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# **HQ-Subsidiary Knowledge and Financial Resource Flows:**

## **A Typology of Subsidiary Roles**

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## **ABSTRACT**

In this perspective paper, we discuss antecedents and implications of financial and knowledge HQ-subsidary flows for MNE Strategy. These flows differ, as the deployment of knowledge hinges on numerous contextual characteristics, whereas financial flows are relatively fungible. The complexity and diversity of knowledge resources make their transfer sensitive to several subsidiary-level characteristics such as R&D mandates, location, and inter-unit interdependencies. In contrast, financial resource flows are relatively easier to measure and directly compare across domains. Hence, they are likely to be allocated primarily on risk considerations, notably the equity control over the subsidiary. Both flows are needed for subsidiaries to succeed. Based on the interrelations of knowledge and financial resources flows into the subsidiaries, four types of subsidiary roles are categorized: strategic growth, interrelated, diversified, and independent. We discuss implications on subsidiary competitiveness and MNE risk and point to future research avenues addressing the dynamic and interrelated flows of both these resources.

- **Keywords:** resource flows within MNEs; knowledge resources; financial resources; subsidiary roles

## 1. Introduction

Multinational enterprises (MNEs) create and sustain competitive advantage by mobilizing and leveraging resources within their internal networks across various geographic locations (Doz, Santos, & Williamson, 2001; Gupta & Govindarajan, 2000). Such resources may be categorized as involving either flows of knowledge or flows of financial capital.<sup>1</sup> Knowledge resources include technology, patents, brands, as well as relations and routines (Birkinshaw, Nobel & Ridderstrale, 2002). Knowledge is associated with intangible assets (Buckley, Strange, Timmer & de Vries, 2022). Knowledge can be tacit or explicit (Polanyi, 1966; Nonaka & Takeuchi, 1995), found in individuals as well as organizations (Birkinshaw et al., 2002; Martin & Salomon, 2003; Polanyi, 1966), and is most often constituted by intangible assets (Buckley, Strange, Timmer & de Vries, 2022). Financial resources include cash, loans, and investments.

Knowledge and financial resource transfers differ from each other in fundamental ways. First, whereas financial resources are explicit, knowledge can be tacit, in the sense that it cannot be written down or precisely articulated creating causal ambiguities between actions and outcomes (Lippman & Rumelt, 1982). This ambiguity inhibits the recipient's ability to access and leverage knowledge resources (Szulanski, 1996). In other words, financial resource flows can be clearly observed and deployed by managers while knowledge flows are hard to direct, track, or monitor.

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<sup>1</sup> This paper addresses two types of resources central to the field of International Business Studies. Other fields of research, such as biology and economics, focus on other types of resources, including natural resources (land, air, water) and tangible resources (land, buildings, physical plant and machinery) (Ricklefs, 2005; Samuelson & Nordhaus, 2004).

Second, financial resources can be directly assembled from diverse sources, the total being the simple sum of the constituent flows. In contrast, knowledge may reside within a community of individuals, teams, cultures, and routines, making it difficult to integrate and leverage. This in turn hinders transferability (Simonin, 1999). Further, knowledge flows may generate either synergistic effects or antagonism, depending on the domain of knowledge transfer, integration, and application (Mudambi, 2002).

Third, financial resources are finite, whereas knowledge resources are non-rivalrous in consumption (Buckley, Strange, Timmer & de Vries, 2022). However, gaining value from knowledge resources depend on the absorptive capacity of the sender and receiver of knowledge, which could limit the appropriability of these resources (Minbaeva, Pedersen, Bjorkman, Fey & Park, 2003).

Fourth, the value of a financial resource is clearly defined and agreed upon, whereas the valuation of a knowledge resource depends on both the value in its current application and its value in generating expansion opportunities by absorbing complementary new knowledge (Cohen & Levinthal, 1990). Knowledge transfers between two units may therefore be subject to time compression diseconomies as they depend on cumulative experience created over time (Dierickx & Cool, 1989). Research from alliances (Becerra, Lunnan & Huemer, 2008) and acquisitions (Cantwell & Mudambi, 2005) as well as more general work on MNEs (Foss & Pedersen, 2002) has shown that different types of resource transfers are related to distinct organizational factors. Further, assessments of resource transfers must include multiple determinants (Hansen & Lovas, 2004).

Given the inherent differences between these two types of resources, it intuitively follows that their internal flows should be based on different mechanisms. Prior studies of

knowledge flows in MNEs have identified the critical influence of knowledge characteristics, subsidiaries' absorptive capacity, the relationship between headquarters and subsidiaries, and the timing of knowledge flows (e.g., Driffield, Love & Menghinello, 2010; Foss & Pedersen, 2002; Gupta & Govindarajan, 2000; Lane & Lubatkin, 1998; Lane, Salk, & Lyles, 2001; Szulanski, 1996). Knowledge transfer is considered as a dynamic intertwining process between tacit and explicit knowledge (Nonaka & Takeuchi, 1995; Nonaka & Krogh, 2009). In contrast, the transfer of financial resources is usually more tightly linked to predicted returns of investment (Gertner, Scharfstein & Stein, 1994). Headquarters may engage in "winner picking" whereby units with higher returns may have more financial resource inflows than underperforming units (Inderst & Laux, 2005; Stein, 1997). Alternatively, underperforming units may be subsidized to ensure that they cooperate with other units to enhance overall MNE-wide profits (Rajan & Servaes, 2000). In either case, headquarters run the MNEs' internal capital markets with clear and measurable bottom-line objectives (Stein, 1997).

In this Perspective paper, we argue that both knowledge and financial internal resource flows are critical for MNE competitive advantage (Gupta & Govindarajan, 2000; Mudambi, 1998; Shin & Stulz, 1998). The extant literature has been largely silent on the differences in the antecedents, interrelations, and implications for subsidiaries of these two types of flows. On the one hand, the knowledge-based view of the firm maintains that knowledge assets and routines are fundamental sources of competitive advantage since they are difficult to replicate (Gupta & Govindarajan, 2000; Jensen & Szulanski, 2004; Zander & Kogut, 1995; Grant & Phene, 2022). On the other hand, the international finance literature argues that a core advantage of MNEs is the effectiveness of their internal capital

markets in re-distributing financial resources (Lamont, 1997; Shin & Stulz, 1998; Mudambi, 1999; Goldbach, Nagengast, Steinmuller, & Wamser, 2019). We highlight two important research lacunae. First, intra-MNE financial resource flows have received relatively less attention, and their implications for MNE strategy are less discussed. Second, intra-MNE knowledge and financial flows have seldom been investigated in the same setting. Our objectives are twofold. The first objective is to compare and contrast the more extensive literature on knowledge transfers with the relatively smaller literature on financial flows (e.g., Aulakh & Mudambi, 2005; Mudambi, 1999; Fisch & Schmeisser, 2020) to discuss the drivers and implications of these two internal flows within MNEs. The second objective is to propose a novel typology of subsidiary roles based on this consideration of the relative importance of internal knowledge and financial resource transfers. Finally, we discuss the implications for MNE strategy.

