

**EDITH PENROSE'S UNDER-EXPLORED INSIGHTS IN
STRATEGIC MANAGEMENT AND INTERNATIONAL BUSINESS RESEARCH**

Yasemin Kor

Beckwith Chair of Management Studies
Judge Business School
University of Cambridge
Trumpington Street, Cambridge, CB2 1AG, UK
y.kor@jbs.cam.ac.uk

Joseph T. Mahoney*

Caterpillar Chair of Business
Professor of Strategy, Entrepreneurship, and International Business
Gies College of Business
University of Illinois at Urbana-Champaign
140C Wohlers Hall, 1206 South Sixth Street, Champaign, IL 61820
217-244-8257
josephm@illinois.edu

Danchi Tan

Professor of International Business
Department of International Business
National Chengchi University
64, Chih-nan Rd., Sec. 2, Wenshan, Taipei 11623, Taiwan
dctan@nccu.edu.tw

Keywords: Penrose's resource-based approach; the theory of the growth of the firm;
strategic coherence; engaged scholarship

* = Corresponding author. We thank the anonymous reviewer and the co-editors of this special issue of the *Strategic Management Review*, Peter Buckley and Jose de la Torre, for their comments and counsel. The usual disclaimer applies.

EDITH PENROSE'S UNDER-EXPLORED INSIGHTS IN STRATEGIC MANAGEMENT AND INTERNATIONAL BUSINESS RESEARCH

Abstract

This study focuses on Penrose's resource-based approach and under-explored insights that are of high relevance in moving strategic management and international business research forward. Specifically, we review studies that discuss the relevance and links of Penrose's resource-based approach to other theoretical perspectives, as well as studies that focus on the determinants and consequences of firm-level growth. Based on this review, we then suggest future directions, which elaborate on some of the Penrose-inspired under-researched topics that merit further research attention.

EDITH PENROSE'S UNDER-EXPLORED INSIGHTS IN STRATEGIC MANAGEMENT AND INTERNATIONAL BUSINESS RESEARCH

Penrose's seminal work, *The Theory of the Growth of the Firm* (1959) serves as a foundation of some mainstream theoretical perspectives in the fields of strategic management and international business. Such perspectives include the resource-based view of the firm (Mahoney & Pandian, 1992; Wernerfelt, 1984), the dynamic capabilities approach (Teece, 1982; Teece, Pisano, & Shuen, 1997), and internationalization process theory (Johanson & Vahlne, 1977; Vahlne & Johanson, 2017). The book is celebrating its 60th anniversary in 2019, and its strong influence and relevance continue concerning both academic research and business practice.¹

A number of articles show the relevance of Penrose's ideas to particular theoretical perspectives or research areas. For example, Kor and Mahoney (2000, 2004), Lockett and Thompson (2004), Nason and Wiklund (2018), and Rugman and Verbeke (2002) examined the influence and contributions of Penrose's resource-based approach in strategic management and international business research. Pitelis (2007a) discussed similarities and differences between Penrose (1959) and the behavioral theory of the firm (Cyert & March, 1963). Augier and Teece (2007) elaborated on the relevance of Penrose's seminal contributions to the dynamic capabilities approach. Dunning (2003) discussed some of Penrose's ideas that can be related to the eclectic paradigm. Pitelis (2004) and Pitelis and Verbeke (2007) considered strategic implications of Penrose's theory for explaining expansion patterns of multinational enterprises (MNE). Buckley and Casson (2007) provided a mathematical model of Penrose's theory of the growth of the firm that accounts for product diversification vis-à-vis international diversification, and the speed of international entry. Finally, more recently, Kor, Mahoney, Siemsen, and Tan (2016) explored the implications of Penrose's work for operation management research, and Almeida and Pessali (2017) examined the relevance of Penrose's ideas concerning institutional entrepreneurship.

¹ A *Google Scholar* search of December 21, 2019 shows over 34,000 citations for Penrose (1959).

In the current study, we take stock of insights and connections generated by these works, but we do not plan to repeat them. Instead, we focus on Penrose's under-explored insights that are of high relevance in moving strategic management and international business research forward. In evaluating the impact of Penrose's work and identifying key insights that are under-explored, we provide a brief review of 35 journal articles that extend and/or apply Penrose's ideas. This review provides a basis for discussion of future research directions where we elaborate on some of Penrose's ideas that are not fully captured, appreciated, or examined within current strategic management and international business research.

Accordingly, we begin our study with a brief summary of key ideas from Penrose (1959), which provides a theoretical foundation. Next, we present our review of research that has extended and/or applied Penrose's ideas. Specifically, we review (1) studies that discuss the relevance and links of Penrose's theory to other theoretical perspectives, and (2) studies that focus on the determinants and consequences of firm-level growth. Based on this review, we then provide a section on future directions, which elaborates some Penrose-inspired under-researched topics that merit further research attention.

A Brief Summary of Penrose's Theory of the Growth of the Firm

Penrose (1959: 24) conceptualizes a firm as an administrative unit as well as a collection of productive resources the disposal of which between different uses and over time is determined by managerial decision. Penrose (1959: 25) distinguishes between *resources* and the *services* that the resources render, in that resources can yield a bundle of potential services, which are a function of the way in which managers use them. Penrose (1959) maintains that it is the services, rather than the resources, that are the inputs in the production process. Managers enact the services of the firm's productive resources in a unique way through deploying and combining various productive resources (Kor & Mahoney, 2000; Mahoney, 1995, 2005). The variety of potential managerial enactments due to their heterogeneous expectations and experiences explain why firms possessing even identical

(physical) resources might take different paths in their quest for profitable growth, and with different consequences.

In Penrose's theory of the growth of the firm, managers make investment and financial decisions based on a desire to increase total long-run profits (1959: 29-30), and growth and profits are (under certain conditions) "equivalent as the criteria for selection of investment programmes" (1959: 30). Profitable investment opportunities are not restricted to particular products or locations, and thus, a firm's diversification can be a general policy for growth. In terms of identifying profitable investment opportunities, Penrose maintains that a firm's productive opportunity is subjective and "comprises all of the productive possibilities that its 'entrepreneurs' see can take advantage of" (1995: 31). Penrose thus considers entrepreneurial capabilities as a "necessary (though not sufficient) condition" for growth (1959: 8).

Penrose (1959) focuses on explaining the process of firm growth in which the determinants of firm growth are primarily internal. A firm is a collection of productive resources, which are typically under-utilized given that they are often indivisible and fungible. There is also new knowledge continually created because of learning-by-doing within the firm. These under-utilized productive resources motivate managers to seek growth opportunities to utilize them more fully. Although internally generated excess resources provide an economic incentive for growth, it is managers orchestrating the internal growth process. Furthermore, managerial experiences and capabilities affect the productive services that the under-utilized resources are capable of rendering. Firm-specific learning of managers, which results in an increase in managers' knowledge and understanding about the firms and their resources, can increase the range or amount of services available from those resources, and therefore is an important driver for the growth of the firm.

However, in Penrose's theory, "management (is) both the accelerator and brake for the growth process" (Starbuck, 1965: 490). Specifically, firm-specific knowledge constitutes the binding constraint on the rate of the growth of the firm. Given that a firm is essentially an administrative organization, it relies on managers to direct and coordinate productive resources (Barnard, 1938;

Simon 1947). The process of decision-making and coordination requires managers with firm-specific knowledge because it is too complex to be codified as a management “blueprint” that newly hired managers could implement (Nelson & Winter, 1982). Managers with firm-specific knowledge also influence the development of newly recruited personnel by providing them with their experiential knowledge of the ways things work within the firm, and by providing plans that the newly hired personnel learn on the job. Because it takes time for managers to accumulate firm-specific knowledge, firms face an inelastic supply of such managerial services in the short run. As a result, rapid growth of a firm in one time-period is likely to be followed by a time-period of stagnant growth --- the so-called Penrose effect.² This phenomenon occurs because the firm incurs substantial adjustment costs in adapting its managerial inputs to the desired level in a timely manner to ensure proper coordination and control from within the firm.

Penrose does not consider external conditions as serious barriers to the growth of the firm, and considers firm-level diversification as an efficacious pathway to address current stagnated market conditions (1959: 43). Yet, Penrose acknowledges that it is difficult for a firm to diversify into entirely new basic areas of specialization and thus suggests that the firm expands into related product areas, where its existing productive activities are typically more valuable (1959: 130). For Penrose, long-run profitable growth depends on a firm’s capability to “establish one or more wide and relatively impregnable ‘bases’ from which it can adapt and extend its operations” in changing environments (1959: 137).

