Multinational Enterprises and Structural Transformation in Emerging and Developing Countries: A Survey of the Literature

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Acknowledgements: The authors are grateful to Shaomeng Li for excellent research assistance in literature search and downloading and to Pervez Ghauri and two anonymous reviewers for helpful and constructive comments, and to the Economic and Social Research Council (ESRC) and European Commission for financial support (no. ES/S001336/1 and 612889).

1. Introduction

For developing countries[1] today, how to encourage and engage with foreign direct investment (FDI) by multinational enterprises (MNEs) to promote local capabilities building and structural transformation is still one of the most important questions which has profound economic and social implications (Lin, 2017), especially when these countries are marching their way towards achieving the 2030 Sustainable Development Goals (Boddewyn, 2016). While viewed as a positive force for change, MNEs are also treated with suspicion. Despite their acknowledged potential to provide knowledge spillovers for recipient economies, developing host governments are aware of their own limited bargaining power vis-à-vis multinationals, their potential to crowd-out domestic firms, and the difficulty involved in forcing these self-interested monoliths to serve local development objectives (Ghauri, Fu and Väätänen, 2017). MNEs are nonetheless enshrined in many models of structural change, notably "flying geese" models, as a natural component of industrial upgrading. In Kojima's catching-up product lifecycle model, economies which successfully become exporters of high-value-added capital goods begin to produce consumer goods abroad via outward foreign direct investment (OFDI), which in turn permits low-productivity developing exporters to kickstart their own consumer good exports (Kojima, 2000). Similarly, in Vernon's product life-cycle theory (Vernon, 1966), the dynamic nature of comparative advantage means that the production of capital-intensive goods tends to shift over time from the innovating country (assumed to be a developed country) to other developed countries, and eventually to developing countries via FDI. While such models confine developing and emerging markets[2] to a process of catch-up innovation, they nonetheless outline a path for consistent upgrading of production via FDI.

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[1] *The United Nations Department of Economic and Social Affairs (UN DESA) delineates countries by what they refer to as 'basic economic country conditions', including income per capita, human capital and economic vulnerability (UN DESA, 2014). We hence for the purposes of this paper use the term 'developing countries' to refer to countries with a low level of per-person income and/or a low level of holistic economic and human development.*

[2] *Coined in 1981, the term 'emerging economies' tends to refer to developing countries which possess some characteristics of developed countries, which are experiencing rapid growth and transitioning towards developed-country status, and which exhibit a high level of investment in new productive capital (World Bank, 2020; MSCI, 2014).*

As the Global South, and especially China, increasingly becomes an originator of outward direct investment, outward FDI from developing countries has grown in both size and salience (Lo et al., 2016; Ghauri, Fu and Väätänen, 2017). While Southern MNEs investing in less-developed economies represent a pathway to offshoring labour-intensive industries which have become uncompetitive at home, multinationals from developing countries often invest in advanced economies as a way of breaking into new markets, facilitating the acquisition and diffusion of cutting-edge technological and managerial capital (Fu, Buckley and Fu, 2020). Both forms of outward investment carry implications for structural change, either in the originating or host economy.

While the growth benefits of FDI have been studied extensively, its impact on structural transformation has largely been ignored in the literature (Mühlen and Escobar, 2019). The modified Solow (1956) model of Sachs et al. (2004) demonstrates that a low-productivity economy may become stuck in a persistent low-investment, low-income trap in which inflows of capital such as FDI provide a temporary increase to the growth rate but do not facilitate long-term income growth. In such a situation, the improvement of productivity by shifting towards higher value-adding industries can bring about the virtuous cycle of self-sustaining growth. Within the broad umbrella of structural change, the promotion of manufacturing activity is of particular significance for long-term economic success. Kaldor's laws of growth also identify that the productivity of the non-manufacturing sector is positively and causally related to the productivity of the manufacturing sector (Thirlwall, 1983), highlighting the collective role of different sectors in promoting structural transformation.

