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INVESTMENT AND DEVELOPMENT



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*Transnational Corporations*¹ is a longstanding policy-oriented refereed research journal on issues related to investment, multinational enterprises and development. It is an official journal of the United Nations, managed by the United Nations Conference on Trade and Development (UNCTAD). As such it has a global reach, a strong development policy imprint, and high potential for impact beyond the scholarly community.

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The journal aims to advance academically rigorous research to inform policy dialogue among and across the business, civil society and policymaking communities. Its central research question – feeding into policymaking at subnational, national and international levels – is how to make international investment and multinational enterprises contribute to sustainable development. It invites contributions that provide state-of-the-art knowledge and understanding of the activities conducted by, and the impact of multinational enterprises and other international investors, considering economic, legal, institutional, social, environmental or cultural aspects. Only contributions that draw clear policy conclusions from the research findings will be considered.

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The scale and complexities of the “grand challenges” faced by the international community, such as climate change, poverty, inequality, food security, health crises, and migration – as embodied in the United Nations’ Sustainable Development Goals (SDGs) – are enormous. These challenges, combined with the impact of disruptive technologies on business, rapidly evolving trends in international production and global value chains, new emerging-market players and new types of investors and investment, make it imperative that policymakers tap a wide range of research fields. Therefore, the journal welcomes submissions from a variety of disciplines, including international business, innovation, development studies, international law, economics, political science, international finance, political economy and economic geography. However, submissions should be accessible across disciplines (as a non-specialized journal idiosyncratic research should be avoided); interdisciplinary work is especially welcomed. The journal embraces both quantitative and qualitative research methods, and multiple levels of analyses at macro, industry, firm or individual/group level.

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Transnational Corporations aims to provide a bridge between academia and the policymaking community. It publishes academically rigorous, research-underpinned

¹ Previously: The CTC Reporter. In the past, the Programme on Transnational Corporations was carried out by the United Nations Centre on Transnational Corporations (1975–1992) and by the Transnational Corporations and Management Division of the United Nations Department of Economic and Social Development (1992–1993).

and impactful contributions for evidence-based policy-making, including lessons learned from experiences in different societies and economies, both in developed and developing-country contexts. It welcomes contributions from the academic community, policymakers, research institutes, international organisations, and others. Contributions to the advancement and revision of theories, frameworks and methods are welcomed as long as they are relevant for shedding new light on the investigation of investment for development, such as advancing UNCTAD's *Investment Policy Framework for Sustainable Development*.

The journal publishes original research articles, perspective papers, state-of-the-art review articles, point-counterpoint essays, research notes and book reviews. All papers are double blind reviewed and, in line with the aims and mission of the journal, each paper is reviewed by academic experts and experts from the policymaking community to ensure high-quality impactful publications that are both academically rigorous and policy relevant. In addition, the journal features synopses of major UN reports on investment, and periodic reviews of upcoming investment-related issues of interest to the policy and research community.

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Making the most of FDI for development: “new” industrial policy and FDI deepening for industrial upgrading

Stephen R. Buzdugan and Heinz Tüselmann*

This article examines the theoretical and empirical links between a new generation of industrial policy, which is rapidly emerging as a dominant paradigm in development economics, and foreign direct investment (FDI). It finds that thus far, the theoretical role of FDI in “new” industrial policy has been vague, despite openness to FDI being one of the characteristics which sets it apart from an “old” generation of industrial policy, which advocated protectionism. Based on primary and secondary research, the article argues that a set of interventions into the economies of low- and lower-middle-income countries combined with an in-depth understanding of the complex interactions involved in TNC subsidiary upgrading, the internationalization processes within TNCs, and TNC strategies and objectives on the part of policymakers, offers such countries the opportunity to maximize the benefits of FDI and move further up in global value chains.

Key words: FDI upgrading, subsidiary development, industrial policy, economic development

1. Introduction

After several decades as a controversial sideshow, industrial policy is taking the centre stage again in mainstream development policy thinking (Stiglitz et al., 2013; Wade, 2012; Lin and Chang, 2009; Hausmann et al., 2008). This shift is a response to the growing recognition that the liberalization of trade and investment, which have been pursued in developing countries since the 1980s, has alone been insufficient in promoting economic growth (Harrison and Rodríguez-Clare, 2010). Industrial policy, however, has taken on a more contemporary form, breaking with its past association with hard line protectionism and advocating instead “softer” forms of

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interventions by governments to promote production upgrading and diversification (Wade, 2012: 236; Harrison and Rodríguez-Clare, 2010). For low- and lower-middle-income economies especially, the focus of debates and practice has been on the role of industrial policy to promote exports and become incorporated into higher levels of global value chains (GVCs) (Haque, 2007; Gereffi, 2014: 442; Pérez, 2014). In this regard, the role of trade policy has understandably been seen as essential and thus, debates have focused on whether governments should “conform to or defy” their respective countries’ comparative advantage (Lin and Chang, 2009) and then on what policies may be effective in doing so under World Trade Organization (WTO) rules, which limit the range of intervention by governments (Gereffi, 2014: 438; Wade, 2012: 237; Harrison and Rodríguez-Clare, 2010: 4113–4114). While the role of soft forms of industrial policy with respect to foreign direct investment (FDI) has also been recognized as key to encouraging growth through upgrading activities, the treatment of how such upgrading can occur through FDI has been approached with a somewhat broad brush in the development literature, referring generally to FDI promotion and its potential positive spillover effects (see for instance Lin, 2012a and 2010).

This article seeks to address this gap by shedding light on how FDI can be an important component in a new generation of industrial policies to further economic development in lower-income countries. Specifically, it argues that to avoid being trapped in the low end of the value chain by the entrenchment of low value added activities associated with FDI, low- and lower-middle-income developing countries should tailor their efforts to attract higher value added (HVA) FDI and upgrade existing FDI towards more HVA operations through a new set of industrial policies.¹ Put differently, it argues that the attraction of a significant *volume* of FDI, which is implied in much of the existing literature on FDI and industrial policy, is a necessary but insufficient condition for FDI to contribute to development objectives, and that what matters instead is industrial policy to improve the *quality* of both attracted and existing FDI. In this respect, it agrees with Gereffi (2014: 455) that the wholesale attraction of transnational corporations (TNCs) *per se* by developing-country governments may present a risk to the upgrading of domestic production, particularly in low- and lower-middle-income countries:

If low-value-added activities dominate a specific country or region, then consequences [of FDI] for economic performance and social welfare can be profound. Specifically, entrenchment in narrow, routine, low-value-added activities can lock firms and national industries into unprofitable and intellectually narrow segments of the value chain. Learning might be

¹ See, for instance, UNCTAD (2013) for an overview of the importance of moving to the higher end of GVCs for developing countries.

rapid at first, but over time such limits can become acute, especially if lead firms in GVCs move to new sites for low-cost production and more promising markets.

On the basis of evidence from both developed and developing countries, this article posits that such a new generation of industrial policies should occupy some middle ground within the current debates, be broadly sector based (rather than aimed at particular industries) and focus on activities in a cross-cutting way, especially those that are new to the economy and that may be transferable across sectors (for instance, such a notion is implicit in a number of recent research and policy papers on the development of agribusiness value chains (Heumesser and Schmid, 2012; Schaffnit-Chatterjee, 2014). On the one hand, the purpose of such policies is to contribute to the achievement of a certain level of local capabilities and absorptive capacity necessary to upgrade FDI towards HVA activities and to channel FDI into key areas of productive capacity-building. Yet, on the other hand, the potential to upgrade FDI relates to policies that are informed by an understanding of the complex interactions involved in TNC subsidiary upgrading, the internationalization processes within TNCs, and TNC strategies and objectives, in order to generate win-win situations for both investors and host countries. This paper provides evidence of such developments.

In this regard, the article suggests that success in formulating these policies will be based on increasing the understanding among policymakers of the internationalization processes, objectives and overall strategies of the investing TNCs – including the complexities associated with potential impacts on domestic productivity and skills, among other effects – in order to maximize the quality of inward FDI and promote FDI upgrading. This is a crucial point: because many approaches aimed at developing FDI towards more HVA operations are resource intensive, policymakers in low-income countries (with large funding gaps to cross in order to build and sustain the requisite productive capacity bases) seeking to promote TNC-assisted industrial upgrading strategies require policies based on evidence of the complexities in FDI upgrading. One example of such complexities is how the dual embeddedness of TNC operations (i.e. embeddedness within the host country and within the broader TNC organization) influences subsidiary development and upgrading (Andersson et al., 2005; Birkenshaw et al., 2005; Ghoshal and Bartlett, 2005; Meyer et al., 2011), which has thus far rarely been accounted for in influential FDI impact studies and policy prescriptions.² Thus, this article supports such evidence-based policymaking by presenting the results of extensive original research by the authors performed in a developed-country

² For instance, see two recent World Bank studies – Farole and Winkler (2014) and Echandi et al. (2015) – for a comprehensive review of the empirical literature.

context (supplemented by evidence from developing-country contexts), which show that such FDI upgrading is relatively rare but possible if a number of lessons learned in such contexts are applied.

This article proceeds as follows. First, we discuss the contemporary debate on industrial policy and seek to explain how middle ground within this debate may be found. Then, we present an argument – based on insights from the international business literature and the results of large-scale, representative, micro-level, survey-based studies in the United Kingdom, Germany and Scandinavia – that what matters for production upgrading and growth is the *quality* of FDI, rather than the attraction of FDI per se. From this, we examine the emerging evidence in the economic development literature about the ways that new forms of industrial policy have been used in developing countries to maximize the developmental effects of FDI. Finally, based on these two sets of evidence, from developed and developing countries, we conclude by suggesting a set of policy areas and policy considerations that have been shown to attract HVA FDI and upgrade existing FDI towards more HVA operations.

2. The contemporary shift toward a new industrial policy

The term “industrial policy” has historically elicited two forms of responses among those concerned with economic growth and development: some have praised it as the means by which a number of East Asian economies achieved rapid levels of economic development, while others have condemned it, citing failures of import-substituting industrialization policies in parts of sub-Saharan Africa and Latin America in the 1960s and 1970s. Arguably, the reason for such opposing views, as Weiss (2011: 1) points out, “stems from the fact that here the structuralist and neoclassical traditions of development studies meet head-on, with the former seeing industrial policy as a means of correcting for the limitations of markets and the latter seeing it as the highpoint of ‘government failure’”.

Recently, there has been renewed interest in industrial policy within the mainstream strands of the field of economic development, which has accepted the pervasiveness of market failures in developing countries but has tried to design an approach to limit the potential for government failure (Hausmann et al., 2008; Lin and Chang, 2009; Stiglitz et al., 2013). Although there has been some consensus on the necessity of some form of industrial policy for economic development, the approaches that have been proposed thus far differ in the degree to which state intervention attempts to promote industrialization.

On one side of the contemporary industrial policy debate lie proponents, such as former chief economist of the World Bank Justin Lin, of the view that economic development is firmly rooted in a country’s endowment structure and a private

sector which responds adequately to prices reflecting the relative abundance and scarcity of its factor endowments. In this view, governments can actively promote the process of economic development by coordinating and facilitating the entry of firms into industries compatible with the country’s latent comparative advantages and absorb the large externalities involved in industrial upgrading and improvements in infrastructure (Lin, 2012b: 406). As Lin (Lin and Chang, 2009: 486) has put it:

The optimal industrial structure [of poor countries] is endogenous to the country’s endowment structure – in terms of its relative abundance of labour and skills, capital, and natural resources. Upgrading the industrial structure requires first upgrading the endowment structure, or else the resulting industrial structure will become a drag on development. Therefore the government’s role is to make sure that the economy is well launched on this endogenous process of upgrading.

Although there is an apparent logic to this approach, it fundamentally assumes that there is or will be a private sector that is mature enough to respond to and take full advantage of the facilitating and coordinating activities of the state. Furthermore, as Chang (Lin and Chang, 2009: 490–91) has rebutted, Lin’s approach assumes that the factors of production are easily put in place to specialize in the country’s comparative advantage. As he points out, many poor countries exhibit limited factor mobility and limited access to technology, which may hamper their efforts towards industrial upgrading.

Ha Joon Chang, who supports the other side of the industrial policy debate, suggests that government should play a more active role to overcome the many complex barriers to industrial upgrading that poor countries are likely to face, which a coordinating role may not be able to grapple with:

The industrial upgrading process will be messy. It will not be possible for a country to follow market signals closely and enter an industry when its factor endowments are right, as will happen with the smooth comparative-advantage-conforming strategy that Justin advocates. In the real world, firms with uncertain prospects need to be created, protected, subsidised, and nurtured, possibly for decades, if industrial upgrading is to be achieved (Lin and Chang, 2009: 501).

Although these two approaches may appear divergent, they share quite a bit of common ground, mainly on the central importance of industrial upgrading for economic development and that the government should play a significant role in this process. Therefore, given that there is consensus on these core principles, a middle path can be found. A number of works have emerged over the past decade that have sought to elaborate such a middle path. One key insight from this literature is that government intervention should focus on activities (a new technology, a particular kind of training, a new good or service), rather than on sectors per se –

“it is activities that are new to the economy that need support, not those that are already established” (Rodrik, 2004: 14). Therefore, whether it is appropriate, given the country’s set of resources, to stay close to or attempt to move slightly farther from its comparative advantages, the government needs to be able to promote and support new ways of producing. In relation to this, policies, institutions and activities need to be put in place to promote learning in the economy. Finally, Weiss (2011) suggests that elements from both sides of the industrial policy debate can be combined at different – that is micro and macro – levels, on the basis of the work of Hausmann et al. (2008). At the micro level, governments, for example, can engage in dialogue with local industries to (i) determine constraints to industrial upgrading and seek to alleviate them, for instance through the establishment of public-private “deliberation councils” to identify roadblocks to upgrading and develop solutions to overcome them; and (ii) create centralized budgets from which public institutions can draw on state resources to alleviate such private sector constraints (such as training individuals in a necessary activity or improving a specific piece of infrastructure) (Hausmann et al., 2008: 5–10). At the macro level, governments can promote upgrading through, for instance, making credit available for risk-taking ventures as well as choosing to focus on promoting a priority sector (not a specific industry). However, in order to enhance the efficiency of those sectors that are receiving support, these promotion activities need to be time-limited and have clear performance criteria and transparency.

Irrespective of the forms of intervention deemed necessary, one distinguishing characteristic of new industrial policy – and the one we draw most attention to in this article – is its open orientation towards foreign investment in order to harness its potential to build capacity, promote HVA activities in the economy, and therefore participate in and capture the gains of higher levels of GVCs. This is a fundamental departure from old forms of industrial policy, which had limited success in achieving such outcomes by closing off economies from foreign trade and investment, substituting them instead with often scarce levels of domestic demand and investment. Thus, the key to positive developmental effects of new industrial policy is its successful integration with existing and potential FDI. Yet, as we show below, such successful integration is by no means automatic or solely dependent on levels – i.e. of stocks and flows – of FDI, but depends on the quality of FDI and the ability of countries and their investors to promote upgrading.

3. Deepening FDI for production upgrading

FDI can play a role in sustainable economic development, poverty reduction and industrial upgrading in lower-income countries (Kolk et al., 2017). However, the attraction of a high volume of FDI is not a sufficient condition for FDI to contribute

to these objectives. What matters is the *quality* of FDI, in terms of HVA FDI and the development of existing FDI towards more HVA activities with associated positive spillover effects to the domestic economy. Direct and indirect benefits associated with upgrading of FDI include (but are not limited to) higher productivity, more skilled employment and technological advancement. Such upgrading of FDI is at that heart of Narula’s and Dunning’s (2010) “TNC-assisted development strategy”. Since developing countries exhibit different degrees of economic development, possess different endowments and locational asset bases, different static and dynamic comparative advantages, varying degrees of market and/or coordination failures and have different development objectives and strategies, a fundamental issue is whether upgrading of FDI or FDI in general are efficient paths toward economic development and industrial upgrading.

FDI upgrading is connected to an increasing emphasis on developing unique locational asset bases, efficient local network infrastructures (consisting of suppliers, customers, competitors, clusters of domestic firms, research institutes and universities, supportive government agencies and local authorities) and effective institutional frameworks that are attractive and desirable to TNCs to upgrade their activities and enable their subsidiaries to perform more HVA activities. Many of these assets are spatially bound. Therefore, the development of more HVA activities by foreign firms in their host locations is associated with them being deeply embedded in the host region and within efficient local networks and linkages to effectively access and leverage the tangible and intangible locational assets, which underlie the development of high-productivity, high-skills and high-employment HVA activities. At the same time, the increasing emphasis of policymakers on the new embeddedness factors for upgrading and deepening FDI is connected with TNCs increasingly developing GVCs and seeking to develop their subsidiaries into a differentiated network, where some subsidiaries are more central to core aspects of overall TNC performance than others (which embodies a more footloose type of FDI) (Bartels et al., 2009; Birkenshaw et al., 2005; Rugman et al., 2011). In this way, TNCs increase specialization within the TNC network and establish a differentiated network of subsidiaries in order to maximize competitive advantage through the development of their unique contributions, in order to fulfil the strategic objectives of the parent company. This suggests that subsidiaries which are more central to overall TNC performance and that can build up valuable assets which are not accessed by other parts of the TNC (or do so at higher costs), should be given mandates and strategic autonomy to deeply embed themselves in the host economy; to develop main business lines for international markets; or to perform specialist functions for all or part of the TNC.

If the upgrading of FDI is part of the wider development and industrial upgrading strategy, it has to be borne in mind that any direct and/or spillover benefits are neither automatic nor cost- or risk-free. Crucially, these require a level of host

country productive capacity in terms of local capabilities and absorptive capacity, and related investments to foster these, as well as international connectivity (UNCTAD, 2012).

With regard to expected FDI spillover effects, much of the evidence points mainly to vertical spillovers (spillovers to firms in linked industries: upstream and/or downstream sectors) rather than horizontal spillovers (spillovers to firms within the industry) (see Harrison and Rodriguez-Claire (2009) for a comprehensive overview). Low-income countries have generally weak absorptive capacity and local capabilities compared to high- and middle-high-income countries, as well as limited resources to invest in these (UNCTAD, 2014a). For example, sub-Saharan African countries have generally placed greater emphasis on solely attracting FDI, as they have generally lacked the requisite infrastructure, skills and capabilities of domestic firms to capture the development potential of the employment, technology and productivity spillovers associated with the deeper embeddedness of TNC subsidiaries and related HVA activities (Chen et al., 2015: 35–36).

The more important need for policymakers in low-income countries, then, is for evidence-based policies based on an understanding of the complexities involved in FDI upgrading and subsidiary development towards more HVA activities, including the objectives and overall strategies of the investing TNCs, and the complex links to outcomes such as productivity, skills and so forth. In light of the discussion above, this requires a framework of analysis that draws on insights from the international business strategy literature, including resource-based and network theories of the firm, development economics and economic geography (e.g. Andersson et al., 2005; Birkenshaw et al., 2005; Cantwell and Mudambi, 2011; Coe and Perry, 2004; Dunning, 2009; Henderson et al., 2002; Goshal and Bartlett, 2005; Peng et al., 2009; Holm et al., 2000; Porter and Sölvell, 1998), FDI upgrading and its associated benefits depend on the combination and interaction of a number of factors at different levels.

Some of these factors are not new and are well versed, such as (i) a host country's endowments and its static and dynamic comparative advantages; (ii) a host location's possession of tangible and intangible location asset bases at the national and subnational levels that are attractive for TNCs to pursue HVA activities, including next-to-market and cost factors, and spatially bound created assets; (iii) a host country's capabilities and absorptive capacities to attract, sustain and develop HVA FDI activities; and (iv) a host country's institutional, regulatory, policy and governance frameworks and in particular stable and business-friendly investment climate, in addition to political, economic and social stability. There has also been a growing appreciation in the economic development literature of the differential implications for the developmental potential of FDI depending on type of investment (e.g. greenfield, joint ventures and acquisitions) and FDI motives

(e.g. market, resource, efficiency or strategic asset seeking) (Farole and Winkler, 2014; Zhan et al., 2015). This is also the case for the importance of the degree of embeddedness of subsidiaries in the host country, in terms of local network relationships (interorganizational relationships), to effectively access and leverage host-country locational advantages and assets.

What is somewhat missing in the economic development literature and related studies are insights from the international business literature relevant to FDI upgrading and HVA development that link the external embeddedness of TNC foreign operations with their embeddedness in the broader TNC network so that mutual beneficial outcomes can materialize. These include (i) the role and degree of strategic decision-making autonomy within the subsidiary, to build up a unique position within the TNC by tapping into external networks and locational assets, with associated activity or functional mandates performed for the broader TNC; (ii) the embeddedness of the subsidiary within the broader TNC network in terms of intra-organizational relationships with other units of the TNC and/or the parent company, which *inter alia* relate to the centrality of a subsidiary’s position within the TNC network, as well as highlighting the “dual embeddedness” of subsidiaries (Meyer et al., 2011), i.e. in the host country and within the TNC; (iii) related to this, the degree of TNC differentiation and specialization and the extent to which it is developing its subsidiaries into differentiated networks in which some subsidiaries are more central than others to overall TNC performance and competitiveness; (iv) the TNC’s overall strategic objectives and the extent to which subsidiaries can contribute to them and deliver outcomes that boost the competitive advantage of the TNC as a whole and contribute to overall TNC performance.

Thus, among the central factors that contribute to FDI upgrading and associated subsidiary development towards HVA activities lie the complex interactions of host-country embeddedness and local networks, intra-organizational relationships within the TNC and the granting of strategic autonomy, which in turn are influenced by the overall strategy and strategic objectives of the investing TNC. The following evidence from developed countries may shed important light on these matters and may provide useful pointers for policy in low-income countries.

4. Evidence and lessons of FDI upgrading from a developed-country context

These issues were investigated by the authors through a set of large-scale, representative, micro-level, survey-based studies in the United Kingdom, Germany and Scandinavia, which included subsidiaries of major FDI source countries from the developed world, as well as a supplementary census of German parent companies (Gammelgaard et al., 2009, 2012; Hoppe et al., 2003; McDonald et

al., 2003, 2005, 2011). On the whole, these studies, which were summarized in detail in recent UNCTAD research notes by the authors (Tüselmann and Buzdugan, 2013, 2016), found that the strategic development of TNC subsidiaries necessary for FDI upgrading and subsidiary development towards HVA activities is less pronounced than generally assumed. Only a significant minority of TNCs were found to be strategically developing their subsidiaries by granting them higher-level mandates and strategic decision-making autonomy, to be deeply embedded into local networks in their host locations and to be performing some form of HVA activity. Embeddedness in local, regional or national supply chains was found to be particularly low. Furthermore, the majority of subsidiaries in the countries surveyed were shown to be only lightly embedded in their host location, as a result of being geared to supplying and developing domestic markets, which highlights the continuing importance of the export-enhancing nature of FDI among developed countries.

There was little evidence that in recent years a large number of subsidiaries have considerably increased value added; deepened linkages to local, regional or national supply chains; or experienced a substantial upgrade in their strategic decision-making autonomy, which is associated with fostering subsidiary development and specialization. This is despite the fact that the majority of foreign-owned subsidiaries are relatively mature, having been in foreign ownership for many years and having had a long period in which to develop host-location linkages.

The insights provided by this research may indicate that a number of host locations, even in highly developed countries, may lack desirable asset bases and capabilities that are attractive for a large number of TNCs to develop and upgrade their FDI. Put differently, the results may indicate that many domestic suppliers are not internationally competitive, despite the increasing importance attached by TNCs to developing global or European supply chains, and that many locations lack appropriate network infrastructures and/or institutional frameworks. The findings of the study also indicate that the majority of TNCs are not looking for such embeddedness factors for their investments. Indeed, the parent companies surveyed in the studies above highlighted that they attached far less importance to embeddedness factors than subsidiary managers do. This highlights that even if subsidiaries embed deeply in their host locations, not all are candidates for upgrading, which may point to an overinvestment of a portion of subsidiaries into these factors without a related increase in HVA activities and a move into a more central position within the TNC network.

These issues notwithstanding, in a developed-country context, the results of these studies show that although FDI upgrading, deep integration into host locations and subsidiary development are generally uncommon, when these elements are present, they are associated with direct economic benefits for both the host countries and TNCs in terms of increased export intensity, productivity level and

growth, skilled employment and subsidiary performance (with the latter perhaps being an important contributor to overall TNC competitiveness and performance and thus an important precursor for subsidiary upgrading). In short, the deepening of FDI and subsidiary development towards more HVA activities has the potential to create win-win situations for both host countries and investors. With regard to the direct employment effects of FDI upgrading, the studies above show that the main effects are not strongly related to employment growth but are instead related to a shift in the skills composition in these subsidiaries towards an increase in skilled jobs and a decrease in unskilled jobs, with associated labour market effects.

The studies also revealed the complex processes involved between subsidiary upgrading and win-win outcomes for investors and host countries – whereby direct and indirect routes exist between increased autonomy, embeddedness and such mutual beneficial outcomes. The deepening of embeddedness in host locations in terms of network relationships was found to be among the main contributors to positive mutual beneficial outcomes, with the granting of strategic decision-making autonomy and strong intra-TNC relationships being primary facilitators in the development of networks in the host location. Put differently, the cultivation of embeddedness in host locations, which is the prime driver of positive subsidiary outcomes, requires the establishment of internal embeddedness and relationships within the TNC to bring the subsidiary into a more central position within the TNC network. In turn, this may facilitate the granting of mandates and strategic decision-making authority to tap into and effectively utilize local networks and local asset bases. Furthermore, as highlighted by the parent company survey, the results underscore that deepening local embeddedness by subsidiaries, per se, is a necessary but not sufficient requirement for beneficial economic outcomes, if not underpinned by the facilitating role of intra-TNC embeddedness and the granting of strategic autonomy which enable the subsidiary to contribute to the overall competitiveness and strategic objectives of the TNC.

5. Potential economic benefits of integrating new industrial policy and FDI upgrading in low- and lower-middle-income countries

Although such potential benefits have been identified in research conducted in developed countries, they are nonetheless very much aligned with the overarching findings of a host of recent studies on the impact of FDI in developing countries, particularly with regard to the need for government policies that establish the conditions in order to attract the right type of FDI and to engage with TNCs in order to increase HVA activities. Furthermore, to underscore the win-win nature of such policies, which reconcile the investment objectives of investors with the

investment and development needs of developing countries (Hallam, 2009), there is some evidence from the agriculture and agribusiness sector in developing countries which shows that investors that are well integrated and embedded in the host location not only yield economic benefits for the host country but also exhibit better firm performance than those that are only lightly embedded (World Bank, 2014; Zhan et al., 2015).

Thus, a wide-ranging and in-depth survey of the literature on the impact of FDI on development performed by the Trade and Competitiveness Global Practice Group at the World Bank (Echandi et al., 2015: 6) concluded:

The benefits from FDI are not automatic. Indeed, the extent to which countries regulate investment and devise other policies affecting spillovers can have a direct impact on the economic and social effects of FDI. Thus, the importance of governments is to obtain the 'right mix' of policies to properly manage different types of FDI. Historically, inadequate design and/or implementation of appropriate policies may, on many occasions, have prevented developing countries not only from attracting, retaining and linking FDI within the domestic economy, but also from maximizing FDI benefits.

In other words, they argue, "the key point is that for policymakers in many developing countries, the real question is not whether to choose between FDI and domestic investment, but rather how to connect them" (Echandi et al., 2015: 6 (emphasis added)). In this respect, recent studies such as Farole and Winkler (2014) and Moran (2014) are beginning to acknowledge the necessity of industrial policy and government management of FDI in order to significantly enhance its benefits in developing countries.

With regard to new industrial policy, Moran (2014) shows through the analysis of five case studies – Costa Rica, the Czech Republic, Malaysia, Morocco and South Africa – that efforts by these governments to invest in *inter alia* infrastructure, to enhance labour skills and to bolster domestic supplier networks were met with increases in the attraction of TNCs which thus diversified local production and exports, as well as increased backward linkages in the host economy. Moran (2014: 32) terms such interventions "light-form industrial policy", which in essence corresponds to the approach advocated by Justin Lin, discussed earlier, whereby interventions should arguably be limited to improving market conditions for local industries within a country's endowment structure. On the basis of their own research, Farole and Winkler (2014: 268) also arrive at a very similar policy prescription:

The trick is to fashion a light-handed industrial policy that focuses mostly on overcoming market failures or capturing coordination externalities, including packages of infrastructure expenditures and public-private vocational training initiatives. But in promoting linkages through targeted

sector strategies, it is important that those chosen sectors conform to reasonable projections of comparative advantage.

Yet, Farole and Winkler (2014: 255) also find that “in many developing countries, a large share of the supplies, services, and skills demanded by foreign firms simply does not exist”. This suggests, that this new form of industrial policy need not be so macro and “light touch” – it incorporates more micro-level interventions to support the emergence and competitiveness of domestic suppliers, as discussed above. Such micro-level interventions – such as government programs to support quality improvement, timeliness of delivery and investment in equipment and technology, which Farole and Winkler (2014: 128) show are demanded of domestic suppliers by TNCs in the mining industry in Chile, Ghana and Mozambique – can complement more light-handed, “macro-handed”, macro-level interventions involving the improvement to infrastructure, skills development and investment climate issues.

Such a mix of micro- and macro-level approaches to new industrial policy (what we agree constitutes a middle-path approach, as discussed earlier) was shown to be successful in a number of recent case studies in Central America examined by the Economic Commission for Latin America and the Caribbean (Pérez, 2014). For instance, the study shows that in El Salvador and Guatemala the application of new industrial policy focused on the promotion of activities in the industrial, primary commodity and services sectors that had higher rates of productivity, that were more technology and knowledge intensive, and that involved the participation of small enterprises, with the intention to build local capacity, promote HVA activities and allow local firms to move to higher levels of GVCs (Pérez, 2014). Such activities included formulating and applying good biosafety practices to prevent outbreaks of diseases, in the case of shrimp cultivation in El Salvador; the creation of new national, regional and local institutions by the government to promote innovation in textile manufacturing among local firms, as well as partnerships between academia and trade associations to promote know-how among workers, in the case of garment manufacturing in El Salvador; and the promotion of diversification of agricultural production through incentives in areas such as the production of organic produce and oriental vegetables, in the case of the non-traditional export vegetable chain in Guatemala (Pérez, 2014).

These cases show that unlike old forms of industrial policy, new industrial policy need not be oriented towards the industrial sector – it can and should be applied to sectors such as services, agriculture and natural resources. This is particularly important with regard to low-income economies in regions such as sub-Saharan Africa, as the agriculture and natural resources sectors are dominant in a majority of the economies and have, therefore, attracted resource-seeking inward FDI. In the case of the agriculture and natural resources sectors, industrial policy aimed at activities in these sectors – such as training in resource extraction and training in

processing – can promote learning, and therefore contribute to the development of local capabilities, as a prerequisite to the emergence of competitive domestic suppliers and FDI upgrading. However, learning can also come from industrial policy focused on sub-activities linked with resource extraction, such as the construction of buildings, the management of human resources, and the provision of transportation and logistics, which can have spillover effects in the direction of HVA activities across industries and sectors (Greenwald and Stiglitz, 2014). Together, the development of activities associated with human resources and skills, of infrastructure and of domestic suppliers form a network. As shown earlier, such networks are at the core of subsidiary development, and thus HVA activities, as they strengthen the embeddedness of existing FDI, whether resource or market seeking.