## **2. The Drivers of Intra-MNE Resource Flows**

### *2.1. Bargaining Power and Global Mandates*

Prior literature has suggested factors that may increase both knowledge and financial flows from HQ to subsidiaries. We highlight two streams of literature: the literature advocating the bargaining power of a subsidiary stemming from its position in the MNE network, and the literature on competency mandates.

First, subsidiaries vary in their ability to attract resources from headquarters. Subsidiaries have relations with external actors such as local authorities, suppliers, and customers, as well as internal networks with other subsidiaries and headquarters (Forsgren, 2017). These networks generate resources from which embedded subsidiaries accumulate bargaining power (Mudambi & Navarra, 2004). The level and attractiveness of existing

resources put the subsidiary on the radar of headquarters (Monteiro, Arvidsson & Birkinshaw, 2008). This research suggests that subsidiaries act strategically and generate new initiatives according to their own interests. These vary with subsidiary managers' aspirations, capabilities, and resource base generated through past resource acquisition processes (Birkinshaw, Hood & Jonsson, 1998, Forsgren 2017). However, subsidiary influence is achieved only when subsidiaries gain headquarters attention (Ambos, Andersson, & Birkinshaw, 2010; Ambos & Birkinshaw, 2020; Andrews, Fainshmidt, Ambos, & Haensel, 2022). In this sense it is not sufficient that subsidiaries initiate requests for resource transfer from headquarters, they must be recognized by headquarters as the worthiest receivers of these resources in competition with other subsidiaries.

Second, when a subsidiary achieves a global mandate, such as a competence-creating mandate (Cantwell & Mudambi, 2005), it needs financial resources to build up its knowledge base and hire and keep talented employees. A subsidiary mandate refers to “the business, or element of a business, in which the subsidiary participates and for which it has responsibilities beyond its national market” (Birkinshaw, 1996: 471). It indicates the strategic role that a subsidiary plays in an MNE.

A competence-creating subsidiary has received a formal mandate and will therefore be prioritized by headquarters when resources are scarce (Wang, Tong & Koh, 2004). Furthermore, it is more visible to its headquarters and receives more strategic attention (Bouquet & Birkinshaw, 2008). Competence-creating subsidiaries create knowledge considered important for other units within the MNE, and in the process of knowledge development, these subsidiaries must engage in frequent interactions with central MNE units, like R&D centers and other knowledge-rich subsidiaries, interactions which are often



managed by headquarters (Ciabuschi, Martin & Stahl, 2010). In addition, the subsidiary may develop advanced knowledge within one process or product technology but may need knowledge transfer from HQ regarding complementary knowledge, like professional management and services. Knowledge resources must flow into the subsidiary to create best practices for the MNE.

One of the core roles of MNE headquarters is to manage the internal capital market. MNE headquarters guide and manage resource flows between subsidiaries (Dellestrand & Kappen, 2011; Stein, 1997). Global mandates increase interdependency between the subsidiary and other MNE units, which has been found to increase financial flows (Mudambi, 1999). Consequently, when subsidiary strategies are central in the MNE, it is easier for corporate parents to obtain information about the true value of an investment project, which result in larger flows of financial resources. The value of the internal capital market is generally higher when headquarters have access to full information about the true value of subsidiary investment proposals. Independence of local subsidiaries increases the cost of financial resource flows because headquarters must spend time and effort assessing the value of the proposed projects to avoid agency problems.

## *2.2 Subsidiary Interdependence and Knowledge Absorption*

MNE knowledge flows are particularly valuable in organizations that have a global strategy, and where the dispersion of R&D is core to the subsidiaries' value proposition. These characteristics rest on interdependencies between MNE subsidiaries and the benefits of cross-border knowledge sharing. Over time, subsidiaries that demonstrate absorptive capacity may be better positioned to attract knowledge from HQ.

MNEs create value through knowledge flows by reusing existing knowledge or combining and integrating knowledge from different subsidiary units (Ghoshal & Bartlett, 1988). This includes the transfer of “best practices” from different units within the MNE to capitalize on novel and efficient innovations in one subsidiary to be shared throughout the MNC (Cerar, Dimitrova & Nell, 2022; Perri, Scalera, & Mudambi, 2017). Knowledge transfer takes place within a social context (Grant, 1996; Kogut & Zander, 1992) facilitated by social interactions (Noorderhaven & Harzing, 2009).

HQ encourages the development of these social relations through personnel transfers, cross-unit projects, and social meetings and events (Gupta, Govindarajan & Malhotra, 1999; O'Donnell, 2000). Sharing best practices, insightful ideas, and solutions can be valuable. However, in general, a central driver of knowledge flows is MNE unit interdependencies. Interdependencies can take place through global strategy choices emphasizing market and geographical integration, vertical or horizontal activity integration, or sharing of products and services. Interdependencies also increase through shared innovation and technology development, as seen through strategic mandates and R&D centers.

Interrelatedness denotes overlapping interests and increased needs for coordination and adaptation. The higher these interdependencies, the more changes, or innovations in one unit require adaptations in another unit. This suggests that the two units may need to engage in common problem-solving, implying that the benefits of inter-unit knowledge flows increase. When units are interdependent, they will also be similarly affected by external events, such as market or technology changes, which implies valuable advantages in sharing knowledge.

Interdependencies are particularly tied to the global strategy of integration. Global strategy refers to the MNE's approach to leveraging its competencies across national borders, whilst optimizing its embeddedness in local contexts (Meyer, Mudambi, & Narula, 2011). It consists of the design and coordination of global value chain activities, resource allocation, and the establishment of subsidiaries (Bartlett & Ghoshal, 1989; Roth, Schweiger, & Morrison, 1991).

MNE headquarters' assessment of subsidiaries is based on the 'fit' of the subsidiary into the headquarters' global strategy (Mudambi, 2011). Two categorizations of MNE strategies are commonly used: a global integration strategy and a local responsiveness strategy (Bartlett & Ghoshal, 1988; Devinney, Midgley & Nenaik, 2000; Prahalad & Doz, 1987; Roth & Morrison, 1990).

MNEs adopting a global integration strategy are inclined to centralize their decision-making processes to pursue global efficiency and reduce cost. The strategy is typically used when the pressures for national responsiveness are low. By unifying and consolidating geographically dispersed activities, MNEs pursue standardization across locations yielding global scale effects. This type of strategy implies more central coordination and less decision-making autonomy from subsidiaries that will be taking on receiving or specialized roles (Foss & Pedersen, 2002; Jarillo & Martinez, 1990). Consequently, this strategy involves high vertical interdependencies, as subsidiaries specialize and take roles as internal suppliers, producers, and distributors, and high horizontal interdependency, as similar types of units, for example, marketing and sales units, benefit from similar structures, procedures, and strategies.