² Hay and Morris (1991: 347-351) explain the significance of Penrose’s (1959) seminal contribution of the “Penrose effect” within the industrial organization economics literature. A key insight is that the services of resources that a firm can generate are unique due to its history in use of resources and the experience of past and present operations of the firm’s managers. At some point, an increase in the number of new managers within a compressed time-period will reduce the firm’s economic profitability because the training of new managers and their integration into the existing firm will become sufficiently large that current operation effectiveness will decline. To connect to modern resource-based language there are imperfect (strategic) factor markets (Barney, 1986) or thin labor markets (Dierickx & Cool, 1989). Thus, the Penrose effect occurs due to labor market imperfections in which there is a limited market for managers possessing the requisite knowledge needed by the focal firm. The Penrose effect not only was a major contributor to industrial organization economics, but also connects to the heart of resource-based theory concerning a firm’s uniqueness (Barney, 1991; Rumelt, 1984), as well as transaction cost economics concerning firm-level human capital specificity (Mahoney & Kor, 2015; Williamson, 1985).

A Review of Strategic Management and International Business Research that Draws on Penrose's Theory

In evaluating the impact of Penrose's work and identifying key insights that are under-explored, we draw on articles and journal issues that have applied and/or extended Penrose's ideas. We focus on conceptual and empirical articles published in major management journals including: *Academy of Management Journal*, *Academy of Management Review*, *Administrative Science Quarterly*, *Journal of Business Venturing*, *Journal of International Business Studies*, *Journal of Management*, *Journal of Management Studies*, *Journal of World Business*, *Management International Review*, *Organization Science*, and *Strategic Management Journal* from year 2004 to 2019 (a 15-year period), and searched titles and abstracts of these targeted journals for the keywords: Penrose and Penrosean. This search yields 35 articles. Most of the 35 articles can be placed into two broad categories: (1) studies that discuss the relevance of Penrose's theory to other theoretical perspectives, and (2) studies that focus on determinants and consequences of firm growth.³

Studies that discuss the relevance of Penrose's theory to other theoretical perspectives

Penrose's conceptualization of a firm as a collection of productive resources provides a theoretical foundation for the resource-based view. Several studies further discuss the relevance of Penrose's work to the resource-based view. Lockett and Thompson (2004) maintain that Penrose's analysis of path-dependent firm evolution is consistent with key propositions of the resource-based view. Despite the close connection between Penrose's work and the resource-based view, a few scholars point out the differing aspects of the two theoretical perspectives. Rugman and Verbeke (2002, 2004) suggest that Penrose is interested in describing the process of firm growth and the focus of her analysis is the optimal growth rate, rather than the pursuit of economic rents, which is the focus of the resource-based view. Kor and Mahoney (2004) take issue with their view and submit that Penrose's (1959) resource-based approach is relevant to both creating and

³ We note that our review is very conservative in collecting relevant works based only on titles and abstracts. Indeed, there are over 7,000 citations of Penrose (1959) since 2015. Thus, we maintain this conservative approach as a pragmatic necessity for a journal-length article.

sustaining competitive advantage. Kor and Mahoney (2004) document that Penrose (1959: 85) proposed that unused resources not only shape the rate and direction of growth, but they also serve as a source of competitive advantage. Specifically, Penrose (1959) elaborated on the catalyst role of managers in converting resources into new product applications, and emphasized the maintenance of innovation through continued investments and strategic experimentation as part of the firm's diversification. Moreover, Penrose (1959) elaborated on key notions of path-dependent resource development, entrepreneurial vision, and firm- and team-specific experiences of managers, and the firm's idiosyncratic capacity to learn and diversify, which contributes to current understanding of *firm-specific isolating mechanisms* and sustaining of competitive advantage.

Nason and Wiklund (2018) explore the divergence between Penrose (1959) and Barney's (1991) resource-based approach in terms of the characteristics of resources in their theories. Penrose (1959) focuses on fungible or versatile (services of) resources that enable firms to grow in related product areas, while Barney's (1991) resource-based view focuses on valuable, rare, inimitable, and non-substitutable (VRIN) resources that enable firms to gain and sustain competitive advantage, and therefore positive economic rents. Nason and Wiklund (2018) find that Penrosean resources have stronger impacts on firm growth, and thus suggest that future resource-oriented growth studies directly build on Penrose's work. Hansen, Perry, and Reese (2004) show how Penrose's (1959) original ideas complement Barney's (1991) resource-based explanation of competitive advantage. Their study suggests that researchers that examine competitive advantages of a firm should shift focus from resources to administrative decisions, because managers, and their administrative decisions, determine how resources within a firm are used, and it is managers' conversion of resources into productive services that explains firm heterogeneity. Relatedly, Kor, Mahoney, and Michael (2007) build on Penrose to develop *a subjectivist resource-based approach* to entrepreneurship research. Their study elaborates how entrepreneurs' perceptions and personal (experience-based) knowledge shape a firm's *subjective productive opportunity set*, which Penrose defines as the key driver of the firm's growth. Here the intimate knowledge of the firm's resources serves

as a cognitive driver of future opportunity and strategy via ‘resource learning’ (Mahoney, 1995; Spender, 1996).

Researchers also point out the relevance of Penrose’s work to other theoretical perspectives. Augier and Teece (2007) identify Penrosean thinking as an inspiration to dynamic capabilities and comment that Penrose’s framework is consistent with elements of the dynamic capabilities approach. Pitelis (2007a) notes that Penrose’s theory of the growth of the firm, and Cyert and March’s (1963) behavioral theory of the firm, share similarities in that both see the external environment as subjective and regard slack or excess resources as key determinants of organizational growth and economic performance. However, these theories differ particularly in their assumption of the existence of *intra-firm conflict*. Pitelis (2007a) provides an integrative framework in which the process of intrafirm knowledge generation enhances problem-solving managerial capabilities, which can leverage excess resources to mitigate intrafirm conflict and achieve greater firm growth.

Penrose (1959) did not apply her theory of the growth of the firm to explain the process and the growth of MNEs, *per se*. However, several studies show the relevance of Penrose’s writings to international business activities and theories. Dunning (2003) observes that while Penrose (1959) does not acknowledge the possibility that a firm can gain advantage via foreign direct investment, she does mention a number of potential or conditional ownership advantages accrued to large (multinational) firms. Pitelis (2007b) discusses Penrosean insights relevant to Dunning’s ownership, location, internalization (OLI) paradigm and shows that Penrosean insights help to provide a more endogenous, dynamic, and forward-looking theory of the multinational enterprise (MNE). Steen and Liesch (2007) suggest that core insights from Penrose may advance the Uppsala internationalization model in that international expansion is a process of learning not only about local markets but also about the firm’s own internal resources. Pitelis and Verbeke (2007) show that Penrosean thinking can contribute to explaining MNE expansion patterns, and provide three directions of extension of Penrosean insights on the MNE, including technology-based firm-specific advantages,

dynamic capabilities, and melding location-bound and internationally transferable knowledge through international human resource management. Buckley and Casson (2007) follow Penrosean logic and present a model that describes MNE growth that accounts for both geographical diversification into new markets and product innovation. Their study shows that in addition to Penrosean thinking, superior technological knowledge is crucial to penetrate foreign markets.

Studies that focus on the determinants and consequences of growth of the firm.

Articles we reviewed in this section draw on Penrose's work and discuss the types of resources that facilitate growth and product diversification, how growth opportunities are identified, and the impact of managerial constraints on growth.

Types of resources that promote growth. Penrose's theory suggests that under-utilized (excess) resources provide economic incentives for growth. Several research studies extend this idea by further examining the specific impacts of various types of resources. For example, Bradley, Wiklund, and Shepherd (2011) find that financial slack has a positive effect on the sales growth of Swedish firms, but their study also finds that financial slack stifles entrepreneurship in these firms, because managers with access to financial slack tend to become more complacent and risk averse. Thus, under-utilized financial resources can have both (positive) direct and (negative) indirect effects on the growth of the firm. Goerzen and Beamish (2007) examine under-utilized expatriates in multinational enterprises. Their study finds that the presence of under-utilized expatriates is not a sufficient condition for MNE growth, and that the presence of slack in the form of expatriates improves subsidiary performance only when the firm has greater host country experience. Thus, slack resources matter in combination with complementary resources (Teece, 1986).

Researchers further explore the characteristics of resources that are most relevant for firm growth. Nason and Wiklund (2018) use the methodology of meta-analysis and find that versatile resources, which are resources with internal and/or external fungibility, have stronger positive impacts on firm growth than non-versatile resources. Their study explains that versatile resources

provide means for firms to exploit market opportunities once such opportunities are identified (or created) and that these resources provide flexibility for firms to adapt to changing environmental conditions.