The desire in China to shift away from labour-intensive manufacturing towards the global technological frontier (Fu, 2015; Cyrill, 2018; Yao, 2014) has opened up space in third markets for other latecomers (Lin and Xu, 2019; Lin, 2012). At the same time, China's industrial upgrading and demographic transition will continue to drive a wave of offshoring of labour-intensive manufacturing industries to developing countries via OFDI. These recent developments have created a global economic structure more similar to that faced by the 'Tiger' economies during their economic ascendance, which was fuelled by soaring consumer good demand in postwar Europe and Japan (Wolf, 2016). In light of this window of opportunity for industrial upgrading, and the potential role played by MNEs, understanding the relationship between multinationals and

structural transformation must be at the forefront of the policy agenda for developing countries today.

The extant literature emphasises the growth spillovers of FDI (eg. Almfraji and Almsafir, 2014; Lasbrey et al., 2018), as well as the relationship between MNEs and poverty reduction (e.g. Fu, Ghauri and Väätänen, 2017), labour market outcomes (e.g. Javorcik, 2015), gender (e.g. Aguayo-Téllez, 2012), health (e.g. Smith, 2004) and the environment (e.g. Cole and Elliot, 2017; Erdogan, 2014). Little systematic survey of the literature examines what we have learned about the impact of MNEs on structural change in the developing countries, partially because structural change is systematically overlooked in the literature (Mühlen and Escobar, 2019). This paper aims to fill in the gap. In particular, it focuses on the transmission mechanisms through which MNEs impact structural change in the host countries, including knowledge transfer and local technological capabilities upgrading, productivity growth, export competitiveness and sophistication, industrial upgrading and diversification, and services sector growth. We also highlight the conditions under which the activities of MNEs can effectively and positively promote structural change, and the resultant policy and managerial implications. The effects of inward FDI on the host developing economy and outward FDI on the home developing economies are both examined.

The rest of the paper is organised as follows. Section 2 discusses the methods used for this review. Section 3 discusses the effect of MNEs on various aspects of structural transformation, ranging from knowledge transfer and local capabilities building, to productivity, export sophistication and diversification, services sector growth, to the effect of outward foreign direct investment by developing country firms. Section 4 analyses the conditions for MNEs to effectively and positively promote structural change. Finally, section 5 concludes with discussions of policy implications and areas for future research.

2. Methodology

Structural transformation here refers to shifts in the composition of output in economies, from low-value-adding activities towards higher-value-adding activities, and especially from agriculture towards manufacturing and services. Our review

concerns the effects of foreign direct investment (both inward and outward) by multinational firms: the literature surveyed refers to this process using a number of terms including “FDI”, “multinational enterprises”, “multinational corporations”, “transnational corporations” or simply “the presence of foreign firms”. Accordingly, we will use these terms interchangeably.

In order to do so, we undertook a search of all academic journal papers published in the Web of Science (WoS) during the period 2000 to 2020 using two groups of keywords. One group of keywords reflects different names describing MNEs. These include multinational enterprises, MNEs, multinational corporations, transnational corporations, foreign direct investment or FDI. Another group of keywords captures various aspects of structural change. These include ‘structural change’, ‘industrialisation’, ‘manufacturing growth’, ‘manufacturing productivity’, ‘services’, ‘diversification’, and ‘industry upgrading’.

We selected sources which contained at least one key phrase referring to MNEs, and at least one key phrase referring to structural transformation. Our search string returned 1539 papers, from which 71 relevant papers were selected based on title and abstract. Of those papers selected, 66 were included in the final review after having been read and analysed. We then added a further 79 papers by including works on emerging topics related to structural change, and works included to provide the reader with a grounding in the relevant theoretical and economic context of the review; and by oversampling papers which appeared in International Business Review. For the precise search string used, and the inclusion and exclusion criteria for our sources, please consult the appendix.