On the other hand, MNEs following a local responsiveness strategy emphasize adaptation to local markets. Subsidiaries within a local responsiveness strategy will have more autonomy as they are expected to use local resources to match local environments. This makes them more independent and less likely to benefit from knowledge developed elsewhere (Foss & Pedersen, 2002; Jarillo & Martinez, 1990). The MNE headquarters will coordinate fewer functions and activities. Although these subsidiaries may still need support, their embeddedness in the local environment discourages headquarters from committing knowledge resources to them or involving these units in social relationship-building initiatives that encourage knowledge transfer.

The MNEs' corporate R&D expenditure is inevitably connected to the transfer of knowledge. First, R&D investments indicate commitments in knowledge-related activities. The more MNEs emphasize the value of knowledge in obtaining competitive advantage, the more they signal intent to take advantage of knowledge exploration and exploitation activities. R&D expenditure is positively associated with innovations (Mudambi & Swift, 2014). More R&D-intensive MNEs are more likely to transfer innovations to update and improve the performance of subsidiaries. Second, R&D investment helps the MNE to recognize and exploit technological as well as commercial opportunities (Canals, 2000; Nelson & Winter, 1978). Evidence suggests that these opportunities are scattered across several corporate locations around the globe (Feinberg & Gupta, 2004). Further, corporate R&D activities increasingly involve relations with and reverse transfers from subsidiaries (Hakanson & Nobel, 2000). As the R&D intensity of an MNE increases, we would expect knowledge flows between headquarters and subsidiaries to follow suit.

A dynamic driver of MNE knowledge flows is absorptive capacity. Absorptive capacity refers to the ability of the receiver of knowledge to “recognize value of new external knowledge, assimilate it and apply it to commercial ends” (Cohen & Levinthal, 1990: 128). Absorptive capacity is contingent upon prior related knowledge (ability) and motivation of the recipient (Mudambi, Piscitello, & Rabbiosi, 2014) as well as relatedness of knowledge between the source and the recipient (Hansen & Lovas, 2004; Lane & Lubatkin, 1998). Absorptive capacities develop over time leading to renewals of the knowledge stock (Zahra & George, 2002). This process therefore becomes path-dependent and cumulative with high performance demonstrating absorptive capacity to take in new knowledge. Several studies have found a positive relationship between absorptive capacity and knowledge transfer (Gupta & Govindarajan, 2000; Minbaeva et al., 2003; Szulanski, 1996). Subsidiaries may vary in their level of absorptive capacity, which puts a premium on subsidiaries that are able to quickly recognize, assimilate, and apply new, valuable knowledge. Building absorptive capacity takes time (Dierickx & Cool, 1989), hence there is likely to be a premium to early movers, which will accumulate more resources, and increase their performance, which again will attract more resources.

### *2.3 Subsidiary Growth, Diversification, and Performance*

Prior literature has related headquarters financial flows to subsidiary growth, strategy, and performance. MNE subsidiaries display different growth characteristics in different markets and geographic regions (Goerzen, Asmussen, & Nielsen, 2013; Lorenzen, Mudambi, & Schotter, 2020) suggesting that the investment required to stay competitive varies across subsidiaries. Financial investments are particularly needed for a subsidiary that is in the establishment phase, or undergoing transformation, such as an

acquisition, integration, or expansion. In short, where the main strategic motive for the subsidiary is growth.

MNEs use diversification strategies to reduce the extent to which sales and profits fluctuate (Rugman, 1979). Reductions in risks can be obtained through investments in markets with different prices, customers, and market volatilities. Diversification allows a firm to pursue new market opportunities, enjoy the benefits of increased bargaining power, scale, and global synergies (Kim, Hwang, & Burgers, 1993; Chang & Wang, 2007), and create risk-reducing options (Chi, Trigeorgis, & Tsekrekos, 2019).

The transfer of financial resources is tightly linked to predicted returns of investment (Gertner et al., 1994). Subsidiaries showing higher returns may have more financial resource inflows than underperforming units (Inderst & Laux, 2005; Stein, 1997). Alternatively, headquarters may encourage inter-subsidiary cooperation by subsidizing underperforming units (Rajan & Servaes, 2000). In either case, headquarters run the MNE's internal capital market with clear and measurable bottom-line objectives (Stein, 1997), i.e., the potential profitability of subsidiaries is the main incentive for the MNE parent to transfer resources (Aulakh & Mudambi, 2005; Inderst & Laux, 2005; Mudambi, 1999).

A dynamic factor driving financial flows is perceived investment risks seen through the eyes of the investors, in this case, HQ. All investment decisions are subject to risk and uncertainty (Kaplan & Barish, 1967). Based on the accelerator theory of investment, the growth of expected output calls forth increased investment in capital stock (Rowan, 1983). The prior growth of output is a commonly used metric of the expected growth of output in the future and is often used in investment decision-making. A high rate of prior growth

increases the confidence of investors, while a low rate leads investors to adjust either their expectations or their investment. This implies that meeting or exceeding the headquarters' performance expectations verifies the subsidiaries' investment opportunities and helps them obtain further financial support in the form of investment funds.

Financial resource flows may vary with entry mode. Financial resources are not systematically redirected to units with favorable investment opportunities (Shin & Stulz, 1998; Mudambi & Navarra, 2004). The MNE's operation of the internal capital market determines financial resource redistribution and depends not only on potential profitability but also on long-term commitment. Higher parent ownership is associated with greater control of investment uncertainties. MNEs have a greater deal of flexibility in the operations of plants and decisions regarding capital outlays in wholly-owned subsidiaries.

### **3. Subsidiary types attracting combinations of knowledge and financial flows**

Subsidiary typologies have a long tradition in IB, starting with White and Poynter's classifications (1984), developing subsidiary types based on market and product scope. Other typologies emerge from characteristics of FDI motives (Dunning, 1993), integration-responsiveness (Jarillo & Martinez 1990; Bartlett & Ghoshal, 1986; Taggart, 1998), types of mandates (Birkinshaw & Morrison, 1995, Birkinshaw & Hood, 1997), knowledge and competence characteristics (Bartlett & Ghoshal, 1996: Gupta & Govindarjan, 1991), and global value chain position, competence, and network characteristics (Rugman, Verbeke, & Yuan, 2011) (See Enright and Subramanian, 2007; and Meyer, Li & Schotter 2020, for excellent overviews). Typologies are simplifications that may overlook important nuances (Enright and Subramanian, 2007), but may be helpful by focusing on important dimensions and their consequences for MNE strategy. Existing typologies have not examined financial

flows, not their interplay with knowledge flows. In so doing, we identify the subsidiary's role in the firm's current strategy, and its place in MNE corporate strategy going forward.