Directions of growth – product diversification. Penrose (1959) maintains that under-utilized resources provide not only incentives for growth but also influence the *direction* of growth. Levinthal and Wu (2010) suggest that although scale-free resources provide the basis for firm growth in diversified product areas, some resources are non-scale free in that their values reduce when utilized in multiple firm activities. Such resources must be carefully allocated among alternative uses. Therefore, profit-maximizing diversification decisions should be based on the opportunity cost of the resource utilization in different areas. Ng (2007) draws on Penrose's (1959) resources approach and the incomplete market approach to explain why firms choose an unrelated diversification strategy. According to Penrose (1959), resources are often combined in discrete ways. Thus, a firm's process of utilizing resources will yield further indivisible (lumpy) resources. Incomplete markets provide arbitrage opportunities for firms to discover new combinations of resources, which enable the firms to make economically profitable unrelated diversification moves.

How growth opportunities are subjectively identified. Penrose (1959) suggests that a firm's productive opportunity set is subjective and is influenced by entrepreneurial vision, ambition, and imagination (Boulding, 1956; Kor *et al* 2007). Gruber, MacMillan, and Thompson (2012) draw on Penrose (1959) and entrepreneurial research to examine how founders' pre-entry experience shapes a new venture's subjective market opportunity set. Based on a sample of venture-capital-back ventures found in Germany, their study finds that prior entrepreneurial and managerial experience of founding teams are positively related to the number of market opportunities that their firms identify. However, the founding team's marketing and technological experience has a negative relationship with the number of market opportunities it identifies. This empirical finding is because initial problem formulation by marketing and technology experts may limit these experts' imagination and therefore their search for market opportunities. Overall, these research studies

suggest that a firm's subjective opportunity set can be both enlarged and limited by its firm-level and managerial-level learning and experience.

Furthermore, a firm's knowledge/resource base also influences its productive opportunity set. Based on a sample of small- and medium-sized Swedish firms, Naldi and Davidsson (2014) show that a firm's acquisition of knowledge from international markets enhances its discovery and exploitation of new business opportunities in both domestic and international markets and thus increases its sales in the new markets. In addition, Lockett, Wiklund, Davidsson, and Girma (2011) find that the rate of organic growth in previous time-periods reduces the rate of subsequent organic growth, but that the rate of acquisitive growth in the previous time-period increases the rate of organic growth in the subsequent time-period. This outcome occurs because acquisitions bring in non-path dependent knowledge that can expand a firm's productive opportunity set.

Finally, Zander and Zander (2005) draw on Penrose's idea of "inside track" (1959: 117) and show that a firm's relationships with its established customers are instrumental in generating ideas to enter new product areas. Therefore, inside access to information about emerging needs and wants of established customers can also shape the firm's productive opportunity set and yield long-term profitable growth opportunities.

Limits to the rate of growth – managerial constraints. A key theme of Penrose's (1959) resources approach is that the binding constraint on the rate of growth of a firm is the managerial constraint. Verbeke and Yuan (2007) propose conditions under which a firm requires a greater amount of managerial services and thus is more likely to encounter a managerial constraint. These conditions include a large scope and more complex entrepreneurial activities, dissimilarity between existing and new activities, and dissimilarity between existing and new market conditions. An implication concerning the managerial constraint is that a firm that grows faster than its management can effectively manage will stagnate in the sequential time-periods.

Several studies examine this implication in various empirical settings. Zhou (2011) draws on Penrose's (1959) resources approach and examines a firm's likelihood of product diversification.

This empirical study finds that a firm is less likely to diversify into a new business when its existing business lines are more complex. This outcome occurs because a firm incurs coordination costs when attempting to realize synergies in related diversification. When a firm's existing business lines are already complex, the coordination costs increase faster than synergies and thus constrain related diversification. Gjerløv-Juel and Guenther (2019) find that employment growth in the first five years has an inverted U-Shaped relationship with survival of Danish new ventures after six or more years from inception. This empirical finding is because early employment growth reduces the liability of smallness for new ventures, but growing too fast will result in serious managerial constraints that threaten the ventures' survival. Scalera, Perri, and Hannigan (2018) examine how managerial constraints occur in the context of managerial search for knowledge. Their study finds that when domestic knowledge search is too broad, it can limit a firm's technological scope of innovation. In contrast, foreign knowledge search is less vulnerable to a managerial constraint. This outcome is because foreign knowledge search is "more rational and designed ex ante" (Scalera, *et al.* 2018: 995) and thus less affected by limited managerial capacities. Johnston and Paladino (2007) consider the organizational challenges in international management and their empirical study finds that a subsidiary's use of knowledge management systems increases when the level of technology of the MNE is higher.

Relatedly, recent empirical research finds support for the existence of the Penrose effect in international expansion. Mohr, Batsakis, and Stone (2018) find that rapid international expansion leads to lower ROA and subsequent divestments of international operations for large retail multinational firms. Hutzschereuter, Voll, and Verbeke (2011) examine growth of foreign subsidiaries of 91 German multinational firms and find that added cultural distance in one time-period decreases the rate of international expansion in the next time-period, suggesting that firms encounter greater managerial constraints when expanding into culturally distant and diverse foreign markets.

Relief of firms' managerial constraints. In our review, several research studies focus on the conditions that may reduce firms' managerial constraints. Vidal and Mitchell (2015) show that

divestitures can be a means for well-performing firms to relieve resource constraints. Their study finds that in comparison to firms with poor performance that use divestiture to increase their profitability, well-performing firms use partial divestiture to free up financial and managerial resources to support the pursuit of new business opportunities. Vidal and Mitchell (2015) refer to such use of divestiture to mitigate resource constraints as a “complementary Penrose effect.” Vidal and Mitchell (2018) further find that well-performing firms that use divestiture reinvest the freed resources to their internal operations and achieve greater sales growth. Therefore, acquisitions could be a means to relieve managerial constraints. Tan (2009) shows that when coordination between the corporate parent and the subsidiary is simple or less required, acquisitive entry allows faster post-entry employment growth because it enables foreign entrants to economize the time to build up firm-specific managerial resources at the subsidiary level, thereby enabling faster growth.

A number of research studies have focused on conditions that improve the effectiveness of managerial teams. Bird and Zellweger (2018) show that the composition of managerial teams, through influencing the level of trust and cooperative relationships among team members, has implications for firm growth. Their study finds that firms run by spousal teams achieve greater employment growth than firms run by sibling teams. This result is because spousal teams typically exhibit greater attributes related to trust, loyalty, and obligations of support. Ross (2014) focuses on Penrose’s (1959) distinction between managerial and entrepreneurial services and draws on agency theory to examine division of managerial labor in a firm. This study shows that when supervisors have asymmetric information about their managers, a generalist who provides both entrepreneurial and managerial services, has a greater opening to behave opportunistically. Thus, it is less costly to employ two specialists to provide each service simultaneously. Tan and Mahoney (2007) show that organizational design that helps develop new managerial resources, reduces a firm’s managerial constraint and facilitates its growth. Their study finds that Japanese firms that send more expatriates to local operations and have established routines at home, more readily develop new personnel in their foreign subsidiaries, and thus are less vulnerable to the Penrose effect.

FUTURE RESEARCH DIRECTIONS

As our review indicates, researchers have extended Penrose's (1959) contributions in a multitude of directions, but a number of areas have received limited attention. We highlight a few of these as potential avenues of future research. Specifically, we focus on the topics of strategic coherence and the erosion of firm-specific assets, which are also central to both corporate and competitive strategies of the firm.

Strategic Coherence

Strategic coherence is shaped by principles that guide a firm's growth decisions, including decisions about directions of growth and the overall scope or horizontal boundaries of the firm. Strategic coherence is closely linked with the *relatedness* of business activities of a multi-product firm (Teece, Rumelt, Dosi, & Winter, 1994), which involves the use of common or similar set of resources and capabilities across businesses. To the degree that a firm can build on its existing competencies when diversifying into new product markets, it can achieve efficient and synergistic use of resources (e.g., economies of scope). Further, relatedness in the bundle of resources and capabilities increases the likelihood of succeeding and thriving in these new markets. Firms must demonstrate competence in what they do in any given market, and such competence is often enabled by a path-dependent configuration of resources and capabilities that are put together to achieve a purpose. Because competencies are complex systems with interdependent sub-components and relationships, it takes time to develop and calibrate them (Dierickx & Cool, 1989). Thus, without relatedness, firms will be at a disadvantage in a new market.

Corporate diversification research measures relatedness in a variety of ways. Most commonly, industry classification (SIC-code) based measures focused on the input and production process similarities among industries. Alternative approaches involved capturing relatedness based on similarities in employee skill and expertise (occupational categories) (Farjoun, 1994) and inter-industry technology flows (Robins & Wiersema, 1995). Teece *et al.* (1994) maintained that surviving (enduring) patterns of diversification could also be an indication of relatedness. They focused on

capturing *local* coherence, i.e., relatedness in businesses pairs that are the ‘closest neighbors,’ rather than the overall or aggregate relatedness in the corporate business portfolio. They found that despite increased diversification activity, companies maintain a high level of local coherence.

