is how to understand the functionality of the resources that are under their control, and also to understand those that are under the control of other firms. This will aid managers in not only detecting present competitors but also in anticipating future competitors. Peteraf and Bergen (2003, 1029), however, argue that

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managers may be poor at understanding the range of potential functions from their resource-bases for a number of reasons. These include: a lack of time and attention; bounded rationality (e.g. Williamson 1975); cognitive biases; and framing limitations (Amit and Schoemaker 1993). The limitation of managers to perceive competition from outside their narrowly defined industries dates back to the work of Levitt (1960) and the problems associated with managers' myopia.

Not only must managers understand the functionality of their resources, they must also comprehend the capacity for usage their resources permit. Some resources may have multiple functions, and also a capacity that enables them to be used in a number of different ways simultaneously. That is, a resource may have a high capacity for usage so that its use on one market does not preclude it from being used in another market. In the case of intangible resources, especially in the form of knowledge, there is no real limit to the extent to which the resource can be shared. Conversely, physical resources may be easily exhausted, as their use on one market precludes it being used in another.

### *Resource Recombinations*

Penrose (1959) argues that resources are seldom valuable in isolation. In effect, it is unlikely that we can attribute the success of a firm (and hence SCA) to one specific resource. Consequently, it may be more fruitful to consider combinations of resources. By combining resources firms may be able to add value if they are: complementary (Harrison *et al.* 1991), related (Dierickx and Cool 1989) or co-specialized (Lippman and Rumelt 2003) in nature. The concepts of complementarity, relatedness and co-specialization all speak to the issue as to how resource combinations can create value. The idea of resource combinations (and recombinations) is central to the literature on capabilities. A capability is defined as the firm's ability to undertake a productive activity, which is created through

the simultaneous deployment of resources and factors of production (Teece *et al.* 1997). The literature on dynamic capabilities should be viewed as a complement to the RBV (Ambrosini and Bowman 2009; Wang and Ahmed 2007).

In addition to the productive opportunity set of the firm being influenced by resource usage, Penrose (1959) argues that the opportunity set is also influenced by the way in which managers are able to combine resources to produce productive services (or capabilities). At any given point the known productive services arising from a given bundle of resources are unlikely to exhaust its full potential. There is always the potential for firm expansion. Based on the discovery of changes in customer preferences and innovation, managers choose to engage in the recombination of existing resources to satisfy this perceived demand. Hence, opportunities for expansion are limited to the extent to which the managers of a firm perceive there to be opportunities, are willing to act on them and are able to capitalize on them with their own resources (Penrose 1959, 84). Thus, the growth of the firm involves discovering new market opportunities and changing and using existing resources to match these opportunities.

Sirmon *et al.* (2007) offer a more detailed conceptualization of resource recombination, focusing on the nature of resource recombinations and their effect on capabilities. In doing so, they draw a distinction between the activities of stabilizing, enriching and pioneering. Stabilizing involves making minor incremental improvements in existing capabilities through minor improvements to existing resources. A strategy of stabilizing may be a way of maintaining a current position of competitive advantage in conditions of low environmental uncertainty. Enriching involves extending and elaborating current capabilities through activities such as learning or adding a complementary resource. Pioneering is a more advanced process of resource recombination which entails 'the integration of completely new resources that were recently acquired ... and added to the

firm's resource portfolio' (Sirmon *et al.* 2007, 282). This process involves creativity and exploratory learning in order to create novel capabilities.

If managers are able to recombine their resources in a range of different ways, they may be able to produce new outputs for the firm. For example, revisiting our pub landlord above, we find out that in addition to owning a public house he/she also owns a pet shop. In order to attract people into the pet shop, the manager buys a large snake, which he/she can also sell if required. The snake, however, is only employed in the pet shop during the opening hours of 9 to 5 Monday to Saturday. As the snake does not have to work hard for its keep, and given that it is under-utilized outside the shop opening hours, the manager starts to think how he/she can make a more profitable use of the resource. The manager then has an idea of combining the snake, with one of the bar maids, and *hey presto* a resource recombination leads to the creation of an exotic dancer to perform during the evenings and/or on Sundays. The manager of the pub has diversified into offering entertainment through a resource recombination.

Invoking our poker analogy again, the issue of resource recombination, like the issue of usage, makes the rules of the game more permissive. By recombining a bundle of cards, a person may be able to make a series of different hands that can be played in different games. Furthermore, if we relax the assumption that the recombined cards have to be controlled by one player only, we open up the potential for players to collaborate in recombining their cards. The potential for collaboration substantially increases the number of potential recombinations that may be possible.