In this section, we develop a 2x2 matrix where we identify "archetypical" subsidiaries in the MNE based on their likelihood of receiving knowledge and financial resources from HQ. The novelty of our framework is to link knowledge with financial flows. Our focus is primarily on HQ-subsidary resource flows. However, the role of the subsidiary in the overall MNE network as a giver and sender of resources is acknowledged as relevant to attract resources from HQ. We identify four types of subsidiaries: 1) The Strategic Growth Subsidiary, 2) the Diversified Subsidiary, 3) The Interrelated Subsidiary, and 4) The Independent Subsidiary. Table 1 displays each of these subsidiaries in relation to HQ knowledge and financial flows.

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### *3.1 The Strategic Growth Subsidiary*

The "Strategic Growth" subsidiary is central to the strategy of the MNE. This subsidiary receives high knowledge and financial flows from HQ, has high absorptive capacity and performance, and is constantly on the radar of HQ. One example of such subsidiaries can be R&D units with global mandates, or subsidiaries drawing on core MNE resources to expand in a strategically designated market. One specific example could be a subsidiary with a competence-creating mandate. When a subsidiary achieves a competence-creating mandate, it needs financial resources to help build up its knowledge base, hire, and keep talented employees.

The MNE headquarters will allocate resources as well as their time and involvement, guiding and managing resource flows between subsidiaries (Dellestrand &



Kappen, 2011; Stein, 1997). One of the important factors stimulating knowledge transfer is motivation (Gupta & Govinadarajan, 2000; Szulanski, 1996) and we suggest that a subsidiary achieving a competence-creating mandate signals its recognition as well as its motivation to act as a knowledge hub. The parent MNE then has the incentive to continually buttress the subsidiary's competence-creating capabilities in the interest of the firm.

### *3.2 The Interrelated Subsidiary*

The “Interrelated subsidiary” has a central role in the MNE, but it receives limited financial investments. One example could be a competence-exploiting subsidiary that is focused on adapting the MNE's extant knowledge to local conditions and generating cash flows from it. This subsidiary's business involves knowledge developed in other places in the MNE, and, therefore, its need of updated knowledge from HQ is high. The subsidiary will also likely interact with and use knowledge from other subsidiaries; hence, HQ must organize networks and meeting places where knowledge is exchanged. Thus, competence-creating subsidiaries mainly represent investment opportunities, while competence-exploiting subsidiaries represent the means of harvesting the returns from past and ongoing investments. This *raison d'être* implies that competence-creating subsidiaries should be associated with larger financial inflows than competence-exploiting subsidiaries, whereas the need for knowledge flows is still high.

### *3.3 The Diversified Subsidiary*

The “Diversified Subsidiary” is of high strategic importance to the MNE, albeit outside its current technology and knowledge core. An example could be unrelated diversification, where a subsidiary enters a new product/market combination with the aim of tapping into new growth opportunities (Chang & Wang, 2007). This subsidiary's aim is

growth through new product development or new market penetration which requires large financial investments. However, due to the distance between this subsidiaries core business and the extant knowledge of the MNE, the subsidiary cannot benefit much from knowledge transfers. This could be the case if an established MNE, for example in telecom, acquires or invests in digital technology where they have limited knowledge. The subsidiary is diversified as long as it is kept as a separate unit. If the aim of this investment is to integrate new technology into existing products, the need for knowledge transfer increases radically, and the subsidiary would change its role to one of “Subsidiary Growth”.

Another example of a diversified subsidiary could be growth in unique geographical contexts, where the MNE desires to expand in a market where its existing knowledge has no value. In these cases, the subsidiary would still need high financial investments but would need to seek knowledge elsewhere.

### *3.3 The Independent Subsidiary*

We denote subsidiaries that attract both low financial and knowledge resources as “independent” subsidiaries. These could be subsidiaries of which headquarters lack knowledge (Holm, Johanson & Thilenius, 1995) and that over time become isolated and fall off the radar (Monteiro, Arvidsson, & Birkinshaw, 2008). They can also be fully fledged subsidiaries, where the products and services they implement are standardized, modularized and where the need for knowledge transfer is low. The local content of the deliveries is high, for example relying on a local inputs and workforce; hence knowledge transfer and socialization investments to increase knowledge transfer have limited potential value. Since growth is low in these subsidiaries, financial investments needs are low.

Entry modes often have long lasting effects on the subsidiary (Brouthers, 2002; Mudambi, Piscitello & Rabbiosi, 2014). The most common forms of entry are acquisitions and greenfield entries, and the ownership may vary from wholly-owned to some form of joint venture or alliance. Independent subsidiaries may be in a situation where they have shared ownership between the MNE and other actors or be units brought in through corporate M&A, thus being less central to the MNE's strategy.

#### **4 Discussion**

The *raison d'être* of MNE competitiveness rests on resource sharing, and the corporate HQ as an orchestrator of resource flows. However, there is little research investigating and comparing different flows of resources from HQ to subsidiaries. We theorize two different types of resource flows: knowledge and financial and show how their interrelatedness has implications for subsidiaries. In so doing, we offer rich insight into new research avenues for MNE scholars to enhance our understanding of the underlying drivers of MNE strategy. From this study, we offer clear directions for future research.

Subsidiaries need both financial and knowledge resources to operate. Knowledge resources, in themselves, have no value unless transformed into products and services, which requires financial resources. Financial resources are invested to develop knowledge resources to bring forth new products and services. Most extant research has focused on one of these flows, whereas our perspective paper demonstrates how their value depends on each other. We encourage research into these dependencies establishing the importance of both flows for subsidiary performance.

Whereas financial resources can be quickly allocated and reallocated, knowledge resources develop gradually, and their allocation tends to be inert. It is likely that

knowledge transfer in MNEs follows a cumulative path, where those subsidiaries that develop central and related resources (Hansen & Lovas, 2004) and absorptive capacity attract more knowledge resources from HQ (Lane & Lubatkin, 1998; Minbaeva et al, 2003). Knowledge flows require investments over time from senders and receivers and, therefore, cannot easily be redirected. Knowledge resources constitute the core advantage of the MNE, shaping its deep technology, processes, and managerial insights that distinguishes it from other companies (Kogut & Zander 1992;1993). This implies that subsidiaries receiving knowledge resources are at the heart of the MNEs corporate strategy, representing its core domain where HQ share the same deep insight and can exercise its parental advantage (Goold, Campbell & Alexander, 1994). Subsidiaries receiving less knowledge resources must, therefore, get their knowledge elsewhere, which may suggest that these subsidiaries are outside the core of the MNEs main domain. MNEs following a global strategy framework will have a larger shared knowledge domain where they can execute parental control than MNEs following responsiveness strategies.