In the current paper, we are concerned about both *local* and *overall* strategic coherence in a firm. While local coherence itself may justify the decision to diversify, the relatedness of the overall corporate business portfolio has important implications for the effective functioning of a firm’s headquarters.⁴ Local coherence, which can be satisfied by relatedness between *any* two businesses of the company, may yield sufficient resource synergies at the local level; however, increased diversity of the corporate business portfolio still adds to the complexity of managing and governing the firm in its entirety. Diversification into dissimilar markets requires injection of new resources (including managerial resources) and developing new competencies. At the headquarters-level, diversification requires deployment of managerial resources to make resource (capital and other) allocation, evaluation, and control decisions. The effectiveness and efficiency of these decisions hinge on the possession of specialized business knowledge, which tends to reside more deeply at the SBU level. When relatedness of a firm’s overall business portfolio declines, corporate managers suffer from knowledge disadvantage. Their lack of specialized and tacit knowledge of the individual businesses and markets can result in sub-optimal decisions in capital allocation across SBUs, inefficient market entry and exit decisions, and expansion and contraction choices, all of which collectively drive the future viability and renewal of the firm (Lindlbauer & Kor, 2020).

Penrose (1959) observes that when firms venture beyond their knowledge of expert domains, substantial managerial and employee learning needs to take place. Individuals can learn

⁴ Chandler describes the two key functions of the multi-business firm headquarters in the following way: “One was entrepreneurial or value-creating, that is, to determine strategies for maintaining and utilizing in the long term the firm’s organizational skills, facilities, and capital and to allocate resources—capital and product-specific technical and managerial skills—to pursue these strategies. The second was more administrative or loss preventative. It was to monitor the performance of the operating divisions; to check on the use of the resources allocated; and, when necessary, to redefine the product lines of the divisions as to continue to use the firm’s organizational capabilities effectively” (1991: 327-328).

and develop new skills, but there is path-dependency in knowledge and skill acquisition. Big steps in knowledge acquisition can be difficult to achieve. Relatedly, if strategies and competitive models employed in new markets *contradict* with prior managerial knowledge and expertise, managerial use of old models and assumptions may prevail (e.g., Finkelstein, Hambrick, & Cannella, 2009). Overseeing and governing operations with different strategies and dominant logics can undermine the capabilities of these headquarters' units, especially when these strategies and logics involve conflicting business assumptions (Kor & Mesko, 2013).

To gain relief from the challenges of growing into less familiar markets, firms may opt for acquisition or new venture modes. Acquisitions provide only a partial relief, as they require some level of integration with the firm to capture economies of scale and scope, and integration often creates dynamic adjustment costs.⁵ Even when autonomy is granted to the acquired firms (or internally developed ventures), the headquarters unit retains its functions of financial evaluation and capital allocation, which require an intimate understanding of the businesses and future prospects. The headquarters' understanding must go beyond simple interpretation of performance results and metrics reported by units and reflect firm-specific intuition and knowledge.

Therefore, our definition of strategic coherence takes into account both local and overall relatedness of a firm's overall business portfolio (product diversification). However, we also consider relatedness of the firm's international operations, i.e., similarities between home country conditions and host country attributes such as culture, legal and other institutions, as well as the competitive environment. Both product and geographical diversification add to the complexity of the firm's operations and can compound the knowledge disadvantage problem at the firm's headquarters. If there are significant differences and inconsistencies among strategies of business

⁵ While Lucas (1967) is acknowledged as a pioneering neoclassical equilibrium model incorporating a firm's adjustment costs when changing the quantity of its production output in response to changes in demand and/or input prices, Penrose provides a seminal work introducing the concept of adjustment costs in a *disequilibrium* framework (1959: 5). Following Penrose (1959), the strategic management literature moves beyond the neoclassical firm in seeking to understand managerial adjustment processes in disequilibrium (e.g., Argyres, Bigelow, & Nickerson, 2015; Argyres, Mahoney, & Nickerson, 2019; Menon & Yao, 2017; Sakhartov & Folta, 2014).

units and of international subsidiaries, strategic coherence can come under threat along with the diminished ability of the upper management to assess and strategically guide these units.

In the past few decades, we have witnessed a high level of international growth activity among firms as new markets became more accessible and attractive. Similar to product diversification, some of the international growth decisions were made with a resource-based logic (i.e., leveraging existing competencies) and others were driven by the growth opportunities. Opportunity-driven growth was in some cases motivated by efforts to be responsive to the demands of customers, as firms followed their clients who themselves diversified into new locations. In some cases, growth was inspired by empire-building aspirations of managers and/or owners. Penrose noted that the “empire-builder tends to sacrifice co-ordination and consolidation to the pace of expansion” (1959: 189). We concur with this view and add that even non-empire-builders may compromise their strategic coherence while responding to customer and competitive pressures.

Increased product and geographical scope of the firms gave rise to the multidivisional form, which decentralized some strategy formulation through delegation to division managers; however, this form still maintained centralized resource allocation at the headquarters (Chandler, 1962; Williamson, 1975). Lazonick (2002) explains that the multidivisional form solved one problem while creating a *segmentation problem*. Even though the headquarters has the strategic control function, it may lack depth and tacitness of knowledge possessed by the subsidiaries or divisions. Hence, by definition, it is challenging for the head office to effectively evaluate and govern the divisions and subsidiaries. Lazonick notes that “[C]entralized control thus tended to create a segmentation of strategic decision-making from the learning organization, which then made it difficult for those who exercised strategic control to make, or approve, decisions to allocate resources to innovative investments that could enable the company to generate higher quality, lower cost products” (2002: 261). Clearly, this strategic issue is more prevalent in firms with unrelated (product and geographical) diversification, but even related diversifiers are not totally immune (Lazonick, 2002).

In terms of future research, these topics provide new opportunities. Past research has corroborated the presence of the Penrose effect in both domestic and international expansion (i.e., fast growth in one time-period being followed by slower rate of growth in the subsequent time-period) (Hashai, 2011; Johanson & Kalinic, 2016; Mohr & Batsakis, 2017; Tan & Mahoney, 2005). However, we have limited empirical knowledge of organizational and performance consequences of alternative growth trajectories that follow less versus more coherent patterns. Such research must consider interdependencies among multiple (sequential and simultaneous) expansion moves (Zhou & Guillén, 2015), which involves understanding a firm's trajectory of growth initiatives or decisions over time. Thus, we have much to gain by going beyond the typical discrete approach and focusing on one strategic move (Langley, Smallman, & Tsoukas, 2013) to consider interlinkages among a firm's system of growth and competitive activities (Carow, Heron, & Saxton, 2004).

For empirical research, our approach to understanding strategic coherence involves three different research inquiries. First, one can inquire about "local relatedness" of a new growth decision by examining whether a new market has close links (i.e., resource and capability overlap) with any of the existing operations of the firm (Teece *et al.* 1994) and whether the company can effectively capitalize on such synergies. The motivation behind this inquiry is to understand the justification of this growth decision from a relatedness point of view where the firm is in part building on existing competencies (i.e., following a path-dependent approach to developing competencies and market positions). This inquiry would also benefit from measuring the degree of *novelty* in the newly entered market in terms of new (and dissimilar) competencies the firm must acquire. Here a comparative ratio of relatedness to novelty may give a better sense of the required level of resource infusion and organizational learning. A growth initiative highly skewed towards novelty (i.e., not enough path-dependency) pushes the boundaries of strategic coherence locally.

Second, it is important to examine the impact of growth decisions on the firm's *overall* strategic coherence, which applies to both product and geographical (international) diversification. Overall relatedness of the business portfolio and global scope of operations matter both to the

effectiveness of the headquarters and the long-term viability of all business units, which are affected by the quality of decisions made by the head-office. Even though past research examined relatedness in product scope and the degree of internationalization separately (or using one as a control variable), we advocate taking these into account jointly as they both add to the strategic complexity of the firm. Product and international diversification are likely to jointly influence the boundaries of strategic coherence, but we do not fully understand whether these effects are additive and/or multiplicative (interactive), or linear versus non-linear. Kumar (2009) finds that fungible intangible assets and economies of scope can create opportunities for firms to pursue both product and international diversification; however, these opportunities also compete with one another for firm-level resources. Replicating and exploiting existing competencies in new markets involve challenges and complexities (Vermuelen & Barkema, 2002), and a simultaneous expansion on both fronts can be quite taxing for the firm. While some of these effects are transitory and adjustment costs may diminish over time, the firm may also end up failing to achieve or sustain a strong position in the new market because the expansion moves greatly undermined strategic coherence locally and/or in aggregate. Thus, we advocate for future research to consider additive and interactive effects of both types of diversification. Such interactive effects may, for instance, vary based on the type of product diversification (Hitt, Hoskisson, & Kim, 1997). In general, we observe that very few studies examined these relationships jointly and their measurement of international diversification often failed to capture the overall *diversity* of the host countries in terms of economic, political, and structural distances to the home market (and the ‘learned’ markets where the firm is well established). We also encourage research to examine the *interdependencies* between these alternative diversification moves, such as how a particular (product) diversification decision may affect both the likelihood of engaging in and returns to the alternative (international) diversification decision (with attention to the diversity of global operations).