As outlined above, one other key part of a successful new industrial policy is for inward investment to be structured in a manner that is conducive to facilitating upgrading, promoting spillovers and increasing HVA activities. With regard to the recent economic development literature on the impact of FDI in a developing-country context, only some clarity has emerged on the influence of this aspect. For instance, Farole and Winkler (2014) demonstrate that joint ventures, long-term investments (particularly in sectors with high rent potential, such as mining), the use of formal contracts and market-seeking FDI (rather than efficiency-seeking and resource-seeking FDI) significantly contribute to spillover effects, though efficiency-seeking FDI may bring greater potential spillovers in the long run if it is linked with producing at higher levels of GVCs. However, control over factors such as whether FDI is market-seeking, efficiency-seeking or resource-seeking is not always an option for developing countries. Therefore, the insights gleaned from the developed-country studies discussed earlier, showing that subsidiaries with sufficient strategic autonomy and embeddedness in local networks are more likely to upgrade FDI activities, may point the way toward future research and policy on the way that developing countries manage inward FDI. Indeed, these studies show that even after controlling for entry mode and for market-, resource- and efficiency-seeking factors, three indicators – embeddedness in host economies (in particular), subsidiary strategic decision-making autonomy and embeddedness in the broader TNC internal network – remain important predictors for FDI upgrading towards HVA activities and positive outcomes for the TNC and the host economy.

Taken together, the insights from a developing-country context with regard to new industrial policy and harnessing the developmental potential of FDI, and from a developed-country context, outlining the factors which contribute to FDI upgrading, lead to a set of policy considerations for low- and lower-middle-income countries, which we set out in our conclusion.

6. Conclusion: Considerations for industrial policies for deepening FDI for production upgrading

As UNCTAD has rightly stated in its recent agenda for the future of investment and development, “meeting the challenge of investment for development, in particular achieving the [UN Sustainable Development Goals], requires among others that investment is reconfigured to better harness the contribution of TNCs for development, especially in light of the contemporary TNC universe and the new balance between the public and private sectors” (UNCTAD, 2014: 1). Yet, it is currently a tall order for low-income countries to pursue an TNC-assisted development strategy (Narula and Dunning, 2010) based on attracting HVA FDI and upgrading existing FDI towards more HVA operations. Apart from the fundamentals (conducive institutional and regulatory frameworks, good governance structures, political and economic stability, and so forth), this will require locational asset bases and local network infrastructures that are attractive for TNCs to upgrade their activities, related policies that enhance local capabilities and absorptive capacity conducive for FDI upgrading, as well as policies to correct any market and/or coordination failures. Moreover, such policies need to be informed by an understanding of the complex interactions involved in TNC subsidiary upgrading, the internationalization processes within TNCs, and TNC strategies and objectives.

Although such a “high-road” approach to economic development and industrial upgrading through FDI upgrading and higher value added FDI appears very demanding for low-income countries, studies and recent literature shows that it confers substantial benefits in terms of productivity advances, skills upgrading and so forth. Furthermore, the trend towards increasing specialization and fine-slicing of value activities in TNCs (Buckley, 2014), may provide new opportunities (and risks) for lower-income countries for the pursuit of a high-road FDI approach. Such fine-slicing may lead to greater international diversification of HVA activities of TNCs, as these entail both specialized and standardized tasks and activities across all functional areas (even within the R&D function) (Meyer et al., 2011).

In addition, developing countries need not go it alone in making the most of FDI through the application of new industrial policy and pursuit of the right type of FDI. For example, as Moran (2014: 37) rightly argues, “Support for emerging market economies to use FDI to upgrade and diversify their production and export base – and to develop reliable and competitive supply chains deep into the local economy – is the new frontier for assistance from the developed country and multilateral donor community”. Although we agree with Moran on this point, we would add that this new frontier for the donor community also includes support for developing local networks (such as clusters of domestic firms, research institutes or universities, supportive government agencies or local authorities) and developing links with effective domestic institutions, which we have shown above to be integral to FDI

upgrading. Indeed, the possibilities for donors to assist with the implementation of a new industrial policy raises a key issue: Given the potential gains from FDI upgrading, how can limited national resources, overseas development aid and international investment in low- and lower-middle-income countries be prioritized, combined, targeted and tailored for a requisite new industrial policy to promote productive capacity-building, development of locational assets and local networks that are attractive for TNCs for FDI upgrading? Some recent examples in the agricultural sector, for instance, shed light on the possibilities for multi-stakeholder partnerships in this area, which have been championed by the UN as a means of achieving the Sustainable Development Goals (UN, 2016): the case of Africado, a Tanzanian avocado and avocado oil producer stands out as an example of FDI in the form of overseas development financing, which has seen the implementation of an outgrower scheme to train and involve 2,400 smallholders in avocado production for export (Bachke and Haug, 2014); and the case of the African Cashew Initiative, in which the German TNC SAP, together with multiple stakeholders such as African states and farmers, regional business associations, international NGOs and international development agencies, has successfully worked to integrate informal parts of the cashew value chain into GVCs through a “virtual cooperative” (Franz et al., 2014).

Policies to make the most of FDI certainly need to be context-specific, considering the diversity of low- and lower-middle-income countries in terms of their factor endowments, institutions, geography, labour composition, market size and political power, among other characteristics. However, a number of core policy considerations can be applied, given the recent findings that cut across these sets of countries (UNECA, 2016; Pérez, 2014; Farole and Winkler, 2014; Moran, 2014). Such policies can be divided into two areas. The first area includes policies to attract and retain the right type of FDI, as well as potentially upgrade the activities and investments of existing FDI, such as developing the labour force to engage with new activities, supporting the availability and reliability of supplier networks, investing in infrastructure and strengthening the country’s legal framework to facilitate entry into long-term contracts between foreign investors and local firms. In this regard, the findings and policy recommendations of Farole and Winkler (2014) are instructive – though, we challenge their view to “use industrial policy in a light-handed way that focuses mostly on overcoming market failures or capturing coordination externalities” (2014: 268). As we have pointed out, for instance, their findings show that “in many small developing countries, the reality is that no local suppliers exist for a share of the large-value, strategic inputs required by foreign investors” (2014: 255). In these cases, there is scope for adopting an approach to new industrial policy that focuses on such micro-level issues as actively supporting the creation of such supplier networks while not losing sight of more macro-level priorities such as improving the overall legal framework in order to protect property

rights. Absent such an approach, given the results of the developed-country studies discussed earlier, it is doubtful that TNCs will “take a lead role in planning and implementing supplier development programs” as Farole and Winkler (2014: 272) suggest, if such supplier networks are not already in place.

The second area of policy considerations involves policies intended to allow countries to better engage with existing and potential foreign investors in order to establish a more thorough understanding of their priorities and constraints, given the complexity of their subsidiary-headquarters relationship structures and motivations. In this regard, the findings of Moran (2014: 35) are a useful starting point: “The data reviewed in this paper confirm that there is demonstrable payoff to targeting investors in sectors and to developing expertise about the characteristics and needs of international companies in those sectors. This is a complicated and expensive undertaking, and would-be hosts that want to use FDI to upgrade and diversify the production and export base of their economies need training and counseling”. Such findings underscore the point we make here that not only does attracting and retaining the right type of FDI rely on countries successfully implementing policies in the first area, but also that such success hinges on establishing productive relationships with foreign investors based on insights into their operations and requirements.

Industrial policy that harnesses the potential of FDI involves a reconfiguration – that is, moving towards an activity-based and internationally connected set of strategies that harness extraterritorial economic linkages for FDI deepening and production upgrading, which, especially in the context of GVCs, may also require respective trade policy reforms. Indeed, a country’s design and implementation of new industrial policy requires careful coordination with its investment and trade policies, its investment agreements and other policies within a coherent, integrated, consistent and cohesive set of policies geared towards its overall development objectives, which form part of the broader sustainable development strategy within a framework of a generally favourable investment climate.

Given the insufficiencies of development strategies that have focused more on liberalization than on economic transformation, TNC-assisted production upgrading (with proper economic, social and environmental safeguards in place) may be a viable route towards sustainable development in low- and lower-middle-income countries.

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How can academic-policy collaboration be more effective? A stewardship approach to engaged scholarship in the case of SME internationalization

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In response to calls for more policy-relevant academic research, this paper undertakes a stewardship approach to examine an engaged scholarship policy programme targeted at supporting the internationalization of Small and Medium-Sized Enterprises (SMEs) in Scotland, namely the Global Companies Development Programme (GCDP). The study was undertaken by academics and included a combined formal evaluation and research study, a follow-up workshop and group interviews over a ten-year-period. This study extends the stewardship approach to the engaged scholarship context. The findings suggest that stakeholders view their collaboration as a “supra-organizational” formation through which they can identify and empathize with its objectives; require skilful boundary spanners who consistently promote the objectives of the collaboration in the participating organizations; and, accentuate effective knowledge generation and transfer to SME internationalization activities that reflect the outcomes of their collaboration. We discuss policy implications for the development of private-public and inter-agency partnerships.

Key words: Engaged Scholarship, Stewardship Theory, Global Companies Development Programme, Small and Medium-Sized Enterprises, Internationalization, Scotland.

1. Introduction

In response to calls for more policy-relevant academic research, this paper provides an examination of how an engaged scholarship policy programme that supported the internationalization of Small and Medium-Sized Enterprises (SMEs) in Scotland, namely the Global Companies Development Programme (GCDP) rendered successful outcomes for the stakeholders involved. In this project, the participating

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GCDP stakeholders comprised a three-person academic team, Scottish Enterprise policy makers and GCDP-participating SMEs. Scottish Enterprise is the chief policy organization in Scotland, which supports economic development, enterprise, internationalization and innovation. This was a successful collaboration since all three stakeholder groups effectively attained their pursued objectives, namely generation of research knowledge (academics), promotion of SME internationalization support measures (policy makers), and enhanced enterprise international growth and performance (SMEs).

The rationale behind this paper draws upon the debate regarding the need for more academic research to be more practically relevant, with pleas for greater engagement between researchers and practitioners in a learning community (e.g. Rynes, Bartunek and Daft, 2001; Thorpe, Eden, Bessant and Ellwood, 2011). We posit that the existing engaged scholarship literature is rather descriptive in nature and devoid of the partnership processes and mechanisms that influence engaged scholarship. In other words, although there is agreement on the necessity of stakeholders to closely work together in an engaged scholarship context, there is a lack of research on how such a close collaboration can be achieved. In this paper, we seek to apply the stewardship theory to our understanding of how these processes and mechanisms influence effective, engaged scholarship in a collaborative project involving academics, policy makers and business practitioners. The stewardship theory is a robust theoretical framework that may advance our understanding of how effective collaborations involving stakeholders that have common, but also sometimes conflicting, objectives in the partnership can work effectively (Davis, Schoorman, Donaldson, 1997). The contribution of the current study is to show how stewardship theory is extended into the engaged scholarship setting, by advancing three propositions. The implementation of this theory adds to its validity since engaged scholarship transcends the distinct organizational boundaries within which stewardship relations have customarily been applied.

We adopt Van De Ven's definition that engaged scholarship is "a participative form of research for obtaining the different perspectives of key stakeholders" in studying complex problems; and thereby "produc[ing] knowledge that is more penetrating and insightful than when scholars or practitioners work on the problems alone" (Van De Ven, 2007:9). The learning community "jointly produces knowledge that can both advance the scientific enterprise and enlighten a community of practitioners" (2007:7). We respond to calls for empirical investigations into how useful successful cooperation can be advanced and provide insights into how knowledge transfer between collaborators may take place (Jarzabkowski, Mohrman and Scherer, 2010).

The remainder of this article is structured as follows. The next section discusses the literature on engaged scholarship and stewardship theory. Following that we provide the context of the GCDP and explain the process of this engaged scholarship collaboration. In the subsequent part we elaborate on this collaboration in the light

of the stewardship theory and develop three related propositions. The concluding section discusses the implications of this research for theory and public policy, and offers suggestions for future research.

2. Research background

2.1. Academic-practitioner engaged scholarship

Calls from the academic community for greater engagement between researchers and practitioners include leading proponents such as Pettigrew (1997) in the United Kingdom and Van de Ven (2007) in the United States. Since Pettigrew's initial prompt, there has been a growing interest in the generation of policy-relevant academic research in the United Kingdom (Atherton, 2008; Ram, Jones, Edwards, Kiselincev, Muchenje, Woldesenbet, 2013). There is debate in the field of management research as to the apparent marginality of business school academics in the production of management knowledge and the lack of academic engagement in developing and conducting research with practitioners, and communicating the results to this audience. This has been identified as a rigour-relevance gap (Fincham and Clark, 2009).

In an early review of the literature on the use of organizational research, Beyer and Trice (1982) conclude that researchers and practitioners belong to separate communities with different values and ideologies. More recently, Keiser and Leiner (2009) claim that these communities operate according to completely separate sets of institutional logic, with the consequence that communication of knowledge cannot be absorbed from one to the other rendering collaboration futile. Starkey, Hatchuel, and Tempest (2009) support the idea that as a result of the proliferation of different modes of enquiry there is a range of versions of science, but that management research has pursued rigour over relevance. However, in order to improve knowledge creation and dissemination, academia needs to better reflect user interests (Starkey and Madan, 2001).

In contrast, other researchers argue that there are examples of successful collaborations that engender superior research and outputs, which provide high-quality scholarship and social usefulness, while not compromising the needs of academics and practitioners (Hodgkinson and Rousseau, 2009). In addition, Paton, Chia and Burt suggest that by pursuing advanced levels of scholarship, academics can contribute to practice by presenting "counterintuitive perspectives" (2013:1) that challenge conventional business wisdom. Bridging the gap between the two groups is likely to lead to cross-fertilization and richer understanding of organizations. It also provides credibility to researchers in the wider community (O'Brien and Pizmony-Levy, 2016). By obtaining different perspectives from stakeholders regarding

complex problems, engaged scholarship has the potential to “produce knowledge that is more penetrating and insightful” (Van de Ven, 2007:265). In order for this to happen, Hodgkinson and Rousseau (2009) highlight the necessity for appropriate training in theory and research methods, and deep partnership between academics and practitioners. Although there are difficulties in creating successful collaborative research teams, Amabile, Patterson, Mueller, Wojcik, Odomirok, Marsh and Kramer (2001) find that related success can be influenced by team, environment and process characteristics. Designing an academic-practitioner team includes careful selection of team members, clarification of roles, regular communication, development of trust and allocation of time to reflect on the process and relationship conflicts.

Elaborating on forms of engaged scholarship research, Van de Ven (2007) proposes that this addresses complex problems and surpasses the relevance and rigour issue as it studies problems with and for practitioners and other stakeholders. Recognizing that there are many ways of practising engaged scholarship, Van de Ven presents four alternative forms, namely informed basic research with stakeholder advice, co-produced knowledge with collaborators, design and evaluation studies for professional practice, and action research for a client. He proposes that the specific approach will depend on the purpose of the study and degree to which a researcher performs an “extension” role as a detached, external observer; or an “intension” role as an attached, internal participant. Informed basic research and evaluation forms are extension approaches, whereas collaborative and action research are viewed as intension roles (see also Struminska-Kutra, 2016). According to Van de Ven, collaborative basic research, which is of interest to the present study, comprises insiders and outsiders, whereby the complementary skills of research teams support a collective learning experience through repeated meetings and jointly sharing in activities, for example, to develop the research questions. A potential problem concerns the sharing of proprietary findings.

Van de Ven (2007:283) admits that “in practice, there are many variations and overlap” in his four-dimensional model of engaged scholarship, and that one form may lead to transition into another. The model of Van de Ven (2007) is based on the question of how scholarship that is engaged *with* practitioners can advance knowledge, rather than focus on the relevance of academic research *for* practice. This presents challenges, which require researchers to reconcile different viewpoints, establish and maintain relationships, be reflexive about their role and spend time in the research field. It appears that Van de Ven’s (2007) approach is a good attempt to portray different forms of engaged scholarship involving academia and practice.

However, in general the engaged scholarship literature fundamentally represents a rather phenomenological body of work because it largely lacks in the portrayal of processes and mechanisms that can influence effective engaged scholarship. This absence may primarily be linked to the scarcity of theoretical frameworks that are likely to illuminate how fruitful engaged scholarship works over time. Such a limitation

potentially obstructs the development of the engaged scholarship literature and cultivation of effective relations between the stakeholders involved. We propose that the stewardship framework is likely to provide an effective theoretical lens on which engaged scholarship practice can be analyzed.

2.2. Stewardship theory

The stewardship perspective supports the argument that stakeholders view long-term utility in focused pro-social behaviour rather than in self-serving, short-term opportunistic behaviour (Davis et al., 1997). In the words of Hernandez (2012:174), “[s]tewardship reflects an ongoing sense of obligation of duty to others based on the intention to uphold the covenantal relationship”. Instead of emphasizing motivation on individual goals, it argues that stakeholders share aligned motives. It assumes that stakeholder relations are based on trust, goal alignment and long-term links (Sundaramurthy and Lewis, 2003). Stewards strongly believe they are morally obligated to pursue organizational interests (Caldwell, Bischoff and Karri, 2002). The stewardship approach has been used in several aspects of contractual behaviour such as executive corporate governance (Cho, Huang and Padmanabhan, 2014), board leadership organizational structure (Zona, 2014) and angel-backed company financing (Collewaert and Manigart, 2016), among others. Its approach to governance is sociological and psychological in nature, contrasting the economic approach of agency theory that sees stakeholders as rational actors who seek to maximize their self-interest (Jensen and Meckling, 1976). According to agency theorists, both principals and agents tend to maximize their own utility at minimum cost. Agency costs are realized when the interests of principals and agents diverge as agents seek to maximize their own utility. The agency-principal relationship is characterized by goal conflict, distrust, discipline and monitoring.

Therefore, the stewardship theory puts forward the argument that the steward focuses on cooperation rather than defection. Essentially the steward’s motivation overlaps with the success of the collaboration (Davis et al., 1997). According to the stewardship theory, the motives of stewards are aligned with the objectives of the collaborators rather than individualistic goals. Stewards can be regarded as trustworthy guardians who are granted considerable discretion without the need for onerous external monitoring (Bradley, MacGregor, Stuebs and Thomasson, 2015). Stewardship behaviours are likely to form an organization’s conduct as reflected in its mission, practices and shared meanings (Le Breton-Miller and Miller, 2009). However, this occurs only when stewardship behaviours are fully fused and institutionalized in the organization (Pearson and Marler, 2010).

Numerous psychological factors such as motivation, identification and power can account for the cases in which stewardship may predict behaviour better than its agency counterpart. Similarly, contextual factors such as stakeholders’ managerial

philosophy, culture and power distance are likely to explain the choice and use of one versus the other framework (Davis et al., 1997). Previous (high or low) levels of organizational performance may favour one over the other type of behaviour (Sundaramurthy and Lewis, 2003). Hence, stewardship and agency theories should not be viewed as mutually exclusive but rather as complementary. It has been found, for instance, that when stewardship is used in juxtaposition with agency theory it can extend the principal-agent predictability when it comes to accountability for professionals (Mansouri and Rowney, 2014).

Elaborating on antecedents to stewardship behaviour, Hernandez (2012) further identifies shared leadership practices, collective responsibility for outcomes, mutual work towards a valued end, and self-efficacy and self-determination between stakeholders as influences on psychological factors. These psychological factors can be an altruistic perspective, a long-term orientation and affective commitment through mutual social exchange. In turn, this collection of psychological factors positively affects psychological ownership and, ultimately, the stewardship behaviour of stakeholders. Stewards work persistently to accomplish the organization's goals when they think their work is important.

Also, a "stewardship climate" in the organization stems from a combination of personal motivations of the leader and the associated contextual conditions of the organization (Neubaum, Thomas, Dibrell and Craig, 2017). The characteristics of a stewardship climate are intrinsic motivation, organizational identification, employment of personal forms of power, collectivism, low power distance and involvement orientation (Davis et al., 1997; Hernandez, 2012; Neubaum et al., 2017; Vallejo, 2009). Consequently, the stewardship theory approach identifies several motivations, mechanisms, and reward and monitoring processes that may exist between stakeholders in order for the collaboration to generate successful outcomes for all parties concerned. However, to the best of our knowledge the stewardship approach and its constituents have not been employed hitherto in an engaged scholarship context, which is a gap upon which we aim to fill with some evidence in this study.

3. The empirical setting: Global companies' development programme

The background to this study draws on the significance of SME internationalization for the economic performance of developed nations, which is evident in the public policy support literature on export and internationalization promotion (Bell, McNaughton, Young and Crick 2003; Diamantopoulos, Schlegelmilch and Katy Tse, 1993; Wright, Westhead and Ucbasaran, 2007). Policy-related studies (e.g. Blackburn, 2016; UKTI, 2006) have further identified deficiencies in support

measures for the internationalization needs and capabilities of indigenous SMEs. Hence, the context of this engaged scholarship collaboration refers to the evaluation of internationalization support programmes in Scotland to ensure policy programme effectiveness and evaluate the need for SME internationalization assistance.

The GCDP was designed to address a broad range of market failures that inhibited the internationalization of Scottish SMEs, including facilitating access to information, enhancing the scale and pace of international activity, improving access to public goods – especially R&D – and stimulating positive externalities such as networking. This ambitious and high-profile public policy initiative was an outcome of the findings of earlier research enquiries that highlighted the limited extent of “globalization of Scottish SMEs” (Scottish Enterprise, 1999a; Scottish Enterprise, 1999b). The GCDP was launched in 2000 by Scottish Enterprise with the aim of enabling Scottish firms to achieve a significant “global presence” (Scottish Enterprise, 2003; Raines and Brown, 2001). From the outset, the objective was to recruit a cohort of between 15 and 20 SMEs per year to the programme. Seminars, workshops and peer group networking events were held regularly to stimulate information exchange and learning among participating firms. In 2002 a formal evaluation and research study of the GCDP broader programme was commissioned to a three-person academic team, namely the authors of the present paper. This evaluation and research project involved longitudinal case studies of the first two cohorts of firms participating in the programme, comprising 27 firms. The evaluation and research study was initiated by an approach from the lead GCDP executive at Scottish Enterprise to the authors as a result to earlier collaboration on cognate research. This client-researcher relationship was interactive from the outset since this evaluation and research was a new approach to Scottish Enterprise and reflected the objectives of the GCDP, which were concerned with longer-term and sustainable SME internationalization development. The initial discussions also focused upon the need to investigate potential new innovations in SME support provided by the GCDP and generated the sponsorship of a doctoral study as part of the evaluation and research project. Scottish Enterprise funded both the evaluation and research, and the related doctoral study. The approach in both studies was agreed collaboratively with Scottish Enterprise and involved a longitudinal, case study approach, spanning from 2002 to 2008 and providing deep insights into SME internationalization policy support.

Other than the three academics and the Scottish Enterprise policy makers, the study comprised participant GCDP SMEs and their Scottish Enterprise account managers. Pre-interview access to Scottish Enterprise records, interviews with SMEs and pilot evaluation reports assisted the stakeholders to develop trust, and probe and confirm expectations (cf. Easterby-Smith, Thorpe and Lowe, 1991). The academics had access to GCDP executives within Scottish Enterprise, programme archival data and external consultants’ reports on the firms, as well as internal policy

evaluation documentation. The evaluation and research study additionally involved regular meetings with GCDP executives and evaluation teams at Scottish Enterprise to ensure that ideas and feedback formed part of the development of the evaluation and research study. This supported the engaged scholarship objective of co-production of knowledge between research and policy makers (Van de Ven, 2007) and ensured that findings were based on credible evidence that the stakeholders perceived as trustworthy and relevant (Donaldson et al., 2009). The longitudinal approach further required a succession of in-depth interviews with GCDP firms and involved “regional” Scottish Enterprise account teams. In addition, there was favourable response from SMEs on what they perceived as “annual reviews” as well as ad-hoc interfaces between the academics and these firms at the “peer events” sponsored by Scottish Enterprise to promote networking. Moreover, considerable stakeholder feedback occurred, which involved evaluation and research findings presented to stakeholders, and regular focus group discussions to test the findings from the research on SME internationalization processes. Although the GCDP was funded by Scottish Enterprise, it was considered essential that the researchers were independent in order to establish the credibility of the study. SMEs were further assured that their responses were confidential.

Apart from this, after the main evaluation and research study period, a workshop and two extra focus groups, comprising the researchers, Scottish Enterprise policy makers and executives, and SMEs were held in 2008 to provide feedback on the evaluation and research findings, and explore in more depth issues that emerged from the case studies. This was supported by ESRC-funded post-doctoral research. The workshop was promoted to the firms as one of the GCDP peer group events, entitled “learning for internationalization”. The focus group interviews were undertaken, with the aim of gaining additional insights into the implications of the research findings for policy (cf. Huxham, 2002). The GCDP review additionally involved semi-structured interviews with four Scottish Enterprise executives and policy makers three years after the conclusion of the evaluation and research study (i.e. in 2012-13).

4. The stewardship approach: Key findings

In line with the tenet of stewardship theory, a high level of engagement was pursued throughout the GCDP at different levels, involving academics, Scottish Enterprise officials and SMEs. An early decision by the research team and policy makers was that the evaluation should be longitudinal in nature so as to be able to understand and respond to the strategic changes that participating SMEs had to follow. Close engagement between the lead Scottish Enterprise executives and the research team was particularly crucial to the successful co-production of knowledge pertaining to

the project's dual objectives of policy evaluation and academic research. This was also in agreement with the engaged scholarship literature arguing in favour of a close interaction between policy and academia (Van de Ven, 2007). Also engaged scholarship authors such as Rynes et al. (2001) and Schein (2001) suggest that in this collaboration good social relations and a common research agenda with practitioner involvement are required, which was the case in the examined GCDP. Policy makers needed to engage in the evaluation and research methods of this programme (Smallbone and Baldock, 2002). In the words of Romme, Avenier, Denyer, Hodgkinson, Pandza, Starkey and Worren (2015), such an effective engaged scholarship approach involved identifying common ground and trading zones between stakeholders.

The processes in the collaboration between academics and policy makers strongly reflected a stewardship theory approach. All stakeholders sought to actively engage and empathize with the GCDP rather than own or control it. To illustrate, the timings and methods of the SME interviews were regularly revised to better facilitate both academic and Scottish Enterprise needs. In addition, academics responded quickly to ad-hoc reporting needs of policy makers. According to stewardship theory, the partners sought affective commitment through mutual social exchange (Hernandez, 2012). This kind of behaviour is illustrative of the high-involvement approach observed in stewardship collaboration (Davis et al., 1997). It is noteworthy that over the duration of this project, the three academics and Scottish Enterprise officials thought of this collaboration as an arrangement that transcends the boundaries of their University and policy-making organizational boundaries. Indeed, they were intrinsically motivated to identify predominantly with a 'supra-organizational' engaged scholarship formation for the purposes of this long-term collaboration. To this end, they employed their personal forms of influence and power within their own organizations to achieve the objectives of engaged scholarship and induce their organizational member activities to make GCDP succeed. This finding not only supports the stewardship theory as to the stewardship climate constituents (Hernandez, 2012; Neubaum et al., 2017; Vallejo, 2009), but also adds to it since it suggests that the aspects of this climate concerns an imperceptible supra-organizational formation that participants refer to and empathize with rather than their own organizations. This finding brings the engaged scholarship stewardship area close to the organizational identity literature because such identity appreciation in modern network formations has different manifestations than that in traditional firms (Whetten, 2006). Consequently, we advance the first research proposition.

Proposition 1: An effective academic-policy collaboration involves member identification and empathy with the objectives of supra-organizational engaged scholarship formation that surpasses their palpable organizational structures, facilitating interaction and communication between the stakeholders.

Another key finding of this research has to do with the roles of the senior academic and the lead policy maker who were the GCDP programme key players in their respective organizations. Both acted as high-value commitment persons seeking to maximize their shared objectives confirming the premise of stewardship theory (Davis et al., 1997). Largely thanks to them, an atmosphere of close collaboration at senior levels of both the academic team and Scottish Enterprise emerged, which “has changed the minds of how people think”, to quote the lead Scottish Enterprise executive involved. They were the “project champions” at both academic and policy levels. On the academic side, this was an academic who had an expertise of SME internationalization issues and a tradition of successfully working with Scottish Enterprise for over two decades. On the practitioner side, the lead Scottish Enterprise policy maker for evaluation and research was an Honorary Research Fellow at the academics’ affiliated University who had an interest in academic research and participated in research workshops.

Both project champions performed three roles, including, first, collaborative leadership in the University team and the evaluation and research design, respectively, adding to the value of applied academic research in the SME internationalization area in their organizations. The second role included policy intermediation, a knowledge broker role (ESRC, 2009; Pettigrew, 2011) that embraced promoting and interpreting the GCDP for University and Scottish Enterprise colleagues, involving regional Scottish Enterprise account managers. The third role included policy making through the production and presentation of board papers to justify continued funding for the GCDP. Following Van de Ven (2007), the academic project champion had an “intension”-oriented role as an “attached insider” but also undertook an “extension”-oriented role to reflect on the academic outputs of this project, when needed. Similarly, the Scottish Enterprise policy-maker had an “intension”-oriented role, periodically reporting on the findings from the evaluation and research back to different units and levels of his organization.

Therefore, both project champions served as effective boundary spanners between the two organizations (cf. Zhao and Anand, 2013) working harmoniously to minimize misunderstandings and avoid conflicts. They regularly acted as efficient knowledge transfer bridges that were of paramount importance to the success of a stewardship approach. In accord with Williams (2012), they grasped the idiosyncrasies of each other’s organizational contexts, deployed political skills as required, and engaged in diplomatic and persuasive modes of behaviours. They further crossed intra- and inter-organizational boundaries, seeing the big picture and orchestrating the collaboration agenda (Kaplan, Milde and Cowan, 2017). Because of these roles, they contributed to the mechanism of psychological ownership that both teams offered to the GCDP project since through time they believed their outputs were common and became “theirs”. This is a main attribute that the stewardship theory views as indispensable to the success of collaboration (Hernandez, 2012).

Therefore, we advance the second research proposition.

Proposition 2: An effective academic-policy collaboration involves adept boundary spanners who successfully transcend organizational boundaries sponsoring the stewardship collaboration and contributing to the shared ownership of its outputs.

The third main finding referred to the successful knowledge transfer that took place during the process of the GCDP within and across participating academic and policy organizations. Knowledge in this setting referred to SME internationalization-specific routines and learning practices, involving academic concepts and policy-making tools generated and accumulated over time. When it came to knowledge dissemination, the partners chose to make regular small investments in options that were favourable to the collaboration, which is in alignment with the tenet of stewardship theory (Tosi et al., 2003). Such small investments, for example, referred to the Scottish Enterprise team initially sharing their expertise with academics over frequent, structured briefing meetings. Likewise, the academics presented their interim findings regularly to various Scottish Enterprise officials providing convincing evidence pertaining to their research with internationalized SMEs. As time went by and enhanced levels of trust were built between the stakeholders, knowledge transfer between parties became more regular and undeterred. This increasing stakeholder involvement, based on credible evidence and open communication, was deemed to be relevant and trustworthy by the stakeholders (cf. Donaldson et al., 2009). Such an ongoing and growing transfer of knowledge added to appreciation of the benefits of engaged scholarship, namely a mutual learning mentality and stakeholder-collective responsibility. The observed knowledge transfer referring to “best SME internationalization processes” has not had any association with rigid dissemination control schemes, often used in formal consulting projects. If the study had been undertaken by consulting firms, not only would the costs have been substantial, but it might have been difficult to get continued uninterrupted knowledge transfer. This knowledge transfer aspect proved to be a major element of success to this engaged scholarship study since it relates to the wider debate concerning the knowledge provider role of academic advisers versus consultants (Bouwmeester, 2010).