Financial resources, on the other hand, are most often allocated to where they are expected to offer highest return (Stein, 1997; Aulakh & Mudambi, 2005; Bartlett & Ghoshal, 1989). Subsidiaries receiving a high level of financial resources from HQ, therefore, represent areas of expected future growth within the MNE. These allocations may have implications for a subsidiary's competitiveness and governance risk, as shown in Table 2.

-----Please insert Table 2 about here-----

In Table 2 we develop implications for subsidiaries based on their ability to make decisions outside the core MNE domain, as well as the level of HQ control and attention.

“Interrelated” and “strategic growth” subsidiaries receive high knowledge transfers from HQ hence, they are in the core parental global domain of the MNE. Activities performed by these subsidiaries are tightly connected to global R&D initiatives that may span products, regions, and industries. These subsidiaries operate within areas of HQ expertise and have developed an ability to receive and benefit from this knowledge. Their internal networks and embeddedness are strong. The competitiveness of these subsidiaries hinges on their ability to utilize knowledge resources and transfer them into valuable goods and services.

The “interrelated” subsidiary receives high knowledge transfer, but low financial resources, suggesting that this subsidiary is central to the MNE's knowledge domain, operating in a phase of knowledge exploitation (March, 1991). Its customers can be internal or external. The subsidiary's competitiveness rests on its ability to utilize knowledge transfers efficiently when developing competitive market offerings. The subsidiary has no means to innovate new products and services and depends on other sister units to share their innovations. This means that, in addition to achieving efficiency, building, and maintaining internal networks becomes crucial.

The “strategic growth” subsidiary receives high inflows of both knowledge and financial resources. It is located in the MNEs current global core and has high future growth expectations. The MNE has deep knowledge into its main technology and can directly advice its strategic direction, as well as keep track of its development. This subsidiary will be high on the central HQs radar. The subsidiary’s competitiveness depends on its innovative ability in developing new technology. Risks are related to current knowledge strengths turning into “core rigidities” (Leonard-Barton, 1992). Pushing existing

knowledge strengths without enough attention to global market and technology shifting trends could place too strict restrictions on the subsidiary's development of new innovations. Further, as this subsidiary is firmly within the MNE's core, its attention and parental guidance may be extensive, which may stifle innovative behavior, if misdirected.

Subsidiaries receiving low knowledge transfer get their knowledge elsewhere, for example from local market actors or from global specialists. HQ have less ability to govern their actions, and their behavior is less restricted.

The "independent" subsidiary receives low resources of both kinds. It has low HQ radar visibility and can take actions more freely. Its competitiveness hinges on its external embeddedness, both in attracting resources, but also in turning these into competitive products and services. External networks and embeddedness in these, therefore, become crucial. The subsidiary risks developing in isolation from the rest of the MNE, becoming increasingly irrelevant and a potential liability, only meriting its belonging to the MNE to its performance.

The "diversified growth" subsidiary can only limitedly benefit from existing knowledge resources but is seen as representing a potential prosperous business. This business could extend the core knowledge of the MNE over time, expanding its parental domain. This will, however, take time. The subsidiary depends on external networks to acquire knowledge resources, and its competitiveness, therefore, lies in its ability to establish and nurture these relations. HQ may be tempted to get involved in innovations due to its financial investments but could do harm as it only limitedly understands the technology and market where this subsidiary operates.

Table 2 offers predictions for MNE strategy from our resource typology. We have outlined some benefits and risks, but these predictions can be expanded, for example by exploring their implications over time. It seems reasonable that subsidiaries that receive high knowledge resources will continue to do so, because it takes time to build absorptive capacity. What is the breaking point where their resource streams are cut?

As “diversified growth” subsidiaries develop, they may start benefitting from existing MNE knowledge resources. At which point and how is knowledge of the MNE added to their activities, and what predicts these subsidiaries’ path to the core knowledge domain of the MNE? What does it take for “interrelated” and “independent” subsidiaries to attract financial resources, and what are the implications on their strategy? What are alternatives (to HQ) for resources for subsidiaries, and what are advantages and disadvantages of these alternative resource flows for their strategy?

The typology may be linked to the integration-responsiveness framework. The subsidiaries receiving high knowledge transfer are more likely to be part of a global strategy framework, whereas the “independent” subsidiary more likely is multi-domestic subsidiary. The “diversified” could be both as it could represent an initiative to cater to a specific and valuable customer group in a distinct market, however, it could also represent a future core area in a global strategy framework.

This paper focuses on “traditional” resource transfers from parents to subsidiaries. However, in the network of MNE actors, resource transfers can be lateral as well as reverse (Yang, Mudambi & Meyer, 2008). These can represent alternative routes for resource inflows, but they can also have dynamic consequences. A subsidiary can use its knowledge advantage from being central in a lateral cluster of knowledge exchange to bargain for both

knowledge and financial resources from HQ. Alternative resource flows can also impact its absorptive capacity. Our perspective opens for new research examining dynamic and multiple flows and their implications.

Previous studies have linked resource transfer to subsidiary ownership (Almeida, Song, & Grant, 2002; Mansfield & Romeo, 1980; Wang, Tong & Koh, 2004). These studies suggest that MNE transfers to wholly owned subsidiaries are higher in terms of both quality and quantity than transfers to other subsidiary types. One of the reasons highlighted in the literature is control (Ambos & Schlegelmilch, 2007; Anand & Delios, 2002). In the case of knowledge resources, there is a risk of leakage in alliances, especially in the case of knowledge that can be articulated and therefore more easily copied resulting in leakages and unwanted spillovers (Becerra et al., 2008; Mansfield & Romeo, 1995). Joint ventures are also seen as more risky long-term investments because the MNE has only partial operational control (Shin & Stulz, 1998).

This ties in very well with the idea that one of the strongest competitive advantages of the MNE is its ability to transfer resources (Almeida et al., 2002; Kogut & Zander, 1993), and that alliance forms are less likely to offer these advantages. Financial investments in acquisitions are riskier than in greenfields due to problematic operational, strategic, and cultural integration (Graebner, 2004). On the positive side, entering into alliances and acquisitions allows the firm fresh input of knowledge resources. These resources can offer new or complementary technologies avoiding biases from current knowledge development (Leonard-Barton, 1992). More research is also needed to investigate what factors add, motivate, and constrain MNE resource flows in and across different contexts and types of market economies. Ownership relates to control, but also to



the existing knowledge base within the subsidiary and its links to MNE core domain, which makes it a relevant factor to consider in future studies.

In our development of subsidiary types, we have assumed that HQ directs financial resources to achieve high returns. Alternatively, MNE headquarters may be driven by political processes and not always reward good behavior. They may render a helping hand to subsidiaries in need (Dellestrand & Kappen, 2011), redistributing resources from well to poorly functioning subsidiaries. Albeit this redistribution cannot apply to all funds available, the extent and impact of the political distribution of financial resources should be further researched (Geppert, Ritterspach, & Mudambi, 2016).