### *Resource Creation and Decay*

The issue of resource creation was first dealt with by Penrose (1959) through her attempts to theorize the growth process in firms. She argued that firms develop resources through their productive activities and, over time, firms

will generate an excess capacity in their resource-bases. It is the excess capacity in a resource base that presents the basis for firm expansion. The activities of the firm will lead to the development of resources over time. The firm's resources, therefore, will be directly related to the past activities of the firm, i.e. the resource base of the firm will be path dependent. Although Penrose highlighted that resources may be created through the process of competing in markets, little attention has been focused on the issue of resource creation (Bowman and Collier 2006). A notable exception is the *Management Science* paper of Dierickx and Cool (1989).

Dierickx and Cool (1989) attempted to summarize the growth and decay processes affecting those intangible assets that form the core of the RBV. Barney (1991) examined the *consequences* of firm heterogeneity (for a given set of resources), whereas Dierickx and Cool (1989) examined the *causes* of firm heterogeneity. The genesis of Dierickx and Cool's (1989) argument is that, given that factor markets for intangible assets are incomplete, critical resources are accumulated rather than acquired in 'strategic factor markets'. Furthermore, they argue that the immobility of a resource position is linked to the characteristics of the asset accumulation process. Their terminology has been widely followed, and their typology of asset accumulation may be summarized briefly thus:

*Asset mass efficiency* describes Dierickx and Cool's (1989) proposition that the marginal cost of specific asset accumulation falls with the size of the existing relevant asset base. This is seen most clearly where activities such as R&D exhibit (at least locally) increasing returns with obvious benefit to established research-intensive companies.

*Time compression diseconomies* relate to the observed tendency of the costs of asset accumulation to rise within a given time interval. The more a firm tries to reduce the time horizon associated with asset accumulation, *ceteris paribus*, the more costly the process will be. Again, R&D is a good example where

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there is a well-established trade-off between the time and cost associated with accelerating the rate of problem-solving.

*Causal ambiguity*, as described by Barney (1991), relates to the difficulty faced by outsiders – and perhaps even insiders – in isolating the particular factors responsible for a firm's competitive advantage.

*Asset interconnectedness* implies that the cost of adding an increment of resource A to the firm's stock may be related to its existing stock of resource B. Dierickx and Cool's (1989) own example is of a manufacturer whose product development costs are lowered by feedback benefits derived from the same firm's customer service department.

*Asset erosion* refers to the shrinkage of the firm's stock of intangible assets, as these are destroyed by exhaustion, obsolescence and rivals' innovation. It is the intangible asset equivalent of balance sheet depreciation for tangible assets. It both afflicts the firm in isolation and arises through the actions of its rivals. In effect, the firm is a bundle of resources whose value is in constant flux.

The work of Dierickx and Cool (1989) has important parallels with Barney's (1986) bad news message, which was that, if resource markets are perfect, the costs of acquiring resources will be approximately equal to the value of those resources once they are used to implement product market strategies. Consequently, if a firm acquires resources, and continues to use them in the same way that they were previously employed, SCA will be difficult to achieve in the absence of resource market imperfections. Denrell *et al.* (2003) provide a more nuanced understanding of resource acquisition, which is consistent with the work of Dierickx and Cool (1989), by outlining two conditions under which SCA may be possible. First, you may be lucky and acquire the resources below their full market value because of a seller's ignorance. Second, you may own, or have access to, other idiosyncratic resources that are not available to other firms and which augment the value of the resources.

### The Resource-based View: Methodological and Practical Difficulties

The RBV has developed as a series of related propositions that seek to explain the relationship between a firm's resource endowment and its performance and growth. However, it has not generated clear unambiguous hypotheses in the manner of more narrowly conceived theories of firm behaviour or even transaction cost economics (TCE), an approach with which the RBV is frequently compared (e.g. by Newbert 2007). For example, TCE contends that transaction costs rise with certain (relatively) well-defined market attributes, especially asset specificity, and that vertical integration dominates outsourcing where transaction costs are sufficiently high. Together, these hypotheses have suggested a simple reduced form equation test: namely, that vertical integration will increase with asset specificity. Variants of such an equation have been estimated by many researchers. By contrast, the RBV has a number of methodological and practical difficulties that limit the generation and testing of direct hypotheses.