The continual knowledge transfer that was built over time contributed to the development of an effective socialization process (Tsai, 2001) whereby academic and policy stakeholders interacted as a team with one another over a lengthy period of time. In turn, this has facilitated the quality of the communication between collaborators and induced a common understanding of each other’s knowledge domain, whereby, for instance, Scottish Enterprise officials were becoming more prepared to grasp the “academic terminology” of presentations and reports. All this reinforced the collectivist orientation in which teamwork in knowledge co-production was essential. Both academics and Scottish Enterprise officials viewed that they generated important knowledge into the activities that SMEs could pursue

in international markets. Moreover, this process had strengthened the involvement orientation concerning knowledge generation because both academic and policy-making partners felt they were equally important in developing and transferring knowledge within the two organizations. This collectivist and pro-involvement orientation distinguishes effective stewardship relationships (Davis et al., 1997; Neubaum et al., 2017). Hence, we advance the third research proposition.

Proposition 3: An effective academic-policy collaboration involves uninterrupted knowledge transfer and dissemination between organizations, which encourage successful group and engaged knowledge generation by both academics and policy makers.

Table 1 below illustrates further empirical examples related to the three propositions of this study.

Table 1: Empirical examples related to the propositions of this study

Propositions	Case Example: Academic	Case Example: Policy
<p>Proposition 1</p> <p>An effective academic-policy collaboration involves member identification and empathy with the objectives of a supra-organizational engaged scholarship formation that surpasses their palpable organizational structures, facilitating interaction and communication between the stakeholders.</p>	<p>Academics made interim presentations of findings to promote the programme internally to Scottish Enterprise business account managers and help with GDP external consultant recruitment.</p>	<p>Policy makers accepted a more innovative firm-specific case study methodological approach to the evaluation study recommended by the academic team.</p>
<p>Proposition 2</p> <p>An effective academic-policy collaboration involves adept boundary spanners who successfully transcend organizational boundaries sponsoring the stewardship collaboration and contributing to the shared ownership of its outputs.</p>	<p>The lead academic fully engaged with both the evaluation and research aspects of the project. For example, he chaired all meetings with the Scottish Enterprise team, at the University and on location at Scottish Enterprise head office for the whole duration of the project.</p>	<p>The lead policy maker attended the University research seminars, contributing to the discussion of policy implications for research in the field of academic study.</p>
<p>Proposition 3</p> <p>An effective academic-policy collaboration involves uninterrupted knowledge transfer and dissemination between organizations, which encourage successful group and engaged knowledge generation by both academics and policy makers.</p>	<p>The academic team reported on an ongoing basis issues arising from the CEO interviews, for example the need for 'aftercare', as firms implemented their internationalization strategies following the initial foreign market entries.</p>	<p>The Scottish Enterprise evaluation team ran a dedicated workshop for the academic team on their in-house evaluation processes and objectives, and reviewed drafts prepared by the academics of interview protocols.</p>

5. Conclusions

This research has important implications for theory and policy practice. In line with Quelin, Kivleniece and Lazzarini (2017), we contribute to the literature on how diverse and hybrid forms of collaboration can create social value and propose three inter-related mechanisms. The GCDP project stresses the importance of following a stewardship approach in an engaged scholarship context through a long-term approach (Davis et al., 1997; Hernandez, 2012). This has important implications for governments promoting private-public partnerships (see Yeung, 2017) and other inter-agency relationships (Sun & Cao, 2018). The findings of the current study attest to the value of a long-term, involvement-oriented, trustworthy and performance-enhancement collaboration, which is in accord with the premise of the stewardship theory. The three propositions advanced further refine the stewardship theory as they suggest that in this engaged scholarship context stakeholders perceive the collaboration as a supra-organizational arrangement, identifying and empathizing with its objectives. Boundary spanners in both academic and policy sides are crucial to support the merits of this collaboration and overcome communication and coordination complexities. Frequent and undeterred knowledge generation and transfer add to the trust and appreciation of the outcomes of this engaged scholarship collaboration. All these findings enhance the stewardship theory by advancing our knowledge on how engaged scholarship processes and mechanisms can work effectively. Engaged scholarship provides another setting whereby stewardship theory may appropriately be used and illuminate the relations between the stakeholders involved.

As to the engaged scholarship literature, the findings suggest that academia needs to move the greater distance and reflect user interests as closely as possible over a long-run horizon to overcome the rigour-relevance gap (Starkey and Madan, 2001). The view that academics and users belong to separate communities with different values (Beywer and Trice, 1982) is distant from the findings of this research. The rather phenomenological engaged scholarship literature benefits from the application of the stewardship approach that illuminates the merits of the collaboration as reflected in the three research propositions advanced in this paper.

Moreover, it clearly pays for policy makers to value and use academic research through a closely collaborative enduring process in which stakeholders take collective ownership of the outcomes of their cooperation (Newman, Cherney and Head, 2016). In that sense, the academic-policy engaged scholarship collaboration studied in this paper may serve as a valuable case study that policy makers can implement to inspire and enhance SME internationalization and growth. For instance, the constituents of the GCDP analyzed can illuminate UNCTAD's "Entrepreneurship Policy Framework and Implementation Guidance" programme in its provision of effective policy monitoring and evaluation. Apart from this, even though this

research has taken place in Scotland, notably a small EU nation, the findings might serve as a reference guide for similar collaborative projects between academia and policy makers in developing countries. Although operating in different institutional and cultural environments, organizations in developing countries can be advised that a rivalistic relationship between academics and policy makers is very likely to undermine the objectives sought to enhance knowledge and practices supporting the internationalization of indigenous SMEs.

With regard to future research, only one long-term case of successful engagement was examined, therefore, further study would benefit from the existence of a “control group” whereby the engaged outcomes of cooperation might not necessarily have been successful. Essentially the examined GCDP on SME internationalization represents a best-case scenario against which outcomes from a less effective collaboration may be compared. In addition, the Scottish setting of this study can restrict the generalizability of the findings to other economy contexts in which engaged scholarship activities occur. Thus, future research should investigate engaged scholarship relationships in settings, particularly in developing countries, where home governments promote outward internationalization to their domestic enterprises (Alcaraz & Zamilpa, 2017) or where the profile of such firms is changing (Pradham, 2017). Furthermore, while the three research propositions advanced illuminate three aspects of processes and mechanisms related to an effective engaged collaboration, future study can possibly elaborate and inform other constituents of a successful academic-policy collaboration.

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Why do African multinationals invest outside their home region? Should they?

Kevin I.N. Ibeh*

This study draws on preliminary case evidence to explore the motivations and advisability of engagement by African multinational enterprises (MNEs) in outward foreign direct investment (FDI) activities outside their home region. It complements recent research on MNEs from emerging markets, focused on the BRICS (Brazil, the Russian Federation, India, China, and South Africa) economies, with virtually no attention to potentially important players from rising Africa. The MNEs explored in this study are active in the energy, manufacturing, construction, chemicals, agribusiness, extractive/mining, and financial services sectors, and they have investment footprints both in countries in the North and the South. Their investment decisions are motivated by the search for market opportunities, strategic assets/resources and performance-boosting relationships, though more advanced economies appear to attract more strategic asset-seeking FDI from African MNEs. The paper argues that intra-regional investments by African MNEs should continue to be prioritized, but selective and strategic extra-regional FDI, undertaken with an eye on furthering global competitiveness, also requires appropriate policy support. This seems even more sensible given that the acceleration of borderless digital internationalization and the increasingly blurred nationality of MNE affiliates are lessening the relevance of regional distinctions.

Key words: Foreign Direct Investment, Africa, Multinational Enterprises, Extra-regional FDI Footprints.

1. Introduction

Outward foreign direct investment (FDI) from the developing “South”, or by emerging market multinational enterprises (MNEs), have witnessed significant growth over the past few decades. The latest UNCTAD statistics put FDI from developing economies at \$383 billion, approximately a quarter of the total global flows of \$1.75 trillion (UNCTAD, 2017a). These flows are buoyed by the significant outward investment by

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MNEs from the BRICS, particularly China. The latter's extensive footprint across Africa is well publicized, as is the considerable outlay of Asian MNEs in Latin America and the Caribbean and the rising intra-regional FDI flows in transition economies, West Asia and Africa (UNCTAD, 2012, 2017a). Increasingly, the understandable quest for strategic assets, markets and other catch-up levers has attracted these multinationals, including State-owned enterprises (SOE), to invest, particularly through mergers and acquisitions (M&A) in more advanced economies (Mathews, 2006; Kumar, 2009; Ramamurti and Singh, 2009; Birkinshaw et al., 2010; Madhok and Keyhani, 2012; Peng, 2012; Sarathy, 2013; Marchand, 2015; Rao-Nicholson et al., 2016).

African MNEs also contribute to these South-South and South-North flows, albeit to a markedly lesser extent than the BRICS economies (BCG, 2010; Ibeh, 2013, 2015). Their contribution is reflected in the surge in the continent's overall FDI stock – from \$38.9 billion in 2000 to \$268.7 billion in 2016 – and its growing army of over 500 services multinationals (UNCTAD, 2015). Notably, intra-African FDI accounted for 76 per cent of the continent's outflows that went to greenfield projects (UNCTAD, 2015), while cross-border intra-regional M&A grew almost twentyfold, from \$130 million in 2013 to \$2.4 billion in 2014 (UNCTAD, 2015). Not surprisingly, South African MNEs are dominant players in the African FDI stakes (Verhoef, 2016), but MNEs from especially Nigeria, Togo, Morocco and Egypt, are also gaining confidence and increasingly investing outside familiar, regional, territory.

African MNEs' intra-regional investment activities, like those of their developing "South" counterparts (Aykut and Ratha, 2003), can be explained from an evolutionary, learning-by-doing or institutional proximity perspective (Buckley et al., 2007; Ibeh, 2009). These forays may also be prompted by infrastructure developments in the region and the emergence of more integrated African markets, particularly as these serve as viable learning platforms and enablers for African companies seeking to upgrade their capabilities and skillsets to expand into more challenging advanced markets (Ibeh, 2009). The case for African MNEs' South-North FDI is, however, more contentious, particularly given concerns in the literature about integration failures and sub-optimal value-creation arising, *inter alia*, from absorptive capacity limitations and institutional dissimilarities (Rugman and Li, 2007; Peng, 2012; Rao-Nicholson et al., 2016).

The aim of the present research is to explore the motivations and advisability of African MNEs' engagement in FDI activity outside their home region. It seeks to improve understanding about the nature of extra-regional FDI, the reasons for so doing, and the policy implications from these findings. The study contributes to the continuing scholarly and policy debate about the preferred FDI destinations and growth directions of developing country MNEs (Rugman and Li, 2007; Ibeh and Makhmadshoev, 2018). This paper reflects on how relevant institutions, development partners and policy makers might better support African MNEs strategic investment decision-making in order to improve their impact on their home and regional economies. The paper is organized as follows. Section two presents a brief review of the literature pertaining to the issues raised and outlines relevant research questions. An explanation of the case study

approach adopted is provided in section three. This is followed by the presentation, analysis and discussion of case material. The final section summarizes the findings and discusses the public policy, economic development and future research implications. It should be noted that for the purposes of this study, FDI by North African MNEs within the Middle East and North African (MENA) region are not considered extra-regional, given these MNEs' connectedness to both Africa and the Middle East.

2. Literature review and research questions

The classic explanations for MNEs' choice of investment destination are fourfold: market-seeking (to access potentially lucrative foreign market opportunities); resource-seeking (to access potentially advantageous resources located abroad); efficiency-seeking (to exploit favourable cost structures, efficiencies or scale economies abroad); and strategic asset-seeking (to access assets that will enable the firm to compete in a particular market, and which can include knowledge/technology- and relationship-seeking motivations) (Dunning, 1993; Mirza, 2000; Ibeh et al., 2004).

The more traditional of these motives, market-, resource- and efficiency-seeking, can be traced to the asset exploitation logic of early international business scholars (Hymer 1960; Caves, 1971) – echoed by the resource-based view (Penrose, 1959; Barney, 1991) – which explains FDI as a means of optimizing quasi-monopolistic advantages possessed by MNEs over indigenous competitors. Such advantages, subsequently reframed as ownership, location and internalization advantages (OLI) (Dunning, 1977) or firm-specific assets (FSA) (Rugman, 1980), are thought to underpin MNEs' search for market opportunities, resources and efficiencies via FDI. Later research, mainly on developing country MNEs, broadened the spectrum of advantages to encompass relationship and network advantages (Dunning, 1993), country-specific advantages, institutions (Dunning and Lundan, 2008) and government support (Kalotay and Sulstarova, 2008). Significantly, this later research stream posits asset exploitation and “O1” advantages as more relevant to explaining FDI by traditional MNEs than that of their emerging market counterparts. The latter, the argument goes, tend to be more focused on augmenting or seeking strategic assets, including knowledge, technology, intellectual property, brands, reputation or prestige, and critical relationships/networks (Mathews, 2002, 2006; Aulakh 2007; Luo and Tung, 2007; Amighini et al., 2010; Chen et al., 2012; Gaffney et al., 2014), particularly as they move up the value chain into more complex and higher value-added activities. The Linkage-Leverage-Learning (LLL) framework postulated by Mathews (2002, 2006) aptly reflects this asset-augmentation perspective.

The foregoing should not be interpreted as implying that emerging country MNEs only seek access to strategic assets through their FDI activities. On the contrary, classic FDI motivations, specifically the quest for markets, resources and efficiencies, are also relevant (Amighini et al., 2010; Yeganeh, 2016). The literature, to be sure, offers countless examples of market-seeking FDI by emerging country MNEs, for example

Chinese firms' push into Japan and Southeast Asia (Frost, 2004), the expansion into Eastern Europe by firms of the Russian Federation (Vahtra and Liuhto, 2004) and South African MNEs' expansion into other African markets (Klein and Wocke, 2007; Vorheof, 2016). These MNEs – even those with sizeable and rapidly-growing domestic markets – are known to explore new foreign markets to gain the competitive edge over domestic rivals, get closer to customers and obtain knowledge about foreign markets. Resource-seeking motivations, including the search for raw materials and labour (De Beule and Duanmu, 2012), are also amply illustrated by Chinese and, to a lesser extent, Indian FDI in Africa, Latin America and elsewhere (Casanova, 2004; Goldstein, 2006; Buckley et al., 2007). Although efficiency-seeking factors seemed to be of less interest to emerging market MNEs – which traditionally faced lower costs thanks to access to cheap labour, abundant natural resources, and government support – rising competition in domestic and international markets appears to be changing this situation. There is evidence, for example, of emerging market MNEs outsourcing certain functions to cut production costs (Sim and Pandian, 2003) or expanding to advanced countries in pursuit of scale economies (e.g. Tata Group's acquisition of Anglo-Dutch steel group, Corus - Goldstein, 2008). Enhanced national prestige, or the desire to project their corporate identity onto the world stage, have also been identified as motivational factors among emerging MNEs, particularly those supported by their national governments (Gaffney et al., 2014).

The investment location theory for developing economy MNEs – specifically from the perspective of the evolutionary, learning-by-doing, demand similarity, psychic distance (Johanson and Vahlne, 1977) and institutional proximity (Rugman and Li, 2007) factors – essentially recommends priority attention to intra-regional and other Southern economies given their better fit with the institutional characteristics and resource profiles familiar to developing economy MNEs. Arita (2013), for example, attributed the higher presence of developing economy-derived FDI in the Global South to such broadly proximate institutional factors across developing markets.¹ The literature, indeed, suggests that developing country MNEs with market-seeking motivations tend to gravitate towards difficult institutional environments, where they have an advantage over their developed country peers, because they are more familiar with such institutional conditions (Cuervo-Cazurra and Genc, 2008; De Beule and Duanmu, 2012). On the other hand, those that seek strategic assets appear to favour more advanced economies (Citigroup, 2005; UNCTAD, 2005; Goldstein, 2006; Amighini et al., 2010).² This means in their germane search for both catch-up strategic assets and market opportunities, some developing country MNEs concurrently invest in advanced and developing economies (Yeganeh, 2016).

From the perspective of the home country, the existing research shows a mixed impact from outward-oriented internationalization, including outsourcing and FDI, on home economies: direct positive (e.g. overseas profits); direct negative (e.g. loss of jobs and

¹ For examples of Chinese and Indian MNEs in Africa, see De Beule and Duanmu (2012).

² See, for example, Pietrobelli et al. (2010) finding about China's Haier acquisition of a well-known brand and manufacturing and R&D facilities in Italy.

tax income); and indirect positive (e.g. cost savings resulting from optimal allocative efficiency or the so-called “batting average” effect associated with a lower cost location [Blomstrom and Kokko, 1998; Bitzer and Gorg, 2005]). Outward FDI has been found to make a positive contribution to domestic total factor productivity, through spillover effects from accessing foreign R&D, capital stock, local knowledge, public infrastructure and leveraging agglomerative effects in target countries (Hejazi and Pauly, 2003), and through technological and skill upgrading at home. Research also suggests that the impact of outward investment may vary according to the type of industry or technological intensity (Bitzer and Gorg, 2005), the underlying motivation for the investment (Driffield and Love, 2007), and the location of the investment (Bitzer and Gorg, 2005) among other factors. Evidence, for example, suggests that outward FDI in certain high technology sectors tends to lead to effective technology transfer and productivity gains at home. As noted earlier, such strategic asset-seeking FDI or “home-base augmenting” FDI (Chung and Yeaple, 2004; Driffield and Love, 2007) are increasingly common, but their outcomes may depend on factors, including the location of the investment activity, the investing firm’s absorptive capacity, and the extent of institutional similarity/divergence between the investing firm and host economy.

The foregoing review of the literature raises the following questions, which are explored in the present study:

What do we know about African MNEs’ investment activities outside their home region? Where are these activities located?

What are the motivations for these extra-regional investment forays?

How advisable is African MNEs’ engagement in extra-regional FDI?

3. Research context and methodology

The foregoing research questions are addressed using a case study approach (Miles and Hubermann, 1994; Yin, 2003), which is motivated by the distinctly limited extant knowledge on the FDI behaviour of African companies, South Africa excluded. It also responds to repeated calls for more qualitative approaches in international business research (Ghauri, 2004; Welch and Piekkari, 2017), and has been successfully employed in studying emerging market MNEs from other regions (e.g. Sim and Pandian, 2003; Del Sol and Kogan, 2004). To ensure proper case research protocols and minimize weaknesses, the following steps were pursued.

First, the study scope includes all Africa³, but excludes South Africa, one of the BRICS economies with several well-established global players (Klein and Wocke, 2007; Verhoef,

³ According to IMF (2015), the region’s growth averaged 5 per cent between 2001 and 2014 and 3.6 per cent in 2015.

2016). This delimitation also serves to draw attention to the significant level of outward FDI activity from the rest of the continent. The increased investment outflows originate partly from a new generation of innovative and ambitious African champions (KPMG 2013) and pan-African groups, notably from Nigeria, Togo, and Morocco (IMF, 2015). A recent report to the World Bank identifies nascent African MNEs as originating from Algeria, Angola, Botswana, Côte d'Ivoire, Egypt, Gabon, Kenya, Mauritius, Morocco, Nigeria, Togo and Uganda, and mainly operative in the financial services, extractive, construction and manufacturing sectors (Ibeh, 2013, 2015). Kenyan investors are also strongly active in the East African region (Ngugi, 2016). In addition to increasing levels of intra-African investment (UNCTAD, 2015), investment outflows from Africa are also directed further afield to other Southern economies and more advanced economies, mainly in Europe and North America (Ibeh, 2013, 2015).

Second, drawing upon relevant best practice, the study population was defined to encompass African MNEs that have undertaken FDI and own or control value-adding activities in at least two countries outside Africa. Nine companies – not an exhaustive list – were selected for investigation, to ensure that the findings are not idiosyncratic (Miles and Huberman, 1994).

Third, secondary data from multiple sources, including electronic databases, national and supranational organizations, company websites and reports and business press, were examined for relevant insights on the firms under survey. The present study's scope is limited and therefore precludes theory testing or generalizability. However, it allows for the exploration of theory (Yin, 2003) and the generation of insight into African MNEs, by drawing on the aforementioned data sources. Extensive desk-based research enabled the development of case narratives, chronological timelines and information about the study firms' major FDI activities. The integration of multiple sources produced a patchwork of evidence, in the best tradition of case study research (Yin, 2003). The foregoing aligns with earlier calls in the literature for a greater integration of secondary data sources in international business research (Mol and Birkinshaw, 2014; Puolis et al., 2013), particularly as they "... provide empirical depth into a case-study project" (Puolis et al., 2013, p. 331).

4. Analysis and findings

4.1 Brief Profiles and Indicative FDI Footprints of the Focal MNEs⁴

The African MNEs explored in the present study respectively originate from Algeria, Egypt, Morocco, Nigeria, and Togo, and mainly active in the energy, manufacturing, construction, chemicals, agribusiness, extractive, and financial services sectors. They are Sonatrach Group (of Algeria); Sonangol (of Angola); the Elsewedy Group and Orascom Construction Industries (of Egypt); Office Chérifien des Phosphates, Attijariwafa Bank, and Groupe Banque Centrale Populaire (of Morocco); First Bank Holding (Nigeria); and Ecobank Transnational Incorporated of Togo. The below provides a brief profile with the salient features of each firm.

Elsewedy Electric, founded in 1984, is a Cairo-based industrial conglomerate engaged in the manufacture and management of power cables, transformers, power generation units and other electrical products. It commenced outward international activities in 2000, has 30 factories in 14 countries, exports to 110 countries, and generates most of its revenue internationally. The company has grown significantly both organically and through acquisitions and joint ventures in the Middle East, sub-Saharan Africa, Europe and other countries. See table 1 for more profile information, including indicative FDI milestones and footprint.

Orascom Construction Industries (OCI), founded in 1950 and controlled by the Sawiris family, is one of Egypt's largest corporations, employing 12,000 (core) staff in 18 countries across the Middle East and Africa, Europe, North America, and Asia. It specializes in large industrial construction and infrastructure and fertilizer businesses and operates through major subsidiaries, including the OCI Construction Group, which provides international engineering and construction services for public and private clients, primarily on infrastructure, industrial and high-end commercial projects in the MENA region and Europe. The OCI Fertilizer Group, based in the Netherlands, ranks among the world's top fertilizer producers. It owns and operates nitrogen fertilizer plants in Egypt, Algeria, the Netherlands, the United States, and an international distribution platform spanning from the Americas to Asia. Latest available figures (2016) suggest annual revenues of \$4bn, before-tax profit of \$145 million. OCI generates most of its revenue outside Egypt and this is likely to continue based on the Group's intensifying international investments, including acquisitions and joint ventures (JVs). Table 2 offers more profile information on OCI, including sample FDI milestones and footprint.

⁴ All figures for employment and performance in Tables 1 to 9 are based on the most recent publicly available data (relating to financial year 2016, unless otherwise indicated) and are based on company documents and financial reporting and/or secondary data sources such as Reuters and Financial Times, when not all data could be obtained from primary sources. However, even with consultation of secondary sources, not all figures could be obtained for some firms.

Table 1. Elsewedy Electric's Profile and FDI Activities

Industry	Diversified Manufacturing - electrical, renewable energy, telecoms
Established	1984
Employees	12,000
Ownership	Elsewedy family (64%); Free float (34%); Private investors (2%)
Home Country	Egypt
Physical Network (International Locations)	Algeria, Angola, Cameroon, Ethiopia, Gambia, Ghana, Guinea, Nigeria, Niger, Liberia, Libya, Malawi, Mozambique, Rwanda, Sudan, Uganda, Zambia, Zimbabwe, Bahrain, Iraq, Kuwait, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen; Czech Republic, Hong Kong (China), India, Kazakhstan, Malaysia, Pakistan, the Russian Federation, Slovakia, Slovenia; Spain, Netherlands.
Performance Indicators/ Metrics	Revenue US\$1.3 billion Profit before tax US\$319 million
Indicative FDI Activities	<i>Subsidiaries</i> Elsewedy Cables (Syria); Sudanese Egyptian Electric (Sudan); PSP (Turnkey power plant, Saudi Arabia); Electric Transformer plant (Zambia); Electric Cables plant (US\$50m, Algeria); Power Generation plants (3) (US\$484.5m) (Angola); Solera, Solar projects (Liberia & Sudan); <i>JVs</i> Power cables plant (US\$42m) (70%, with Hassan & Massoud) (Yemen); Power plant -build and operate (US\$169m with Arab Contractors) (Iraq); Electric Transformer plant (95.7%, with Lagos State Govt (Nigeria); Sewedy Wind Energy Group (30%, with German's SIAG; acquired the wind division of M. Torres Olvega for US\$56m) (2008); Electricity Grid works (US\$1 billion contracts, part of a consortium) (Libya). <i>Distribution network</i> Europe; <i>Representative offices</i> Saudi Arabia, United Arab Emirates, Qatar, Bahrain, and Kuwait.
Accolades (selected)	Best African Company of the Year Award, 2017 (Africa CEO Forum); Largest Cables producer in the MENA region.

Source: Case Data.

Table 2. Orascom Construction Industries' Profile and FDI Activities

Industry	Construction, Fertilizer and Chemicals
Established	1950
Employees	12,000
Ownership	Sawiri's Family (controlling stake)
Home Country	Egypt
Physical Network (International Locations)	Algeria, Morocco, Nigeria, Tunisia, Bahrain, Iraq, Qatar, Saudi Arabia, United Arab Emirates; Afghanistan, Brazil, India; Belgium, Cyprus, Netherlands, Switzerland, United States.
Performance Indicators/ Metrics	Revenue US\$4.0 billion Profit before tax US\$145.1 million
Indicative FDI Activities	<p><i>Wholly Owned Subsidiaries</i></p> <p>Weitz Co, Iowa; Contract International (Virginia, United States) (e.g. the US\$1 billion SIDRA Medical and Research Centre in Doha); Orascom Saudi Limited (e.g. US\$450 million Infrastructure work); Petrochemical Complex in Oran (Algeria); Gas Turbine power plant (US\$363 million Iraq); OCI International Cyprus;</p> <p><i>JVs</i></p> <p>Sorfert Algérie (US\$1.9bn) (with Sonatrach) (Algérie); Nuclear Power projects (with Arab Contractors) Middle East; Shams Abu Dhabi Gate District Towers project (US\$150m) (with Arabian Sea Foundation, Hydra Commercial, Soroush Real Estate and Capital Investment); Civil Works and Facilities, Ruwais (US\$146m, with Technimont SpA/Samsung (Abu Dhabi); El Merk Central Processing Facility, Berkine Basin (US\$280m, with Bentini of Italy and Petrofac International (Algeria); BISEX Group, Belgium (50%, with Al-Muhaidib Contracting) (e.g. US\$400 million Al Safooh Transit System Dubai, with Alstom; US\$673 million Wastewater Treatment plants Abu Dhabi & Al Ain, with Veolia Water; €380 million King Abdullah Sports City near Jeddah; US\$675 million Doha Convention Center & Tower, phase IIB; US\$1.3 billion Cleveland Clinic, Abu Dhabi, 60:40 JV with Samsung).</p>

Source: Case Data.

Group Office Chérifien des Phosphates (OCP), owned 94 per cent by the Government of Morocco, is reputedly the world's leading exporter of phosphates and derivatives, with investments in several countries. It became a public company in 2008, and employed over 20,000 staff and generated \$4.1 billion of revenue in 2016. Among its international investments is a 50 per cent interest in Prayon, which owns two production sites in Belgium and Pakistan; Maroc Phosphore SA, a joint venture between the OCP and Fauji Fertilizer Bin Qasim Limited of Pakistan; and Black Sea fertilizer trading company, a JV with Turkish Toros Agri-industry Company, aimed at extending OCP's presence to Central Asia and the Balkans. OCP also recently established a JV with India's Krishak Bharati for the development of a greenfield NPK fertilizer plant in Andhra Pradesh, India.

Sonatrach, founded in 1963, is a State-owned Algerian group, which is the first integrated petroleum company in Africa and the twelfth largest in the world. It has over 154 subsidiaries within and outside Algeria (49 internationally) and generated \$27.5 billion of revenue, employing 48,000 employees in 2016. It is also a leading global gas exporter, with a pipeline network of around 16,200km, and has, as part of its diversification strategy, invested in power generation, new and renewable energies, water desalination, and mining exploration and exploitation. Sonatrach International Holding has over 30 subsidiaries, including wholly-owned trading units in London, Singapore (since 1994), and Amsterdam (Sonatrading). Table 4 offers more profile information on Sonatrach, including indicative FDI milestones.

Sociedade Nacional de Combustiveis de Angola (Sonangol), incorporated in 1976, is a State-owned oil and gas group that operates primarily in the upstream and downstream

Table 3. Office Chérifien des Phosphates' (OCP) Profile and FDI Activities

Industry	Mining
Established	1920
Employees	20,980
Ownership	Moroccan's government (controlling stake)
Home Country	Morocco
Physical Network (International Locations)	Gabon, Iran; Argentina, Brazil, India, Pakistan, Turkey; Belgium, United States.
Performance Indicators/ Metrics	Revenue US\$4.1 billion Net income US\$562.1 million
Indicative FDI Activities	JV Greenfield NPK Fertiliser plant, with Krishak Bharati (Andhra Pradesh, India) (2016); Fertiliser plant (with the government of Gabon (2014).

Source: Case Data.

Table 4. Sonatrach's Profile and FDI Activities

Industry	Extractive
Established	1963
Employees	47,596
Ownership	Algerian government (controlling stake)
Home Country	Algeria
Physical Network (International Locations)	Angola, Chad, Egypt, Libya, Mali, Mauritania, Niger, Nigeria, Tunisia, Iraq, Saudi Arabia, United Arab Emirates, Yemen; Bolivia, Brazil, China, Peru, Singapore, Slovenia, Republic of Korea, Turkey; Belgium, France, Germany, Greece, Italy, Portugal, Spain, Netherlands, United Kingdom, United States.
Performance Indicators/ Metrics	Revenue US\$27.5 billion Profit before tax US\$ 2.7 billion
Indicative FDI Activities	<p><i>Wholly-Owned Subsidiaries</i> (finance, investment and portfolio management) Sonatrach Petroleum Investment Corp (Netherlands); International Petroleum Investment Partnership (Netherlands);</p> <p><i>Gas Plant JVs</i> Propanchem, with BASF (Spain); Propane dehydrogenation plant, with Bayegan & Rónesans (Turkey); Camisea gas project (10%, Peru); with Anadarko (Houston, United States);</p> <p><i>Exploration and Production (E&P) JVs</i> With Oil India Ltd, National Oil, Algeria and Indian Oil (Libya); With Agip (Yemen); With India's ONGC and Reliance Industries (Iraq); Others: Syria, Chad, Niger, Angola, the Gulf of Mexico;</p> <p><i>Refining Operations</i> (Mauritania, Tunisia, Sudan, Brazil, Bolivia, and Canada – stake in Diamond Shamrock);</p> <p><i>Independent Power Plant JVs</i> (in Turkey and Other markets);</p> <p><i>Pipeline JVs</i> Galsi 900km Enrico Mattei with Eni affiliate (to Italy); The NIGAL, with Nigeria's NNPC and the government of Niger (Trans-Saharan gas pipeline); Medgaz (42%, Pedro Duran Farrel with Spain's Cepsa Gas).</p>

Source: Case Data.

sectors of the petroleum industry, with additional interests in telecommunications, insurance and financial services and the training of oil industry professionals. It is a highly diversified conglomerate with more than 30 units and JV activities across Africa, South East Asia, Europe and North America. It generated \$10 billion in revenue and \$436 million in pre-tax profit, with 8,000 staff in 2016. Seemingly driven to become a significant international competitor, particularly in the African context, Sonangol has undertaken strategic investments both domestically and internationally. The latter include China

Sonangol International Holding, a 30:70 JV with Beiya International that has assets in Nigeria, Indonesia, and Argentina and handles crude flows between Angola and China. More profile information, including indicative FDI milestones and footprint, can be seen in Table 5.