Resource flows is one of the most cited and important antecedents of MNE competitiveness (Doz, Santos, & Williamson, 2001). Our perspective paper shows that the orientation of the headquarters is important for transferring resources in general. This is an important idea because it gives substance to theoretical predictions much used in strategy.

In summary, our perspective paper demonstrates the complexities of MNE resource flows. Whereas the literatures on international knowledge and financial flows previously have operated separately, we have shown that by integrating these we are beginning to discover common and distinct antecedents that offer rich avenues for future research.

## References

- Almeida, P., Song, J., & Grant, R. M. (2002). Are firms superior to alliances and markets? An empirical test of cross-border knowledge building. *Organization Science*, 13, 147-161.
- Ambos, T. C., Andersson U., & Birkinshaw, J. (2010). What are the consequences of initiative taking in multinational subsidiaries? *Journal of International Business Studies*. 41, 1099-1118.
- Ambos, T. C., & Birkinshaw, J. (2010). Headquarters' Attention and Its Effect on Subsidiary Performance. *Management International Review*, 50(4), 449-469.
- Ambos, B., & Schlegelmilch, B. (2007). Innovation and control in the multinational firm: A comparison of political and contingency approaches. *Strategic Management Journal*, 28, 473-486.
- Anand, J., & Delios, A. (2002). Absolute and relative resources as determinants of international acquisitions. *Strategic Management Journal*, 23, 119-134.
- Andrews, D., Fainshmidt, S., Ambos, T., & Haensel, K. (2022). The attention-based view and the multinational corporation: Review and research agenda. *Journal of World Business*, 57(2), 101302.
- Aulakh, P. S. & Mudambi, R. (2005). Financial resource flows in Multinational Enterprises: The role of external capital markets. *Management International Review*, 45, 307-325.
- Bartlett, C. A., & Ghoshal, S. (1988). Organizing for worldwide effectiveness: The transnational solution. *California Management Review*, 31, 54-74.
- Bartlett, C.A., & Ghoshal, S. (1989). *Managing across borders: the transnational solution*. Harvard Business School Press: Boston, MA.
- Becerra, M., Lunnan, R., & Huemer, L. (2008). Trustworthiness, risk, and the transfer of tacit and explicit knowledge between alliance partners. *Journal of Management Studies*, 45, 691-713.
- Birkinshaw, J. (1996). How multinational subsidiary mandates are gained and lost'? *Journal of International Business Studies*, 27, 467-495.
- Birkinshaw, J., & Hood, N. (1998). Multinational subsidiary evolution: capability and charter change in foreign-owned subsidiary companies. *Academy of Management Review*, 23,773-795.
- Birkinshaw, J., Hood, N., & Jonsson, S. (1998). Building firm-specific advantages in multinational corporations: The role of subsidiary initiative. *Strategic Management Journal*, 19(3), 221-242.

- Birkinshaw, J., Nobel, R., & Ridderstrale, J. (2002). Knowledge as a contingency variable: Do the characteristics of knowledge predict organization structure? *Organization Science*, 13, 274-289.
- Birkinshaw, J. M., & Morrison, A. J. (1995). Configurations of strategy and structure in subsidiaries of multinational corporations. *Journal of International Business Studies*, 26, 729-753.
- Bouquet, C., & Birkinshaw, J. M. (2008). Weight versus voice: how foreign subsidiaries gain attention from corporate headquarters. *Academy of Management Journal*, 51, 577-601.
- Brouthers, K. D. (2002). Institutional, cultural and transaction cost influences on entry mode choice and performance. *Journal of International Business Studies*, 33, 203-221.
- Buckley, P. J., Strange, R., Timmer, M. P., & de Vries, G. J. (2022). Rent appropriation in global value chains: The past, present, and future of intangible assets. *Global Strategy Journal*, 12(4), 679-696.
- Canals, J. (2000). *Managing corporate growth*. Oxford, U. K.: Oxford University Press.
- Cantwell, J., & Mudambi, R. (2005). MNE competence-creating subsidiary mandates. *Strategic Management Journal*, 26, 1109-1128.
- Cerar, J., Dimitrova, M., & Nell, P. C. (2022). Fostering operational management “Best Practices” in subsidiary plants in the Western Balkans: The role of MNC home-country environment and resource allocation. *Journal of International Management*, 28(2), 100918.
- Chang, S. C., & Wang, C. F. (2007). The effect of product diversification strategies on the relationship between international diversification and firm performance. *Journal of World Business*, 42(1), 61-79.
- Chi, T., Li, J., Trigeorgis, L. G., & Tsekrekos, A. E. (2019). Real options theory in international business. *Journal of International Business Studies*, 50, 525-553.
- Ciabushchi, F., Martin, O.M. & Stahl, B. (2010). Headquarters' influence on knowledge transfer performance. *Management International Review*, 50, 471-492.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation'. *Administrative Science Quarterly*, 35, 128-152.
- Dellestrand, H. & Kappen, P. (2011). 'Headquarters allocation of resources to innovation transfer projects within the multinational enterprise'. *Journal of International Management*, 17, 263-277.
- Devinney, T., Midgley, D., & Venaik, S. (2000). 'The optimal performance of the global firm: formalizing and extending the integration-responsiveness framework'. *Organization Science*, 11, 674-695.

- Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35(12), 1504-1511.
- Doz, Y., Santos, J. & Williamson, P. (2001). *From global to metanational: How companies win in the knowledge economy*. Harvard Business School Press: Boston, MA.
- Driffield, N., Love, J., & Menghinello, S. (2010). The multinational enterprise as a source of international knowledge flows: Direct evidence from Italy. *Journal of International Business Studies*, 41, 350-359.
- Dunning, J. H. (1993). Trade, location of economic activity and the multinational enterprise: A search for an eclectic approach', In: J. H. Dunning. Eds., *The theory of transnational corporations*. London and New York: Routledge.
- Enright, M. J., & Subramanian, V. (2007). An organizing framework for MNC subsidiary typologies. *Management International Review*, 47, 895-924.
- Feinberg, S. & Gupta, A. (2004). Knowledge spillover and the assignment of R&D responsibilities to foreign subsidiaries. *Strategic Management Journal*, 25, 823-845.
- Fisch, J., & Schmeisser, B. (2020). Phasing the operation mode of foreign subsidiaries: Reaping the benefits of multinationality through internal capital markets. *Journal of International Business Studies*, 51(8), 1223-1255.
- Forsgren, M. 2017. *Theories of the Multinational Firm*. 3<sup>rd</sup> edition. Edward Elgar.
- Foss, N. J. & Pedersen, T. (2002). Transferring knowledge in MNEs: the role of sources of subsidiary knowledge and organizational context. *Journal of International Management*, 8(1), 49-67.
- Geppert, M., Becker-Ritterspach, F., & Mudambi, R. (2016). Politics and power multinational companies: integrating the international business and organization studies perspectives. *Organisation Studies*, 37(9), 1209-1225.
- Gertner, R. H., Scharfstein, D., & Stein, J. C. (1994). Internal versus external capital markets. *Quarterly Journal of Economics*, 109, 1211-1230.
- Ghoshal, S., & Bartlett, C. A. 1988. Creation, adoption, and diffusion of innovations by subsidiaries of multinational corporations. *Journal of International Business Studies*, 19(3): 365-388.
- Ghoshal, S., & Nohria, N. (1989). Internal differentiation within multinational corporations. *Strategic Management Journal*, 10, 323-337.
- Goold, M., Campbell, A., & Alexander, M. (1994). *Corporate-Level Strategy: Creating Value in the Multibusiness Company*. Wiley.