First, and perhaps most fundamental, is the issue of tautology. Perhaps unsurprisingly, for an approach that ultimately ascribes differences in firm performance to intrinsic differences in the firms themselves, the RBV is certainly prone to circular reasoning. Priem and Butler (2001a,b) in an exchange with Barney (2001a), debate this point at length. Priem and Butler (2001a,b) reduce the RBV to the following statement: 'only valuable and rare resources can be a source of competitive advantage', where rarity and value in turn depend upon the use to which such resources may be put. More generally, they argue that the problem of tautology lies in the relationship between the general and the specific in the RBV. Competitive advantage is considered to be rooted in firm-specific circumstances that are themselves, at least in part, imperfectly observable.

Second, if one assumes (as does Barney 2001a) that the RBV may be specified in a



testable form, any empirical assessment of its predictions requires the identification and measurement of relevant resources. Unfortunately, this has often proved problematic, because the resources of central concern are often those associated with organizational learning etc. and are commonly unobservable (see Ambrosini and Bowman 2001; Godfrey and Hill 1995; Rouse and Daellenbach 1999). Resources which *can* easily be identified and measured are unlikely to be of great interest to RBV researchers. Such resources, however, are commonly the focus of empirical studies largely because they can be measured, not because they are necessarily important. Consequently, a significant body of empirical research on the RBV has parallels with the proverbial drunk looking under the street light for his keys. When asked where he had lost his keys he responded, 'somewhere over there in the dark, but can't see a thing over there so I'm looking under the light instead.' A further consequence of the resource identification problem is that researchers have used an extremely varied set of proxies for key capabilities and resources, making systematic comparisons across the empirical literature more difficult.

Third, firm heterogeneity creates problems for researchers who are interested in generating a homogeneous sample of firms for testing specific RBV hypotheses. Recall that the central thrust of the RBV is that any firm's competitive advantage is rooted in its unique attribute set. If each firm is unique, any sample of firms is heterogeneous by definition. This clearly makes it difficult to derive meaningful inferences about the causes of competitive advantage across the sample. To reduce sample heterogeneity, some researchers have focused on single-industry studies, often using exogenous changes in the industry environment, e.g. deregulation (see Ingham and Thompson 1995), as 'natural experiments'.

Fourth, identifying and explaining causal relationships in large firms is problematic. The sheer complexity of large organizations makes it very difficult to isolate the performance

effects of specific resources. Birger Wernerfelt recently argued that, if you take a firm like Wal-Mart, there are probably 10,000 little ideas there that each might be worth \$100,000 or less in annual profits. Therefore, the complexity of the organization means that a whole range of small initiatives may influence the performance of the firm, but each in a very small way (Lockett *et al.* 2008). Moreover, Barney's (1991) argument that causal ambiguity sustains competitive advantage, by restricting rivals' ability to isolate and hence replicate rent-generating resources, itself suggests limited potential for empirical work. If rivals, i.e. competitors within the same strategic group, cannot fathom a firm's key resources it appears unlikely that models using externally measurable variables will achieve strong explanatory power, particularly since these are often estimated across broad industries to allow viable sample sizes.

Fifth, not merely is agreement on a working definition of 'competitive advantage' itself controversial (Foss and Knudsen 2003; Powell 2001), but such a concept is directly unobservable so that empirical tests normally involve seeking to explain inter-firm differences in performance (see Peteraf and Barney 2003) with respect to observable differences in the firms' identifiable resource endowments. Equating performance and competitive advantage in this way strictly tests the joint hypothesis that resources and not other factors (see Ray *et al.* 2003) generate a competitive advantage, and that the firm is effectively managed to harvest this competitive advantage.

Sixth, the logic of the RBV does not predict a universal relationship between firm performance and any particular resource. On the contrary, the value of a resource to the firm will depend upon the specifics of its use, including the deployment of co-specialized assets. Therefore, even at the industry level, there may be no discernible relationship between firm performance and the possession of resource X. For example, within the airline industry, full service carriers and low-costs operate very different business models which presumably

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require differing resource bundles such that a performance–resource model indiscriminately estimated across airlines is unlikely to yield strong results.

Finally, best practice firm-level empirical work now generally uses first-differenced panel data sets, usually unbalanced to minimize selection/survivor biases. However, in empirical work on the RBV it is the fixed effects, discarded in differencing, that contain most of the interest. It follows that much empirical work in the field still tends to use the (otherwise discredited) single equation, cross-sectional design. This raises inevitable problems of causality. For example, if a study of pharmaceutical companies reports a positive correlation between performance and R&D spend, the researcher cannot, without further tests, rule out the possibility that R&D depends upon performance rather than the reverse. Furthermore, multicollinearity of explanatory variables, often size related, is common in cross-sectional firm-level work. This reduces the efficiency of estimates, leading to what Swann (2006) terms the noise–signal ratio. Many cross-sectional studies do not address these difficulties.