Attijariwafa Bank, part of the Moroccan Royal family-controlled Group ONA, is one of Africa's largest in terms of assets. A product of a merger between Banque Commerciale du Maroc and Wafabank, it generated \$3.3 billion revenue with just under 20,000 staff across 3,040 branches. Its investment footprint extends to over 20 countries, including MENA, West and Central Africa, China and Europe (where its 60 branches facilitate the remittances of millions of Moroccan diaspora) (Euromoney, 2013). The first

Table 5. Sonangol's Profile and FDI Activities

Industry	Extractive
Established	1976
Employees	8,000
Ownership	Angolan government (controlling stake)
Home Country	Angola
Physical Network (International Locations)	Cabo Verde, Congo, Nigeria, Sao Tome and Principe, Zaire, Iraq; Cuba, Hong Kong (China), Indonesia, Singapore; Portugal, Switzerland, United Kingdom, United States.
Performance Indicators/ Metrics	Revenue US\$10 billion Profit before tax US\$436 million
Indicative FDI Activities	<p><i>Exploration and Production JVs</i> Sonangol E&P International Ltd (25%, with Cobalt International Energy, Gulf of Mexico); With Tullow, Ireland & Addax, Switzerland (10%, Gabon); Amorim Energia (45%, with Galp Energia, Portugal); Others: Iraq and Syria;</p> <p><i>Marketing JVs</i> Enco Sarl (40%, Sao Tome and Principe); Enacol (32.5%, Cabo Verde); Sopor Portugal (49%, Portugal); Sonangol Congo (60%, DR Congo); China Sonangol Intl. Holding (70%, with Beiya Intl.) (China);</p> <p><i>Refining Subsidiaries</i> LNG plant (Northern Zaire);</p> <p><i>Other JVs</i> Banco Africano de Investimentos (BAI), Portugal; Banco do Comercio e Industria (BCI), Portugal; Millennium BCP, Portugal; Overseas Offices - Congo, China, United States, United Kingdom, Singapore;</p> <p><i>Other Assets</i> - Nigeria, Indonesia, and Argentina.</p>

Source: Case Data.

phase of its intra-regional expansion focused mainly on neighbouring countries and francophone West Africa, while the second phase of African expansion, heralded by the acquisition of Barclays Egypt, prioritized such selection criteria as size of the national economy, population and growth prospects. Table 6 presents more profile information on Attijariwafa Bank, including indicative FDI milestones and footprint.

Banque Centrale Populaire (BCP), established in 1961, is owned by the State of Morocco (45.4 per cent) and 11 regional cooperative banks (22 per cent). A further 25 per cent is held through publicly-issued shares and the Government Pension Fund vehicle, CDG (5 per cent). Listed on the Casablanca Stock Exchange in 2004, the group reportedly employed some 12,000 employees across 1250 branches in 2016. Revenues in the year were \$2.1 billion. It also has 4.5 million customers and a presence in 11 African countries as well in Europe, the Middle East and North America. BCP's subsidiary,

Table 6. Attijariwafa Bank's Profile and FDI Activities

Industry	Financial Services
Employees	19,754
Ownership	Moroccan Royal Family (controlling stake)
Home Country	Morocco
Physical Network (International Locations)	Burkina Faso, Cameroon, Congo, Côte d'Ivoire, Gabon, Guinea Bissau, Libya, Mali, Mauritania, Senegal, Tunisia, Egypt, Saudi Arabia, United Arab Emirates; China; Belgium, France, Germany, Italy, Netherlands, Spain, United Kingdom.
Performance Indicators/ Metrics	Cabo Verde, Congo, Nigeria, Sao Tome and Principe, Zaire, Iraq; Cuba, Hong Kong (China), Indonesia, Singapore; Portugal, Switzerland, United Kingdom, United States.
Indicative FDI Activities	Revenue US\$3.3 billion Net income US\$675 million Total assets US\$29.3 billion
Accolades (selected)	<i>Subsidiaries</i> Banque du Sud (35.5% from the Tunisian government); Tunisia (with Banque Sénégal-Tunisienne); CBAO, Senegal's second ranked bank (79.15%); BIM, Malian lender (51%); Former Credit Agricole businesses in the Congo, Ivory Coast, Cameroon, Gabon and Senegal (2008); Barclays Egypt (2017); Burkina Faso, Mauritania, Mali; Guinea-Bissau; Attijariwafa Europe – Belgium, France, Germany, Italy, Spain, Netherlands, United Kingdom; <i>Branches</i> - Libya, Saudi Arabia, United Arab Emirates; <i>Representative Office</i> China.

Source: Case Data.

Chaabi Bank, set up in 1972 in France, has a presence in several other European countries, including Belgium, Spain, Italy, Germany, the Netherlands, and the United Kingdom. This expansive international network mainly targets the Moroccan diaspora and accounts for BCP's leading position in remittance banking. BCP's African footprint was facilitated via the acquisition of Ivorian lender, Group Banque Atlantique (currently 75 per cent), which is active in Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Senegal, and Togo. BCP also recently undertook FDI activity in the United States (representative office in Washington DC) – see Table 7.

Ecobank Transnational Incorporated, established in 1985 by private and institutional investors from several African countries, reputedly has the broadest reach of any African bank. It employed almost 16,000 staff, across 1250 branches across 33 African and four non-African countries, and generated revenue of \$1.8 billion and profits before tax of \$182 million in 2017. Ranked number one by asset in seven African markets, among the top three in fourteen others, and listed on three West African Stock Exchanges, Ecobank commenced FDI activity in 1989 and has expanded largely through the acquisition of existing banks in various countries.

Table 7. BCP Profile and FDI Activities

Industry	Financial Services
Established	1961
Employees	11,878
Ownership	Moroccan's government (controlling stake)
Home Country	Morocco
Physical Network (International Locations)	Benin, Burkina Faso, Central Afr. Rep., Côte d'Ivoire, Guinea, Mali, Niger, Senegal, Togo, UAE; China; Belgium, Canada, France, Germany, Gibraltar, Italy, Netherlands, Spain, Switzerland, United Kingdom, United States.
Performance Indicators/ Metrics	Revenue US\$2.1 billion Net income US\$198 million Total Assets US\$20 billion
Indicative FDI Activities	<i>Subsidiaries</i> Chaabi Bank, France (1972) - Belgium, Spain, Italy, Germany, Netherlands; British Arab Commercial Bank (United Kingdom); Union des Banques Arabes et Françaises (France); Banca UBAE (Italy); Group Banque Atlantique (2011) - Ivory Coast, Benin, Burkina Faso, Mali, Niger, Senegal, and Togo; <i>Representative Office</i> Washington DC, United States (2017).
Accolade (selected)	African Banker of the Year, 2015

Source: Case Data.

Table 8. Ecobank's Profile and FDI Activities

Industry	Financial Services
Established	1985
Employees	15,390 (2017)
Ownership	Public
Home Country	Togo
Physical Network (International Locations)	Angola, Benin, Burkina Faso, Burundi, Cameroon, Cabo Verde, Central African Rep., Chad, Congo, Democratic Republic of the Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Malawi, Mali, Niger, Nigeria, Rwanda, Sao Tome & Principe, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Uganda, Zambia, Zimbabwe; China, United Arab Emirates; France, United Kingdom.
Performance Indicators/ Metrics	Revenue US\$1.8 billion (2017); Profit before tax US\$182 million (2017) Total assets US\$20.5 billion
Indicative FDI Activities	<i>Subsidiaries</i> Togo, Nigeria, Côte d'Ivoire, Ghana, Benin (1988-1990); Burkina Faso, Guinea, Liberia, Mali, Niger, Senegal, Cameroon (1998-2001); Sierra Leone, Chad, Central African Republic, Sao Tome and Principe, Congo, Democratic Republic of the Congo, Malawi, Rwanda, Guinea Bissau, Burundi, Cabo Verde, Gambia, Kenya, Gabon, Uganda, Tanzania, Zambia (2006-2009); South Africa, Angola, Zimbabwe, Equatorial Guinea, Ethiopia, South Sudan, Mozambique (2009-2014); <i>Representative Offices</i> Paris (EBI SA), Johannesburg, Dubai, London (2009-2014).
Accolade (selected)	Best Digital Bank in Africa 2017 (Euromoney); Retail Bank of the Year 2015 (Global Retail Banking Awards).

Source: Case Data.

First Bank Holding, which was founded in 1894, has interests in commercial and investment banking, asset management, insurance and other financial services. In 2016, it employed some 9,000 staff in 862 business locations across 12 countries, including eight African and four non-African markets. Its profit before tax was \$63.6 million. First Bank Holding is listed on the Nigerian Stock Exchange and London Stock Exchange. Its acquisition of Anglo-African Bank in 1912 was reportedly the first ever M&A recorded in this region (FBN Holdings, 2014), and this was followed by entry into the United Kingdom in 1982 and later FDI activities in a number of African countries, France, China, and the United Arab Emirates.

From the above it is evident that the case subjects are significant multinational actors. The analysis now turns to the focal questions raised in the present research, as outlined at the end of the literature review section.

Table 9. First Bank's Profile and FDI Activities

Industry	Financial Services
Established	1894
Employees	9,099
Ownership	Public
Home Country	Nigeria
Physical Network (International Locations)	Dem. Rep. of Congo, Gambia, Ghana, Guinea, Senegal, Sierra Leone, South Africa; China, United Arab Emirates; France, United Kingdom.
Performance Indicators/ Metrics	Profit before tax US\$63.6 million Total assets US\$13.1 billion
Indicative FDI Activities	<i>Branches</i> Set up a branch in the United Kingdom (1982); Established Paris branch of FBN United Kingdom (2008); <i>Subsidiaries</i> Established FBN United Kingdom (2002); Democratic Republic of the Congo (2011); Guinea, Gambia, Sierra Leone, Ghana, Senegal (2014); <i>Representative Offices</i> South Africa (2004); Beijing, China (2009).
Accolade (selected)	Best Bank brand, 2012-2015 (Banker Magazine)

Source: Case Data.

4.2 African MNEs' Extra-regional FDI: Where? Why?

The above overview shows that African MNEs' outward FDI activities have mainly been intra-regionally focused. That said, there is also considerable evidence of outward FDI to other Southern economies and advanced economies in the North. This concurs with a report, which puts rising Africa's outward FDI to Southern and advanced economies at 17 and 15 per cent respectively (Ibeh, 2013). The analysis below focuses on these two types of extra-regional FDI.

In absence of a commonly agreed definition and classification system of which countries belong to the "global North" and the "global South" or "economies of the South" and "economies of the North", the following operationalization was employed. Based on UNCTAD's classification of developed, developing and transition countries (UNCTAD, 2017b) and in line with UN ESCAP (2009) understanding of the "South" and the "North", developing and transition countries in this study are denoted as "economies of the South" and developed countries as "economies of the North".

Table 10, above, offers a non-exhaustive list of other Southern economies targeted by African MNEs in their investment activities. These MNEs are, thus, contributing to South-South FDI flows with investment footprints in South America (Argentina, Brazil, Bolivia, Cuba, Peru); South Asia (e.g. China, Hong Kong (China), India, Indonesia, Malaysia, Pakistan, Singapore, the Republic of Korea, Turkey); Central Asia (Afghanistan, Kazakhstan); and transition economies (such as the Russian Federation).

With regard to the motivation for these South-South FDI activities, the case material summarized in Box 1 points to the particular relevance of market-seeking motivations. Examples abound, including:

- Sonatrach International Holding's 1994 establishment of a Singaporean subsidiary to market LPG, crude and other products in the Asia/Pacific market and an LNG marketing agreement with Russia's Gazprom, the world's largest exporter of natural gas;
- OCI's investment in a JV in Brazil (with FITCO International S.A, a Brazilian fertilizer trading company) in order to trade and distribute fertilizer products and import urea from its Fertilizer Group;
- OCP's investment in Black Sea Fertilizer trading company, a JV with Turkish Toros Agri-industry, seeking to extend its presence to Central Asia and the Balkans;

Table 10. Extra-regional FDI Footprints of African MNEs

MNE	Economies of the South	Economies of the North
Elsowedy (Egypt)	Hong Kong (China), India, Kazakhstan, Malaysia, Pakistan, Russia	Spain, Netherlands, Slovakia, Slovenia, Czech Republic
Orascom Construction Industries (OCI) (Egypt)	Afghanistan, Brazil, India	Belgium, Cyprus, Netherlands, Switzerland, United States
Office Chérifien des Phosphates (OCP) (Morocco)	Argentina, Brazil, India, Pakistan, Turkey	Belgium, United States
Sonatrach (Algeria)	Bolivia, Brazil, China, Peru, Singapore, Republic of Korea, Turkey	Belgium, France, Germany, Greece, Italy, Portugal, Slovenia Spain, Netherlands, United Kingdom, United States
Sonangol (Angola)	Iraq, Cuba, Hong Kong (China), Indonesia, Singapore;	Portugal, Switzerland, United Kingdom, United States
Attijariwafa (Morocco)	China	Belgium, France, Germany, Italy, Spain, the Netherlands, United Kingdom
Banque Centrale Populaire (BCP) (Morocco)	China	Belgium, France, Germany, Gibraltar, Italy, Netherlands, Spain, Switzerland, United Kingdom, United States
Ecobank (Togo)	China, United Arab Emirates	France, United Kingdom
First Bank (Nigeria)	China, United Arab Emirates	France, United Kingdom

Source: Case Data.

- Elsewedy's 50mw wind power plant in Pakistan and OCI's partnership with HCC Infrastructure Limited (HIL), a preeminent Indian infrastructure company, based in Mumbai, to pursue Public-Private Partnerships and Build Operate Transfer projects in India.

Additional indicators include Ecobank and First Bank's setting up of representative offices in China, apparently to facilitate trade links between China and Africa; the former's strategic partnerships with the Bank of China and India's ICICI Bank to extend services across their combined footprint in India and Africa; and Sonangol's overseas offices in South East Asia, notably Singapore.

There are also indications that resource-seeking motivations influenced some of the direct investments undertaken by African MNEs in other Southern economies (Box 2). This is illustrated by OCP and Sonatrach's respective investments in a Pakistani plant that produces phosphate fertilizers and phosphoric acid and Peru's Camisea upstream gas project; as well as Sonangol's investments in exploration rights in Iraq and Cuba.

Box 1. Motivations for African MNEs' South-South Investments: Market-seeking

- Sonatrach International Holding's subsidiaries, including SPC Singapore, were reportedly set up to market Algerian LPG, crude and other products in the Asia/Pacific market.
- Ecobank's representative offices in Beijing and Dubai were respectively positioned to facilitate the growing trade links between China and Africa, and develop market presence in an increasingly important regional hub and emerging financial centre.
- First Bank similarly has a representative office in China.
- OCP's JV with Turkish Toros Agri-industry, the Black Sea Fertilizer trading company reportedly aimed to extend the company's market presence to Central Asia and the Balkans;
- OCI's JV with Brazil's FITCO International was reportedly aimed at facilitating the trading and distribution of OCI Fertilizer Group's products. OCI's partnership with Indian infrastructure company, HCC Infrastructure Limited, was also focused on pursuing revenue generating PPP and Build-Operate-Transfer projects in India.
- Elsewedy's JVs with Arab Contractors and the Pakistani government in Iraq and Pakistan respectively were aimed at accessing market opportunities.
- Sonangol's Singapore subsidiary, SonAsia, was reportedly set up in 2004 to sell Angola's crudes to the Asian continent.

Source: Case Data.

Sonatrach's exploration and production agreement with Russia's Gazprom also reflects a resource-seeking focus.

Investments in economies of the North targeted opportunities in the following host countries: Belgium, Canada, Cyprus, Czech Republic, France, Germany, Gibraltar, Greece, Italy, Portugal, the Netherlands, Slovakia, Slovenia, Spain, Switzerland, the United Kingdom, and the United States. BCP, Attijariwafa, Sonatrach, Sonangol, Elsewedy and OCI have been particularly expansive, with each invested in five or more advanced economies. This level of exposure to more competitive and mature global markets underlines the international commitment of these African MNEs. The United Kingdom, France and Spain are among the most common advanced-economy destinations for African investments, which reflect the influence of historical and cultural ties on the investment location decisions of African MNEs. Nigerian financial service MNEs, e.g. First Bank, have invested in the United Kingdom, while Moroccan MNEs – BCP and Attijariwafa – have targeted Spain and France, and the United Kingdom to a lesser extent. The Netherlands and the United States are also frequently targeted.

A close look at the case material summarized in Boxes 3, 4 and 5 suggests the search for strategic assets/resources, new market opportunities and value-enhancing relationships to be the main motivations for these MNEs' foreign investment activities. The quest for strategic assets largely explains Elsewedy's acquisition of the Spanish wind energy firm, M Torres Olvega, principally to leverage the acquired entity's capabilities in manufacturing wind turbines and providing co-development, operation and maintenance services for wind farms as well as set the stage for the subsequent establishment of Sewedy Wind Energy Group (SWEG). Similar technology leveraging or asset exploitation also appears to explain Elsewedy's entry into a JV with German company SIAG, a producer of steel and tube towers. The towers are the main component required by Elsewedy for wind turbine installations in its home market. OCP's investments in phosphate fertilizer and phosphoric acid production plants in Belgium and France assists to diversify its supply chain and to secure access to critical sources; while Sonangol's acquisition of US-based Cobalt International Energy helps diversify and extend its offshore oil

Box 2. Motivations for African MNEs' South-South Investments: Resource-seeking

- Sonatrach's exploration and production agreement with Russia's Gazprom and propane hydrogenation JVs in Turkey were reportedly aimed at enhancing its access to critical resources and increasing overall production capacity. So was its JV in the upstream Camisea gas project in Peru.
- OCP's JVs in Pakistani and Indian plants that produce phosphate fertilizers and phosphoric acid were similarly focused on sustaining its access to critical resources and boosting overall capacity. The same goes for Sonangol's investments in exploration rights in Iraq and Cuba.

Source: Case Data.

and gas assets to the Gulf of Mexico. Sonatrach's 49:51 JV with Germany's BASF in Northern Spain (called Propanchem) apparently seeks to tap into BASF's capabilities in propane dehydrogenation technology. Although Uganda's Madhvani Group is not part of the present study, its 2005 and 2006 acquisitions of Rhodia Chemie's phosphates operations in Spain and Belgium, reportedly to facilitate the development of phosphate deposits in Uganda, similarly reflect a strategic asset-seeking orientation.

Market-seeking motivations also abound. Sonatrach International Holding's wholly-owned trading units in London and Amsterdam – respectively Sonatrach Petroleum Corporation and Sonatrading Amsterdam – were both set up to market piped gas and LNG to Europe and the American LNG market. Elsewedy's acquisition of ZPA Smart Energy, a Czech manufacturer with clients such as E.ON and CEZ was predominantly driven by market-orientated considerations. Another example is Sonatrach's wholly-owned finance and investment Dutch subsidiary, Sonatrach Petroleum Investment Corporation and its financial holding unit, International Petroleum Investment Partnership, which respectively focus on helping Sonatrach expand, consolidate and integrate its overseas operations and strategic subsidiaries, including through E&P ventures, associated logistics and services and the management of Sonatrach's portfolio. Ecobank subsidiaries in France and London, and First Bank's subsidiary in the

Box 3. Motivations for African MNEs' South-North Investments: Strategic assets/ resource-seeking

- Elsewedy's acquisition of the Spanish wind energy firm, M Torres Olvega, was reportedly aimed at leveraging the capabilities of a reputable manufacturer of wind turbines and service for wind farms in its subsequent establishment of Sewedy Wind Energy Group (SWEG). Such technology leveraging was also observed in Elsewedy's JV with German steel maker SIAG, which produces tube towers, the main component required by Elsewedy for wind turbine installations in its home market., and in Sonatrach's propane de-hydrogenation JV in Northern Spain with BASF of Germany.
- OCI's acquisition, via wholly-owned OCI Nitrogen (Netherlands), of an integrated ammonia-methanol plant in Beaumont, Texas, and of MICRO Chemie B.V., which own major assets in the Netherlands (including 30,000-ton ammonia storage tanks, a port terminal and Royal DSM's Agro and Melamine businesses) were reportedly focused on procuring strategically important assets.
- Sonangol acquisition of America's Cobalt International Energy's oil blocks in the U.S. Gulf of Mexico, US, in exchange for 40% of two blocks offshore of Angola, was reportedly aimed at diversifying Sonangol's oil and gas supply base. So was OCP's investments in phosphate fertilizers and phosphoric acid production plants in Belgium and France.

Source: Case Data.

United Kingdom and a branch in Paris, appear motivated by the need to develop market presence in these key financial centres.

Relationship-seeking motivations evidently underlie African banks' expansion into Europe, North America and other major host countries of African immigrant communities. These financial service MNEs typically seek to develop relationships in these markets with the diaspora and organizations with links to Africa, or seek to initiate such links.

The case material above all point to market-, strategic resource- and relationship-seeking motives, or a combination of these motives, for African MNEs' investment decisions abroad. The MNEs pursued their market-seeking objectives by investing in revenue-generating platforms in both the emerging South and the advanced North. The MNEs, notably Elsewedy, OCI and the extractive industry giants, Sonatrach, Sonangol and OCP, also manifested their strategic-asset/resource-seeking orientation by augmenting assets in both developing and advanced economies. The present study, while limited in scope, suggests that African MNEs with primarily strategic asset- and relationship-seeking motivations largely favour upmarket, advanced economy destinations, while those whose motivations are predominantly market-seeking tend to prioritize intra-regional and Southern market opportunities. The tendency, however, may vary by industry. Oil and gas MNEs, for

Box 4. Motivations for African MNEs' South-North Investments: Market seeking

- Ecobank and First Bank's subsidiaries in Paris and London were reportedly aimed at developing market presence in these key global financial centres.
- BCP's representative office in Washington was reportedly positioned as a "link between non-Resident Moroccans and their country of origin as well as to contribute to strengthening business relationships between Morocco and the USA".
- Elsewedy's acquisition of Czech ZPA Smart Energy was reportedly influenced by the type of clients served by the latter, including major power companies, CEZ, PRE, & E. ON and CR
- Among Sonatrach International Holding's many subsidiaries are Sonatrach Petroleum Corporation and Sonatrading, both wholly-owned trading units respectively based in London and Amsterdam, with responsibility for marketing piped gas and LNG to Europe and America.
- OCI's acquisition of the Weitz Company, an Iowa-based US general contractor, and long-term off-take agreement with the Methanex Corporation for output from OCI's methanol plant in Beaumont, Texas are reportedly aimed securing and strengthening access to US market opportunities.

Source: Case Data.

Box 5. Motivations for African MNEs' South-North Investments: Relationship-seeking

- BCP, First Bank and Attijariwafa's subsidiaries, branches and representative offices in several key financial centres in Europe and North America are reportedly aimed at developing and strengthening relationships with companies and individuals who do business and maintain links with Africa, including Diaspora or non-resident Africans.
 - "What we did is to open branches in front of consulates...so that Moroccans could see our branch before they went in" (Attijariwafa CEO).

Source: Case Data.

example, are largely bound to pursue extra-regional markets given the inadequate level of demand for their main products intra-regionally. Not surprisingly, efficiency-seeking motivation appears not to be particularly salient in the extra-regional FDI activities of African MNEs. Elsewedy's investment in production facilities in Eastern Europe and the Middle East, however, offer the closest example.

4.3 How advisable is African MNEs' engagement in extra-regional FDI?

As might be expected, there are credible arguments in favour of, and against, African MNEs investing outside their home region. Some of the key considerations are presented below.

On the positive side, upmarket FDI can facilitate African MNEs' access to critical technologies, knowledge capabilities and related strategic assets thereby assisting them to augment, upgrade and catch up. This aligns with the LLL framework by Mathews (2002, 2006). Notably, Elsewedy's initial foothold in the increasingly important wind energy business and the development of the Sewedy Wind Energy Group would seem to have stemmed from its acquisition of a Spanish specialist provider of wind turbines and wind farms, M Torres Olvega. The JV with SIAG of Germany, a producer of steel and tube towers, similarly availed Elsewedy of critical capabilities for manufacturing tube towers required for wind turbine installation projects in its home market. This, interestingly, suggests some additionality from extra-regional FDI to augment Elsewedy's home market, echoing evidence from previous emerging economy MNE research, notably related to Chinese MNEs, about the leveraging of acquired entities to bolster operations at home (Yueh, 2012). Similarly, OCI's acquisition of the Iowa Fertilizer Company and subsequent contract for its Construction Group to build a greenfield nitrogen fertilizer plant in south-eastern Iowa reportedly availed OCI of access to the production process technologies of Kellogg Brown and Root, Stamicarbon BV (Maire Tecnimont Group) and ThyssenKrupp Uhde. Related arguments

apply to OCP's investments in phosphate fertilizer and phosphoric acid production plants in Belgium and France; Sonangol's acquisition of gas assets in the United States from Cobalt International Energy; and Sonatrach's propane de-hydrogenation JV with BASF of Germany in Northern Spain.

A crucial complementary benefit of these extra-regional FDI moves is the opportunity they offer to African MNEs to enrich their portfolio of collaborative relationships with even more impactful, resource-laden international players. For example, Sonatrach's JV in Peru enabled it to enter into strategically advantageous collaboration with partners, including Tecgas NV, Pluspetrol (Argentina), Hunt Oil (United States), SK Corporation (Republic of Korea), GDF Suez-Tractebel SA (Franco-Belgian), and Grana y Montero SAA (Peru). These add to the earlier discussed benefits of developing and sustaining relationships with the African diaspora and pro-African organizations in Europe, North America and elsewhere, pursued by several financial services MNEs.

There is another important sense in which such extra-regional investments widen the strategic and market options available to African MNEs: this is by enabling them to seek diversified market opportunities further afield, in more lucrative, *albeit* competitive, advanced economies. Such market diversification arguably limits future revenue exposure to any one region or geographic market clusters. This tends to be particularly important when situations within their home region (e.g. the *Arab Spring*, civil conflicts, economic recession, etc.) narrow the range and size of opportunities available to these firms locally or regionally, or even present risk to their operations. OCI, for example, appeared to have mitigated some of the effects of the post-Arab Spring-related challenges in its home country by realigning its global structure and shifting organizational emphasis away from Egypt and toward international subsidiaries, notably in The Netherlands and the United States (Iowa and the Gulf of Mexico). Notably, its Construction Group reportedly secured a turnkey engineering, procurement and construction contract worth over \$1 billion from an acquired entity, the Iowa Fertilizer Company, in 2012. The reported increase in revenue generated from Europe, North America and other regions (e.g. 78 per cent increase in the Asian segment) evidently mitigated the overall decline in OCI financial outcomes during the particularly challenging 2011–2013 period. OCI Fertilizer Holdings' reported disposal of its 16.8 per cent stake in the US-based Gavillion Group to the Japanese Marubeni Corporation for over \$600 million, at a hefty premium on the \$340 million purchasing price three years earlier, was similarly helpful.

Arguments against extra-regional FDI, however, also prevail. For instance, some contend that expansion to intra-regional markets tends to yield comparable or better market diversification benefits. The significant boost reportedly achieved by Elsewedy from the infrastructure boom and attendant demand for housing, power generation, cables and other electrical products in the neighbouring Gulf Cooperation Council countries could be cited for illustrative purposes. Elsewedy's intensified post-Arab Spring targeting of parts of the MENA region and the African continent, where rising demand for electricity was creating opportunities and boosting revenues in the medium term (e.g. through a share of a \$1 billion deal to repair Libyan armed conflict-damaged electricity grid and

infrastructure) similarly boosted operations. There is also suggestion in the literature (e.g. Selmiar and Newenham-Kahindi, 2017) that shared institutional, including cultural, background with host markets may enhance MNEs' effectiveness in managing relations with local communities.

Furthermore, extra-regional FDI is posited as out of sync with the increasingly observed divestments of traditional MNEs from their so-called non-core markets (e.g. European financial services MNEs, including Barclays, selling off African subsidiaries, while major African players like South Africa's Standard Bank are divesting from most of its extra-regional operations to focus on African markets [African Business, 2017]). Extra-regional FDI ambitions also tend to ignore the widely noted struggles of developing country MNEs to integrate acquired upmarket entities and capture value. The lowering of OCI Iowa subsidiary's revenue bonds, from BB-minus to B-plus, by Fitch Ratings, reportedly owing to escalating costs and *construction* delays is an example of such upmarket FDI snags, as is Attajariwafa CEO's bemoaning the higher associated costs and regulatory burden of operating a "fully French bank" (Euromoney, 2013).

From the above it is obvious that the advisability or otherwise of African MNEs' involvement in direct investment outside their home region is not an easily resolved matter. The next and final section of the paper seeks to draw some conclusions.

5. Summary, conclusions and implications

This paper has presented and discussed preliminary evidence on the extra-regional FDI activities of African MNEs, and explored the motivations for these investments. It captures the tentative steps of these MNEs in South-South and South-North investment contexts and contributes to the global discourse on the merits or otherwise of extra-regional FDI, including probable *additionality* for home economies. These MNEs' forays beyond their intra-regional markets in search of market opportunities, strategic assets/resources and value enhancing relationships are welcome, and concerted policy efforts are needed to support their sustainability. Although not always consistent, previous studies on the impact of FDI on home economies largely suggest favourable net effects on employment, technological and managerial knowledge transfer, among others (Hejazi and Pauly, 2003; Bitzer and Gorg, 2005; Buckley et al., 2007; Moran, 2007). Arguments against extra-regional FDI are not without merit, however, a more holistic and strategic view ought to factor in the positive concomitants of direct exposure to more advanced markets. These include learning/technology spillovers, access to "wealthier" markets, the opportunity to acquire strategic assets/resources, as well as the associated opportunity of engaging with and embedding global best practice (Ibeh et al., 2018). Intra-regional investments by African MNEs should continue to be favoured, but selective and strategic extra-regional FDI, undertaken with an eye to enhancing global competitiveness, also requires appropriate policy support. Indeed, the increasing importance of the digital economy, with its vastly enhanced facilities for borderless digital internationalization (UNCTAD, 2017a; Ibeh and Lloyd-Reason, 2017), and the

proliferation of MNE affiliates with blurred national identities or “multiple passports” (UNCTAD, 2016) are making regional distinctions less relevant.

Policy makers should guide African MNEs to prioritize the acquisition of advantage-generating capabilities, including habitual upgrading, continuing innovation and continuous learning (Ibeh and Makhmadshoev, 2018). Such foregrounding and capability anchors on the home and regional fronts would help them, in time, to develop breakthrough brand reputation, or augment their brand equity to a level that neutralizes the effects of unfavourable country-of-origin perceptions. It could also attract value-seeking private equity firms to partner with them to effectively reach global markets. *White elephant*, prestige-seeking multinational expansion, driven mainly by ego and puff, with questionable firm-specific capability anchors, should rightly be discouraged. However, policy makers must not shy away from championing ambitious upstarts and global start-ups, including digital economy entrepreneurs with the vision and strategic intent to take on the world and occupy a global niche. To do otherwise is to deny the possibility that the next game changers might emerge from the developing world, including Africa. This is particularly important given the vast and increasing opportunities that the digital economy and digital internationalization present to firms of divergent demographics and geographies (UNCTAD, 2016; Ibeh and Lloyd-Reason, 2017).