- Goerzen, A., Asmussen, C. G., & Nielsen, B. B. (2013). Global cities and multinational enterprise location strategy. *Journal of International Business Studies*, 44, 427-450.
- Goldbach, S., Nagengast, A., Steinmuller, E., & Wamser, G. (2019). The effect of investing abroad on investment at home: On the role of technology, tax savings, and internal capital markets. *Journal of International Economics*, 116, 58-73.
- Graebner, M. E. (2004). Momentum and serendipity: How acquired leaders create value in the integration of technology firms. *Strategic Management Journal*, 25, 751-777.
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17 (Winter): 109-122.
- Grant, R., & Phene, A. (2022). The knowledge-based view and global strategy: Past impact and future potential. *Global Strategy Journal*, 12(1), 3-30.
- Gupta, A., & Govindarajan, V. (1991). Knowledge flows and the structure of control within multinational corporations. *Academy of Management Review*, 16, 768-792.
- Gupta, A., & Govindarajan, V. (2000). Knowledge flows within multinational corporations. *Strategic Management Journal*, 21, 473-496.
- Gupta, A. K., Govindarajan, V., & Malhotra, A. (1999). Feedback-seeking behavior within multinational corporations. *Strategic Management Journal*, 20(3): 205-222.
- Hakanson, L. & Nobel, R. (2000). Technology Characteristics and Reverse Knowledge Transfer. *Management International Review*, 40, 29-48.
- Hansen, M. & Lovas, B. (2004). How do multinational companies leverage technological competencies? Moving from single to interdependent explanations. *Strategic Management Journal*, 25, 801-822.
- Holm, U., Johanson, J. & Thilenius, P. (1995). Headquarters knowledge of subsidiary network contexts in the multinational corporation. *International Studies of Management and Organization*, 25, 97-119.
- Inderst, R. & Laux, C. (2005). Incentives in internal capital markets: capital constraints, competition, and investment opportunities. *RAND Journal of Economics*, 36, 215-228.
- Jarillo, J. C., & Martinez, J. I. (1990). Different roles for subsidiaries: The case of multinational corporations in Spain. *Strategic Management Journal*, 11, 501-512.
- Jensen, R. & Szulanski, G. (2004). Stickiness and the adaptation of organizational practices in cross-border knowledge transfers. *Journal of International Business Studies*, 35, 508-523.
- Kaplan, S. & Barish, N. (1967). Decision-making allowing for uncertainty of future investment opportunities. *Management Science*, 13, 569-577.

- Kim, W. C., Hwang, P., & Burgers, W. P. (1993). Multinationals' diversification and the risk-return trade-off. *Strategic Management Journal*, 14(4), 275-286.
- Kogut, B., & Zander, U. (1992). Knowledge of the firm: Combinative capabilities, and the replication of technology. *Organization Science*, 3(3): 383-397.
- Kogut, B., & Zander, U. (1993). Knowledge of the firm and the evolutionary theory of the multinational corporation. *Journal of International Business Studies*, 24, 625-645.
- Lamont, O. (1997). Cash flow and investment: Evidence from internal capital market *Journal of Finance*, 52, 83-115.
- Lane, P. J., & Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning. *Strategic Management Journal*, 19, 461-477.
- Lane, P. J., Salk, J. E., & Lyles, M. A. (2001). Absorptive capacity, learning, and performance in international joint ventures. *Strategic Management Journal*, 22, 1139-1162.
- Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal*, 13, 111-125.
- Lippman, S. A. & Rumelt, R. P. (1982). Uncertain imitability: An analysis of interfirm differences in efficiency under competition. *Bell Journal of Economics*, 13, 418-438.
- Lorenzen, M., Mudambi, R., & Schotter, A. (2020). International connectedness and local disconnectedness: MNE strategy, city-regions and disruption. *Journal of International Business Studies*, 51, 1199-1222.
- Lyles, M. A. & Salk, J. (1996). Knowledge acquisition from foreign parents in international joint ventures: An empirical examination in the Hungarian context'. *Journal of International Business Studies*, 27, 877-903.
- Mansfield, E. & Romeo, A. (1995). Technology transfer to overseas subsidiaries by U. S. – based firms. *Quarterly Journal of Economics*, 95, 737-750.
- March, J. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2, 71-87.
- Martin, X., & Salomon, R. (2003). Tacitness, learning, and international expansion: A study of foreign direct investment in a knowledge-intensive industry. *Organization Science*, 14, 297-311.
- Meyer, K.E., Mudambi, R., & Narula, R. (2011). Multinational enterprise and local contexts: the opportunities and challenges of multiple-embeddedness. *Journal of Management Studies*, 48, 235-252.

- Meyer, K., Li, C., & Schotter, A. (2020). Managing the MNE subsidiary: Advancing a multi-level and dynamic research agenda. *Journal of International Business Studies*, 51(4), 538-576.
- Minbaeva, D., Pedersen, T., Bjorkman, I., Fey, C., & Park, H. (2003). MNE knowledge transfer, subsidiary absorptive capacity and HRM. *Journal of International Business Studies*, 34, 586-599.
- Monteiro, L. F., Arvidsson, N., & Birkinshaw, J. M. (2008). Knowledge flows within multinational corporations: Explaining subsidiary isolation and its performance implications. *Organization Science*, 19, 90-107.
- Mudambi, R. (1998). Review of International Financial Management. *Journal of Finance*, 53(3), 1194-1197.
- Mudambi, R. (1999). MNE internal capital markets and subsidiary strategic independence. *International Business Review*, 8, 197-211.
- Mudambi, R. (2002). Knowledge management in multinational firms. *Journal of International Management*, 8(1), 1-9.
- Mudambi, R. & Navarra P. (2004). Knowledge flows, subsidiary power and rent-seeking. *Journal of International Business Studies*, 35, 385-406.
- Mudambi, R. (2011). Hierarchy, coordination, and innovation in the multinational enterprise. *Global Strategy Journal*, 1, 317-323.
- Mudambi, R. & Swift, T. (2014). Knowing when to leap: Transitioning between exploitative and explorative R&D'. *Strategic Management Journal*, 35(1), 126-145.
- Mudambi, R., Piscitello, L., & Rabbiosi, L. (2014). Reverse knowledge transfer in MNEs: Subsidiary innovativeness and entry modes. *Long Range Planning*, 47(1-2), 49-63.
- Nelson, R., & Winter, S. (1978). Forces generation and limiting concentration under Schumpeterian competition. *The Bell Journal of Economics*, 9, 524-548.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: how Japanese companies create the dynamics of innovation*. Oxford University Press: New York.
- Nonaka, I., & Krogh, G. (2009). Tacit knowledge and knowledge conversion: controversy and advancement in organizational knowledge creation theory. *Organizational Science*, 20(3), 635-652.
- Noorderhaven, N., & Harzing, A.-W. 2009. Knowledge-sharing and social interaction within MNEs. *Journal of International Business Studies*, 40(5): 719-741.
- O'Donnell, S. W. 2000. Managing foreign subsidiaries: Agents of headquarters, or an interdependent network? *Strategic Management Journal*, 21(5): 525-548.