### The Resource-based View: Empirical Evidence

Empirical testing of elements of the RBV has focused on two main issues. First, scholars have examined the relationship between firm performance and the possession of identifiable and imperfectly imitable resources/capabilities/competences. Second, researchers have examined whether the prior possession of such resources shapes the subsequent development of the firm in ways the RBV predicts.

#### *Resources and Firm Performance*

As suggested above, the overarching proposition of the RBV suggests that a firm's possession of specialized resources may permit it to enjoy a competitive advantage over its rivals which, given suitable management, is converted

into an observable performance advantage. Furthermore, where this resource bundle is imperfectly imitable the competitive advantage is sustainable in at least the medium term. Testing this relationship presents difficulties, some of which have been outlined in the previous section. Among these are problems in both specifying testable hypotheses and measuring dependent and explanatory variables.

In the case of the dependent variable, it is noted above that difficulties in defining and measuring comparative advantage have ensured that a variety of performance variables have been used in the literature. These have included both accounting and stock market-based measures. The choice of resource measures as explanatory variables is necessarily even wider. This is not simply a reflection of the availability of data to particular researchers; it also reflects the specific nature of any hypothesized link between resources and competitive advantage. However, an overall consequence of the diversity of the available empirical literature on the RBV and the range of variables it uses is that formal meta-analyses are precluded, and even summary statistics are difficult to compute.

The most comprehensive treatment of the RBV performance literature is that of Newbert (2007), who performed a semi-quantitative analysis of the studies identified via a formal search procedure. Newbert (2007) used a key word search across the management literature to identify papers appearing to offer a test of the resource–performance linkage. After the application of relevance criteria, he was left with 55 studies from which he generated the following conclusions: First, only 53% of the papers he examined offered positive support for the link between resources (broadly defined) and performance. This figure, he suggests, is broadly consistent with other theories of strategic management such as transaction cost economics (see David and Han 2004). Second, he found evidence that resource combinations, and/or capabilities/competences, are more likely to explain performance differences rather than single resources in isolation.

As with the drunk looking for his keys under the light, many RBV scholars (including the authors) have focused on resources that can be easily measured, e.g. simple measures of human capital.

Given the methodological problems in designing general tests of the resource–performance relationship, discussed above, the relatively modest empirical support revealed by Newbert’s survey is generally unsurprising. Perhaps more worrying for those of us working in the field is that even this level of support is probably inflated by publication bias: that is the tendency of journal editors to disproportionately reject insignificant findings.

### *Resources and Firm Development*

As noted above, an important strand of the RBV literature, going back to the pioneering work of Penrose (1959), is concerned with the way in which the firm’s current resource bundle shapes its future development. This work implicitly assumes that in a competitive environment decisions concerning the firm’s activity set will reflect managers’ attempts to use the resources at their disposal in the interest of advancing the firm’s performance. This leads to predictions about shifts in the boundaries of the firm conditional upon its current resource set. Among boundary decisions analysed in this way are issues concerning diversification, modes of entry to new markets and refocusing. The diversity of these issues has thus far precluded any quantitative survey of which we are aware. The literature review that follows is based on an updating of that in Lockett and Thompson (2001). We depart from David and Han (2004), Newbert (2007) and Armstrong and Shimizu (2007) in our approach to reviewing the empirical literature, which employs a keyword search for RBV papers, because we feel that such an approach omits empirical studies that may be RBV in nature, but do not explicitly mention the RBV. Our survey includes papers that test hypotheses congruent with the RBV, even if they do not explicitly mention it.<sup>2</sup>

### *Product/Service Market Diversification*

One of the most explicit and implicit empirical application of the RBV has been in the literature examining patterns of diversification via new market entry. Econometric studies by Lemelin (1982), MacDonald (1985), Montgomery and Hariharan (1991) and Ingham and Thompson (1995) have shown that diversification is not a purely random process, driven by idiosyncratic managerial decisions, but instead follows a pattern consistent with the exploitation of existing identifiable resources (see Montgomery 1994, for a review). Lemelin (1982) found that diversification tended to occur across industries using similar resources. MacDonald (1985) and Montgomery and Hariharan (1991) used US firm-level data to demonstrate a similar outcome, whereas Montgomery and Wernerfelt (1988) identified that specific resources may only be transferred into a small number of industries and that firms with more specific resources could generate higher rents with less diversification. Ingham and Thompson (1995) used financial services deregulation in the UK as a ‘natural experiment’ to show that diversification into previously prohibited, but nonetheless related, financial product markets followed the firms’ resource endowments at the time of deregulation.