A third level of inquiry involves understanding the *broad patterns of growth and diversification* of the firm over time. Such an inquiry involves examining a firm’s trajectory expansionary and

contractionary moves to understand links between how firms create and capture synergies from multiple initiatives (sequentially and/or simultaneously), and likewise, how these moves give rise to inefficiencies and incompatibilities across multiple locations or business units. Clearly, this type of inquiry is a more complex one, where rich case studies such as Penrose's (1960) close examination of the growth and diversification of Hercules Powder Company may be appropriate (see also Johanson and Kalinic, 2016 for a recent example). It may also involve designing a study of an industry-based sample of companies and their comparative growth trajectories over time. For example, Pettus, Kor, Mahoney, and Michael (2018) examined the growth trajectories of large U.S. railroad companies after a major industry deregulation, and investigated how they sequenced their alternative growth moves. The study found that the railroads that followed a path-dependent pattern of growth (i.e., with the sequencing of same industry growth followed by related diversification, and then by international diversification) had the longest rates of survival and return on equity. The juxtaposition of product and international diversification is germane to investigate these types of growth trajectories with attention to sequencing and timing of the growth moves.

There is currently a dearth of such studies in the management literature. We have such trajectory studies in the context of acquisitions or alliances. For example, Shi and Prescott (2011) examined firms' sequential patterns of cooperative moves in a specialty pharmaceuticals segment, and found that those with a predictable pattern (i.e., a consistent rhythm) of acquisitions and alliances achieved the highest levels of profitability. Klarner and Raisch (2013) examined European insurance firms' strategic response patterns (entry into a new business segment; entry into a new country; and refocusing) during industry deregulation and found that firms with regular change rhythms with regularly spaced intervals outperform firms that have irregular change rhythms. However, these studies of sequencing of collaboration 'modes' did not capture the corresponding changes in corporate strategy (product and international diversification), and their likely impact on the local and overall strategic coherence of the firm. Thus, we can gain rich insights by identifying and analyzing patterns and trajectories of growth over time with close attention to the notion of

strategic coherence, which is shaped by sequencing and bundling of resource accumulation and acquisition decisions and organizational learning (Gabrielsson, Gabrielsson, & Dimitratos, 2014; Hutzschenreuter & Matt, 2017).

Over the decades, firms have gone through cycles of diversification, divestments, and refocusing where once popular risk-diversifying unrelated business activities have been largely abandoned. Yet, firms continue to differ from one another in their approaches to diversification. Some adjustments to corporate strategy (diversification, refocusing, and exits) are a natural cycle of pursuing new opportunities and responding to changing industry conditions. With international diversification, firms are now making substantial adjustments to their global business portfolios following ambitious international moves they made in the 1990s and 2000s, which have delivered mixed success (e.g., Economist, 2017, 2019; Verbeke, Coeurderoy, & Matt, 2018). Thus, time is right to investigate how firms' trajectories of growth and diversification pushed the boundaries of their strategic coherence. Examining a firm's growth moves, along with its subsequent 'corrections' would provide a fuller picture of the inter-dependencies among the evolving trajectory of the firm's strategic coherence, sustainability of its comparative advantages in specific markets, and its long-term performance.

Relatedly, Penrose's (1959) idea that the supply of productive resources is inelastic in the short-run but can grow in the long-run due to managerial learning, suggests that researchers consider potential positive and negative spillover effects of current strategic moves on subsequent strategic moves (Pedersen & Shaver, 2011). For example, each growth or retrenchment/exit move offers an opportunity for managerial and organizational learning, but it also has implications for potential competitor responses as well as the future capacity of the firm to make new strategic moves. Understanding these spillover effects requires attention to the evolution of a firm's network of global activities versus a single activity (Cuervo-Cazurra, Mudambi, & Pedersen, 2018; Vidal & Mitchell, 2018) and how the rival firms sequence their market entry, growth, and exit decisions. It may be particularly useful to examine the effects on the ability of the organization to learn and

assimilate new knowledge based on the rhythms of its international expansion and the diversity and complexity of its existing portfolio (Eriksson, Majkgard, & Sharma, 2000; Vermeulen & Barkema, 2002; Zahra, Ireland, & Hitt, 2000). For example, Kumar, Gaur, and Pattnaik (2012) find that while high levels of product diversification by Indian business groups had a negative effect on their internationalization, prior knowledge of international markets and presence of technology investments transformed this negative relationship into a positive (synergistic) one. Thus, research can further examine external contingencies or firm-specific factors that may shape the boundaries of strategic coherence (Chi, Trigeorgis, & Tsekrekos, 2019; Tan & Mahoney, 2007; Verbeke & Yuan, 2007); in particular, how these factors may influence the substitutive and complementary relationships between product and international diversification.

Finally, research can examine the consequences of potential erosion of strategic coherence on administrative processes and how firms can maintain strategic control via the headquarters (Belderbos, Du, & Goerzen, 2017; Birkinshaw, Ambos, & Bouquet, 2017). With increasing product diversity and geographical dispersion, some firms moved to a more decentralized decision-making structure and granted autonomy to the subsidiaries. Typically, autonomous units and subsidiaries can better utilize their localized knowledge and expertise; however, as Lazonick (2002) pointed out, they cannot seem to escape the problem of assessment and control at the headquarters level. Thus, the increased product and geographical scope of firms call for research about the effectiveness of administrative processes and control mechanisms. For example, what are effective combinations of delegation (autonomy) and incentive (reward) mechanisms that promote collaboration between the head office and divisions/subsidiaries? How do companies adjust their administrative structure, processes, and organizational learning systems to cope with increasing product and geographical diversity? Markides and Williamson (1996) find that firms with certain types of related diversification performed better when they adopted a centralized multidivisional structure (where strategic and financial control of divisions are centralized at the head office), but this form did not effectively facilitate transfer of competencies across SBUs. Rowe and Wright (1997) note that firms

rely more on outcome controls with unrelated diversification, but such controls have limitations and negative long-term effects on competitiveness of SBUs. Thus, future research can examine how organizations can learn from their past growth decisions and develop a better awareness of both the boundaries of their local and 'global' strategic coherence and of the effectiveness of their administrative processes.

Research on various aspects of strategic coherence shines the spotlight on the dynamic evolution and renewal of the firm, its purpose and dominant logic(s), and how the firm manages the distances between its existing competencies and the configuration of resources and capabilities it must have to succeed in the newly entered markets. Without an understanding of these factors, firms face the threat of becoming like a holding company with a constrained ability to effectively manage and govern its operations in "distant" markets.

Relevance of Firm-specific Managerial and Employee Resources

Penrose (1959) emphasized the importance of firm-specific talent (managers and employees) in propelling the growth of the firm, and a lack of such resources serving as the key bottleneck in expansion and organizational learning. This insight is highly consistent with the flourishing human capital literature within strategic management that underscores the importance of human capital as a key source of innovation and competitive advantage (Campbell, Coff, & Kryscynski, 2012; Coff, 2002; Hitt, Bierman, Shimizu, & Kochhar, 2001). Firm-specific human capital involves multiple layers of tacit knowledge including: "(1) the experiential knowledge of the firm's idiosyncratic resources, co-specialized capabilities, systems, and routines, (2) the collective shared knowledge of the firm's employees' (and managers') strengths and shortcomings, and the trust embedded in specific relationships and the firm's organizational culture, and (3) the explicit and tacit knowledge about the key constituents and stakeholders of the firm, including their specific contributions, needs, and the firm's interactions with them" (Mahoney & Kor, 2015: 298-299). In a way, firm-specific managerial and employee knowledge is an essential ingredient in developing

and supporting a firm's specialized knowledge bases, competencies, and exchange relationships. Without these assets, it is unlikely that the firm can sustain growth and further learning.