- Perri, A., Scalera, A., & Mudambi, R. (2017). What are the most promising conduits for foreign knowledge flows: Innovation networks in the Chinese pharmaceutical industry. *Industrial and Corporate Change*, 26(2), 333-355.
- Polanyi, M. (1966). *The Tacit Dimension*. Routledge and Kegan Paul, London, U.K.
- Prahalad, C. K. & Doz, Y. (1987). *The Multinational Mission*. New York: Free Press.
- Rajan, R. & Servaes, H. (2000). The cost of diversity: The diversification discount and inefficient investment. *Journal of Finance*, 55, 35-80.
- Ricklefs, R.E. (2005). *The Economy of Nature* (6th ed.). New York, NY: WH Freeman.
- Roth, K., & Morrison, A. (1990). An empirical analysis of the integration-responsiveness framework in global industries. *Journal of International Business Studies*, 21, 541-564.
- Roth, K., Schweiger, D. & Morrison, A. J. (1991). Global strategy implementation at the business unit level: Operational capabilities and administrative mechanisms. *Journal of International Business Studies*, 22, 369-402.
- Rowan, D. C. (1983). *Output, Inflation and Growth*. 3<sup>rd</sup> Edition, London: The Macmillan Press.
- Rugman, A. M. (1979). *International Diversification and the Multinational Enterprise*, Lexington Books, Lexington, MA.
- Rugman, A., Verbeke, A., & Yuan, W. (2011). Re-conceptualizing Bartlett and Ghoshal's classification of national subsidiary roles in the multinational enterprise. *Journal of Management Studies*, 48(2), 253-277.
- Samuelson, P.A. & Nordhaus, W.D. (2004). *Economics*, 18th ed. McGraw-Hill/Irwin, Boston, MA.
- Shin, H., & Stulz, R. (1998). Are internal capital markets efficient? *Quarterly Journal of Economics*, 113, 531-552.
- Simonin, B. (1999). Transfer of marketing know-how in international strategic alliances: an empirical investigation of the role and antecedents of knowledge ambiguity'. *Journal of International Business Studies*, 30, 463-490.
- Stein, J. C. (1997). Internal capital markets and the competition for corporate resources. *Journal of Finance*, 52, 111-133.
- Szulanski, G. (1996). Exploring internal stickiness: impediments to the transfer of best practices within the firm. *Strategic Management Journal*, 17, 27-43.
- Taggart, J. H. (1998). Strategy shifts in MNC subsidiaries. *Strategic Management Journal*, 19(7), 663-681.



- Wang, P., Tong, T. W., & Koh, C. P. (2004). An integrated model of knowledge transfer from MNC parent to China subsidiary. *Journal of World Business*, 39(2), 168-182.
- White, R. E., & Poynter, T. A. (1984). Strategies for foreign-owned subsidiaries in Canada. *Business Quarterly*, 49(2), 59-69.
- Yang, Q., Mudambi, R., & Meyer, K. (2008). Conventional and reverse knowledge flows in multinational corporations. *Journal of Management*, 34, 882-902.
- Zahra, S. A. & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27, 185-203.
- Zander, U., & Kogut, B. (1995). 'Knowledge and the speed of the transfer and imitation of organizational capabilities: An empirical test'. *Organization Science*, 6, 76-92.

Table 1. Subsidiary Roles based on Knowledge and Financial Inflows

		<i>Knowledge Flows</i>	
		LOW	HIGH
<i>Financial Flows</i>	LOW	<p><b>INDEPENDENT</b></p> <p>For example, subsidiary in a country-specific, well developed, mature market</p>	<p><b>INTERRELATED</b></p> <p>For example, competence-exploiting, internal supplier or distributor, marketing or sales subsidiary, subsidiary with cross-border or corporate functions</p>
	HIGH	<p><b>DIVERSIFIED GROWTH</b></p> <p>For example, subsidiary with diversified strategy, subsidiary in a country specific market</p>	<p><b>STRATEGIC GROWTH</b></p> <p>For example, subsidiaries with centers of excellence mandates, R&amp;D units with global scaling responsibilities</p>

Table 2. Predictions of Subsidiary Roles on Competitive Behavior and Risks

	Subsidiary Behavior	
	<i>Unrestricted</i>	<i>Restricted</i>
HQ Control and Attention	<p><b>INDEPENDENT</b></p> <p><u>Competitiveness:</u> Ability to develop attractive products and services with local actors and achieve high external embeddedness.</p> <p><u>Risks:</u> "Fall of the Radar". Developing in isolation from rest of the MNE. Outside HQ attention and control</p>	<p><b>INTERRELATED</b></p> <p><u>Competitiveness:</u> Ability to exploit knowledge transfer from MNE and turn this knowledge into products and services attractive to the internal and external market. High internal embeddedness and possibly external embeddedness.</p> <p><u>Risks:</u> Bounded by internal restrictions, not able to meet internal or local demands. Lack of financial resources to develop.</p>
	<p><b>DIVERSIFIED GROWTH</b></p> <p><u>Competitiveness:</u> Ability to develop attractive to local and global customers using external knowledge sources.</p> <p><u>Risks:</u> Allowing the subsidiary freedom to develop new products and services while monitoring financial spending. Aligning corporate and global strategy direction.</p>	<p><b>STRATEGIC GROWTH</b></p> <p><u>Competitiveness:</u> Ability to utilize knowledge core of MNE to explore and develop new products and services for local and global customers.</p> <p><u>Risks:</u> Ensuring that "core" represents frontier technology and avoid core rigidities. Avoid parental misguidance.</p>
<i>Low</i>		
<i>High</i>		