While the RBV has been explicitly and implicitly used in analysing firms’ diversifying expansions into new product markets, the firm’s decision to expand its operation by producing its existing products in new regions or national markets involves directly analogous reasoning. Here the dominant internalization paradigm (see Caves 1996, for a survey) used to explain the internationalization of business, suggests that firms choose to become multinational when the specific assets they possess are more economically transferred across international boundaries within the firm rather than by using markets. Internalization theory’s focus is upon the role of comparative levels of transactions costs in determining the optimal form of expansion, and therefore, it might be considered an application of TCE. However,

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since the transactions costs usually considered to drive this decision are those attached to intangible assets and firm-specific attributes, where replication is also problematic, there is an obvious relevance for the RBV. Non-specific resources pose far fewer problems for market contracting but, conversely, since activities depending upon them alone can be easily replicated, offer little opportunity for sustaining a competitive advantage.

The evidence on foreign direct investment, at industry and firm levels, is generally consistent with the internalization perspective (see Caves 1996). It points to concentrations of multinational activity in R&D-intensive industries (where proprietary technology is important) and advertising-intensive industries, where marketing and brand name issues are important. Of particular relevance to the RBV is the firm-level evidence (e.g. Caves 1996; Grubaugh 1987) that confirms the effect of proprietary assets and relative R&D and advertising outlays on the probability of a large firm having multinational operations.

Inter-industry differences in firm organization constitute a potential difficulty for firm-level work in this field. In consequence, single-industry studies generally allow a more detailed specification of relevant resource variables than would be possible in inter-industry work. Recent examples include case studies of the US TV receiver industry by Klepper and Simons (2000), Internet service providers (ISPs) by Greenstein (2000), and the generic pharmaceutical industry by Scott Morton (1999). Klepper and Simons (2000) show that prior experience in radio technology was a major determinant of success among entrants to the rapidly expanding TV receiver market from the 1950s to the 1970s. Furthermore, the advantage conferred by radio experience continued to exert a statistically significant effect, even after 1965 when colour TV began to dominate the market. Greenstein (2000) demonstrates that, although entrants to the ISP sector have come to a completely new industry, their prior experience, commercial background and local market characteristics

determine their subsequent development and specialization. Thompson (2007) reaches a similar conclusion with respect to entrants to the digital camera business, while Mitchell (1991) and Carroll *et al.* (1996) report comparable results from the diagnostic imaging and early US car industry, respectively.

Scott Morton (1999) shows that, among the set of generic pharmaceutical producers, prior technological, scientific and marketing experiences determine which new product markets, created by compound discovery or patent lapse, individual firms choose to enter. Thus, prior expertise with a particular class of compounds, delivery mechanism or disease treatment market will increase the probability of entry. Interestingly, she notes how different firm resources, the result of divergent experiences, assist the industry by preventing the simultaneous entry of large numbers of producers with inevitable widespread losses (Scott Morton 1999, 436). This confirms the classic argument of Richardson (1972) on the importance of firm heterogeneity in the orderly diffusion of innovations.

### *Mode of Market entry (Product and Geographic)*

Firms seeking to extend their profitable activities typically require assets to complement their existing resource bundles and frequently need to obtain these from existing firms. Mergers and acquisitions, joint ventures and other collaborative associations have been analysed quite extensively as alternative mechanisms for the acquisition of complementary assets for domestic and foreign expansions alike. In some instances, for example, in obtaining access to specific assets in countries with poorly developed capital markets or with restrictions on private and/or foreign ownership, the costs associated with acquisition may be prohibitive. In others, joint venturing with the desired party may turn out to be simply unattainable. However, a growing body of research suggests that, where a choice exists, joint venturing tends to be associated with a lack

of specific expertise (of markets, technology, cultures, etc.) on the part of the firm concerned. Singh and Kogut (1989) using foreign entrants to the US, Hennart and Reddy (1997) for Japanese entrants to the US, and Thompson (1999) using domestic and foreign expansions by diversifying UK utility companies, all report that having controlled for size, prior market experience encourages expansion by acquisition rather than joint venture. Such a result is supportive of the RBV in that it confirms that outsiders with incomplete resources need to secure specific resources via cooperation with the insider. The experienced entrant is able to purchase the relevant resources by acquiring a suitable company. Of course, this does not preclude joint venturing having other advantages.<sup>3</sup>