Development promotion institutions, including multilateral global and regional development partners, African regional bodies, UN agencies (e.g. UNCTAD) and the World Bank Group, should steer and support African governments and policy makers towards embracing an appropriately nuanced outward-oriented development strategy. This ought to entail, *inter alia*, working with and assisting these actors to establish or upgrade their investment policy infrastructure, including in-house capacity for investment policy making, and redressing the mixed policy signals so often given on outward FDI. African governments that are yet to enter into appropriate bilateral and multilateral investment treaties should also be encouraged to take the necessary steps in that regard in order to obviate unfair treatment of their current and future MNEs and negotiate their access to as level a playing field as possible (Ibeh, 2013; UNCTAD, 2017b). African governments and policy makers should also be assisted to craft a template that can be used to evaluate and distinguish between African firms based on their readiness to undertake FDI – intra-regionally or extra-regionally. Such a template should guide the design and provision of appropriately tailored support to African firms ready to invest abroad. This is likely to advance the crucial task of prioritizing scarce support resources to African companies with better prospects of generating net positive benefits to their home economies.

Researchers and policy makers are challenged to continue efforts to understand the net impact of African MNEs’ outward investment on their home countries, regions and relevant parties, such as diaspora communities. Improved understanding of additionality and net effects could fruitfully advance scholarly discussions and managerial and policy decision making, whilst also informing the design and deployment of assistance programmes by stakeholders.

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How subsidiaries influence innovation in the MNE value chain

Edward Gilmore, Ulf Andersson and Noushan Memar*

As multinational enterprises increasingly disaggregate their value chains and assign functional responsibilities to foreign subsidiaries, they are increasingly focused on augmenting spatially distant activities and resources. At the same time, despite subsidiary managers operating at the “middle” of the organization and having awareness of operational and strategic contexts, they have received significant criticism for hindering the successful coordination and integration of value chain activities. This appears counterintuitive as, on the one hand, MNEs are increasingly disaggregating their value chains and, on the other, subsidiary managers act as frontline managers, at the intersection of their local context and the MNE. We examine the resource stocks of six subsidiaries and the activities of subsidiary managers locally and across global value chains. The results indicate that integration responsibilities are decentralized, as properties of subsidiary mandates, and that the subsidiary managers’ connectivity activities significantly affect the strategic influence that they subsidiary can exercise locally and globally. The results also contain important information for policymakers.

Key words: R&D mandate integration; subsidiary manager activities; connectivity; strategic influence.

1. Introduction

Over the few past decades, multinational enterprises (MNEs) have disaggregated their value chains and relocated their activities to subsidiaries in diverse locations to capitalize on and leverage globalization (Cantwell and Mudambi, 2005; Contractor et al., 2010; Demirbag and Glaister, 2010) in order to withstand increasing competition (Rugman, Verbeke and Nguyen, 2011). This fine-slicing of activities has even led to the internationalization of activities such as research and development (R&D) that were previously co-located with headquarters in proximity to the core competencies of the MNE. With this disaggregation, R&D has become an activity that is commonly mandated to foreign subsidiaries in resource-rich foreign locations around the globe (Contractor et

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al., 2010). Thus, subsidiary managers and their local and internal relationships become important for the development of innovation and the evolution of technology, inside the firm and locally.

The importance of connectivity and relationships to a firm's viability is well established (Hannigan, Cano-Kollmann and Mudambi, 2015), but relatively few studies have examined the development and leverage of global knowledge connections or assessed their role in the evolution of subsidiaries. To illustrate and analyse the phenomenon of connectivity in subsidiaries' relational activities in the context of global innovation, we study the R&D subsidiaries of ABB – located in Sweden, Switzerland, China, India, the United States and Germany – and their evolution to a global lab. The transformation of ABB has been the subject of other studies (e.g. Bartlett and Ghoshal, 1989, 2001). We add value to this literature by examining multiple dimensions of subsidiary performance and paying particular attention to the relational dimension and the subsidiary managers' role in global connectivity. This approach leads to new insights about MNEs' management of innovation, the microfoundations of subsidiaries' innovative influence and local systems' supportive policy mechanisms.

Subsidiaries can evolve and change in surprising ways along mandated functions (Birkinshaw and Hood, 1998; Cantwell and Mudambi, 2005; Rugman, Verbeke and Yuan, 2011). Technological advancements push firms and their subsidiaries to evolve, but not all subsidiaries in all geographic locations are able to create and leverage new technology. The forces of innovation can pressure subsidiaries to feel and act in bolder ways, looking to create more knowledge, and develop new products and processes (Andersson, Forsgren and Holm, 2002). This is particularly so if the local environment is conducive to such actions, through public organizations' policies and the presence of capable business partners (Ryan et al., forthcoming). Subsidiary evolution occurs through intertwined technological and organizational processes (e.g., Birkinshaw and Hood, 1998; Cantwell and Mudambi, 2005). In the organizational dimension, processes can encourage or discourage innovation by subsidiaries. The continuing conversion of tacit into codified knowledge through the standardization of processes often leads to outsourcing, offshoring and greater geographic mobility (Mudambi, 2008; Vernon, 1966).

Firms can disperse their activities broadly over physical geography (Cantwell and Mudambi, 2005). Both subsidiaries and their key managers have been pushed to adapt and become prominent actors as firms have increasingly moved activities to new locations, largely in response to falling spatial transaction costs and the growing ease of modularization of activities. This transition can spark new ideas and make it possible to tap new sources of innovation, but increases in the costs of coordination and communication can also hurt innovation (Meyer, Mudambi and Narula, 2011) as a result of greater competition between subsidiaries (Mudambi, Pedersen and Andersson, 2014). When firms disperse important activities geographically, that action has important implications for the evolution of subsidiaries and of activities by subsidiary managers. As functional responsibilities change, the influence of these subsidiaries on

the technological and organizational processes of the firm underpins the subsidiary's rise and decline and complicates the scope of managerial activities.

The research has predominantly investigated the relationship between gaining value-generating mandates and developing subsidiary strategic influence from a macro (i.e. MNE) or meso (i.e. subsidiary) level. Less attention has been given to the mechanisms underlying these processes, i.e. the contribution of the subsidiary managers' activities and their connectivity. This makes these mechanisms interesting to investigate from the perspective of both practice and policy, as subsidiary managers act to connect to local resources, and to manage and integrate these resources. These activities affect the subsidiary's influence within the MNE as well as the technological co-evolution of the local region. To elucidate a clearer picture, our research asks, how do subsidiary managers' resource management activities create strategic influence for subsidiaries after they gain an R&D mandate?

In this paper we study the allocation of R&D mandates to foreign subsidiaries, in particular, we focus on changes in the subsidiary manager's responsibilities in terms of developing and integrating resources locally and across value chains in the MNE. This study yields the following contributions: First, we provide a more nuanced description of the heterogeneity of subsidiary mandates. Our analysis suggests that the notion of aggregated subsidiary mandate roles where one kind of mandate role applies to all subsidiaries of an MNE – e.g. contributor, strategic leader, black hole or implementer – does not capture the complexity and uniqueness of the modularity of mandate roles. For example, a subsidiary can be an implementer locally on a sales mandate while being a strategic leader on its R&D mandate (Bartlett and Ghoshal, 1989; Rugman, Verbeke and Yuan, 2011). Second, examination of mandate resource sourcing and of the connectivity activities of subsidiary managers reveals evidence of the tenets that determine the evolution of mandates and subsidiary influence over time. Third, we contribute to global strategy development by investigating how subsidiary managers' activities are critical to managing and integrating value chain activities. Fourth, we contribute to the resource dependency discussion by elucidating how dependencies are developed at the operational level (i.e. in inter-MNE R&D projects across value chains) and leveraged at the strategic level (i.e. where the subsidiary can influence the allocation of resources or mandates because of its importance and its influence over integration). Last, with our results we provide information for evidence-based policymaking on national and regional development and investment.

Owing to the multilevel nature of this research, in this paper we follow the structure of Coleman's Bathtub diagram to clarify the structure of the conceptual arguments (see figure 1). We have acknowledged the previous research on the links between macro- and meso-level phenomena in the fine-slicing of the MNE value chain and resource allocations, the R&D mandating of subsidiaries and the strategic influence of subsidiaries with the MNE at both the MNE and the subsidiary levels. In the following sections we review the micro-level explanations of these phenomena and propose a mechanism and causality between and within levels (Felin, Foss and Ployhart, 2015). To do this, we

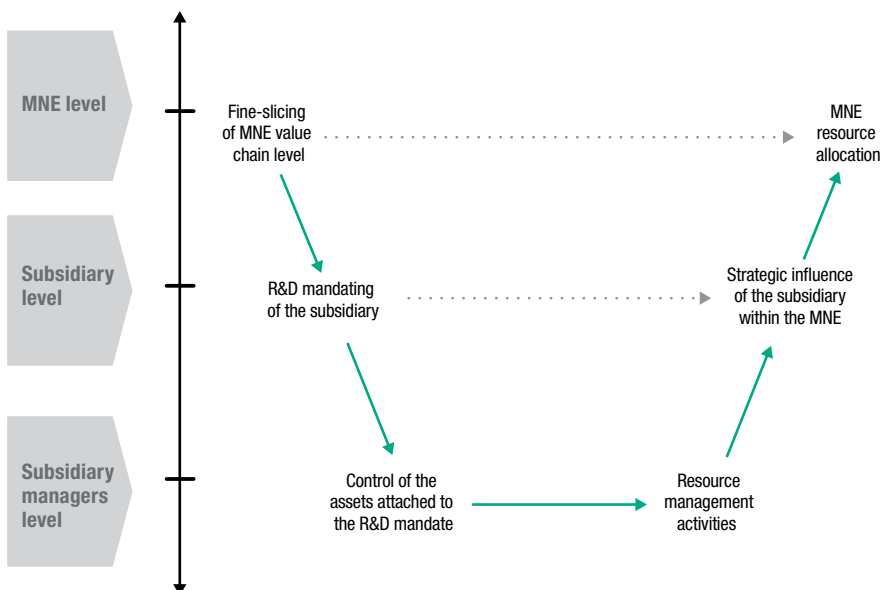
review the received research on subsidiary mandates to justify the importance of the subsidiary manager's resource management activities in an R&D mandate. We discuss these activities and their dimensions, as well as their connections to the subsidiaries' strategic influence within the MNE. We then introduce the methods and approaches of our case data and our findings. This is followed by a discussion and the presentation of a set of propositions that illuminate the responsibilities of subsidiaries for the development of mandate resources, the integration of those resources and how these processes contribute to the strategic influence of the subsidiary on MNE decision-making about mandate and resource allocation. The final section summarizes the main findings and presents some implications for senior MNE managers and public policymakers.

2. Literature

2.1 Subsidiary mandates and linkages to asset control: sources of subsidiary influence

Within MNE value chains, a subsidiary can perform single or multiple activities (Birkinshaw and Hood, 1998): e.g. production, sales, administration and R&D activities (Rugman, Verbeke and Yuan, 2011). These activities, together with the scope of responsibility attached to them, whether local, national, regional or global,

Figure 1. General Model of the Subsidiary's Strategic Influence



constitute the subsidiary's mandates (Birkinshaw and Hood, 1998). Mandates are always assigned to subsidiaries by the headquarters. It is important to understand that although mandate gains sometimes are driven by subsidiaries' successful initiatives, the assignment and granting of mandates is always the prerogative of headquarters (Birkinshaw and Hood, 1998; Dörrenbächer and Gammelgaard, 2006).

Building on Hart's (1995) view of ownership and control over an asset, and considering that the ownership of an asset is different than the ownership of the attributes of an asset (see e.g. Barzel, 1987, 1994, 1997), we can argue that in the context of the MNE, the headquarters is the entity that owns and can exercise the ultimate legal control of assets (i.e. mandates). However, since the control of an asset consists of the control over its attributes (Foss and Foss, 2001), by assigning a mandate to a subsidiary, headquarters is delegating to the subsidiary both control of the attributes of the mandate and the degree of global scope of it to be integrated with the subsidiary's other mandates.

Attributes of an asset are its characteristics and its possible use. Control of the attributes gives the assigned agent, in this case the subsidiary, control over the usage and development of the asset (Foss and Foss, 2001; Kim and Mahoney, 2005). In this sense, when a subsidiary receives a mandate, it has the potential to develop knowledge attached to that mandate, and any unique development done by the subsidiary using the available resources (i.e. attached to the mandate or to the subsidiary's existing portfolio of mandates) can act as strategic leverage for the subsidiary within the context of the MNE (Andersson et al., 2002; Ambos, Andersson and Birkinshaw, 2010). In other words, by developing a gained mandate such as R&D, the subsidiary gains strategic control over the newly developed knowledge, and this strategic control over the asset is separate from the legal control that headquarters exercises over the same asset.

In principle, R&D mandating means that the MNE, through its headquarters, assigns a subsidiary the responsibility for a particular R&D activity with a spatial scope. This responsibility – regardless of its spatial scope – requires the subsidiary not only to exploit its own capabilities but also to integrate the R&D mandate into its existing portfolio and resources that reside in the subsidiary's internal and external environments so as to contribute to overall knowledge, value and innovation in the MNE (Birkinshaw, 1997; Delany, 2000; Berry, 2014). In other words, the subsidiary is gaining a responsibility from the headquarters domain for developing, applying and integrating the resources associated with that R&D mandate to the internal and external MNE technological contexts, to generate new knowledge and values for use beyond the subsidiary's local context. In doing so, subsidiary managers, as those responsible for the subsidiary's development, build connections with counterparts from which they can source resources for the subsidiary's resource portfolio so that the subsidiary can build capabilities (Sirmon, Hitt and Ireland, 2007), not only in its local environment but also in global contexts where it is participating

in intra-MNE projects. These activities of subsidiary managers strengthen the subsidiary's position in the MNE network through the accumulation of knowledge and technological capabilities (Achcaoucaou et al., 2014) and provide a voice for the subsidiary with which it can have more influence on the MNE's strategy (Garcia Pont et al., 2009). In the next section, we discuss subsidiary managers' resource management activities, which are antecedent to the creation of the unique resources for the subsidiary that they are able to leverage within the MNE.

2.2 Subsidiary managers' resource connectivity activities:

Subsidiaries' top managers can be viewed as the middle managers of MNEs because they are connected to both the host environment and the headquarters. The original framework of middle management suggests that middle managers can influence the strategic standing of a firm through their strategic activities (Floyd and Wooldridge, 1992). Strategic activities of the subsidiary can be induced from the theoretical arguments on the role of middle management and its relationship with strategy development in the firm's complex and dynamic environment (O'Brien, 2014). This view suggests that middle managers can improve performance by improving the quality of the firm's strategic decisions (Wooldridge and Floyd, 1990), by developing "deliberately emergent" strategies that are based on the strategic opportunities in their environment (Mintzberg, 1978; Mintzberg and Waters, 1985).

In addition, subsidiary managers – like any managers of independent firms – need to pursue strategies to achieve economic objectives for the subsidiary. In doing so, they are conducting strategic activities that can be aggregated in three dimensions: upward, horizontal and downward (Wooldridge and Floyd, 1990; O'Brien, 2014). In the upward dimension, subsidiary managers are engaging with the headquarters by lobbying for new activities (Birkinshaw and Hood, 1998), highlighting important issues (Dutton and Ashford, 1993), vocalizing the subsidiary's current success (Bouquet and Birkinshaw, 2008) and building political influences (Dörrenbächer and Gammelgaard, 2006). Upward activities provide the subsidiary the opportunities to attract strategic decisions by headquarters towards subsidiaries' benefit as well as to exploit and gather knowledge on the critical resources available in the MNE that are relevant to the subsidiary's portfolio of activities (O'Brien, 2014).

In the horizontal dimension, subsidiary managers engage internally with sister subsidiaries as well as externally with counterparts to deal with the competitive environment both internal and external to the MNE (O'Brien, 2014). The horizontal internal dimension entails activities such as aligning and adapting the subsidiary's activities to sister units in the MNE. These activities provide the subsidiary the chance to gain critical resources and build linking economies with other subsidiaries through which the strategic influence of the subsidiary within the MNE increases (Garcia Pont et al., 2009). The horizontal external activities of subsidiary managers

are activities dealing with external counterparts in order to create knowledge and enhance subsidiary learning (Mu, Gnyawali and Hatfield, 2007) and performance (Andersson et al., 2002). Engaging in these activities offers the subsidiary the ability to build its external network, through which the subsidiary can be introduced to new opportunities and resources that later on can strengthen its competitive position (O'Brien, 2014).

In the downward dimension, the activities of subsidiary managers are directed towards their own operations, to exploit the resources and capabilities available in the subsidiary (O'Brien, 2014). Downward activities consist of facilitating learning, coping with opportunities and changes occurring in the unit, and implementing strategy that is in line with headquarters' objectives (Wooldridge and Floyd, 1990).

In this study, we are concerned with the resource management activities of subsidiary managers, in their local environment and inside the MNE, that increase the MNE's dependency on the subsidiary. Ergo, downward activities are considered to be implementation activities carried out by subsidiary managers at the time of receiving a new mandate; i.e. they represent resource-structuring activities necessary to implement a mandate and develop capabilities associated with the mandate. By gathering information on the resources available in the MNE, upward activities give the subsidiary the knowledge platform from which to increase MNE dependency. Upward activities also represent the communication processes that subsidiary managers adopt towards their headquarters, both in searching for resources and in communicating the reasons why they should be allocated resources (e.g. successful sales or initiatives or the potential to achieve such successes).

3. Method

In the extant literature there is a dearth of studies investigating the mechanisms of subsidiary development and their links to strategic influence. This story is under-researched, novel and worthy of attention, elements that constitute the basic rationale for applying an explorative case study approach (Birkinshaw, Brannen and Tung, 2011). To better elucidate the subject, we first engage in an empirical investigation. We then use inductive theory building (Welch et al., 2011) to further develop our framework and to outline avenues for future research. This study is based on an embedded longitudinal case study methodology (Yin, 1989), which is a suitable approach for the purpose of the investigation, including the description and generation of a theory (Eisenhardt, 1989). We investigate MNE subsidiaries' mandate configurations and the rationale behind subsidiary influence by opening the "black box" of subsidiary managers' activities related to gaining an R&D mandate.

Prior research has offered substantial evidence that parent-subsidiary linkages are critically important to subsidiary influence. However, extant studies capture only a

part of the MNE network relationship – vertical-side links – and, with the exception of O'Brien (2014), do not adequately address lateral-side relations (Ambos and Birkinshaw, 2010; Birkinshaw and Lingblad, 2005; Chen, Chen and Ku, 2012). To explore the phenomenon of intra-MNE dynamics that affect subsidiary influence, we aim to illuminate a picture of the strategic control of the subsidiary units by elucidating the interface between subsidiary mandate development and managers' activities.

Moreover, as this paper reports on the mechanism behind subsidiaries' strategic configurations in an MNE and offers a contextual picture of a relatively unknown phenomenon, our cases follow Tsang's (2013) logic that contextualized explanatory case studies offer a richness and detail that are more useful than large samples in describing general phenomena. The case studies that we report can help identify generative mechanisms in a relatively complex area, so others can recognize event patterns and structures that makes replication of the study easier (Tsang, 2013).

3.1 Case selection

Our case company is the Swiss–Swedish MNE, ABB, which became one of the world's largest engineering MNEs after the merger in 1988 of the Swedish corporation Allmänna Svenska Elektriska Aktiebolaget and the Swiss company Brown, Boveri & Cie. In our study we investigate the mandate configurations at ABB's corporate research centres and the managers' connectivity and activities based on managers' strategic influence over the subsidiaries' resources and the strategic domain of the MNE.

The cases encompass the activities of subsidiaries' managers in supporting the development of mandate assets and in leveraging the resources that are developed from the mandates. We canvas the junctures at which six of ABB's globally dispersed R&D subsidiaries have specific R&D mandate domains where they simultaneously collaborate and specialize in intra-MNE R&D projects. Further to this we look at the ratio of core competencies within R&D that is dispersed among the subsidiaries and the major shifts in global R&D responsibilities among the six subsidiaries. We examine the subsidiary influence through looking at the orchestration of subsidiary resources in intra- and inter-MNE resources. To sample the six subsidiaries theoretically to provide contexts of maximum variation, we separated the subsidiaries by their mandate domains and their roles in the MNE (Eisenhardt and Graebner, 2007; Yin, 2009). We compare and contrast the overlapping points where subsidiary managers' downward and horizontal activities support the development of mandate assets and where cases of subsidiary managers' horizontal and upwards activities facilitate leveraging dependencies.

Having defined the study's population and the baseline from which specific cases were selected, namely the subsidiaries with R&D mandates that were part of ABB's

global lab that serves the R&D requirements of the five divisions, the case selection was guided by the theoretical sampling principle. More specifically, the criteria for including units in the study was guided by their involvement in development, their responsibilities for divisional R&D mandates (core competences within the division) within the five divisions of ABB. Having secured access to the case subsidiaries we adopted a narrow definition of subsidiary managers' activities to include various implementing, linking and communicating activities (Wooldridge, Schmidt and Floyd, 2008).

3.2 Data collection

The data collection comprised four main phases: (1) study of secondary sources; (2) interviews with senior-level headquarters informants; (3) interviews with subsidiary managers; and (4) review of archival materials. Our data collection focused first on secondary data about each unit, i.e., at the general MNE level as well as at headquarters and subsidiary levels. These data emanate from annual reports, press releases, the units' websites and commentaries – all of which helped us develop an understanding of the MNE's organizational structure, the focal subsidiaries and their strategies, as well as what subsidiary mandates existed.

The primary tool used was the semi-structured interview. Where feasible, to guard against possible individual response bias, we interviewed multiple informants from each subsidiary (Miller et al., 1997). This yielded 33 interviews at various levels across the ABB headquarters and the six R&D subsidiaries. The data obtained through semi-structured interviews with senior executives from corporate, divisional and business unit headquarters as well as general and R&D managers from the subsidiaries provided deep insights into the influence of subsidiaries on the MNE's operations. The information about particular events resides with a few principal individuals who are often hard to access (Baker, Edwards and Doidge, 2012). Thus, we focused on key people: the subsidiary's general and R&D managers who were exposed to the headquarters units, mandating and their respective activities.

We began establishing contact with the interviewees in 2012 and interviewed them in 2012, 2013, 2014 and 2015. The interviews were recorded for accuracy and transparency, and transcribed. The narratives of the managers were organized to understand the timeline of growth of the subsidiaries. The Atlas.ti analytical program was then used to manage and tease out from the interview data recurring themes of resource management among the subsidiaries. The interviews were structured in three phases (see table 1). In the first phase, we held 12 interviews with representatives from ABB's corporate, divisional, business unit headquarters and corporate research centres, which took on average 60 minutes. These yielded data about the configuration and the network of R&D mandates within ABB in relation to the subsidiaries and inter-MNE projects. We avoided asking specific questions

about the subsidiaries, but we did discuss what the MNE's network of subsidiaries looked like as well as the activity dispersion within the network. Consideration of ABB's shift in strategy in 2010 to focus on inter-divisional R&D, as described above, resulted in the selection of six subsidiaries that had dispersed R&D activities across divisions and had R&D mandates.

In the second phase of the interviews, scheduled in the fall of 2013 and spring of 2014, we spoke with the same respondents from the selected units; these were general discussions about the mandates of the subsidiaries. We encouraged each of the respondents to openly discuss his or her perceptions of the R&D network configuration, and the different roles that headquarters has in subsidiary R&D activities. We then triangulated these perceptions with subsidiary manager activities and in particular what they perceived to be the key facilitators and inhibitors with respect to the outcome of R&D projects; and whether or not the subsidiaries were able to manage and leverage their resources with support from the headquarters.

The respondents in the headquarters included the chief technical officer and divisional responsible presidents. In the subsidiaries the respondents included the country managers, who had been contacted beforehand by email or telephone and informed about the purpose of the interview. Other key managers were interviewed in each subsidiary, including the general manager and the lead R&D manager. We had the opportunity to spend between one and two days at the site locations, enabling us to interact with people in the local units and also to discuss these topics with people who were not formally interviewed for this study. Through tours of the headquarters office buildings and subsidiary R&D facilities, we gained deeper insight into the functions and roles established at headquarters to support subsidiaries' R&D initiatives and R&D projects. These informal interactions and the extended visits enabled us to make observations about the general atmosphere in these units, which served as useful background information to the data collected.

In the next phase of interviews, in the autumn of 2015, we focused solely on the involvement of subsidiaries in mandate activities in inter-MNE projects and their outcomes. We had prepared questions about how, where and with whom the subsidiary managers had contact within the headquarters at different periods of time, hence enabling us to obtain a detailed retrospective account of the subsidiary-headquarters interactions. To further explore the effect on outcomes of subsidiary managers' activities based on R&D mandates, we asked questions about the support structures in place for the subsidiary to develop capabilities related to mandates, about how the subsidiary exchanged knowledge with other parts of the organization, and about the structure and value of the resource portfolio employed in subsidiary operations, with a particular emphasis placed on mandate resources and the outcome of operating in inter-MNE projects on resource allocation to the subsidiary by headquarters.

Table 1. Description of the Data

Unit	Interviewee position	Date of first interview		Date of second interview		Date of third interview	
		Date of first interview	Duration (minutes)	Date of second interview	Duration	Date of third interview	Duration
CHQ (Zurich)	CTO	01-11-12	50	01-10-13	35	02-09-15	45
Sub (Sweden)	Global Process Improvement Manager	21-11-12	90				
Divison HQ (Sweden)	Head of Discrete Automation & Motion	29-01-13	60	14-01-14	45		
Subsidiary (Sweden)	General Manager, ABB Corporate Research Centre	21-01-13	55	05-02-14	40		
Subsidiary (Sweden)	Head of Global R&D Projects	22-01-13	70	21-03-14	50		
Subsidiary (Switzerland)	Director, ABB Corporate Research Centre	23-01-13	60	21-04-14	45		
Subsidiary (Switzerland)	Lead R&D Manager	28-01-13	50				
Subsidiary (China)	Head of Discrete Automation & Motion	29-01-13	60	22-03-14	55	03-09-15	60
Subsidiary (China)	Director, ABB Corporate Research Centre	24-04-13	55	24-04-14	40		
Subsidiary (India)	General Manager, ABB Corporate Research Centre	03-04-13	70	07-04-14	55	16-11-15	65
Subsidiary (India)	Lead R&D Manager			07-04-14	60	16-11-15	50
Subsidiary (Germany)	Director, ABB Corporate Research Centre	18-03-13	60	17-04-14	45	18-11-15	55
Subsidiary (Germany)	Lead R&D Manager			17-04-14	50	18-11-15	60
Subsidiary (United States)	Vice President and Head of Corporate Research Centre	30-04-13	65	01-05-14	50	04-12-15	60
Subsidiary (United States)	Lead R&D Manager			01-05-14	60	04-12-15	45

3.3 Data analysis

In analysing the qualitative data, we first wrote case narratives using episodes to reconstruct the acquisition and orchestration of mandate resources across the subsidiary and the MNE's value chains. In these narratives, in order to reflect the original interview data as closely as possible, we made extensive use of citations from our primary sources as well as secondary sources. We then used these narratives to compare and contrast managers' resource activities from the German, American, Indian, Chinese, Swiss and Swedish subsidiaries. Drawing on literature on managers' resource activities (Sirmon et al., 2007), we focused particularly on understanding why and where the subsidiary managers manage resources and orchestrate assets across value chains. Applying a broad definition of managing and orchestrating, we examined all data relating to these practices in detail. This qualitative analysis involved the generation of a descriptive coding reference that was derived from the semi-structured interview format, with the addition of unique themes that emerged during the analysis. We carried out an interpretative analysis in order to conceptualize and verify resource management across complex value configurations and the resulting managers' activities that emerged.

Our analysis then proceeded in four main stages: analysis of the processes of evaluating and staying apprised of the mandate's resource pool, analysis of the processes of removal of redundant mandate resources, analysis of the processes for connecting to new resources externally and internally, and analysis of the processes of integrating the mandate resources into the resource pool of the subsidiary and into intra-MNE projects. Following Tippmann, Mangematin and Scott (2013), we adopted an activity perspective so as to tease out and evaluate complex actions and interactions by subsidiary managers as they sought to fulfil their resource management and orchestration activities while faced with specific integration responsibilities in complex intra-MNE settings. This was considered the best approach to applying the resource management template of analysis (adapted from Sirmon, Hitt and Ireland (2007)) from the resource pool management of the focal unit to resource management and integration of resources of the focal unit across MNE value chains.

To analyze the subsidiary managers' resource management activities, we examined all data relating to their practices in detail, including which managers actually connected to knowledge they had in their activities, both locally and across MNE value chains. We developed detailed descriptions of their resource management activities and of the organization in general. We then selected quotes from the case descriptions that could be categorized in one of the four stages of resource management processes outlined above. This enabled us to present, synthesize and compare the subsidiaries on the basis of variances and similarities in subsidiary managers' resource management activities.

4. Empirical findings

From our study it became evident that subsidiaries must implement mandates that earn positive returns for the firm and for the subsidiary. To achieve this, subsidiary managers must orchestrate the subsidiary's assets and configure the mandate's resources to achieve operational requirements, both assigned to it by its headquarters and for its own benefit in terms of its competitive position in the MNE's subsidiary network. However, because internal and external competitive environments are rarely static, it became clear in the study that implementing mandates and managing their resources require varying degrees of decentralized integration responsibility. We propose this because the MNE's and subsidiary's competitive positions are temporary and non-static, which means that the subsidiary must be allowed to orchestrate its mandate resource pool to implement strategies that help it achieve a series of temporary competitive positions internally and externally (Sirmon et al., 2010). A subsidiary's competitive positions are temporary, due not only to competitors' growth, but also because mandates experience what has been termed life-cycle stages, identified as gain, development, maturity and atrophy (Birkinshaw and Hood, 1998).

4.1 Evaluating subsidiary mandate resources in intra-MNE projects

We found that subsidiary managers vigilantly monitor their mandates' resource inventories by evaluating the current resource stocks. This monitoring varied between the subsidiaries whose mandates and activities were mainly oriented towards local activities and those whose mandates were both local and global in scope. The subsidiary managing director from India made this illustrative comment:

“Our financial and human resources fluctuate a lot. We have to monitor and incentivize our people to want to stay past three years and train up. These are probably the only resources that we don't have to constantly inform our headquarters about or that they can directly evaluate”.

Across the sample of six subsidiaries, managers exhibited strong evaluation processes, which were found to be enhanced when managers were knowledgeable of the subsidiary's proprietary resources and the resources that were shared across intra- and inter-divisional projects. The cases provided evidence that the effective evaluation of a mandate's resources required that the subsidiary managers employ an appropriate time horizon when considering the requirement for and removal of mandate resources and have adequate knowledge about the resource's usefulness to the mandate. It was found that all of the subsidiaries had strategies for resource management, which provided the managers with parameters for evaluation, depending on whether the resources were proprietary or shared across R&D projects in the MNE's value chains. However, it was also evident in each subsidiary that having these dual strategies varied with the greater ability of subsidiary managers

to perform evaluations in situations of resource competition and dependence. A subsidiary managing director from Germany communicated this:

“We constantly monitor the resources we have and need. Knowing when to source or build up resources can be very tricky, as we constantly have to compete for them. A lot of the time they are not just tied up in our operations but also to projects we are involved in here in Germany or in projects that are shared inside the company”.