3. Effects of MNEs on Structural Transformation

As Figure 1 summarises, inward FDI may influence structural transformation in host countries through several mechanisms: in particular knowledge transfer and local technological and innovation capabilities upgrading; productivity growth, export competitiveness and sophistication; participation in global value chains; industrial diversification; and service sector growth.

<Insert Figure 1 here>

3.1 Knowledge Transfer and Local Technological Capabilities Upgrading (A-B)

Inward FDI can produce substantial gains for the host country via development financing; job creation; knowledge transfer (demonstration effects), movement of trained labour and competition effects, whereby the presence of MNEs incentivises local firms to enhance their competitiveness (Porter and Van der Linde, 1995; Javorcik, 2008; Fu, Buckley, and Fu, 2020). On the other hand, FDI may also have negative effects on the host economy, for example crowding-out effects (Taylor and Driffield, 2005; Fu, 2004).

Knowledge creation is acknowledged as the key driver of productivity growth, the leap from incremental to radical change (disruptive innovation), resulting in structural transformation (Fernandes and Paunov, 2012; Wang et al., 2014). In least developed countries, MNEs help host countries to stock up the knowledge and skill pool (Noor, Clarke and Driffield, 2002; Kemeny, 2010; Fu, et al., 2018), which may eventually catalyse structural transformation (Bwalya, 2006). Yet, evidence of the effect of MNEs on knowledge transfer and local capabilities upgrading was mixed due to limited linkages between MNEs and local firms (Fu et al., 2014; Fu, 2020). The inappropriateness of foreign technology tends to cause the innovation spillovers of IFDI to be insignificant or negative (Fu, Pietrobelli and Soete, 2011; Fu and Gong, 2011; Baranwal, 2018).

3.2 Productivity, Export Competitiveness and Export Growth (C-D)

A large number of studies found that the presence of MNCs contributed to TFP growth via spillovers from both horizontal and vertical linkages with MNCs (Ramirez 2006; Suyanto, Salim and Bloch; 2009; Fernandes and Paunov, 2012; Anwar and Nguyen, 2014) across various levels of aggregation (Liu and Wang, 2003; Peluffo, 2015; Herzer, 2013, 2017; Mühlen and Escobar, 2019;). These impacts manifested by raising the industrial competitiveness of manufacturing, by contributing to labour-movement into productive manufacturing and services or simply due to the higher productivity of foreign firms (Fan and Hu, 2007; Lin, Lee and Yang, 2011; Fan, Hu and Kwan, 2019). Yet, the productivity effect of IFDI may vary between countries, conditional on the

types of links formed with local industry (Liu, 2002; Chudnovsky et al., 2008; Managi and Bwalya, 2010). Productivity gains from forwards linkages with MNEs may occur only when supplying to firms with a much higher level of productivity (Lenearts and Merlevede, 2012;).

Others identified a negative impact of MNCs' presence on TFP growth, often due to competition effects, and that these tended to outweigh any gains in allocative efficiency (Bwalya, 2006; Lo, Hong and Li, 2016; Hong, Sun and Huang, 2016). Therefore, to leverage the aggregate productivity of IFDI, it is worth identifying the nature of productivity growth which arises from the presence of MNEs: the exit of unproductive domestic firms due to competitive pressure, the entry of productive foreign firms, and the rightwards shift of the productivity distribution, especially due to knowledge spillovers between MNEs and local suppliers (Javorcik, 2015).

3.3 Export Sophistication and Diversification (F)

Information and knowledge spillovers from the presence of foreign investors positively affected export competitiveness (Melitz, 2003; López, 2005; Anwar and Nguyen, 2011; Fu, 2011) and promoted export sophistication in developing countries (Fu and Zhu, 2013). Again, such spillovers are conditional on country context and the types of links with local industries (Xu and Lu, 2009). IFDI drove export sophistication growth via forwards linkages, but purely processing and assembling the sophisticated intermediate goods provided by MNCs had few implications for capabilities upgrading (Xu and Lu, 2009; Fu and Zhu, 2013; Padilla-Pérez, 2008). The presence of foreign firms may also adversely affect diversification due to over-control and exploitation, especially when MNEs take advantage of specific host-country factor endowments to produce a single class of goods, and this may increase vulnerability to price fluctuations, especially in small open economies.