However, increasingly, development of firm-specific human capital is subject to failure in organizations. As the employee-employer relationships evolved over time, there is diminished expectancy of employment in one firm for an extended time-period, and along with this change, there is diminished loyalty and increased opportunism on both sides of the exchange relationship. For example, firm-specific investments by employees (and managers) are subject to opportunistic value capture by the firm, because such investments can decrease employee (and manager) mobility even though they can benefit the firm greatly (Wang, He, & Mahoney, 2009). Firm-specific employee investments may be in the form of working on strategically important but highly uncertain projects that have greater failure rates (Gambardella, Panico, & Valentini, 2013). Likewise, “[m]anagers investing in recruitment, building teams, and mentoring of junior and new employees contribute to the development of firm-specific team capital, but they may not get rewarded for these efforts. These activities can be rather time-consuming and may compete with one’s individual work obligations and personal goals” (Mahoney & Kor, 2015: 300). When employees anticipate that they will not be recognized or rewarded for these activities, they are less likely to engage in them. Similar issues of reluctance to make firm-specific investments is observed in relationships with business partners (e.g., suppliers and distributors) and customers anticipating being disadvantaged if they make investments specific to a firm (Hoskisson, Gambeta, Green, & Li, 2018). When employees strategically choose jobs, tasks, and effort levels to promote their future mobility and actively pursue job opportunities to advance their careers quickly (i.e., job-hopping), it is difficult for firms to build competencies and relationships at the organizational and inter-firm levels. This difficulty especially holds when these competencies require cumulative, firm-specific learning and trust, and relationship building by a stable, core group of individuals.

Addressing this issue requires the firm to take a long-term view and make commitments to these exchange relationships, putting in place governance safeguards to protect these stakeholders

against opportunism for value appropriation (Klein, Mahoney, McGahan, & Pitelis, 2012; Williamson, 1985). This issue offers ample research opportunities where scholars can examine how different reward systems and managerial styles influence the willingness of employees to make a stronger commitment to firm-specific contributions. As opportunism exists on both sides of the employee-employer relationship, one can ask how firms can both incentivize their employees but also to rationally “lock themselves” into safeguarding these firm-specific contributions. In addition, how do such mechanisms fit with current norms and rules of corporate governance and expectations from top-level managers? As today’s corporations and MNEs are highly exposed to financial markets, which may reinforce short-termism, how can firms promote and safeguard firm-specific investments by employees and managers that require a long-term view? One can also examine whether alternative corporate forms (e.g., publicly held, private, ESOP, and B-corporation) can help address the challenges of a lack of firm-specific investments in human capital and safeguarding of such investments. As firms can be subject to substantial economic rent appropriation by employees, it is equally important to investigate how firms can protect their investments in building both firm-specific and general human capital of their employees (and managers), which are often bundled and can jointly facilitate employee mobility (Morris, Alvarez, Barney, & Molloy, 2017).

The juxtaposition of the eroding strategic coherence of the firm (along with increased managerial complexity) and the eroding capability of the firms to build and maintain firm-specific human capital call for new research that can result in a better understanding of these phenomena and how new administrative systems, corporate forms, and governance mechanisms may alleviate or possibly negate these concerns. Such research can enable us to understand better the role of administrative, entrepreneurial, and governance systems within and outside the firm in shaping directions, patterns, and consequences of corporate growth and competitiveness in the 21st century. Here, the status quo is no longer a single business firm, but a diversified, multinational enterprise with redefined relationships with its stakeholders, such as employees and managers.

Conclusion

The current study considers research from 2004 to 2019 (a 15-year period), and offers 35 articles that fall into two broad categories: (1) studies that discuss the relevance of Penrose's theory to other theoretical perspectives, and (2) studies that focus on determinants and consequences of firm growth. Rather, than summarize what we provide above, we instead address the question of *"why has Penrose (1959) at sixty remained so attractive to contemporary strategic management and international business scholarship?"*

Our first response to this question is that Penrose's (1959) approach builds on rigorous economic foundations. For example, Penrose's (1959) profit-maximizing diversification approach requires that managers make resource deployment decisions based on *opportunity cost*, which takes into account alternative uses/services of resources within the firm's subjective opportunity set. Further, the very idea of an optimal profitable growth rate of the firm stands on the Marshallian logic (Marshall, 1890) of *thinking at the margin*, in which the stopping rule for management growth in any time-period is when the marginal revenue of additional growth is below the marginal cost of such growth. Arguably, in our modern business school, the concepts of *opportunity cost*, and *thinking at the margin* are two bedrock principles that all business school students should both know and be able to apply following their business school education. Based on such fundamental principles, it is little wonder that Penrose (1959) stands the test of time, and will continue to do so.

Our second response follows an idea attributed to Socrates that "the beginning of wisdom is the definition of terms." Penrose (1959) is an exemplar of clear writing in which great care is given to provide definitions to the key concepts used in building her thesis. This outcome, no doubt, can be attributed to the penetratingly analytical mind of Edith Tilton Penrose. As a complementary resource, Penrose's dissertation advisor at Johns Hopkins University, Fritz Machlup, was a doyen within the discipline of Economics concerning precision in language use (e.g., see Machlup, 1963).

Our third response is that Penrose (1959) satisfies Whetten's (1989) criteria for theory-building by providing: (1) *what* factors (concepts, constructs, and variables) that logically should be

considered as part of an explanation of the growth rate of the firm; (2) *how* these factors are interrelated (i.e. introducing causality); and (3) *why* these factors are important (i.e. providing the logic and theoretical glue that underpins the psychological and economic dynamics to explain the selection of factors and the proposed causal relationships. Our point being that research based on good theory is likely to prove more durable.

Our fourth response is that in addition to the exceptional precision and analytical rigor, Penrose (1959) provides us with real-world managerial problems that were grounded in reality (Kor, *et al.* 2016), and provides an exemplar of engaged scholarship (Van de Ven, 2007). Penrose (1959) is theory at its best, which offers a parsimonious framework that is operationalizable by empirical researchers, and simultaneously resonates with practitioners navigating in complex real-world experience. In short, Penrose's (1959) scholarship is positioned within *Pasteur's Quadrant* (Stokes, 2011), exhibiting both scientific rigor and practical relevance.

The lesson for young and active scholars today is to consider whether your quest is contained in the question: "How do I publish in top journals?" *vis-à-vis* "How do I publish quality research for posterity?" Penrose's (1959) latter approach provides a cogent case that following in her footsteps of a *research process of engaged scholarship*, albeit the road less traveled, can make all the difference. In particular, Penrose (1959) changed the conversation of the field by changing the question from "what is the optimal *size* of the firm?" to "what is the optimal *profitable growth rate* of the firm?" Perhaps new and energetic scholars today will ask new pressing questions. One we suggest is in a world of climate change, and negative externalities in production, what is the proper growth rate of firms to enhance the welfare of societies on our planet?

REFERENCES

- Almeida, F., & Pessali, H. 2017. Revisiting the evolutionism of Edith Penrose's The theory of the growth of the firm: Penrose's entrepreneur meets Veblenian institutions. *Economia*, 18(3): 298-309.
- Argyres, N., Bigelow, L., & Nickerson, J.A., 2015. Dominant designs, innovation shocks, and the follower's dilemma. *Strategic Management Journal*, 36(2): 216-234.
- Argyres, N., Mahoney, J.T., & Nickerson, J., 2019. Strategic responses to shocks: Comparative adjustment costs, transaction costs, and opportunity costs. *Strategic Management Journal*, 40(3): 357-376.
- Augier, M., & Teece, D.J. 2007. Dynamic capabilities and multinational enterprise: Penrosean insights and omissions. *Management International Review*, 47(2): 175-192.
- Barnard, C.I. 1938. *The Functions of the Executive*. Cambridge, MA: Harvard University Press.
- Barney, J.B. 1986. Strategic factor markets: Expectations, luck, and business strategy. *Management Science*, 32(10): 1231-1241.
- Barney, J.B. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17(1): 99-120.
- Belderbos, R., Du, H.S., & Goerzen, A. 2017. Global cities, connectivity, and the location choice of MNC regional headquarters. *Journal of Management Studies*, 54(8): 1271-1302.
- Birkinshaw, J., Ambos, T.C., & Bouquet, C. 2017. Boundary spanning activities of corporate HQ executives' insights from a longitudinal study. *Journal of Management Studies*, 54(4): 422-454.
- Bird, M., & Zellweger, T. 2018. Relational embeddedness and firm growth: Comparing spousal and sibling entrepreneurs. *Organization Science*, 29(2): 264-283.
- Boulding, K.E. 1956. *The Image: Knowledge in Life and Society*. Ann Arbor, MI: University of Michigan Press.
- Bradley, S.W., Wiklund, J., & Shepherd, D.A. 2011. Swinging a double-edged sword: The effect of slack on entrepreneurial management and growth. *Journal of Business Venturing*, 26(5): 537-554.
- Buckley, P.J., & Casson, M. 2007. Edith Penrose's *Theory of the Growth of the Firm* and the strategic management of multinational enterprises. *Management International Review*, 47(2): 151-173.
- Campbell, B.A., Coff, R., & Kryscynski, D. 2012. Rethinking sustained competitive advantage from human capital. *Academy of Management Review*, 37(3): 376-395.
- Carow, K., Heron, R., & Saxton, T. 2004. Do early birds get the returns? An empirical investigation of early-mover advantages in acquisitions. *Strategic Management Journal*, 25(6): 563-585.
- Chandler, A.D. 1962. *Strategy and Structure: Chapters in the History of Industrial Enterprise*. Cambridge, MA: MIT Press.
- Chandler, A.D. 1991. The functions of the HQ unit in the multibusiness firm. *Strategic Management Journal*, 12(S2): 31-50.
- Chi, T., Li, J., Trigeorgis, L.G., & Tsekrekos, A.E. 2019. Real options theory in international business. *Journal of International Business Studies*, 50(4): 525-553.