#### *Corporate Refocusing (Market Exit)*

The reversal of diversification is refocusing. It is reasonably well established (see Haynes *et al.* 2003; Markides 1995, and references therein) that, in the USA and UK, there was a continuing increase in diversification among larger firms until the early 1980s. Thereafter, there has been a discernible trend towards corporate refocusing, defined here as the disposal of peripheral activities and the renewed concentration upon core businesses. In the past, this has frequently involved the divestment of unrelated activities acquired in the conglomerate merger boom of the 1960s and 1970s (Shleifer and Vishny 1991). This reversal of the trend towards diversification suggests a number of interesting questions for researchers. First, why did so many firms engage in apparently unsuccessful diversification, especially unrelated diversification, in the 1960s and 1970s? Second, what caused this policy to be reversed? And third, why did this reversal occur in the 1980s?

Both the RBV and Agency Theory (AT) provide insights into these questions which are, at least in part, both substitutes and complements. From the perspective of the RBV, there are at least two contending explanations for widespread over-diversification among

large firms. First, a large number of managers, perhaps acting on incorrect suppositions of internal capital market superiority may have simply got it wrong. In the RBV, as in Austrian economics (see below), there appears to be no necessary presumption that managers always make correct decisions. Second, it is possible that previously optimally organized firms found themselves over-diversified because the comparative advantage of the M-form had declined. This has been alternatively attributed to capital market innovations and a reduction in transaction costs (Hoskisson and Turk 1990) and a decline in scarcity rents to the resource of general management (Goold and Luchs 1993). Since these changes coincided with the internationalization and deregulation of capital markets in the 1980s, the reversal of corporate diversification also dates from this time (Haynes *et al.* 2003).

By contrast, the AT hypothesis attributes over-diversification to the diversion of free cash flow into preferred (sometimes negative net present value) investments by managers insulated from capital market discipline by weak corporate governance arrangements (Jensen 1986). The widespread subsequent reversal of this process is again attributed to capital market changes, particularly the rise in hostile and debt-financed takeovers in the 1980s that tended to pressurize managers into a return towards value-maximizing behaviour (Jensen 1986, 1993).

A growing volume of empirical studies of corporate refocusing provides support for both strategy and governance hypotheses in explaining the phenomenon (Johnson 1996). Markides (1992) found that refocusing firms were highly diversified and suffered from poor performance relative to their industry counterparts. He also found that the higher the R&D intensity of the core business, the lower the likelihood that the firm would refocus.<sup>4</sup> Haynes *et al.* (2003), using a panel of large UK firms, include strategic and governance variables in an analysis of divestment activity. They find that divestment, variously measured, increases with size, diversification and market

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share in the firm's core business, while falling with performance. However, they also report a significant positive coefficient for leverage, in line with Jensen's (1993) free cash flow reasoning and, tellingly, a large and highly significant increase in divestment in the year following the publication of a bid rumour. They find some support for strategy–governance interaction effects. For example, firms with 'strong' governance regimes, defined in terms of management equity ownership and the existence of substantial 'blockholders', experience a much larger sensitivity to poor performance. In contrast to Johnson (1996), who finds internal and external antecedents to corporate refocusing in the US, Haynes *et al.* (2003) do not find a significant role for senior management changes.

While the RBV does not unambiguously support the superiority of related diversification over unrelated diversification (see Chatterjee and Wernerfelt 1991), there is a presumption in much of the refocusing literature that divesting peripheral activities to concentrate upon those more closely related to one another should raise performance. This is reinforced by arguments, dating back at least to Penrose (1959), that suggest the costs of management rise with size and complexity and, unless these are offset by comparable benefits, as promised, for example, by the M-form hypothesis, performance may be enhanced by decoupling. These conjectures have been supported by a number of studies of the effects of divestiture on corporate performance. Montgomery and Thomas (1988), John and Ofek (1995) and Hoskisson and Johnson (1992) all reported an improvement in ROA following corporate asset sales. Markides (1995) found a large and statistically significant increase in profitability following reductions in diversification, although his results also suggest that the gains were larger for the earlier cases of refocusing in his sample. Haynes *et al.* (2002), in a dynamic panel study of firm profitability, report statistically significant positive shocks following divestment for up to four years after the event. This study also explores the effect of

'complexity', measured as the interaction of size and the level of diversification, and reports that the benefits of divestment are substantially greater for 'complex' firms. In brief, the refocusing literature tends to reinforce the conclusion from that on corporate diversification, in many respects its opposite, about the importance of relatedness in successful firm growth.