3.4 Participating and Upshifting in Global Value Chains

The integration of developing country firms into global value chains (GVCs) via IFDI offers the potential for knowledge and technology transfer, employment creation, demand generation and skills development (Jones et al., 2005; UNECA, 2015).

Nonetheless, meaningful participation in the production process by host country firms is not automatic. When domestic firms become integrated into value chains via unskilled or semi-skilled labour-intensive processing or assembling activities, this integration has few implications for capabilities upgrading and little indigenous knowledge is embodied in the output (Xu and Lu, 2009; Fu, 2011; Padilla-Pérez, 2008). Especially when domestic supply chains are weak, FIEs may import inputs and export sophisticated outputs, forgoing both backwards and forwards linkages with domestic firms (Fu, 2011; Bräutigam, et al., 2013). Such cheap-labour-based GVC exports may actually reduce the export propensity of domestic firms in developing countries (Fu, 2011). In this way, such GVC-driven industrialisation is fast but less meaningful (Baldwin, 2014). In the long run therefore, only indigenous innovation and value chain participation supported by a domestic innovation system will constitute the deep drivers of upgrading (Fu, 2011; Pietrobelli and Rabellotti, 2011).

Value chain governance can fundamentally determine the effect of GVC integration on upgrading (Baldwin, 2014; UNCTAD, 2015). GVCs following a quasi-hierarchical structure create lock-in, whereby developing country firms must supply to a small number of global buyers but are confined to the lowest value-adding activities (Humphrey and Schmitz, 2002). Such structures may allow for fast production upgrading to meet leading firms' standards, but limit opportunities to transition into higher value adding activities via functional upgrading.

3.5. Negative Effects of IFDI on Structural Change in Host Countries

Resource-seeking IFDI may have few links with the host economy and negatively influence industrialisation efforts, and host countries practicing locational deregulatory competition by granting concessions to MNEs risk forgoing or reversing any potential benefits of IFDI (Suyanto, Salim and Bloch, 2009; Bwalya, 2006; López, 2005). The presence of MNEs may also slow or reduce knowledge diffusion by attracting and retaining skilled labour from elsewhere in the economy (Fu, Pietrobelli and Soete, 2011; Fu and Gond, 2011; Thompson, 2002; Fatima, 2015).

However, the detriments of receiving IFDI largely centred around domestic crowding-out effects (Fu, 2004; Jordaan, 2008), including harming domestic productivity

(Suyanto, Salim and Bloch, 2012; Bwalya, 2006; Javorcik, 2015; Lo et al., 2016; Hong, Sun and Huang, 2016), resulting in negative horizontal and intra-industry effects (Bwalya, 2006; Ramirez, 2006; Liuet al., 2009; Wooster and Diebel, 2010; Xu and Sheng, 2012; Thang, Pham and Barnes, 2016; Fatima, 2015). Such productivity losses may be worsened by strong existing market institutions, as firms in regions with such institutions are already exposed to a competitive environment with strong productivity incentives and thus gain little from exposure to competition with MNEs (Hong, Sun and Huang, 2016).

4. The Effect of Outward Foreign Direct Investment by Developing Country Firms

To sustain long-term economic development and achieve the transition from resource-intensive to knowledge-based growth, developing countries, especially emerging economies (EEs), have actively undertaken OFDI to access key strategic assets, resources, and leading-edge technologies (Khanna and Palepu, 1997; Liu and Buck, 2009; Luo and Tung, 2007; Ramamurti and Singh, 2009). MNEs from emerging economies (EEs) possess unconventional properties (Rugman and Li, 2007), and the extant literature has also extended the OLI model (Dunning and Lundan, 2008) to cover their intangible-seeking motives in developed countries (Hennart, 2012). Figure 2 summarises the mechanisms by which OFDI affects structural transformation in originating countries.