- Coff, R.W. 2002. Human capital, shared expertise, and the likelihood of impasse in corporate acquisitions. *Journal of Management*, 28(1): 107–128.
- Cuervo-Cazurra, A., Mudambi, R., & Pedersen, T. 2018. The boundaries of the firm in global strategy. *Global Strategy Journal*, 8(2): 211–219.
- Cyert, R., & March, J. 1963. *A Behavioral Theory of the Firm*. Englewood Cliffs. NJ: Prentice Hall.
- Dierickx, I., & Cool, K., 1989. Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35(12): 1504–1511.
- Dunning, J.H. 2003. The contribution of Edith Penrose to international business scholarship. *Management International Review*, 43(1): 3–19.
- Economist. 2017. The retreat of the global company: The biggest business idea of the past three decades is in deep trouble. January 28. <https://www.economist.com/briefing/2017/01/28/the-retreat-of-the-global-company>
- Economist. 2019. The agonizing dilemma of Spanish firms in Latin America: Conquistadors in a quandary. December 5. <https://www.economist.com/business/2019/12/05/the-agonising-dilemma-of-spanish-firms-in-latin-america>
- Eriksson, K., Majkgård, A., & Sharma, D.D. 2000. Path dependence and knowledge development in the internationalization process. *MIR: Management International Review*, 40(4): 307–328.
- Farjoun, M. 1994. Beyond industry boundaries: human expertise, diversification and resource-related industry groups. *Organization Science*, 5(2): 185–199.
- Finkelstein, S., Hambrick, D.C., & Cannella, A.A. 2009. *Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards*. New York: Oxford University Press: New York.
- Gabrielsson, M., Gabrielsson, P., & Dimitratos, P. 2014. International entrepreneurial culture and growth of international new ventures. *Management International Review*, 54(4): 445–471.
- Gambardella, A., Panico, C., & Valentini, G. 2015. Strategic incentives to human capital. *Strategic Management Journal*, 36(1): 37–52.
- Gjerløv-Juel, P., & Guenther, C. 2019. Early employment expansion and long-run survival: Examining employee turnover as a context factor. *Journal of Business Venturing*, 34(1): 80–102.
- Goerzen, A., & Beamish, P.W. 2007. The Penrose effect: “Excess” expatriates in multinational enterprises. *Management International Review*, 47(2): 221–239.
- Gruber, M., MacMillan, I.C., & Thompson, J. D. 2012. From minds to markets: How human capital endowments shape market opportunity identification of technology start-ups. *Journal of Management*, 38(5): 1421–1449.
- Hansen, M.H., Perry, L.T., & Reese, C. S. 2004. A Bayesian operationalization of the resource-based view. *Strategic Management Journal*, 25(13): 1279–1295.
- Hashai, N. 2011. Sequencing the expansion of geographic scope and foreign operations by “born global” firms. *Journal of International Business Studies*, 42(8): 995–1015.
- Hay, D.A., & Morris, D.J. (1991). *Industrial Economics and Organization: Theory and Evidence*. New York: Oxford University Press.

- Hitt, M.A., Hoskisson, R.E., & Kim, H. 1997. International diversification: Effects on innovation and firm performance in product-diversified firms. *Academy of Management Journal*, 40(4): 767-798.
- Hitt, M.A., Bierman, L., Shimizu, K., & Kochhar, R. 2001. Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of Management Journal*, 44(1): 13-28.
- Hoskisson, R. E., Gambeta, E., Green, C. D., & Li, T. X. 2018. Is my firm-specific investment protected? Overcoming the stakeholder investment dilemma in the resource-based view. *Academy of Management Review*, 43(2): 284-306.
- Hutzschenreuter, T., & Matt, T. 2017. MNE internationalization patterns, the roles of knowledge stocks, and the portfolio of MNE subsidiaries. *Journal of International Business Studies*, 48(9): 1131-1150.
- Hutzschenreuter, T., Voll, J.C., & Verbeke, A. 2011. The impact of added cultural distance and cultural diversity on international expansion patterns: A Penrosean perspective. *Journal of Management Studies*, 48(2): 305–329.
- Johanson, J., & Vahlne, J.E. (1977). The internationalization process of the firm—a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, 8(1): 23-32.
- Johanson, M., & Kalinic, I. 2016. Acceleration and deceleration in the internationalization process of the firm. *Management International Review*, 56(6): 827–847.
- Johnston, S., & Paladino, A. 2007. Knowledge management and involvement in innovations in MNC subsidiaries. *Management International Review*, 47(2): 281-302.
- Klarner, P., & Raisch, S. 2013. Move to the beat-Rhythms of change and firm performance. *Academy of Management Journal*, 56(1): 160-184.
- Klein, P.G., Mahoney, J.T., McGahan, A.M., & Pitelis, C.N. 2012. Who is in charge? A property rights perspective on stakeholder governance. *Strategic Organization*, 10(3): 304-315.
- Kor, Y.Y., & Mahoney, J.T. 2000. Penrose's resource-based approach: The process and product of research creativity. *Journal of Management Studies*, 37(1): 109-139.
- Kor, Y.Y., & Mahoney, J.T. 2004. Edith Penrose's (1959) contributions to the resource-based view of strategic management. *Journal of Management Studies*, 41(1): 183-191.
- Kor, Y.Y., Mahoney, J.T., & Michael, S.C. 2007. Resources, capabilities, and entrepreneurial perceptions. *Journal of Management Studies*, 44(7): 1185–1210.
- Kor, Y.Y., Mahoney, J.T., Siemsen, E., & Tan, D. 2016. Penrose's the theory of the growth of the firm: An exemplar of engaged scholarship. *Production and Operations Management*, 25(10): 1727–1744.
- Kor, Y.Y., & Mesko, A. 2013. Dynamic managerial capabilities: Configuration and orchestration of top executives' capabilities and the firm's dominant logic. *Strategic Management Journal*, 34(2): 233-244.
- Kumar, M.S. 2009. The relationship between product and international diversification: The effects of short-run constraints and endogeneity. *Strategic Management Journal*, 30(1): 99–116.
- Kumar, V., Gaur, A.S., & Pattnaik, C. 2012. Product diversification and international expansion of business groups. *Management International Review*, 52(2): 175-192.
- Langley, A., Smallman, C., & Tsoukas, H. 2013 Process studies of change in organization and management: Unveiling temporality, activity, and flow. *Academy of Management Journal*, 56(1): 1–13.

- Lazonick, W. 2002. The US industrial corporation and *The Theory of the Growth of the Firm*. In *The Growth of the Firm: The Legacy of Edith Penrose*, Christos Pitelis (Ed). Oxford, UK: Oxford University Press: 247-277.
- Levinthal, D.A., & Wu, B. 2010. Opportunity costs and non-scale free capabilities: Profit maximization, corporate scope, and profit margins. *Strategic Management Journal*, 31(7): 780-801.
- Lindlbauer, N., & Kor, Y.Y. 2020. Re-Allocation of Resources in the Multi-Business Firm: Dynamism vs. Persistence. Working Paper.
- Lockett, A., & Thompson, S. 2004. Edith Penrose's contributions to the resource-based view: An alternative perspective. *Journal of Management Studies*, 41(1): 193-203
- Lockett, A., Wiklund, J., Davidsson, P., & Girma, S. 2011. Organic and acquisitive growth: Re-examining, testing and extending Penrose's growth theory. *Journal of Management Studies*, 48(1): 48-74.
- Lucas, R.E. 1967. Adjustment costs and the theory of supply. *Journal of Political Economy*, 75(4): 321-334.
- Machlup, F. (1963). *Essays in Economic Semantics*. New York: Prentice-Hall.
- Mahoney, J.T. 1995. The management of resources and the resource of management. *Journal of Business Research*, 33(2): 91-101.
- Mahoney, J.T. 2005. *The Economic Foundations of Strategy*. Thousand Oaks, CA: Sage Publications.
- Mahoney, J.T., & Kor, Y.Y. 2015. Advancing the human capital perspective on value creation by joining capabilities and governance approaches. *Academy of Management Perspectives*, 29(3): 296-308.
- Mahoney, J.T., & Pandian, J.R. 1992. The resource-based view within the conversation of strategic management. *Strategic Management Journal*, 13(5): 363-380.
- Markides, C.C., & Williamson, P.J. 1996. Corporate diversification and organizational structure: A resource-based view. *Academy of Management Journal*, 39(2): 340-367.
- Marshall, A.D. (1890). *Principles of Economics*. London, UK: Macmillan.
- Menon, A.R., & Yao, D.A., 2017. Elevating repositioning costs: Strategy dynamics and competitive interactions. *Strategic Management Journal*, 38(10): 1953-1963.
- Mohr, A., & Batsakis, G. 2017. Internationalization speed and firm performance: A study of the market-seeking expansion of retail MNEs. *Management International Review*, 57(2): 153-177.
- Mohr, A., Batsakis, G., & Stone, Z. 2018. Explaining the effect of rapid internationalization on horizontal foreign divestment in the retail sector: An extended Penrosean perspective. *Journal of International Business Studies*, 49(7): 779-808.
- Morris, S.S., Alvarez, S.A., Barney, J.B., & Molloy, J.C. 2017. Firm-specific human capital investments as a signal of general value: Revisiting assumptions about human capital and how it is managed. *Strategic Management Journal*, 38(4): 912-919.
- Naldi, L., & Davidsson, P. 2014. Entrepreneurial growth: The role of international knowledge acquisition as moderated by firm age. *Journal of Business Venturing*, 29(5): 687-703.
- Nason, R.S., & Wiklund, J. 2018. An assessment of resource-based theorizing on firm growth and suggestions for the future. *Journal of Management*, 44(1): 32-60.