### Practical Insights from the Resource-based View

As academics working in Business and Management Schools, we are increasingly encouraged to make prescriptive statements on the basis of existing management knowledge. The use of case studies in strategy teaching illustrates this dilemma. On the one hand, the suitably selected case can illustrate neatly the successful or unsuccessful past attempt of some managers to achieve a winning fit between resources and strategy. Such teaching aids both reinforce the analysis we are offering and capture the attention of the class by grounding the subject in a relevant business context. On the other hand, the subject also emphasizes the importance of the unknown in the specifics of individual cases. Indeed, as noted above, the inevitable ignorance of the outsider confronted by causal ambiguity is both an important device to sustain competitive advantage and a partial blindfold to any would-be case analyst. The user of cases must resist the misplaced certainty of *ex post* rationalizations. Analyses offering 20:20 hindsight do not merely disguise the complexity of the decision-taking they cover but are also unfalsifiable. Under imperfect information, *ex ante* optimal decisions can have unpleasant outcomes while *ex ante* mistakes can yield fortuitous mistakes. As Donald Rumsfeld opined about the problems facing US military operations in Afghanistan:

Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know

we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know.

Clearly there are resources – known knowns – whose potential to impact on a firm's future growth is appreciated. Similarly, there are factors – known unknowns – whose causal direction is understood but whose impact can only be evaluated *ex post*. Finally, there are the unknown unknowns, the products of unfolding market, technological or other events, whose manifestation cannot be anticipated and incorporated in even the most careful scenario planning. For example, firm managers may know that their firm is outperforming its rivals but are unable to explain why this is the case, i.e. the causal ambiguity problem. An example of known unknowns would be the future value of a firm's resources as markets evolve. We know the value of the resources will change over time but not how. We may not be on our own in not being able to understand the notion of unknown unknowns.

Known knowns are unlikely to enable a firm to outperform its rivals in the medium to long run unless there are market impediments that prevent competition for the underlying resources (this is the genesis of Barney's 1991 paper). Known unknowns, however, are much more interesting from an RBV perspective. The role of managers is to try and make sense of known unknowns and to manage the ambiguity surrounding them. As for unknown unknowns, what can we do about them if we do not ever know about them, even *ex post*?

The approach adopted in this paper is to treat the RBV not as a theory of firm behaviour but, primarily as a theory that offers insights about the decision-making behaviour of managers. Below, we have outlined some of the main practical insights of the RBV, which are presented as an illustrative rather than exhaustive list.

First, managers need to understand what are the strengths and weaknesses of a firm. Wernerfelt's motivation for writing his seminal

paper in 1984 was a disagreement with Porter's work on industry analysis and generic competition, which abstracted away from inter-firm differences (Lockett *et al.* 2008). Wernerfelt's view was that opportunities and threats cannot be exploited solely through the external positioning of businesses. The firm's distinctive internal characteristics are central to any discussion of strategy formulation. Strategy should encapsulate what the firm is distinctively good at, and also seek to address the potential weaknesses of the firm. A rare example of authors who have focused on the problems associated with firm weaknesses are West and DeCastro (2001) or Powell's (2001) consideration of competitive disadvantage.

Second, the resource base of the firm is path dependent, i.e. history matters. Firm resources are developed through competition in markets, and so the markets in which the firm competes today, and the way in which it competes, will be the most important determinants of that firm's resource base tomorrow. In effect, any learning by the firm will be, *ceteris paribus*, closed in to its existing operations.

Third, managers need to be able to understand the functionality of their resources. Resources are defined by their usage. For example, a building may be used for a number of different purposes, but its current usage may blinker managers from fully appreciating the full range of potential functions the building could be used for. This idea links back to Levitt's (1960) marketing concept, in that customers are not interested in the resources of a firm, rather they are interested in how firm resources may satisfy their wants and needs. Two firms may be able to satisfy similar wants and needs of a customer but by using different resources. In the area of information and communication technology, high degrees of technological change have led to a blurring of market boundaries. Companies from computing, telecommunications, software, consumer electronics are now all competing against one another in similar markets but with historically very different backgrounds.

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Fourth, the resource base of the firm is continuously subject to the processes of resource creation and decay. As markets evolve, the underlying value of a firm's resource base changes over time. Changing technology and consumer tastes, allied to the competitive process, will tend to erode the value of many resources over time. In general, the resources that may hold the key for a firm's position of competitive advantage in one period may merely become a necessary resource to earn normal returns. Consequently, firms should continuously seek to manage their resource bases, investing in decaying resources and also seeking to develop new resources.