<Insert Figure 2 here>

4.1 International Knowledge Acquisition and Reverse Knowledge Flow via OFDI

Stemming from the organisational learning perspective, MNEs from EEs use OFDI as a means of international knowledge acquisition (Gao et al., 2008), as well as a channel to accommodate reverse knowledge transfer (Mathews, 2006; Luo and Tung, 2007). Conducting overseas investments allows latecomer MNEs to expand into new markets, as well as to exploit learning potential, to become exposed to diverse knowledge environments and to enhance their home country knowledge stock (Meyer et al., 2009; Ghauri and Park, 2012). Especially for the strategic asset-seeking OFDI (Rugman and Li, 2007; Edamura et al., 2014; Li et al., 2016), knowledge accumulation and

innovation capability building through the internationalisation process is expected to upgrade home country's position in the global value chain and to accelerate structural transformation (Gammeltoft et al., 2010; Fu, 2012; Li et al., 2016; Fu, Buckley and Fu, 2020).

OFDI is regarded as an effective knowledge source that can be reversely transferred back to their home country and overcome the limited domestic technological pool (Child and Rodriguez, 2005; Liu et al., 2005; Liu and Buck, 2009, Hsu and Chen, 2009). Integrating into the host country business environment also allows the emerging MNEs, particularly China, to directly exploit and absorb the locally developed managerial competences and invaluable skills that are otherwise not available in their home markets (Ghauri and Park, 2012).

4.2 The Productivity Impact of OFDI

OFDI was found to be associated with productivity in developing countries, eg. China (Cozza et al., 2013; Li et al., 2017) and Sub-Saharan countries (Foster-McGregor, et al., 2014). Efficiency-seeking OFDI achieves productivity growth via vertical and horizontal expansion internationally (Guillén and García-Canal, 2009; 2013), whereas strategic asset-seeking OFDI essentially aims to increase productivity through one of the key drivers of growth: innovation (Fu et al., 2011; Cozza et al., 2013; Fu et al., 2018). Meanwhile, undertaking OFDI benefits productivity by promoting exports, as OFDI and exporting were highly interrelated and mutually reinforcing (Chen and Tang, 2016; Fu et al., 2018; Krammer et al., 2018). Exporting experience enriches EEs' understanding of foreign markets and global business which are essential to the success of OFDI, whereas OFDI facilitates reverse knowledge and information flow, supporting export upgrading in the home country.

Conducting OFDI also promotes productivity growth via enhancing innovation capabilities (Cozza et al., 2013; Guillén and García-Canal, 2013; Fu et al., 2018) due to higher quality standards in overseas markets and fierce host country competition (Dunning, 2000; Dunnig and Lundan, 2008; Krammer et al., 2018). Physical presence in foreign markets not only offers MNEs the opportunities to learn codified knowledge, but also allows them to obtain tacit know-how by spatial proximity and mobility of

skilled workers (Narula and Santangelo, 2009), which eventually facilitates innovation (Li et al., 2017; Fu et al., 2018).

5. Service Sector Growth

5.1 Services FDI

For service firms, internationalization not only offers business opportunities in new geographic markets but also holds challenges in the global marketplace. Given the unique nature of the sector, existing understanding of the internationalization of service firms and the impact that this has on structural transformation in developing countries is far from clear (Nordin and Agndal, 2008). Within the umbrella of structural transformation, few studies addressed explicitly the role of MNEs in promoting the expansion and upgrading of the service sector.

Similar to the impact of IFDI on the manufacturing sector, the literature suggested a mutually reinforcing relationship between IFDI and human capital, which is crucial to productivity and service sector growth (Patibandla and Petersen, 2002). The strength of such synergy is moderated by the proximity to technological frontier and backwards linkages with local institutions and firms (Thang, Pham and Barnes, 2016). On the other hand, it is found that the productivity benefits from IFDI in the service sector are not as economically or statistically significant as those into manufacturing (Patibandla and Petersen, 2002). Again, the impact and strength of service FDI on productivity and structural transformation are subject to the characteristics of FDI and host country conditions. In the absence of compatibility between services MNEs and host country industrial structure, the productivity impact of FDI may be become neutral or even negative Liu (2002).