The use of time horizons for the evaluation of mandate resources was shown to be pivotal in accurately undertaking valuations. All of the subsidiaries showed signs that they had to impose time horizons so as to manage the mandate's resource pool, as well as to not only integrate the mandate accurately into the subsidiary's charters but also to integrate the mandate's activities into joint internal and external projects. There were examples of time horizons that were too short or too long, resulting in less accurate estimations and less integration. Time horizons that were too short produced under-valuations of a resource, making it more likely to be reallocated, to be susceptible to competition and to overlap with other resources. When the Indian subsidiary started in the 2000s, it had problems with short time horizons and competition, as pointed out by the subsidiary managing director:

“We had great problems with managing our resources in our early days. There was some hostility to our unit. I guess people were threatened by us. We were having to compete for our resources and were quite dependent of our headquarters for them, which made long-term planning harder. This affected our managing our activities. This was probably a significant contribution to the R&D activities going back to Sweden”.

Juxtaposed with this experience, the American and German subsidiaries had employed time horizons that evidently created a situation in which they held mandate resources that had less value than those of counterpart subsidiaries in emerging markets. This neglect of resource management led to mandate atrophy. As noted previously, this was due to the mandates being mature, in that they had been captive to the subsidiary for some time. This was captured by the American subsidiary's managing director who expressed the problems as such:

“We dropped the ball on robotics. As the lead centre for robotics in ABB, we had been around for a good while and were innovating but probably not managing the resource pool we had as best we could, especially as we were planning together with the business unit that's now gone to China and we share robotics responsibilities with other units”.

However, the American and German subsidiaries recovered from this experience, learning to evaluate their resource pools for short-term and long-term needs. It appeared from the data that greenfield subsidiaries were more effective in structuring resources such as capital and human resources because they generally

were more integrated across the MNE's value chains, allowing for longer time horizons and greater flexibility. It was evident that the greenfield subsidiaries did not have to respond to short-term goals imposed by their headquarters to the same degree as the acquired subsidiaries did. We saw in the data that when greenfield subsidiaries engaged in a resource evaluation process, the freedom to use the most appropriate time horizon, as opposed to one imposed by headquarters, made possible more accurate evaluations and greater appraisal of the actions for managing the mandate resource pool. This was evident in a statement by the head of R&D from the Swedish subsidiary, who had just returned from a three-year managerial posting at the Indian subsidiary:

"I observed managers are equally willing to act within and outside of the requirements of their job specification in trying to manage their operations both here and in India. The big difference is that the acquisition and management of resources is held up by senior management requirements and trust. Often, it's a simple question of who you are and why do you need this. That happens far less often here".

In addition, the managers we interviewed from all the subsidiaries who were found to possess more complete and appropriate knowledge of the mandate resources they evaluate shared several characteristic traits. First was structural and operational experience, which creates stronger ties among managers inside their subsidiary and within the MNE, and increases their disposition or ability to adjust to the prevailing values and norms of in the subsidiary, the local market and the MNE. Thus, by developing the structural, cognitive and relational dimensions these managers could build high levels of internal social capital. Second, their close relationships with employees provided the managers with a better understanding of the firms' human capital, allowing for greater awareness of and easier access to the resources. This knowledge was found to be particularly useful for assessing the mandate's intangible resources, such as tacit knowledge pertaining to the subsidiary's evolving strategy, mission, internal resources and environmental changes, which allows for accurate evaluation of a resource's value.

4.2 Managing subsidiary mandate resources in intra-MNE projects

The second phase we observed in managing a subsidiary's mandate resource pool involved the shedding of redundant resources. Our findings show that at different times and under certain conditions each of the subsidiaries' mandate resources reduced the mandate's value. Moreover, the findings show that accumulation of mandate resources has negative effects on the subsidiary manager's ability to manage those resources at the local level and to integrate them into joint projects across the MNE's value chains. The global process improvement manager made an illuminating observation:

"We monitor as best we can the resource requirements of all our units, but it is important that they are aware of their resource needs. My role was created for two main reasons,

to make sense of subsidiary investments and capital runs, and to prevent or reduce existing resource inertia at our unit”.

At differing times, all of the subsidiaries studied faced some form of resource constraint. The data showed that the removal of subsidiary mandate resources was extremely important for freeing up space for fresh resources, preventing inertia and allowing greater flexibility in renewing and sharing resources across value chains in intra-MNE projects. In the data we saw evidence that the ability of subsidiary managers to maintain mandate resources and the potential opportunities to leverage their value were both reduced when the subsidiaries were in possession of inferior resources such as overlapping skills in joint projects or undertrained engineers, which led to reduced rather than increased innovation. The head of the United States subsidiary made this illustrative comment:

“My unit has limited flexibility with resources. Those we have are either focused on our activities or on joint projects. We have to monitor low-value resources diligently and constantly and release resources, so we can be flexible without finances, or reduce our overheads. This has been important to us, so we can be more flexible when getting involved in joint projects”.

It clearly emerged in the data from the German, Swiss and United States subsidiaries that the pruning of redundant resources remained difficult even when the information available warranted such action. There had always been intercompany projects between the German and Swiss subsidiaries, where there appeared to be strong relationships and where social capital had been built up over many years. The German managers had experienced an escalation of commitment of their resources, particularly human resources, to joint projects with the Swiss subsidiary, where the emotional ties between employees and managers made it extraordinarily difficult to release employees. This was illustrated by the director of the Swiss subsidiary:

“Ironically ours and the German subsidiary’s knowledge of each other’s resources, which had contributed to our prior projects’ successes, actually impeded the reduction of our resources”.

This difficulty was also evident in the problems with inertia illustrated by the United States subsidiary. The data showed that an overpowering level of uncertainty in changing resources led to avoidance of further risk, and ultimately to inertia in the mandate and incongruence with other project members throughout the value chains. However, facing the risk of being closed or wound down, the subsidiary managers eventually had to focus on building resource bundles that led to contributions to ongoing projects.

All of the cases produced evidence that resources can be obtained from subsidiaries’ local markets or sourced and created internally from counterparts inside the MNE. An interesting finding was that all the subsidiaries indicated that both sources of resources had inherent limitations and that they iterated between them, depending on whether they were faced with a limitation or the source could provide complementary resources. However, regardless of the sources of the resources, the subsidiary managers sought resources – from their environments or elsewhere in the MNE’s value chains – that could

be integrated into the mandate's resource bundles, that were of value to the mandate and that could be leveraged by the subsidiaries in their global projects. In this regard, we found that subsidiary managers concentrate on actions in which the subsidiary can engage and yield either knowledge (learning) or new resources locally or from elsewhere in the MNE's value chains.

4.3 Sourcing subsidiary mandate resources for intra-MNE projects

Each of the subsidiaries was shown to be highly dependent on its headquarters for capital resources; however, as a result of their "centre of excellence" status they had unique information on the local markets, which allowed for greater flexibility than their competitors in acquiring human resources in their local strategic factor markets. Their longevity in the local markets and the subsidiary managers' connections to that market enabled the managers to accumulate unique information, which was shown to make it possible to acquire the mandate resources more easily. A standout finding was that although mandate resources were acquired for their value, the realization of the mandate's value was actualized when integrated with the subsidiary's mandate bundles of resources, where the creation of value occurred after integration into the subsidiary's charter. Furthermore, additional value was created when those resources were integrated into projects across the MNE's value chains. This was illustrated by a comment from the general manager in Sweden:

"Even resources obtained at full market value, particularly sourcing new employees, have the potential to create more value when integrated with our other existing resources. This is really coming in to play for our intangible resources and the skills of our engineers, since they are most valuable not only for our operations but also when they complement resources in our shared operations with other units in the company. This allows us to more easily acquire and change our resources".

Sourcing activities directed at the host market rather than global resources represented an important avenue for subsidiary managers to obtain complementary mandate resources to enhance their own learning. This strategy was found to often be associated with the boundaries and effectiveness of local and global resource acquisition and absorption. We saw that subsidiary manager activities had to overcome deficiencies in mandate resources, which influenced the effectiveness of sourcing and absorbing new mandate resources locally and from the MNE's value chains. It was found that during resource sourcing and integration the subsidiaries' managers are more likely to be creative in using long-term time horizons to develop the best fit for mandate resources. However, to overcome human capital deficiencies, all the subsidiaries increased the heterogeneity of their human capital. First, it was evident that each of the subsidiaries developed a high level of heterogeneity in the top management team so as to drive effective decisions on sourcing mandate resources. Second, across the subsidiaries this was found to be a deliberate choice to increase the possibility of healthy conflict for generating alternative creative ideas. This was illustrated by the head of the Indian subsidiary:

“I started my career in Sweden and then spent some years in the US and now I am here in India. Management teams I have worked in have always been international. I think it has always worked well as our decisions have always been dynamic and creative”.

The subsidiaries created this heterogeneity by hiring experienced managers from diverse backgrounds who had worked for other firms. Doing so was shown to increase the heterogeneity of the experiences and expand the tacit knowledge bases of the subsidiary management teams. This aided the acquisition of mandate resources by adding multiple perspectives not dominated by any specific manager experiences, which was found across the subsidiaries to enhance variety in decision-making and also deepen social capital locally and globally across the MNE's value chains. Subsidiary managers' social capital was found to be a strong driver in increasing the ability of subsidiary managers to acquire diverse resources. This was illustrated by the director of the Chinese subsidiary, who stated:

“In my experience our centre has a good mix of local and international managers whose relationships with local suppliers and other centres in our company has a positive effect on our ability to access valuable raw materials and skills. My managers' relationships contribute to our legitimacy with our centre's partners as it facilitates collaboration and sharing”.

The findings show that subsidiary manager orientation towards collaboration between internal and external partners was a prime mechanism for gaining access to mandate resources including capital, skills and knowledge. We saw in the data that collaborations provided opportunities for the subsidiary managers to learn which partners to draw on for particular resources. These collaborations across the MNE's value chains illustrated that managerial social capital provided access to several types of mandate resources. For example, it was found that linking to partners internally and externally provided subsidiary managers with access to information, managerial capabilities and technology. It was also found that managers linking activities enabled the subsidiary to access resources that were important to the mandate and allowed access to complementary resources for the subsidiary's charter. These subsidiary managers used linking activities to overcome resource shortcomings by selecting partners locally and from across the MNE's value chains that had complementary mandate resources.

Social capital was also shown to contribute to the management of the subsidiary managers' relationships, providing the potential for greater access to creative knowledge, although this was shown to be beneficial only when the subsidiary manager's decision-making motivations and relative absorptive capacities overlapped with their partners. The acquisition of mandate resources was shown in our findings to require long time frames and significant efforts. The long-term outlook allowed the subsidiary managers to devote the proper time to cultivating the relationships necessary to facilitate resource acquisition and transfer. Trust, a significant factor, had to be developed over time. There were variances among the subsidiaries in regard to development of trust; however, it was a factor present in all subsidiaries, which represented the development of social capital that facilitates linkages to partners, allowing for the acquisition and transfer of resources.

4.4 Leveraging subsidiary mandate resources and connectivity in intra-MNE projects

Our findings showed that having the necessary mandate resources to develop mandate capabilities was critical for the sample subsidiaries to create both value in their joint projects and innovative solutions. However, it was evident from the findings for the United States and German subsidiaries that being rich in resources was insufficient to guarantee continued R&D responsibilities or to maintain levels of innovation success. The findings indicated that subsidiary mandate resources must be configured into bundles of old and new resources that are complementary to the mandate and the charter, and must have value for both internal and external partners. Subsidiary managers were found to be the key figures in making implementation decisions in regard to which financial and human capital to place together and how to best allocate these resources.

The case findings show that the subsidiary managers really came to the fore when leveraging the mandate resource bundles in implementing their charters but of critical importance was their linking of activities when leveraging the resource bundles to create advantages over partners in joint projects. This was evident in the case of the United States subsidiary, which had substantially more resources than counterpart subsidiaries in the MNE but lost competitive ground to the Chinese subsidiary, which had considerably less. It appeared that it was due only to the United States subsidiary manager's knowledge of the local market importance and the resource availability, and his internal social capital, that it did not close down after losing the robotics mandate and associated resources to China. This perception is supported by a comment from the director of the Chinese subsidiary:

"I studied and worked in the US for nine years. I think the US centre has a long history of successfully managing their resources. I would say that our centre offers resources that can exploit new opportunities and our market offers newer strategic opportunities".

Our findings showed that the differentiation among the subsidiaries in regard to successful long-term mandate resource management were the result not of differences in their mandate resource pools, but of differences in how their managers configured these resources. The findings suggested that subsidiary managers must configure their mandate resources to develop new products and processes. The cases also showed that subsidiary managers must acquire or develop new mandate resources or reconfigure existing ones to extend their R&D activities or change the subsidiary's mandate. These activities were shown to be necessary for the subsidiary to remain influential and competitive in the MNE and in its local market. Such resource configuration was found to be a continuous process involving subsidiary managerial sourcing and integration activities with mandate resources from various units across the MNE's value chains and local partners. This was illustrated in a comment by the Swedish subsidiary's global process improvement manager:

"We move experienced managers around the company to extend trust and a strong bonding among our managers to try to bring the resource governance costs down. Our

managers have to ensure effective resource coordination among the units to achieve competitive advantage locally and deliver successful and cost-efficient projects”.

This was evident also in ABB's incentive structures and organizational culture, in which managerial resource monitoring activities are decentralized to the subsidiary level and are separate from the MNE's control systems. This gave the subsidiary managers greater flexibility in sourcing and integrating resources into their mandates. Our findings also suggest that the subsidiary managerial activities for configuring and leveraging mandate resources for appropriate means, internally and externally, creates influence over the subsidiary's partners. It was evident in the six subsidiaries that the managers' activities of configuring and leveraging mandate resources both locally and across the MNE value chains required substantial managerial tacit knowledge that was embedded in human capital. The cases showed that conducting these activities effectively required considerable experience. The subsidiary managers were shown to have an advantage in this regard, as they could involve themselves in the processes much earlier than would be possible for headquarters and counterpart subsidiary managers.

However, the findings also showed that the variety of experiences brought by the heterogeneous subsidiary managerial teams was also helpful in configuring and leveraging different types of financial and human resources. Configuring and leveraging mandate resources to implement and develop mandates required subsidiary managers to have capabilities to link internal and external units as well as considerable coordination skills. A common denominator across the subsidiary managers' linking and coordination activities was their relational skills and ability to influence internal and external units regarding the importance of collaboration. In fact, the director of the Swiss subsidiary remarked, “Collaboration contributes to learning, which is important for our unit in producing new ideas and adaptation to existing processes.” We saw that leveraging mandate resources required that subsidiary managers develop a resource strategy that led to flexible sourcing activities and greater influence over internal and external partners.

The findings showed that leveraging resources required the integration of subsidiary managers' operational and entrepreneurial knowledge to develop and apply effective influence over mandate resource management strategies. The strategies pursued by subsidiary managers in these cases included leveraging influence over mandate resources to minimize search costs as well as maximizing speed in the acquisition and transfer of mandate resources and maximizing complementarities between proprietary and shared resources for product and process R&D activities. The subsidiary managers also looked to lock in resources by creating high change costs for external and internal partners, which in turn served to increase the subsidiary managers' influence on resources in the MNE.

5. Discussion

Governance practices such as mandating are considered fundamental to control and coordinate subsidiaries in attaining an MNE's overall strategic objectives. Considerable

research has focused on the governance of headquarters–subsidiary relationships. This has by and large taken two approaches: First is headquarters involvement, where the focus has mainly been on how to best distribute decision-making rights and authority, engendering effective knowledge transfer, and implementation and alignment of goals across the MNE. Second is the subsidiary's choices, where there has been a massive emphasis on entrepreneurship, knowledge creation and, lately, intra-MNE power dynamics (see e.g. Foss and Foss, 2005; Dörrenbächer and Gammelgaard, 2006; Andersson et al., 2007; Mudambi et al., 2014). However, less scholarly attention has been devoted to exploring the role of subsidiary managers' strategic activities and the interaction between these activities and the development of influence that the subsidiary can leverage based on its resource pool and the management of this pool. The aim of this study was to investigate the role of subsidiary mandates' attributes and the effect of strategic activities of subsidiary managers on creating resources and capabilities within the MNE using those attributes.

We argue that subsidiary influence is based on the activities pursued by subsidiary managers through intra- and inter-MNE linkages in utilizing resource management on attributes of subsidiary mandates. In practice, mandates encompass both a formal and an informal dimension and it is not clear-cut which plays the more important role. What is clear is that through the practice of mandating activities and responsibilities to subsidiaries the formal contractual dimensions of a mandate easily conform to the ownership–control discussion. However, the informal dimensions of a mandate, i.e. the resources and relationships, are less easy to control, and as they are explicitly attached to the asset licensed to a subsidiary, they are more easily leveraged by the subsidiary for strategic influence. Given the subsidiary control and the dependency on subsidiaries of counterparts and hierarchal units such as headquarters, an argument can be made that over time subsidiaries can build strategic control of a mandate consisting of the knowledge developed and the relationships created, which are arduous for headquarters to remove even if it exercises its ownership right and withdraws the mandate.

Mandates encapsulate resources; it can be argued that they are themselves resources (hence there is competition for them). As subsidiaries obtain resources that are tricky for other actors within the MNE, including headquarters, to attain, there is a shift in the ownership–control nexuses within the MNE. This creates a situation in which resources and capabilities in the MNE are highly dispersed. It should be pointed out that unique resources and capabilities are important sources of control and create a variety of influences depending on the scope of the mandates. Headquarters of MNEs are reliant on their subsidiaries for many intangible assets, such as knowledge and ideas (and equally reliant on them for sales).

These intangible technological and business-related knowledge resources held by subsidiaries are socially complex, as they are tied into relationships with external counterparts and local environments, making them hard to control. Within the MNE, subsidiaries are also dependent on each other to varying degrees in areas such as production, development and distribution, creating a situation in which some subsidiaries

can leverage resource dependences to influence counterparts. In business networks it is recognized that a subsidiary's critical resources and capabilities are to a large extent linked to the subsidiary's specific relationships with customers, suppliers and other counterparts internally and externally. The subsidiary's internal and external relationships offer resources at the subsidiary level that give the subsidiary the ability to leverage influence also over headquarters due to its potential dependence on the subsidiary.

A subsidiary's managers have two functions in regard to development and utilization of a mandate. First, the knowledge and capabilities they derive from their horizontal activities internal and external to the MNE allow for the development of the mandate's attributes. Second, subsidiary managers develop upward activities, which by and large are created as a consequence of structural governance mechanisms and through informal means of issue selling. The subsidiary manager's horizontal activities consist of coordination and searches. They coordinate tasks with outsiders – e.g. buyers, suppliers and others in their local environment – as well as with internal counterparts. The activities include communication and coordination of functional activities. Subsidiary managers also scout, which consists of general scanning of the environment and gathering of relevant information (both internal and external). These two activities are the managerial activities that support the development of dependencies. Moreover, if the activities succeed in generating value for mandates' attributes, they are also activities that separate the control of the mandate between headquarters and subsidiaries. The position of subsidiary middle managers within the MNE gives them insight into the challenges associated with coordinating activities across the MNE. They are also the focal point of knowledge of the subsidiary's innovative activities and the channels from which those activities derive.

Furthermore, it can be posited that these managers are familiar with the dependencies arising from the knowledge and competencies they have developed. This allows the subsidiary managers to focus their attention on leveraging their control over the attributes of the mandate in the upward activities. These activities encompass being an ambassador, a protector and a persuader in relation to headquarters managers. We thus pose the following proposition:

Proposition 1. Internal and external subsidiary managers' linking activities are positively related to the development and utility of subsidiary resource dependencies in intra-MNE value chains.

The activities of the subsidiary managers can influence the MNE's strategic activities through their relationships with the headquarters and other units' dependency on their resources. These activities can also reinforce the subsidiary's importance and its development within the MNE through the manager's internal relationships. Internal horizontal activities of the subsidiary managers lead to better positioning in the MNE's network and thus better ability to exercise influence on dependencies, due to network positioning as well as insights into the needs of sister subsidiaries for their competencies. We argue that a higher degree of influence tends to be associated with the control of the attributes that are proportioned to a mandate than with the subsidiary managers' activities in developing or leveraging dependencies. Higher degrees of control of the

mandates' attributes indicate that the subsidiary is likely to have developed significant capabilities that are contingent on local resource management or a mixture of local and value chain resource management. This would suggest that greater horizontal and upward activities of subsidiary managers support dependency development and leveragability when influencing headquarters' mandates and resource allocation. We thus suggest the following propositions:

Proposition 2: There is a recursive relationship between subsidiary managers' mandate resource management activities in intra-MNE projects and the degree of integration responsibility conferred on a subsidiary.

Proposition 3: Subsidiary managers' activities to leverage mandate resources are positively related to the subsidiary's degree of strategic influence over headquarters' decisions about mandates and resource allocation.

6. Summary and implications for MNE senior managers and policymakers

We have developed propositions about how subsidiary managers' activities can influence both MNE and local technological evolution when subsidiaries are granted an R&D mandate. We have shown that the allocation of a mandate implies that integration responsibilities are assigned to the subsidiary gaining the mandate. Furthermore, we elucidated that subsidiary managers leverage their connectivity when the subsidiary structures its resources in intra-MNE projects and that the managers have decision rights over these resources. Senior MNE managers should pay attention to the dynamic process of integrating the new mandate and influencing relations with both internal and external counterparts so as to influence the dependencies within the MNE and increase the subsidiary's influence on the MNE's strategy. It is noteworthy that this explanation of a mandate's attributes and its ownership and control can add another dimension to the discussion of why headquarters are incapable of controlling the subsidiary's use of their resources (i.e. their capabilities and relationships), which form the critical base of its value creation (Andersson and Forsgren, 1996; Mudambi et al., 2014).

Senior MNE managers should also pay attention to the fact that because counterparts and headquarters are dependent on subsidiary resources and competencies, the subsidiary will gain strategic influence over functions and decisions in the MNE. In this study we show that some subsidiaries control resources and specifically have the integration responsibility for these resources – resources that the MNE is dependent upon. What this study shows is that a subsidiary that has superior resources and competencies employed in intra-MNE projects can leverage its influence over headquarters' allocation of mandates and resources.

The findings of this study have important implications for the development of domestic firms. It was evident that subsidiaries, through their distinctive characteristics, bring much-needed expertise and skills that help to overcome the technological deficiencies in the

host countries. For example, both India and China have been outstanding in attracting FDI, particularly FDI in technology-intensive sectors; however, the positive spillovers from foreign subsidiaries to domestic firms and their upgrading of specific capabilities is facilitated through the activities and connectivity of foreign subsidiary managers with local counterparts. The goals of national FDI policies should include policies for attracting the right type of FDI. National policies should also, first, consider processes for encouraging a supportive milieu for foreign and domestic firms to interact and build relationships and, second, devise appropriate policies to extract benefits from the presence of foreign subsidiaries. In particular, for the development of R&D and technology knowledge, the possibility of support from regional and national development agencies in the development of research institutes at local universities has been paramount in helping to develop a local knowledge network (Ryan et al., forthcoming). The development of a knowledge network, together with foreign subsidiaries, has a strong influence on the economic growth and prosperity of a region (Giblin and Ryan, 2012). Indeed, policies aimed at upgrading existing FDI towards high value added activities need to be informed by a good understanding of the internationalization processes within MNEs and the complex intra-MNE and interorganizational relationships and interactions, including the role, activities, strategic influence and importance of subsidiary managers of foreign-owned subsidiaries with high value added mandates, such as R&D. Rich insights from detailed micro-level studies encompassing senior managers at both the MNE and the subsidiary level, like this one, can provide important reference points for evidence-based policymaking.

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UNCTAD INSIGHTS

FDI in the digital economy: a shift to asset-light international footprints

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The digital economy is becoming an ever more important part of the world economy. It is revolutionizing the way we do business, and it has important implications for foreign direct investment (FDI). However, little systematic analysis has been done to investigate the investment patterns of digital multinational enterprises (MNEs). This study, conducted in the context of UNCTAD's World Investment Report 2017 (WIR17), is an attempt to fill some of the gap in knowledge and to provide an impetus for future research. It proposes a new interpretative framework for the digital economy, builds an extensive sample of digital and ICT MNEs, and profiles their international operations. Its main findings are that MNEs in highly digitalized industries have a "lighter" FDI footprint than traditional MNEs; they tend to concentrate their operations in a few highly developed countries and their investment patterns are shaped by fiscal and financial motives more than those of traditional MNEs. As digital technologies and business models tend to disseminate across the broader economy, this may suggest the onset of a new era of international production and MNE internationalization paths. This paper sheds light on the methodology underpinning the analysis in WIR17 to ensure full replicability and to prepare the ground for further work in the area. It also builds further on the discussion in WIR17, proposing broader implications for international business and new avenues for future research.

Keywords: FDI, digital economy, multinational enterprises, ICT

1. A changing global economy: the rise of tech and digital MNEs

The global economy is transforming, prompted by production and consumption revolutions. As cautious optimism fuels economic recovery, technological change

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is changing the way goods and services are produced, paving the way to a fourth industrial revolution that will affect society at large (Schwab, 2016).

The digital economy is becoming an increasingly important part of this transformation. It can be defined as the application of internet-based technologies to the production and trade of goods and services. Not only is it affecting the daily lives of a growing number of people, it is also encompassing an ever greater part of the world economy. The internet industry contributes almost four percentage points to GDP in the largest economies, those that generate 70 per cent of global GDP (Atkinson and Stewart, 2013). It is also pervasive in the act of doing business. As an increasing number of small and medium-sized enterprises (SMEs) buy and sell online, it is estimated that the value of web-based business to business (B2B) transactions alone is about a third higher than the entirety of business to consumer (B2C) transactions (UNCTAD, 2015).

With the rapid growth of the digital economy, the importance of digital and technology multinational enterprises (MNEs) in international production has increased dramatically. The rapid rise of tech MNEs represents one of the most noteworthy trends in the world of global megacorporations in recent years. Between 2010 and 2015, the number of tech companies in UNCTAD's ranking of the top 100 MNEs more than doubled, from 4 to 10. Tech MNEs have not only gained weight in the universe of the largest global multinationals, but they also represent by far the most dynamic players. In the same period, the assets of these MNEs increased by 65 per cent and their operating revenues and employees by about 30 per cent, against flat trends for other top 100 MNEs (UNCTAD, 2017a; UNCTAD, 2017b).

In light of these trends, a fundamental question for research and policy analysis is whether, and how, digitalization is changing the internationalization strategies of MNEs. It is generally argued that digitalization may lead to a retreat in FDI, as it enables MNEs to operate globally and engage in foreign markets without a physical presence (Eden, 2016; McKinsey Global Institute, 2016). As (traditional) motivations for market-seeking FDI and (tangible) resource-seeking FDI are partially undermined by digitalization, other types of FDI may become more important. These include knowledge-seeking FDI and to some extent also financial- and tax-driven FDI. These investment patterns may affect MNEs' international production footprints, with important implications for development in host countries. In particular, MNEs in highly digitalized sectors are expected to have a lighter international footprint than other MNEs, which involves generating large volumes of sales abroad by investing relatively less in productive assets, as well as retaining the largest interests in (developed) home countries.

Important research questions are therefore, is empirical evidence supporting these expectations? Are there significant differences between digital and traditional MNEs in the observed investment patterns and international footprints? And if so,

can digital MNEs be considered harbingers of a new FDI paradigm that will affect international production as a whole?

These issues are clearly central to the discussion of the future of international production. Nevertheless, empirical research in this area reveals considerable gaps in knowledge. Although there is mounting interest in fast-growing tech and digital MNEs, and their impact on the global economy, a comprehensive mapping of the digital economy at the firm level is still missing. Appendix 1 shows that existing firm-level sources either lack a digital focus or, conversely, emphasize only specific aspects or subsectors of the digital economy, limiting their usefulness for capturing the fundamental trends and shared features of the digital economy. Similarly, despite the fact that digital economy studies have mushroomed in recent years, the foreign investment angle has been less debated, at least from an empirical economics perspective. Indeed, only limited empirical research has been conducted on the way digitalization is changing the motivations and determinants behind firms' internationalization efforts, and more specifically, the impact these efforts have had on their international footprints.¹

Against this background, UNCTAD developed a comprehensive framework for mapping the digital economy and the firms operating in the digital economy (WIR17). It constructed a novel database of the 100 largest digital MNEs and 100 largest ICT MNEs, complementing its well-established database of the 100 largest non-financial MNEs (see for example WIR17, table I.5). The data sets contain comprehensive information on the international sales and assets of each MNE. The framework and the data sets provide the basis for the analysis and the findings presented in this paper.

This paper is organized as follows. Section 2 presents in detail the analytical steps for the construction of the underlying database of digital and ICT MNEs: the definition of a conceptual framework for mapping digital and ICT firms, the selection and classification of the top 100 firms and the collection of the relevant indicators of international activity at the firm level. On the basis of these indicators, it is possible to elaborate a comprehensive analysis of MNEs' investment patterns,

¹ Nachum and Zaheer (2002, 2005) found that efficiency and the quest for intangible knowledge assets are the most important motivations for digital FDI, whereas market-seeking and resource-seeking investment are much less relevant than in traditional industries. Some related studies have analysed the impact of ICT and digital technologies on the governance of global value chains (GVCs). Foster and Graham (2016) looked at the way internet-based digital technologies shape modern global production networks, with a view to incorporate digital advances in existing theoretical frameworks. Rangan and Sengul (2009) argue that ICT adoption facilitates control in outsourcing and other non-equity relationships, through constant information exchange. On the opposite side, Chen and Kamal (2016) associate ICTs with higher in-house production and intra-firm trade. From a pure trade perspective, Cassetta, Meleo and Pini (2016) argue that adoption and use of digital technologies positively affect enterprises' exporting behaviour.

in relationship to their level of digitalization, both across different categories of digital and ICT MNEs and in comparison with traditional MNEs. The results of this analysis are presented in section 3, where the main findings are discussed. Finally, as one key purpose of this research is to lay the ground for future analytical efforts towards obtaining a better understanding of the implications of digitalization on MNEs' international activity, section 4 suggests a number of promising directions for further research.

2. UNCTAD's analytical framework, database and indicators for mapping digital economy MNEs and their international footprints

2.1. UNCTAD framework for mapping the digital economy

UNCTAD's framework for mapping the digital economy represents the first attempt of its kind to comprehensively chart the digital economy players. It is characterized by three building blocks (figure 1). At its foundation are ICT firms that provide the infrastructure and tools that make the internet accessible to individuals and businesses. Its core is represented by digital firms, characterized by the central role of the internet in their operating and delivery model. Finally, the broad economy rests on digital infrastructure and digital content in the process of the digitalization of traditional activities.

In UNCTAD's analytical framework, *digital firms* include purely digital players (internet platforms and providers of digital solutions) that operate entirely in a digital environment and "mixed" players (e-commerce and digital content) that combine a prominent digital dimension with a physical one.

Specifically, *internet platforms* (search engines, social networks, other platforms) are companies providing digital services through internet and cloud-based platforms; e.g. search engines and social networks. "Other platforms" includes sharing economy platforms, e.g. transaction platforms (eBay) and open-source platforms (Red Hat). The category *digital solutions* (electronic and digital payments, other digital solutions in the cloud) describes a variety of players with core activities based on, or strictly linked to, internet technologies. Among them: cloud hosting and computing, web hosting and email services, electronic and online payments, and digital solutions for business management and for financial applications (fintech).

Among the mixed players, *e-commerce* (internet retailers, other e-commerce) consists of specialized and non-specialized online stores and online travel and booking agencies, focusing on fully online and online-born retailers. It also includes agencies specialized in online marketing and advertising. The last category in the

Figure 1. UNCTAD framework for mapping the digital economy



Source: Based on World Investment Report, 2017.

scope of digital MNEs, *digital content*, (digital media and entertainment, information and data providers) includes producers and providers of digital content, such as media (music, video, e-books and online magazines, online courses) and gaming (“classic” video games, online games, mobile games, multiplayer interactive games). It also captures “big data” providers, and providers of marketing and customer intelligence, as well as economic, business and credit information.