Fifth, acquiring competitive advantage in a resource market is not possible in the absence of asymmetric information and/or co-specialized resources with which you are going to augment the new resources (Denrell *et al.* 2003). Therefore, it is likely that any position of competitive advantage will have to be internally developed (Barney 1986).

### The Resource-based View Looking Forward

Where is the RBV going, and where should it be going? The RBV, owing to its permeable and eclectic nature, has become something of a broad church (Hoskisson *et al.* 1999). In this paper, we have focused on the core essence of the RBV, but many sub-fields have developed as areas of study, including the study of knowledge (as a specialized firm resource), capabilities (created by bringing together bundles of resources) and dynamic capabilities (the ability to continuously adapt and re-configure a resource and capability base). We cannot predict where future developments will take the RBV. Instead, we conclude by offering a subjective view on where we think scholars *should* focus their efforts in the future. We focus on theory and method as we feel that empirical evidence and practical insights will follow logically in time.

First, rather than focusing on the consequences of firm heterogeneity, more scholarly

attention needs to be devoted to the theoretical issue of the causes of firm heterogeneity. All RBV work begins with the explicit or implicit assumption of firm heterogeneity. Even Dierickx and Cool's (1989) arguments about the causes of competitive advantage focus on how differences between firms may become amplified over time. If the RBV is to develop as a theory, it is important that we understand the origins of firm heterogeneity. In a recent interview Birger Wernerfelt has posed the question as to whether or not it is possible to start with a model of homogeneous firms or homogeneous people, or at least randomly distributed people, and generate significant heterogeneities between firms (Lockett *et al.* 2008). We feel that, by providing insights into the origins of firm heterogeneity, we may be able to understand better how managers can generate and manage their firm's distinctive differences.

Second, more scholarly attention needs to be focused on the neglected theoretical issue of resource functionality. Evidence of this neglect can be identified in the burgeoning literature on dynamic capabilities (see Ambrosini and Bowman 2009). Scholars of dynamic capabilities have focused on the role of resource creation/decay and resource recombination, but have not addressed the issue of resource functionality. Any discussion that products and resources are two sides of the same coin, and that resource usage may determine how we perceive the functionality of a resource is largely absent from the RBV literature. We feel that this is a fundamental weakness of the RBV literature to date. It is important, therefore, that more scholarly effort is invested in trying to understand resource functionality and how this relates to the potential product/service market space a firm may compete in. There are obvious links that may be made here to cognitive psychology and decision framing.

Third, as the RBV is a theory about what firms are, and does not require a host of limiting assumptions, it can be deployed with other theories to explain strategic behaviour.



This is a huge advantage of the RBV, as complex relationships can seldom be understood through a single theoretical lens (Gray and Wood 1991). To date the RBV has been linked to theories of the firm, such as AT and transaction cost economics. For example, RBV provides insights into the issue of value creation within firms, whereas TCE provides insights into economic organization (Madhok 2002). We urge scholars to embrace the permeable, eclectic and permissive nature of the RBV to generate new insights into firm behaviour.

Finally, scholars need to reflect on their methodological approaches to empirical research on the RBV. We have suggested that it is those resources that are complex, unobservable and difficult to measure that are likely to be of greatest importance. Furthermore, the paper has noted that problems of multicollinearity and endogeneity plague hypothesis testing in the area, particularly with firm-level data. Addressing these problems will not be easy. It may be that more effort needs to be devoted to the collection of data at the business unit level or with samples of smaller firms where the resource set is less complex. Also, management researchers may need to become more diligent in their search for suitable instruments to overcome the endogeneity problem in commonly employed variables (Lockett *et al.* 2008). These improvements in quantitative investigation will hopefully be accompanied by insightful case-study work.

## Notes

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- 2 Lockett and Thompson (2001) argue that there is a considerable body of empirical evidence in the field of economics that empirically tests hypotheses congruent to the RBV; i.e. the RBV is present but unrecognized.
- 3 It can avoid some of the management/digestion problems associated with the acquisition of diversified firms (see Kay 1997). An expanding firm entering a joint venture can target the resources it requires without having to acquire and subsequently dispose of (see Ravenscraft and Scherer 1987) the unwanted remainder. Similarly, the lower level of sunk commitment associated with joint venturing may reduce risk by comparison with a full acquisition (see Balakrishna and Korza 1993).
- 4 A result that suggests that diversification is beneficial in capturing the spillover effects of R&D.

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