It is worth noting that the inter-industry spillovers of services FDI shall be strong as the inward FDI into downstream production can effectively raise the productivity and quality of downstream indigenous manufacturers (Fernandes and Paunov, 2012). Service IFDI played a role in stimulating the TFP of domestic manufacturers via the spillovers which occur in the value chain, in particular upstream service MNEs tended to foster productivity spillovers among downstream manufacturers (Fatima, 2015). Turning to OFDI, services OFDI firms were more productive than firms catering to the

domestic market in the context of least developed economies, for example in Sub-Saharan Africa (Foster-McGregor et al., 2014).

5.2 Digital MNEs and Digital Adoption of MNEs

The undergoing fourth industrial revolution is imperceptibly restructuring global value chains (GVC) and altering the internationalisation strategies of MNEs. The emergence of digital MNEs and fast digitalisation promoted by traditional FDI have accelerated the digital transformation of developing countries (Bolwijn et al., 2018; Eden 2018). Structural changes are likely to occur when digitalization of supply chains increasingly intensifies across all sectors of the host country.

The global expansion of top 100 digital multinationals (e.g. Aphabet, Facebook, Amazon) has occurred at an unprecedented scale and speed (UNCTAD, 2017). The impact of digital MNEs on the structural change of host countries tends to occur via promoting productivity gains or accelerating digital development (Gotz, 2020). Digital MNEs indirectly promote host countries' efficiency and competitiveness across manufacturing and non-manufacturing sectors. Productivity effects can also be created by the mobility of talent and skilled workers along with the global footprint of digital MNEs. To achieve structural transformation, host country governments are incentivised to attract the most valuable digital leaders, develop their own homegrown digit MNEs or integrate into digitally networked ecosystems (Alcacer et al., 2016; Coviello et al., 2017; Banalieva and Dhanaraj 2019).

The adoption of digital technology by MNEs and global value chains is expected to have a profound impact on international business and international production, including servitization, disintermediation, flexible, and distributed productions (WIR UNCTAD 2017). Digitalisation directs MNEs to invest more on intangibles and services, and accordingly incentivises host countries to upgrade domestic digital capabilities and technological infrastructure (Hannibal and Knight, 2018). Technologies brought by the fourth industrial revolution may also empower MNEs to include many small geographically scattered networks' or chains' members in their value chain (Hannibal and Knight 2018; Szalavetz 2019). Nevertheless, the mechanisms by which digital MNEs transform economic structure and contribute to development in the context of

developing countries remain under-researched and little is known about the consequences from the policy perspective, in particular for prospective host countries (Gotz, 2020).

6. Conditions for MNEs to Effectively Promote Structural Change

Evidently, structural transformation through inward and outward FDI does not accrue automatically and requires MNEs to exert continuous effort to utilise domestic and host-country resources (Dunning, 2000; Fagerberg, 2005; Dunning and Lundan, 2008), as well as to build up compatible absorptive capacity to facilitate knowledge transfer (Cohen and Levinthal, 1989; Fu et al., 2010).

6.1 Characteristics of FDI

Industry knowledge intensity, linkage intensity and country of origin are important characteristics that affect the strength of knowledge transfer and local capability building (Javorcik, 2015; Fu et al., 2011). Knowledge-intensive sectors naturally offer greater potential for technology transfer via domestic R&D activities and vertical linkages than other sectors, e.g., low-technology or labour-intensive sectors. The entry of knowledge-intensive MNEs expands and restructures the domestic knowledge pool, which serves as a driving force for structural transformation (Narula, 1996; Fu, 2012). Meanwhile, sectors that have extensive linkages to suppliers, especially local suppliers, are more likely to stimulate knowledge transfer and host country productivity growth (Patibandla and Petersen, 2002). Domestic firms have to enter into the MNEs' networks and interact with knowledge carriers to upgrade technological capabilities. In addition, FDI from countries that have more innovation leaders offers cutting-edge technologies to domestic learners, especially those with adequate absorptive capacities (Fu, 2011).