The second macro-category *ICT firms* includes IT companies producing hardware and software, as well as telecommunication firms. *IT hardware and software* covers the broad categories of manufacturers of ICT hardware (computer brands) and components (e.g. the semiconductor industry) as well as software houses and providers of assistance. *Telecom* players are owners of the telecommunication infrastructure on which internet data is carried.

Appendix 2 provides a more detailed description of UNCTAD’s taxonomy, including the main caveats and points of attention for each category.

2.2. The new UNCTAD databases of the top 100 digital and ICT MNEs

The construction of the databases of the top 100 digital and top 100 ICT MNEs consisted of two operational steps.

The first step required a selection of the largest 100 such MNEs in terms of operating revenues or sales. For this purpose, extensive screening of company data and information was conducted using Bureau Van Dijk’s Orbis database as the primary source of firm-level information. Where information from that database was ambiguous or not sufficient, alternative sources were employed, including the Thomson One database, company financial reporting and non-technical sources, such as top company rankings (generic and dedicated), company websites and the press.

The second step involved a comprehensive classification of the top digital and ICT companies into the categories of the UNCTAD digital framework. The allocation of firms to categories and subcategories was based on the main activity or main source of revenues.

The detailed steps for the selection and classification of the top 100 digital and ICT MNEs are described in appendix 3.

UNCTAD’s new databases allow systematic profiling and ranking of digital and ICT MNEs across all main digital areas. It is currently the most extensive effort of its kind. These new data sets complement UNCTAD’s well-established top 100 MNEs database, ranking non-financial MNEs, including digital and non-digital industries, based on their international presence. The combination of the “traditional” top 100 database with the new databases of the top 100 digital and ICT MNEs provides a

powerful data bank for analyses to compare and contrast investment patterns and international footprints.

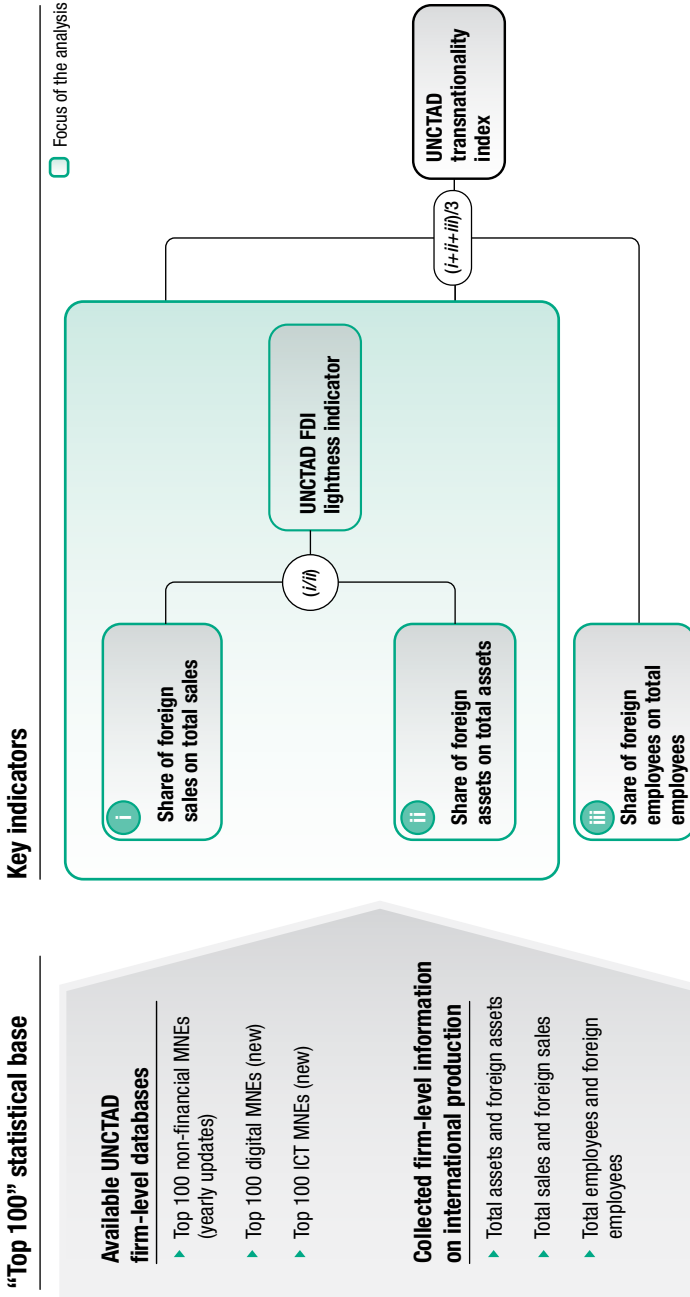
2.3. Indicators of MNE international activity and FDI asset lightness

The main new indicator developed by UNCTAD for the analyses of the international footprint of digital MNEs is the “FDI lightness indicator”. It is defined at the level of the individual MNE as the ratio between the share of sales generated by foreign affiliates and the corresponding share of foreign assets. It reveals the extent to which a company is able to generate sales abroad given its stock of foreign assets. It is low (between 0 and 1) when the share of foreign assets is higher than the share of foreign sales (a “heavy” footprint); it equals 1 when the two shares are the same; it is high (above 1) when the share of foreign assets is lower than the share of foreign sales (a “light” footprint).

The construction of the FDI lightness indicator employs consolidated information on assets and sales of foreign affiliates reported by publicly listed MNEs and usually published in the notes to consolidated financial statements. The approach in this study builds on the established methodology followed by UNCTAD for the analysis of the top 100 largest non-financial MNEs. Figure 2 provides an overview of the UNCTAD statistical base and analytical toolkit for the analysis of the top 100 MNEs and defines the specific scope of this analysis.

Appendix 4 provides the complete list of digital and ICT MNEs, classified according to the digital categories and subcategories defined in the UNCTAD digital framework. For each MNE, it also reports size in terms of total sales and assets (2015), share of sales and assets generated by foreign affiliates, and the resulting FDI lightness indicator. Finally, summary values of the lightness indicator are retrieved from data on individual firms, for each category and subcategory of digital and ICT MNEs. Issues related to the computation of (weighted and unweighted) summary values, together with other technical complexities involved in the construction and operationalization of the FDI lightness indicator, are further discussed in box 1.

Figure 2. The FDI lightness indicator (in the context of the UNCTAD analytical work stream on the top 100 MNEs)



Source: Authors.

Box 1. Issues with the construction of the FDI lightness indicator

The construction of the FDI lightness indicator requires the collection of the shares of sales and the shares of assets generated by foreign affiliates for each MNE in the database, based on the companies' financial reports. Some challenges arise from the fact that reporting of foreign activity (sales and assets) is not fully standardized across companies.

i. Share of foreign sales. Gathering information on the share of foreign sales (or operating revenues) is relatively straightforward, as most publicly listed companies explicitly report the geographic breakdown of sales. However, it is important to note that some companies allocate sales based on their operations and others on the location of their customers. For the first group, foreign sales coincide with the sales of foreign affiliates, while for the second group foreign sales also include exports. In the sample of top digital MNEs, about 30 per cent of companies report geographic sales based on operations, 40 per cent report based on customer location and the remaining 30 per cent do not specify this information. Notwithstanding these differences, both reporting approaches provide an indication of the foreign commercial presence of individual MNEs that can be effectively used for the purpose of this study.

ii. Share of foreign assets. The analytical treatment of the share of foreign assets is more challenging. The main issue is related to the perimeter described by the share of foreign assets. Companies provide a geographic breakdown of assets using different baselines. Only a minority of MNEs provide the geographic breakdown of total assets. The majority provides the breakdown of long-lived assets, and a sizeable share limits the geographic segmentation to property, plant and equipment (PP&E). For digital MNEs, there may be significant differences in the value of PP&E, long-lived assets and total assets, with the value of PP&E in particular covering only a small portion of total assets. Netflix (see box figure 1.1) provides a clear example of such cases.

From a conceptual perspective, this issue has limited implications as the main focus of this analysis is on tangible fixed assets, a component fully covered by the geographic breakdown of the assets. Nevertheless, the different baselines limit the comparability of the individual data across the sample and affect the calculation of the summary values of the FDI lightness ratio for groups of MNEs. To address this issue, summary values have been calculated using both a weighted approach and an unweighted approach. In the weighted approach, the share of foreign assets reported by each firm is applied to the firm's total assets to provide a common baseline for the calculation; in this way, each MNE in the group is weighted by the size of its total assets. In the unweighted approach, summary values are instead

/...

Box 1. Issues with the construction of the FDI lightness indicator (concluded)

simply calculated as the groups’ medians of the shares of foreign assets reported by each firm. This approach does not “stretch” the perimeter of the geographic breakdown to include all assets and does not weigh for the size of the MNEs; it merely computes descriptive summary statistics on the basis of the information available at the firm level.

Box figure 1.1. Illustration: The case of Netflix

Asset composition

	As of December 31,	
	2015	2014
Assets		
Current assets:		
Cash and cash equivalents	\$ 1,809,330	\$1,113,608
Short-term investments	501,385	494,888
Current content assets, net	2,905,998	2,166,134
Other current assets	215,127	152,423
Total current assets	5,431,840	3,927,053
Non-current content assets, net	4,312,817	2,773,326
Property and equipment, net	173,412	149,875
Other non-current assets	284,802	192,246
Total assets	\$10,202,871	\$7,042,500

Asset geographic breakdown

	As of December 31,	
	2015	2014
(in thousands)		
United States	\$159,566	\$138,704
International	13,846	11,171

Geographic information covers only a small share of the assets
(i.e. foreign PP&E negligible share of total assets)

- ▶ **Property, Plant and Equipment (PP&E) at less than 2% of total assets**
- ▶ **Foreign share of PP&E at less than 10% of total PP&E**
- ▶ More relevant items “Non current content assets” at 42% of total assets and 90% of total fixed assets. Likely made of intangibles retained in the United States
- ▶ Geographic breakdown provided only for PP&E

Source: Authors.

3. Analyses and headline results

To assess the potential impact of digitalization on international production more broadly, i.e. on international investment patterns of all MNEs, it is useful to re-think the UNCTAD framework more explicitly in terms of exposure to the internet. As illustrated in figure 3, UNCTAD's digital framework can be mapped into a conceptual matrix positioning digital categories on the basis of their internet intensity (the internet intensity matrix), along two dimensions: production and operations (vertical axis) and commercialization and sales (horizontal axis).

At the top end of the matrix are the purely digital MNEs, the group of internet platforms and providers of digital solutions, where both operations and sales are digital. At the lower end of the matrix is the heterogeneous group of non-ICT, non-digital firms, some of which are gradually moving towards digital adoption in operations and sales, as confirmed for example by the growing importance of e-commerce in traditional business. An intermediate position is covered by digital MNEs with mixed models (digital content and e-commerce) and the group of ICT MNEs (IT and telecom), whose core business activities combine physical and digital elements.

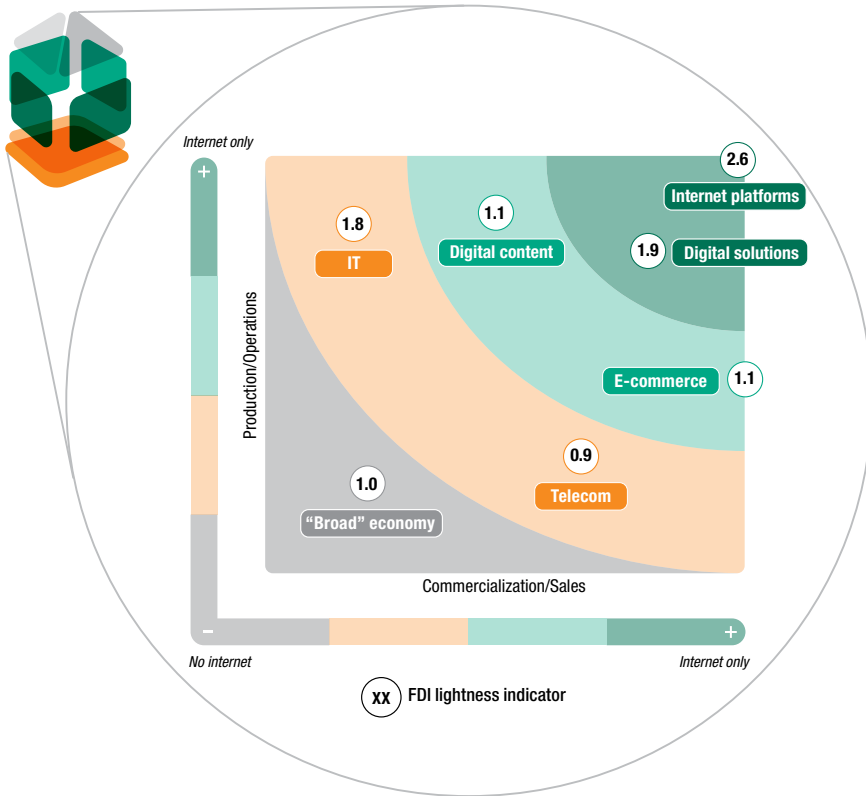
Figure 3 clearly shows an increase in the FDI lightness ratio as companies' positioning on the internet intensity matrix moves towards delivery and operating models characterized by higher internet intensity. It is important to note that this pattern is not driven by a few large companies; the results are consistent when replacing the weighted values of the FDI lightness indicator (i.e. weighted by the sizes of the MNEs) with the unweighted ones (the median values in the group) (see also discussion in box 1).

The pattern of the FDI lightness indicator illustrated in figure 3 confirms a link between the level of digitalization and the lightness of investment; this is the key trend documented and discussed in WIR17 (FDI asset lightness).

The analyses suggest two further relevant FDI patterns related to digitalization. These are: a re-balancing of international production towards the developed world (FDI de-democratization) and the prominence of financial and fiscal motives in MNE investment decisions (FDI financialization). These three big trends are further discussed below and summarized in figure 4, which also reports some key figures to document the size of the transformation at play. The patterns discussed here apply, primarily to digital and tech MNEs, but there are signs that they are starting to spread across the MNE universe.

FDI asset lightness. The internet is transforming the international operations of MNEs, making a physical presence overseas less fundamental and thus lightening the footprints of MNEs' international production.

Figure 3. FDI lightness indicator and the Internet Intensity Matrix



Source: Based on WIR17.

In business models characterized by higher internet intensity, the weight of foreign assets relative to foreign sales tends to be lower. Thus, MNEs in internet-intensive sectors exhibit a higher FDI lightness ratio. Comparing the extreme ends of digital exposure in figure 3, internet platforms have a share of foreign sales that is more than 2.5 times the share of foreign assets, against roughly the same share for traditional MNEs (see also WIR17, figures IV.7, IV.8 and IV.9).

Furthermore, digitalization tends to break the operational nexus between foreign sales and foreign assets. Not only do highly digital MNEs tend to realize more foreign sales with less foreign assets, there is in fact no correlation between the two, suggesting that commercial presence in foreign markets has no apparent bearing on international investment choices. Across internet platforms in the UNCTAD

sample, the linear correlation coefficient between the share of foreign sales and foreign assets is close to 0 (see also WIR17, figure IV.10).

FDI de-democratization. The light international footprint of digital MNEs, coupled with their quest for knowledge and technology assets, fuels a reversal of the democratization trend in FDI (the increase of the share of developing countries in global inward and outward FDI over the last decades).

Most digital MNEs are from developed countries, in particular the United States. Over 60 (63) of the top 100 digital MNEs have their parents in the United States, followed by the United Kingdom (7) and Germany (6); the first three countries account for more than 75 per cent of the largest MNEs. This concentration is more pronounced in the category of internet platforms, where 10 of the 11 MNEs in the sample are from the United States. By contrast, the presence of top digital MNEs from developing economies is marginal, with only four in the top 100 (see WIR17, table IV.1).

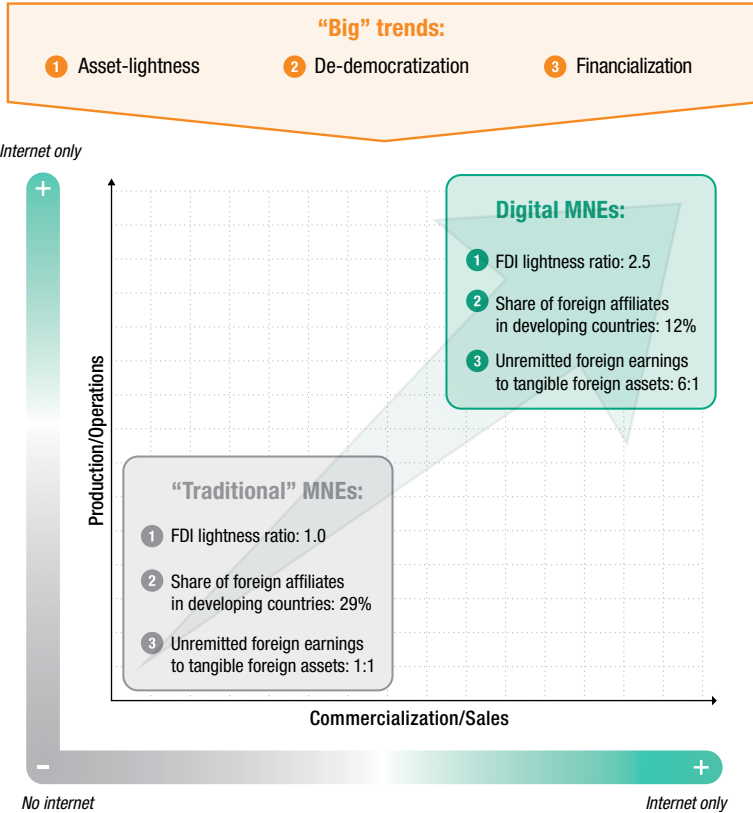
Analogously, subsidiaries of digital MNEs are highly concentrated in developed countries, particularly the United States, whereas their presence in developing economies is marginal. Only 12 per cent of the foreign affiliates of top digital MNEs are located in developing economies, against about 30 per cent for traditional MNEs. The United States has the lion's share, covering alone 40 per cent of subsidiaries of digital MNEs, almost twice the share for other MNEs (21 per cent) (see also WIR17, table IV.1).

FDI financialization. A light international footprint, with limited investment in tangible assets and large volumes of international sales, giving digital MNEs strong liquidity and high spending capacity, provides fertile ground for financial and tax-driven patterns of investment.

Distinctive features of the asset composition of digital and tech MNEs are the limited share of tangible assets compared with intangibles and the large share of cash and cash equivalents (see WIR 17, figure IV.3). A deeper dive into the data reveals that a sizable part of this cash is retained overseas, likely for tax optimization purposes. The largest tech megacorporations from the United States are keeping overseas about 62 per cent of their total foreign earnings, a share almost three times higher than that of other United States MNEs (23 per cent). This share corresponds to about US\$385 billion, equivalent to about six times the estimated value of foreign tangible assets. This fact suggests that these resources are used only in small part to finance foreign productive capacity, with their bulk channelled into non-core operations, driven by financial or tax-related motives² (see WIR17, figure IV.11).

² It should be noted, however, that the phenomenon of high retained foreign earnings is strictly linked to the United States territorial tax system and could be less relevant for MNEs from other countries. Changes in the United States corporate tax system may significantly affect overseas retained earnings of tech and digital MNEs.

Figure 4. Three big trends of international investment in the digital era



Source: Authors.

The onset of a new era for international production?

These trends describe an entirely new multinational business model and have the potential to radically transform the international operations of many MNEs. One of the findings of the analysis is that the process of digital disruption is, for now, mostly limited to digital MNEs and MNEs with strong links to the digital economy, either as providers or enablers. For other MNEs, traditional business models are still quite persistent.

A key question is when and to what extent traditional MNEs will move up the digitalization path (from the bottom left part of the internet matrix to the top right).

Indeed, the rapid growth of online channels in traditional industries shows that companies are already moving towards digitalization of commercial activity (x-axis in figure 3). Digitalization of production (y-axis in figure 3) is clearly more challenging, but technological developments and “industry 4.0” approaches are expected to provide increasing support to the transition. Finally, the penetration of leading digital MNEs into larger portions of the real economy, also outside typical digital markets, will give a further impetus to the digitalization of more traditional activities.

4. Avenues for future research

The work in this paper also provides (an initial) impetus to further theoretical and empirical efforts towards a better understanding of the implications of the digital economy in the globalization patterns of international production. Its main inputs and value added for future research work lie in two areas. First, it describes UNCTAD’s approach to the empirical analysis of digital corporations, leading to a list of the top 100 digital and ICT MNEs that can be used as a basis for firm-level analysis of relevant dimensions of digital MNEs, both within and beyond the international production/investment angle. Second, it hints at some disruptive trends in international investment patterns, calling for further empirical work but also for some deeper theoretical accommodation. This section suggests some possible research directions.

i. Digital investment determinants

Digital technologies are putting into question the traditional motivations behind FDI, leaving the way open to a new set of determinants. For digital MNEs, this translates into a shift of focus in international investment from heavy, market- and resource-driven FDI to light, knowledge-seeking and financial FDI. The exploitation of factor cost advantages is being replaced by the access to key intangible assets as the main driver behind cross-border investment. Building upon this piece of research, micro-econometric analysis can be conducted to help “explain” the motivations behind digital FDI empirically. International footprint indicators may be used to model specific dimensions of FDI in the digital economy, such as international market outreach (share of foreign sales), the degree of internationalization of operations (share of foreign assets or number of subsidiaries), location (country of incorporation), ownership (country of the ultimate owners) and so on.

ii. Firm-specific attributes

A number of firm-specific characteristics, such as age, size, location and value chain role, may also affect the way digital firms invest globally. These firm-specific attributes represent (possible) other angles from which to look at the international

operations (and footprint) of digital and ICT MNEs. Indeed, although this study documents a clear pattern in international footprints that is based on the digital intensity of businesses, across firms within the same or very similar business models there is still significant variability to explain, variability that is not captured by the digital dimension alone.

iii. FDI project data analysis

The digital and ICT database may be linked to external sources of data on FDI projects, such as the Financial Times fDi Markets database, with a view to attaching to the current statistical base information, whether qualitative or quantitative, on foreign investment projects. Running empirical analysis, either in an advanced-descriptive or predictive form, will enable researchers to build upon these findings and look at what hides behind firm-level international profiles. This analysis might help in addressing specific issues related to digital FDI that are not captured by consolidated information on segments. Examples of key investment dimensions include type (greenfield, merger and acquisition (M&A)), motivations, location and impact (capital expenditure, job creation, tax revenues).

iv. Beyond the international production and investment angle

Tech and digital corporations, in particular megacorporations, are the subject of huge interest in the political arena, in the research arena, in the public opinion arena. The obvious reason is that they are by far the most innovative, fastest growing and dynamic players in the global economy. The feeling that they will be driving a change that is likely to radically transform the way we live is shared. For this reason, every day new analyses appear on the ways in which such corporations operate different dimensions of their business and affect economies and societies. However, most of these investigations are based on anecdotal evidence, focusing on one or a few selected companies. As already discussed, this has partly been due to the lack of a comprehensive database of digital and tech MNEs. In this respect, UNCTAD's database provides a rich basis for addressing questions about digital and tech MNEs in a more systematic fashion. All companies included are publicly listed, and most are from developed countries with very good reporting standards. This implies that it is fairly easy to retrieve from commercial databases (such as Bureau Van Dijk's Orbis and Thomson One) and from financial accounts, a significant wealth of historical financial and operational information. With such information at hand it is possible to explore in depth many dimensions of digital MNEs' activity, including growth, operational performance, employment generation, innovation patterns, financing strategies, and, importantly, to compare such dimensions with those of more traditional MNEs to assess the likelihood of a convergence scenario.

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Appendix 1. Existing databases of digital firms

Generic (no digital economy focus)			
Type	Source	Name	Description
Global surveys and databases	International organizations	World Bank Enterprise Surveys Database	<ul style="list-style-type: none"> • No MNE focus • Surveys conducted at country level on a broad population of firms • Includes information on business use of digital technologies, based on survey results
		OECD Activity of Multinational Enterprises (AMNE) Database	<ul style="list-style-type: none"> • MNE focus: data on foreign affiliates by country of origin (inward) or location (outward) • Indicators on production, employment, exports and R&D
		Private sector	Financial Times fDi Markets – Company Database
Top company lists or rankings	International organizations	Orbis Database, Bureau van Dijk	<ul style="list-style-type: none"> • No MNE focus: multi-purpose business intelligence data source • Financial statement data, including ownership structures
		UNCTAD Top 100 MNE Ranking	<ul style="list-style-type: none"> • MNE focus • List of top 100 non-financial MNEs published annually • Indicators on MNE international footprint (foreign assets, sales, employees), by sector
		EU Industrial R&D Investment Scoreboard's Top 2500	<ul style="list-style-type: none"> • MNE focus • Ranking of top 2,500 firms by R&D spending, published annually • Indicators on R&D expenditure and intensity
	Private sector	Forbes Global 2000 and 500; Fortune Global 500; S&P 500	<ul style="list-style-type: none"> • MNE focus, not specifically meant for research • Annual ranking of top companies by size/market capitalization • Multiple metrics
			/...

Appendix 1. Existing databases of digital firms (concluded)

Dedicated (digital economy focus)			
Type	Source	Name	Description
Top company lists or rankings	International organizations	UNCTAD Information Economy Reports – Specialized Lists	<ul style="list-style-type: none"> • MNE focus, segment-specific: software, cloud economy, e-commerce • Various metrics with focus on size, featuring 10 to 25 top companies • Published once, as a part of research projects with thematic focus
	Private sector	Mediobanca Top 23 "Websofts"	<ul style="list-style-type: none"> • MNE focus, sector-specific: software and web companies • Published once, as a part of a research project • Several metrics on business and financial performance
		PwC Global 100 Software Leaders	<ul style="list-style-type: none"> • MNE focus, software houses • Published annually, includes side lists of top 25 fastest-growing cloud companies and top 30 software companies in emerging markets • Two metrics: total revenues and software revenues (value and per cent)

Source: Authors.

Appendix 2. UNCTAD taxonomy of the digital economy

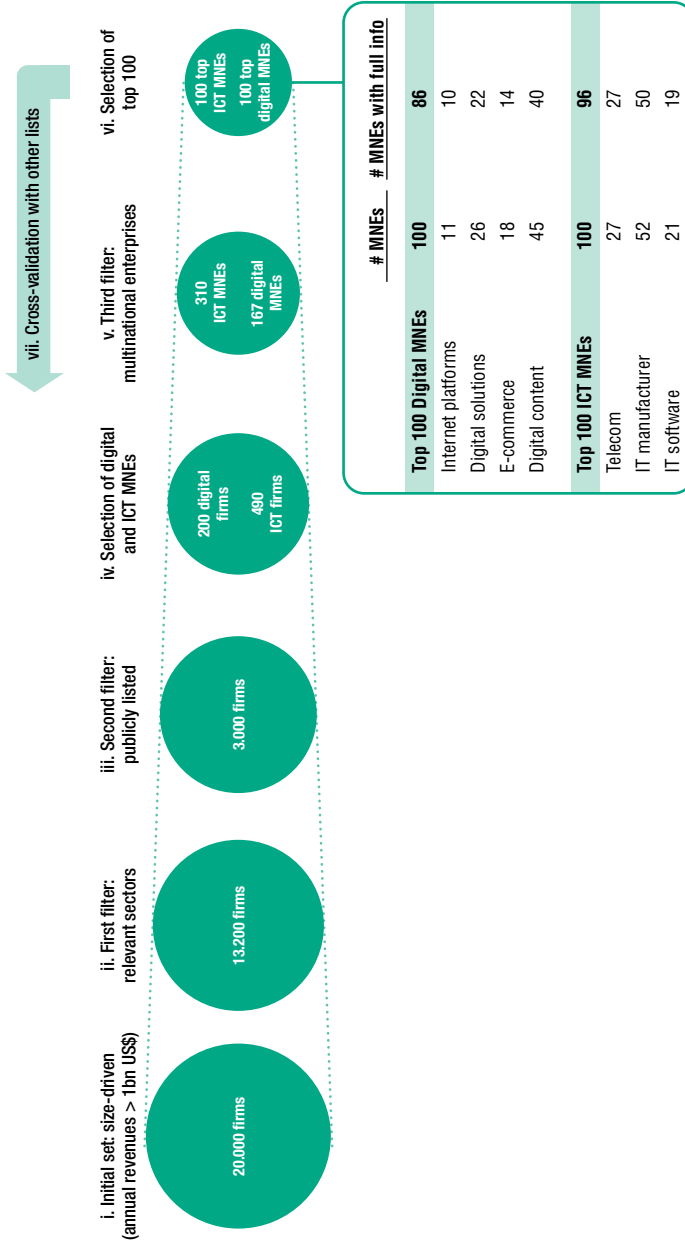
Category	Subcategory	Description of the scope	Caveats/points of attention
Internet platforms	<ul style="list-style-type: none"> Search engines Social networks Other platforms 	<ul style="list-style-type: none"> Companies providing digital services through internet and cloud-based platforms, search engines and social networks. Includes sharing economy platforms (e.g. transaction platforms (Ebay) and open-source platforms (Red Hat)). 	<ul style="list-style-type: none"> Only company-wide platforms such as Alphabet (Google) or Facebook. Internet platforms provided by digital and IT MNEs as part of a broader digital offer (for example, iTunes of Apple or Audible of Amazon) not captured in this category.
	<ul style="list-style-type: none"> Electronic payments Other digital solutions 	<ul style="list-style-type: none"> Includes a variety of players with core activities based on or strictly linked to internet technologies. Providers of electronic and digital payments, cloud hosting and computing, web hosting and e-mail services, digital solutions for business management and for financial applications (fintech). 	<ul style="list-style-type: none"> Miscellaneous category, “blurry” perimeter. Examples of (potentially relevant) business not included: cybersecurity companies (classified as software providers under ICT MNEs), credit card issuers (considered predominantly financial firms).
E-commerce	<ul style="list-style-type: none"> Internet retailers Other e-commerce 	<ul style="list-style-type: none"> Specialized and non-specialized online stores and online travel and booking agencies. Includes agencies specialized in online marketing and advertising. 	<ul style="list-style-type: none"> Only full online and online-born commerce. E-commerce channel of traditional business and multichannel retailers not captured in this category (even when online segment is fast growing and/or prominent).
	<ul style="list-style-type: none"> Digital media Games Info and data 	<ul style="list-style-type: none"> Producers and providers of digital content – media (e.g. music, video, e-books, online magazines) and gaming (e.g. “classic” video games, online games, mobile games, multiplayer interactive games). Production relying on digital formats or files; delivery through both traditional channels (e.g. cable TV for digital media) and online channels (e.g. internet TV and OTT). Online channel growing fast but relative share depends on the product (higher for music and games, lower for video and books). Database-related products and services: big data providers, marketing and customer intelligence, and providers of economic, business and credit information. 	<ul style="list-style-type: none"> Borderline category with elements of digital and traditional business: <ul style="list-style-type: none"> Companies not digitally born (with exceptions such as Netflix), predating the digital revolution – but turning content from other formats into fully digital. Part of business delivered through channels other than the internet, but internet channel fast growing and expected to be leading in the near future.
Digital content			

Appendix 2. UNCTAD taxonomy of the digital economy (concluded)

Category	Subcategory	Description of the scope	Caveats/points of attention
<p>IT</p> <p>ICT MNEs</p>	<ul style="list-style-type: none"> • Software and services • Devices and components 	<ul style="list-style-type: none"> • Developers of software; providers of assistance and IT consultancy. Major software houses, turning from a physical delivery model (with physically installed applications) to remote service applications delivered on demand. Category bordering “Digital solutions”. • Manufacturers of ICT hardware (computer brands) but also components (e.g. semiconductor industry). 	<ul style="list-style-type: none"> • IT software MNEs increasingly becoming digital MNEs while turning from physical delivery model to cloud-based (e.g. Software as a Service or Platform as a Service). • Very broad category; wide range of players with different exposures to digital economy, from very large for leading computer brands to relatively limited for component producers.
<p>Telecom</p>		<ul style="list-style-type: none"> • Owners of the telecommunication infrastructure on which internet data is carried. Increasingly active also as providers of internet services and OTT contents. 	<ul style="list-style-type: none"> • Part of the business of telecommunication players best suited to the digital categories (e.g. platforms or digital solutions (convergence between telecommunication and tech/media) but basic connectivity still the primary source of revenues.