- Nelson, R.R., & Winter, S.G. (1982). *An Evolutionary Theory of Economic Change*. Cambridge, MA: Harvard University Press.
- Ng, D.W. 2007. A modern resource based approach to unrelated diversification. *Journal of Management Studies*, 44(8): 1481-1502.
- Pedersen, T., & Shaver, J.M. 2011. Internationalization revisited: The big step hypothesis. *Global Strategy Journal*, 1(3): 263–274.
- Penrose, E.T. 1959/1995. *The Theory of the Growth of the Firm*. Oxford, UK: Oxford University Press.
- Penrose, E.T. 1960. The growth of the firm—a case study: The Hercules Powder Company. *Business History Review*, 34(1): 1-23.
- Pettus, M.L., Kor, Y. Y., Mahoney, J.T., & Michael, S.C. 2018. Sequencing and timing of strategic responses after industry disruption: Evidence from post-deregulation competition in the US railroad industry. *Strategic Organization*, 16(4): 373-400.
- Pitelis, C.N. 2004. Edith Penrose and the resource-based view of (international) business strategy. *International Business Review*, 13(4): 523-532.
- Pitelis, C.N. 2007a. A behavioral resource-based view of the firm: The synergy of Cyert and March (1963) and Penrose (1959). *Organization Science*, 18(3): 478-490.
- Pitelis, C.N. 2007b. Edith Penrose and a learning-based perspective on the MNE and OLI. *Management International Review*, 47(2): 207-219.
- Pitelis, C.N, & Verbeke, A. 2007. Edith Penrose and the future of the multinational enterprise: New research directions. *Management International Review*, 47(2): 139–149.
- Robins, J., & Wiersema, M.F. 1995. A resource-based approach to the multi-business firm: empirical analysis of portfolio interrelationships and corporate financial performance. *Strategic Management Journal*, 16(4): 277–299.
- Ross, D.G. 2014. An agency theory of the division of managerial labor. *Organization Science*, 25(2): 494-508.
- Rowe, W.G., & Wright, P.M. 1997. Related and unrelated diversification and their effect on human resource management controls. *Strategic Management Journal*, 18(4): 329-338.
- Rugman, A.M., & Verbeke, A. 2002. Edith Penrose's contribution to the resource-based view of strategic management. *Strategic Management Journal*, 23(8): 769-780.
- Rugman, A. M., & Verbeke, A. 2004. A final word on Edith Penrose. *Journal of Management Studies*, 41(1): 205-217.
- Rumelt, R.P. 1984. Towards a strategic theory of the firm. In R. Lamb (ed.), *Competitive Strategic Management*, Englewood Cliffs, NJ: Prentice-Hall: 556-570.
- Sakhartov, A.V., & Folta, T.B. 2014. Resource relatedness, redeployability, and firm value. *Strategic Management Journal*, 35(12): 1781-1797.
- Scalera, V.G., Perri, A., & Hannigan, T. J. 2018. Knowledge connectedness within and across home country borders: Spatial heterogeneity and the technological scope of firm innovations. *Journal of International Business Studies*, 49(8): 990-1009.

- Shi, W., & Prescott, J.E. 2011. Sequence patterns of firms' acquisition and alliance behaviour and their performance implications. *Journal of Management Studies*, 48(5): 1044-1070.
- Simon, H.A. 1947. *Administrative Behavior: A Study of Decision-making Processes in Administrative Organization*. New York: Macmillan.
- Spender, J-C. 1996. Making knowledge the basis of a theory of the firm. *Strategic Management Journal*, 17(December): 45–62.
- Starbuck, W.H. 1965. Organizational growth and development, in *Handbook of Organizations*, J.G. March, ed., Chicago: Rand McNally: 451-533.
- Steen, J.T., & Liesch, P.W. 2007. A note on Penrosean growth, resource bundles and the Uppsala model of internationalisation. *Management International Review*, 47(2): 193-206.
- Stokes, D.E. 2011. *Pasteur's Quadrant: Basic Science and Technological Innovation*. Washington, D.C.: Brookings Institution Press.
- Tan, D. 2009. Foreign market entry strategies and post-entry growth: Acquisitions vs greenfield investments. *Journal of International Business Studies*, 40(6): 1046–1063.
- Tan, D., & Mahoney, J.T. 2005. Examining the Penrose effect in an international business context: The dynamics of Japanese firm growth in US industries. *Managerial and Decision Economics*, 26(2): 113-127.
- Tan, D., & Mahoney, J.T. 2007. The dynamics of Japanese firm growth in US industries: The Penrose effect. *Management International Review*, 47(2): 259–279.
- Teece, D.J. 1982. Towards an economic theory of the multiproduct firm. *Journal of Economic Behavior & Organization*, 3(1): 39-63.
- Teece, D.J. 1986. Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy*, 15(6): 285-305.
- Teece, D.J., Pisano, G., & Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7): 509-533.
- Teece, D.J., Rumelt, R., Dosi, G., & Winter, D. 1994. Understanding corporate coherence: Theory and evidence. *Journal of Economic Behavior and Organization*, 23: 1-30.
- Vahlne, J.E., & Johanson, J. 2017. From internationalization to evolution: The Uppsala model at 40 years. *Journal of International Business Studies*, 48(9): 1087-1102.
- Van de Ven, A.H. 2007. *Engaged Scholarship: A Guide for Organizational and Social Research*. New York: Oxford University Press.
- Verbeke, A, Coeurderoy, R, & Matt, T. 2018. The future of international business research on corporate globalization that never was... *Journal of International Business Studies*, 49(9): 1101-1112.
- Verbeke, A. & Yuan, W. 2007. Entrepreneurship in multinational enterprises: A Penrosean perspective. *Management International Review*, 47(2): 241-258.
- Vermeulen, F., & Barkema, H. 2002. Pace, rhythm, and scope: Process dependence in building a profitable multinational corporation. *Strategic Management Journal*, 23(7): 637–653.
- Vidal, E., & Mitchell, W. 2015. Adding by subtracting: The relationship between performance feedback and resource reconfiguration through divestitures. *Organization Science*, 26(4): 1101-1118.

- Vidal, E., & Mitchell, W. 2018. Virtuous or vicious cycles? The role of divestitures as a complementary Penrose effect within resource-based theory. *Strategic Management Journal*, 39(1): 131-154.
- Wang, H. C., He, J., & Mahoney, J. T. 2009. Firm-specific knowledge resources and competitive advantage: the roles of economic-and relationship-based employee governance mechanisms. *Strategic Management Journal*, 30(12): 1265-1285.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2): 171-180.
- Whetten, D.A.1989. What constitutes a theoretical contribution? *Academy of Management Review*, 14(4): 490-495.
- Williamson, O.E. 1975. *Market and Hierarchies*. New York: The Free Press.
- Williamson, O. 1985. *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*. New York: The Free Press.
- Zahra, S.A., Ireland, R.D., & Hitt, M.A. 2000. International expansion by new venture firms: International diversity, mode of market entry, technological learning, and performance. *Academy of Management Journal*, 43(5): 925-950.
- Zander, I., & Zander, U. 2005. The inside track: On the important (but neglected) role of customers in the resource-based view of strategy and firm growth. *Journal of Management Studies*, 42(8): 1519-1548.
- Zhou, Y.M. 2011. Synergy, coordination costs, and diversification choices. *Strategic Management Journal*, 32(6): 624-639.
- Zhou, N., & Guillén, M F. 2015. From home country to home base: A dynamic approach to the liability of foreignness. *Strategic Management Journal*, 36(6): 907-917.