Source: WIR17.

Appendix 3. Detailed steps for the construction of the top 100 digital and ICT database



Source: Based on WIR17.

i. Extraction of the initial sample. The initial pool of companies extracted from the Bureau Van Dijk's Orbis database includes some 20,000 firms with annual operating revenues above \$1 billion (date of extraction: between December 2016 and February 2017).

ii. First filter: relevant sectors. The initial pool is then narrowed down to 13,200 companies, excluding companies that operate in industries with limited digital exposure, i.e. primary, manufacturing (with the exception of manufacture of computer, electronic and optical products (NACE 26)), utilities and construction.

iii. Second filter: publicly listed companies. The reference units for this analysis are corporate legal entities listed on stock exchanges worldwide. This condition, which excludes some main players (e.g. Uber and Airbnb), is motivated by two reasons. First, unlisted companies usually do not disclose the minimal amount of information on financials and international activity necessary to carry out this analysis. Second, focusing on listed companies greatly reduces the risk of double-counting of consolidated accounts within the same corporate group, because subsidiaries of listed parents are usually not listed on their own (with a few notable exceptions).

iv. Selection of digital and ICT MNEs. The selection procedure was differentiated between digital MNEs and ICT MNEs.

- **Digital MNEs.** The standard industry classifications used in company databases, such as NACE or NAICS, are not sufficient for the identification of digital firms. Digital firms are indeed classified on the basis of what they produce and sell, independent of their level of digitalization. Examples are Amazon (classified as "Retail sale of books in specialized stores" according to its NACE core code), Netflix ("Renting of video tapes and disks") and Expedia ("Travel agency activities"). This makes the identification of digital MNEs challenging and unfeasible without significant manual effort. Such effort entails one-by-one screening of companies' trade descriptions.
- **ICT MNEs.** The scope of ICT MNEs (IT hardware and software, and telecommunication) is more easily matched with commonly used industry classifications. Broadly speaking, four NACE two-digit categories – "Telecommunication", "Manufacture of computer and electronic components", "Computer programming" and "Information services" – cover the range of ICT MNEs and provide a limited and manageable set of candidate companies for the top 100 selection.

v. Third filter: MNEs. The use of the transnationality condition follows from the observation angle of this study, which is the international footprint of digital firms. This filter employs an operational definition of multinational enterprise (MNE) specific to this analysis, which may differ from other standard definitions. In this context, a company qualifies as MNE if (a) its foreign affiliates' revenues or assets (or both)

exceed 10 per cent of the total; or (b) it has a significant number of subsidiaries outside the home economy (excluding affiliates in offshore financial centres).

vi. Selection of the top 100. From the set of candidate publicly listed digital and ICT MNEs, the procedure required selecting the 100 largest in terms of operating revenues. However, since the main goal of the database is to analyse the international footprint of digital and ICT MNEs, another filter is introduced to exclude companies that do not report any information on foreign sales or foreign assets.³ Of the selected 100 digital and 100 ICT MNEs reporting information on at least one of the two, 86 digital and 96 ICT MNEs (respectively) reported both foreign assets and foreign sales, thus providing the complete informative basis needed to perform the analysis.

vii. Cross-validation with other lists. Although there are no other comprehensive lists of digital and ICT MNEs, scattered information on relevant digital and ICT players can be found in different published lists, which can be either generic or dedicated (see also appendix 1).

Generic lists, such as the Forbes 500, include relevant firms that are broadly classified as ICT within a larger selection. Some relevant digital areas, such as cloud services and e-commerce, may be underrepresented. Especially if selection is based on company size, it is critical to build separate lists for digital MNEs and ICT MNEs to ensure sufficient representation of the former, which usually are smaller. To illustrate the point, of 39 companies that feature both in UNCTAD's selection and in the Forbes 500, only 4 are digital MNEs; the rest are ICT MNEs.

Dedicated lists of ICT and digital firms are published in different contexts and are usually market-specific. These lists do not address the broad digital industry but rather provide a picture of the competitive landscape of specific market segments. Often the selection is based on segment-specific criteria (e.g. "the most innovative companies in cloud computing" or "the fastest growing e-commerce firms"). Their scope is too narrow to enable a comprehensive mapping and description of the variety of digital and ICT players, as required for this analysis.

Despite their limitations, these lists provide a useful external benchmark to make sure that no relevant digital and ICT MNE was missed in the selection process. UNCTAD's selection was then cross-validated against the Forbes 500, Fortune 2000 and S&P500, among the generic lists, and against UNCTAD's Information Economy Reports (companies reported in several editions) and reports by consulting firms, such as the PwC Global 100 Software Leaders, among the dedicated lists.

³ Geographic segmentation of assets and sales is not part of companies' standard financial reporting; not all companies in all jurisdictions need to report this information, even if they are listed. For United States companies – the majority of MNEs in the sample – reporting of geographic information is mandatory (unless companies state that foreign business is not relevant); however, in other jurisdictions, particularly in developing countries, reporting standards are more lax.

Appendix 4. UNCTAD top 100 digital and ICT database

Table 1. Top 100 digital MNEs, by sales or operating revenues

	Classifica- tion first level	Company name	Classification second level	Total sales (\$ million)	Total assets (\$ million)	Share of foreign sales (%)	Share of foreign assets (%)	Ratio between share of foreign sales and share of foreign assets
1	Internet platforms	Alphabet	Search engines	74,989	147,461	54	24	2.25
2		Facebook	Social networks	17,928	49,407	53	21	2.51
3		Ebay	Other platforms	8,592	17,755	58	7	8.89
4		Yahoo	Search engines	4,968	45,204	20	6	3.12
5		IAC/Interactive	Social networks	3,231	5,189	26	8	3.49
6		Groupon	Other platforms	3,120	1,796	34	41	0.84
7		LinkedIn	Social networks	2,991	7,011	38	18	2.15
8		Naver	Search engines	2,773	3,741	33	NA	NA
9		Twitter	Social networks	2,218	6,442	35	7	4.93
10		Red Hat	Other platforms	2,052	4,155	34	30	1.13
11		Match Group	Social networks	1,020	1,909	32	41	0.77
Internet platforms total				123,882	290,071	50	19	2.63
<i>(Internet platforms median – unweighted)</i>						<i>35</i>	<i>19</i>	<i>2.38</i>
12	Digital solutions	Automatic Data Processing	Other digital solutions	11,668	43,670	15	10	1.50
13		First Data Corporation	Electronic payments	11,451	34,362	14	11	1.36
14		PayPal	Electronic payments	9,248	28,881	50	7	7.61
15		Salesforce	Other digital solutions	6,667	12,763	26	11	2.39
16		VMware	Other digital solutions	6,647	15,746	50	15	3.28
17		FIS	Other digital solutions	6,595	26,269	41	16	2.48
18		Worldpay Group	Electronic payments	5,873	6,122	71	NA	NA
19		NetApp	Other digital solutions	5,546	10,037	45	15	2.99
20		Insight Enterprises	Other digital solutions	5,373	2,014	32	33	0.96
21		United Internet	Other digital solutions	4,045	4,222	10	16	0.65
22		Amdocs	Other digital solutions	3,718	5,331	86	62	1.40
23		Nasdaq	Other digital solutions	3,403	11,861	29	33	0.89
24		Citrix Systems	Other digital solutions	3,276	5,468	39	21	1.83
25		Global Payments	Electronic payments	2,898	10,510	29	20	1.46
26		Broadridge Financial Solutions	Other digital solutions	2,897	2,880	11	16	0.70
27		Equinix	Other digital solutions	2,726	10,357	48	50	0.96
28		Super Micro Computer	Other digital solutions	2,216	1,166	37	24	1.53
29		Akamai Technologies	Other digital solutions	2,197	4,182	27	43	0.62
30		Rackspace Hosting	Other digital solutions	2,001	2,014	32	36	0.88
31		Transcosmos	Other digital solutions	1,993	1,248	13	40	0.34
32		Cimpress	Other digital solutions	1,788	1,464	NA	79	NA
33		Godaddy	Other digital solutions	1,464	3,499	26	0	..
34		Worldline	Electronic payments	1,336	1,468	65	NA	NA

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Table 1. Top 100 digital MNEs, by sales or operating revenues

	Classifica- tion first level	Company name	Classification second level	Total sales (\$ million)	Total assets (\$ million)	Share of foreign sales (%)	Share of foreign assets (%)	Ratio between share of foreign sales and share of foreign assets
35	Digital solutions	Workday	Other digital solutions	1,162	2,730	16	NA	NA
36		Verisign	Other digital solutions	1,059	2,358	40	3	14.67
37		Servicenow	Other digital solutions	1,005	1,807	34	30	1.13
Digital solutions total				108,253	252,427	32	17	1.90
<i>(Digital solutions median – unweighted)</i>						<i>32</i>	<i>18</i>	<i>1.43</i>
38	E-commerce	Amazon	Internet retailers	107,006	65,444	36	32	1.13
39		Alibaba Group	Internet retailers	15,639	56,353	8	NA	NA
40		Priceline Group	Other e-commerce	9,224	17,421	80	17	4.77
41		Expedia	Other e-commerce	6,672	15,486	44	11	3.95
42		Naspers	Internet retailers	5,930	16,723	54	NA	NA
43		Rakuten	Internet retailers	5,922	35,435	20	67	0.29
44		Amadeus IT Group	Other e-commerce	4,260	7,625	96	96	1.00
45		Cnova	Internet retailers	3,804	1,853	50	75	0.66
46		Zalando	Internet retailers	3,221	2,304	47	NA	NA
47		Bechtle	Internet retailers	3,076	1,252	31	30	1.04
48		Sabre	Internet retailers	2,961	5,394	60	4	14.23
49		Travelport Worldwide	Other e-commerce	2,221	2,929	66	50	1.33
50		Asos	Internet retailers	1,907	854	57	0	..
51		Systemax	Internet retailers	1,855	710	64	53	1.20
52		Liberty TripAdvisor	Other e-commerce	1,565	7,285	48	17	2.91
53		Criteo	Internet retailers	1,323	842	91	51	1.77
54		Copart	Internet retailers	1,268	1,650	20	24	0.82
55		Yoox Net-a-Porter Group	Internet retailers	1,004	3,053	89	NA	NA
E-commerce total				178,857	242,613	42	38	1.11
<i>(E-commerce median – unweighted)</i>						<i>53</i>	<i>31</i>	<i>1.27</i>
56	Digital content	Comcast	Digital media	74,510	166,574	8	NA	NA
57		Time Warner	Digital media	28,118	63,848	27	NA	NA
58		21st Century Fox	Digital media	27,326	48,193	29	10	2.98
59		Liberty Global	Digital media	18,280	67,867	61	63	0.97
60		Sky	Digital media	16,138	23,483	30	7	4.55
61		Tencent Holdings	Games	15,846	47,265	6	23	0.28
62		CBS	Digital media	13,886	23,765	14	2	7.17
63		Viacom	Digital media	12,488	22,508	25	7	3.47
64		Thomson Reuters	Info & data	12,209	29,095	40	40	1.00
65		Liberty Interactive	Digital media	9,989	21,180	26	44	0.58
66		News	Digital media	8,292	15,483	53	62	0.85
67		Netflix	Digital media	6,780	10,203	29	8	3.60
68		RTL Group	Digital media	6,564	8,924	63	71	0.90
69		Alliance Data Systems	Info & data	6,440	22,350	22	16	1.34
70		Discovery Communications	Digital media	6,394	15,864	49	48	1.01
71		Iheartmedia	Digital media	6,242	13,673	26	28	0.91
72		Nielsen Holdings	Info & data	6,172	15,303	38	16	2.33

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Table 1. Top 100 digital MNEs, by sales or operating revenues (concluded)

Classification first level	Company name	Classification second level	Total sales (\$ million)	Total assets (\$ million)	Share of foreign sales (%)	Share of foreign assets (%)	Ratio between share of foreign sales and share of foreign assets
73	S&P Global	Info & data	5,313	8,183	40	11	3.53
74	Grupo Televisa	Digital media	5,117	16,359	14	4	3.33
75	Activision Blizzard	Games	4,664	15,246	48	27	1.79
76	Wolters Kluwer	Info & data	4,581	8,817	96	72	1.34
77	Electronic Arts	Games	4,396	7,050	57	22	2.61
78	Experian	Info & data	4,355	7,407	79	85	0.92
79	Mediaset	Digital media	3,740	7,726	28	18	1.53
80	Axel Springer	Digital media	3,587	7,082	48	69	0.69
81	Prosiebensat.1 Media	Digital media	3,550	5,789	16	17	0.93
82	Moody's	Info & data	3,485	5,103	42	58	0.72
83	Equifax	Info & data	2,664	4,509	23	18	1.32
84	Graham	Digital media	2,586	4,353	26	18	1.42
85	AMC Networks	Digital media	2,581	4,265	18	43	0.42
86	Teradata	Info & data	2,530	2,527	44	17	2.60
87	Konami	Games	2,222	2,918	33	11	3.09
88	Gartner	Info & data	2,163	2,175	38	22	1.69
89	Verisk Analytics	Info & data	2,068	5,594	NA	56	NA
90	Modern Times Group	Digital media	1,921	1,954	71	73	0.97
91	Sanoma	Digital media	1,869	3,010	63	89	0.71
92	GfK	Info & data	1,680	2,006	75	62	1.22
93	Dun & Bradstreet	Info & data	1,637	2,267	19	35	0.54
94	Ubisoft Entertainment	Games	1,587	2,301	92	NA	NA
95	Nexon Co	Games	1,579	3,532	89	64	1.38
96	Transunion	Info & data	1,507	4,443	18	17	1.06
97	Take Two Interactive Software	Games	1,414	2,590	47	NA	NA
98	Entertainment One	Digital media	1,156	2,366	76	71	1.07
99	Verint Systems	Info & data	1,130	2,356	62	58	1.07
100	Factset Research Systems	Info & data	1,127	1,019	33	16	2.00
Digital content total			351,883	758,522	36	32	1.14
<i>(Digital content median – unweighted)</i>					<i>38</i>	<i>25</i>	<i>1.27</i>
Total digital			762,875	1,543,633	40	27	1.49
<i>(Digital median – unweighted)</i>					<i>37</i>	<i>23</i>	<i>1.35</i>

Source: UNCTAD, World Investment Report, 2017, Technical Annex to Chapter IV (available online: http://unctad.org/en/PublicationChapters/wir2017ch4_Annex_en.pdf)

Note: Companies are ranked by sales within each category ("classification first level"). Allocation of companies to categories and subcategories ("classification second level") is based on principal activity.

Table 2. Top 100 ICT MNEs, by sales or operating revenues

	Classifica- tion first level	Company name	Classification second level	Total sales (\$ million)	Total assets (\$ million)	Share of foreign sales (%)	Share of foreign assets (%)	Ratio between share of foreign sales and share of foreign assets
1	IT devices & components	Apple	IT devices	215,639	321,686	65	39	1.65
2		Samsung Electronics	IT devices	171,126	206,550	90	31	2.88
3		Hon Hai Precision Industry	Components	135,996	70,038	99	91	1.09
4		International Business Machines	IT devices	81,741	110,495	63	54	1.15
5		Sony	IT devices	71,968	148,037	71	24	3.00
6		Intel	IT devices	55,355	101,459	80	29	2.75
7		Dell Technologies	IT devices	50,911	45,122	52	29	1.81
8		Toshiba	Components	50,165	48,083	59	36	1.67
9		Cisco Systems	IT devices	49,247	121,652	47	20	2.40
10		HP	IT devices	48,238	29,010	63	58	1.09
11		LG Electronics	IT devices	48,195	30,971	75	21	3.59
12		Legend Holdings	IT devices	47,728	47,176	68	45	1.53
13		Lenovo Group	IT devices	44,912	24,933	72	65	1.11
14		Fujitsu	IT devices	42,078	28,645	40	20	2.00
15		Pegatron	IT devices	36,826	14,445	85	73	1.16
16		Quanta Computer	IT devices	30,562	16,129	100	83	1.21
17		Telefonak-tiebolaget Lm Ericsson	IT devices	29,253	33,689	98	34	2.93
18		Compal Electronics	IT devices	25,709	9,950	100	65	1.53
19		Taiwan Semiconductor Manufacturing Company	Components	25,593	50,292	89	3	31.30
20		Flextronics	Components	24,419	12,385	65	65	1.00
21		Sharp	IT devices	21,856	13,945	70	20	3.43
22		Wistron	Components	18,911	8,811	37	81	0.46
23		Jabil Circuit	Components	18,353	10,323	91	76	1.19
24		SK Hynix	Components	16,032	25,312	94	19	5.01
25		ZTE	Components	15,433	19,192	47	17	2.69
26		Nokia	IT devices	14,778	22,782	91	42	2.16
27		Asustek Computer	IT devices	14,331	10,122	86	46	1.89
28		Kyocera	Components	13,137	27,480	59	31	1.91
29		Texas Instruments	Components	13,000	16,230	88	47	1.85
30		Western Digital	IT devices	12,994	32,862	72	60	1.20
31		Micron Technology	Components	12,399	27,540	84	74	1.15
32		Inventec	IT devices	11,999	5,332	94	62	1.52
33		Seagate Technology	IT devices	11,160	8,252	70	64	1.09
34		China Greatwall Computer Shenzhen	Components	11,129	6,078	60	NA	NA
35		TPV Technology	Components	11,062	5,932	61	47	1.30
36		Innolux	Components	11,048	11,756	72	16	4.38

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Table 2. Top 100 ICT MNEs, by sales or operating revenues

Classification first level	Company name	Classification second level	Total sales (\$ million)	Total assets (\$ million)	Share of foreign sales (%)	Share of foreign assets (%)	Ratio between share of foreign sales and share of foreign assets	
37	AU Optronics	Components	10,990	12,176	67	27	2.44	
38	Murata Manufacturing	Components	10,751	13,476	93	30	3.12	
39	TDK	Components	10,230	12,879	92	77	1.20	
40	Seiko Epson	Components	9,700	8,358	76	38	1.99	
41	Japan Display	Components	8,782	7,226	89	NA	NA	
42	Advanced Semiconductor Engineering	Components	8,596	11,083	88	40	2.21	
43	Acer	IT devices	8,003	5,211	92	78	1.18	
44	STMicroelectronics	Components	6,897	8,195	76	83	0.91	
45	Alps Electric	Components	6,872	4,997	81	40	2.05	
46	Asml Holding	Components	6,845	15,802	100	24	4.14	
47	Lite-On Technology	Components	6,582	6,361	30	3	9.76	
48	Mediatek	Components	6,471	10,657	95	16	6.00	
49	Renesas Electronics	Components	6,155	7,541	56	17	3.31	
50	Nxp Semiconductors	Components	6,101	26,354	97	94	1.03	
51	Tokyo Electron	Components	5,895	7,044	82	22	3.79	
52	Nvidia	Components	5,010	7,370	87	22	3.90	
IT devices & components total			1,637,164	1,887,427	75	39	1.91	
<i>(IT devices & components median – unweighted)</i>					<i>78</i>	<i>40</i>	<i>1.90</i>	
53	IT software & services	Microsoft	IT software & services	85,320	193,694	52	43	1.22
54		Hewlett Packard Enterprise	IT software & services	50,123	79,679	61	51	1.21
55		Oracle	IT software & services	37,047	112,180	53	33	1.63
56		Accenture	IT software & services	34,798	20,609	99	96	1.03
57		NEC	IT software & services	25,048	22,138	21	5	3.95
58		Qualcomm	IT software & services	23,554	52,359	98	18	5.61
59		SAP	IT software & services	22,637	45,061	87	92	0.94
60		Tata Consultancy Services	IT software & services	16,379	13,475	93	80	1.16
61		NTT Data	IT software & services	14,338	16,517	31	10	3.12
62		Capgemini	IT software & services	12,972	17,671	79	79	1.01
63		Cognizant Technology Solutions	IT software & services	12,416	13,061	21	81	0.26
64		Atos	IT software & services	11,633	11,628	84	79	1.07
65		Infosys	IT software & services	9,418	11,371	97	NA	NA
66		CGI Group	IT software & services	8,145	8,915	86	76	1.13
67		Wipro	IT software & services	7,726	10,665	90	NA	NA
68		Harris	IT software & services	7,467	11,996	6	4	1.51

Table 2. Top 100 ICT MNEs, by sales or operating revenues (concluded)

Classification first level	Company name	Classification second level	Total sales (\$ million)	Total assets (\$ million)	Share of foreign sales (%)	Share of foreign assets (%)	Ratio between share of foreign sales and share of foreign assets
69	Computer Sciences	IT software & services	7,106	7,736	57	57	1.00
70	Samsung SDS	IT software & services	6,698	5,400	47	4	11.07
71	Datalec	IT software & services	6,455	3,383	92	94	0.98
72	Adobe Systems	IT software & services	5,854	12,707	47	21	2.23
73	HCL Technologies	IT software & services	4,640	5,931	97	52	1.85
IT software & services total			409,774	676,177	63	46	1.38
<i>(IT software & services median – unweighted)</i>					<i>61</i>	<i>52</i>	<i>1.21</i>
74	Telecom	AT&T	146,801	402,672	4	5	0.94
75		Nippon Telegraph and Telephone	102,468	186,770	16	32	0.51
76		Softbank Group	81,271	183,851	55	66	0.83
77		Deutsche Telekom	75,368	156,686	64	64	1.00
78		Vodafone Group	59,013	192,587	85	90	0.94
79		America Movil	51,970	75,349	67	46	1.44
80		Telefonica	51,407	133,882	72	77	0.84
81		Orange	43,805	99,540	54	57	0.96
82		BT Group	27,426	61,345	22	10	2.19
83		Telecom Italia	21,467	77,550	25	12	2.08
84		Telstra	19,242	32,144	5	8	0.63
85		Altice	15,841	70,545	98	97	1.01
86		Bharti Airtel	14,553	33,900	7	25	0.27
87		Telenor	14,549	23,259	77	76	1.01
88		Emirates Telecommunication Group	14,215	34,926	43	60	0.72
89		Saudi Telecom Company	13,507	25,776	10	5	1.92
90		Swisscom	11,771	21,317	16	18	0.93
91		Vivendi	11,717	38,046	59	62	0.94
92		Telia Company	10,268	30,094	58	71	0.80
93		Vimpelcom	9,625	33,854	53	60	0.90
94		MTN Group	9,460	20,191	75	66	1.14
95		Ooredoo	8,835	25,866	77	75	1.02
96		Level 3 Communications	8,229	24,017	19	17	1.10
97		Millicom	6,730	10,363	100	100	1.00
98		Mobile Telesystems	5,917	8,965	10	16	0.63
99		Vodacom Group	5,436	5,342	23	34	0.67
100		PCCW	5,072	9,646	17	16	1.07
Telecom total			845,964	2,018,482	42	46	0.92
<i>(Telecom median – unweighted)</i>					<i>53</i>	<i>57</i>	<i>0.94</i>
Total ICT			2,892,902	4,582,086	63	43	1.48
<i>(ICT median – unweighted)</i>					<i>71</i>	<i>44</i>	<i>1.21</i>

Source: UNCTAD, World Investment Report, 2017: Technical Annex to Chapter IV (available online: http://unctad.org/en/PublicationChapters/wir2017ch4_Annex_en.pdf).

Note: Companies are ranked by sales within each category ("classification first level"). Allocation of companies to categories and subcategories ("classification second level") is based on principal activity.

BOOK REVIEW

Navigating Global Business. A Cultural Compass

By Simcha Ronen and Oded Shenkar
(Cambridge, Cambridge University Press, 2017), 368 pages

The world has changed dramatically over the last two decades, moving through two distinct phases of globalization. Tapping into the rapid growth of goods and services trade (WTO, 2016a), the first wave of globalization was propelled by value chains, enhancing specialization, productivity and access to markets (Reeves and Harnos, 2017; OECD, 2017). The second is marked by digitalization and it is characterized by the flow of ideas, information and innovation, which has further enabled the exploitation of global business opportunities through internet applications.

A recent McKinsey report points out that traditional trade flows have slowed (in relation to GDP), whereas digital data flows are soaring. Today, cross-border digital data flows generate more economic value than trade in goods (Manyika et al., 2016). This trend has implications for business participation. While the traditional wave of globalization mainly benefited large multinational corporations, the digital wave of globalization may open doors also to smaller firms (WTO, 2016b). Engaging in global business no longer requires deep pockets – the preserve of large corporations. Indeed, this new wave enables the exploitation of global business opportunities at the click of a button.

Globalization is a much-discussed current concept. One of the key concerns, however, is that the debate too narrowly focuses on digital flows and workplace disruption. Digitalization has broadened the business realm to tech-savvy entrepreneurs and small firms creating new opportunities to firms in developed and developing countries alike. This highlights the need to increase our understanding of cultural issues to better navigate the complex current business world. For example, Moritz (2018) argues that in addition to the flows of people, goods and services, we need to discuss how we are connected, with whom we are connected, where we work, what we read online, who we trust and where we learn.

The world is witnessing multi-layered globalization in which contradictory realities manifest. We need to learn to navigate in a world that is simultaneously integrating and fragmenting (Rawlinson, 2018). Whereas political systems appear to be fragmenting, the digital connectedness of people, communities, devices and machines, together with the flow of data and ideas, are reconfiguring markets

(Bhattacharya et al., 2017). Firms that succeed need to know how to read and operate in this highly-connected world.

This book written by Simcha Ronen and Oded Shenkar provides a welcome response to this need. The authors explain why culture matters across business functions such as human resource management, strategy and finance. It demonstrates how cultural forces draw some countries together based on their relative similarity while pushing others apart. The authors have selected ten input studies and integrated the data used therein into a large dataset. By employing cluster analysis, they produced a cultural map reflecting the organizational norms, values and beliefs of 11 country clusters (or country families). Its findings will interest executives and researchers who explore these dynamics.

Whereas globalization can be viewed from several perspectives (i.e. social, economic, cultural, political and technological) Ronan and Shenkar's book emphasizes the economic dimension by which globalization is defined as "the geographical dispersion of the value chain, overlaid on increasing intra-regional and inter-regional flows of people, goods, companies, and ideas, and their respective interdependencies" (p. 26). However, while the book acknowledges the importance of digital flows, it does not provide much empirical evidence, nor does it sufficiently consider the managerial implications. Other studies have showed that volumes of digital flows that may prompt cultural convergence or divergence are high. For example, while 430 million international travellers cross national borders annually, more than 900 million social media users and 360 million e-commerce shoppers do the same without leaving their homes. Whereas five million students study abroad, 13 million students "cross borders" by studying online, while 44 million online freelancers work outside their home countries (Manyika et al., 2016, pp. 8-9). These figures raise the questions of how expanding digital forces facilitate cultural convergence or divergence.

Chapter 2 explains how the empirical evidence was selected and the cluster methodology employed to produce a three-layered cultural map – the main contribution of this book. The authors reviewed an extensive body of literature and evaluated over one hundred studies to identify those whose data were included in their dataset. This evaluation process resulted in ten input studies published between the years of 1992 and 2005. The respondents to these studies cover a broad spectrum of levels of employment and expertise and represent 115 countries. The fact that the original data of the input studies were collected as much as 25 years ago means that the dataset reflects the working attitudes of that decade. One can therefore not help but wonder how well this dataset reflects the values of today's working force. The era in which respondents worked hosted an altogether different business environment. For example, digital flows were much lower, therefore respondents had hardly used mobile devices, email, online conferences,

cloud storage or other digital platforms. Their global connectedness was based on sending faxes, letters and landline communication, and face-to-face meetings demanded a significant amount of travelling.

This problem is acknowledged by Ronen and Shenkar, but it is deemed not highly significant in determining clustering behaviour. They compare the results of the cultural map to their prior study published in 1985 and conclude that “it is striking how little has changed in two decades supporting the notion that cultural changes are stable or slow to emerge” (p. 110). Indeed, when assessing the cluster map and its 11 cultural families, there are few surprises. The map includes Arab, Aegean, Latin American, East European, Latin European, Nordic, Germanic, Sub-Saharan, Anglo, Confucian and South Asian clusters. In most clusters the cultural families are comprised of neighbouring countries suggesting that geography is an important factor in demonstrating covariance with culture. Hence, the globalization of business starts close to home.

In Chapter 3, the authors introduce in detail the variables used to explain the values, beliefs, attitudes and behavioural propensities of the different regions. These variables encompass geography, language, religion, economic development and economic freedom. The results of the cluster analysis are reported in detail and the key findings carefully explained. However, the expansiveness can frustrate. The first 180 pages of the book meticulously detail the reported results, however, their implications for business management are not considered. Chapter 4 provides relief. It delves into the attitudinal and behavioural dimensions of clustering and provides an extensive review of prior literature starting with the focal actor (individual versus group), explaining relations individuals seek to retain with others in their society. The chapter explains the individual’s embedded position in society and organization and discusses societal and organizational orientation, illuminating the factors related to organizational behaviour.

The book concludes with a summary review of the characteristics of each geographic cluster. Because only dimensions with distinctively high or low values are included in this presentation, the summaries of clusters provide only a general view of the country families. The reader can use it as a tool to focus on the country family of interest. However, whereas these family clusters are relevant, the book does not address the rapidly growing digital families in the global business environment. In order to engage in global business, several digital platforms provide access to hundreds of millions of digitally-connected users. For example, the “population” of Facebook is larger than the population of China or India. Similarly, the population of the United States, the world’s dominant economic power, is smaller than the communities of several digital platforms, such as YouTube, WhatsApp, Alibaba, Instagram, Twitter and Amazon (Manyika et al., 2016; Statista 2017). There is a need to produce relevant information about the cultural characters of these new digital families.

Overall, the book presents a useful cultural compass to help navigate global business, notably for companies that seek to expand abroad through investment or merger and acquisition activity. However, the guidance is more limited for smaller businesses preparing for a digital journey that need to respond to the demands of a rich diversity of customers in multicultural, multinational and multilingual environments. This is particularly important to the businesses in the developing countries for the purpose of engaging in global business by connecting digitally with clients, financiers, suppliers and talent worldwide. The style of the book may also deter practitioner readers. The text is written in elaborate academic style, characterized by detailed explanation of methodology, results and references. Whereas these are essential to academic readers, they may be less useful to practitioner readers.

With regards to the relevance of its main findings, the unit of analysis being the nation may have had implications for the conclusions. The fact that within the countries there are large variations highlights the need for more respondent-level data on cultural issues. Finally, a deeper discussion on the managerial implications of the findings would have improved the reading experience.

In conclusion, it is easy to agree with the authors on how important it is to learn about human diversity. The book is highly relevant in the way it continues the academic discussion on culture and globalization, even if it brushes over some knowledge gaps that can help small businesses exploit the opportunities of digital globalization.

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