Participation in GVCs does not automatically guarantee structural upgrading in the long-term. The extant literature (Bwalya, 2006; Ramirez, 2006; Liu et al., 2009; Wooster and Diebel, 2010; Xu and Sheng, 2012; Fatima, 2015) suggests that inward FDI generated negative intra-industry spillovers (typically via crowding-out or competition effects), but positive inter-industry effects (typically via supplier

relationships or demonstration effects) (Porter and Van der Linde, 1995). The externalities generated from these linkages also vary across different sectors (Jordaan,2008) and the technology spillover effects are moderated by indigenous innovation, productivity and economies of scale (Fu, 2011). Meanwhile, the mode of value chain governance also matters in determining the potential for developing country firms to upgrade their production (Humphrey and Schmitz, 2002) as this mode can lock developing country firms into the lowest value-adding tasks (Baldwin, 2014; UNCTAD, 2015). With a strategic plan, compatible capacity and public support, domestic firms can break this pattern and achieve functional upgrading (Humphrey and Schmitz, 2002).

6.2 Characteristics of Host Countries

Policy and institution

The absence of technology transfer requirements (Zanello et al., 2015; Osabutey and Jackson, 2019) or deregulatory locational competition in the form of granting concessions to MNEs is unlikely to benefit the host country (Suyanto, Salim and Bloch, 2009; Bwalya, 2006; López, 2005). To facilitate structural transformation, host government policies should encourage inward IFDI to serve economic and development objectives, emphasising a strong investment promotion strategy[3] and local capacity building (Kohpaiboon, 2006; Javorcik, 2015; Ghauri, Fu and Väätänen, 2017). Similarly, institutions allowed for the low-cost formation of complex contracts, and protected intellectual property rights (IPR), facilitated spillovers of competitiveness, industrial growth and human capital accumulation (Feinberg and Majumdar, 2001; Gui-Digby and Renard, 2015). In addition, education, communications infrastructure, trust and market institutions aided the technological upgrading spillovers of IFDI by allowing host countries to master new technologies more easily and to produce export goods using them (Kemeny, 2010).

Indigenous innovation and Absorptive Capacity

[3] for example, matching suppliers and partners, providing information and publicity, providing assistance with bureaucratic processes, facilitating communication or conducting feasibility studies for potential investors

Learning from IFDI does not occur automatically, and depends fundamentally on the presence of indigenous innovative effort (Fu, Pietrobelli and Soete, 2011). Domestic R&D plays a dual role of being both innovation input and firms' absorptive capacity (Cassiman and Veugelers, 2006; Hou and Mohnen, 2013). Transferring and disseminating foreign technologies to local firms requires adequate local learning capabilities (Liu and Wang, 2003; Padilla-Pérez, 2008; Fu, et al., 2019). The potential complementarities between indigenous innovation and foreign knowledge also accelerates FDI spillovers (Li et al., 2016; Ubeda, 2016; Suyanto et al., 2009). Most existing studies proxied absorptive capacity using human capital (Patibandla and Petersen, 2002; Chamarbagwala et al., 2000), technological capacity (Chudnovsky, et al., 2008; Li et al., 2017), or R&D (Liang, 2017; Endigaw et al., 2020). Human capital and technological capabilities were found to have a mutually reinforcing relationship with IFDI and to improve industrial competitiveness (Suyanto et al., 2009; Zhang, 2013).

Domestic Industrial Structure

The competitiveness of the domestic market can play a role in the realisation of FDI spillovers as higher competition increases the intra-industry productivity spillovers of IFDI (Suyanto, Salim and Bloch, 2009). Under a competitive and highly specialised industry structure, firms are likely to be locked-in to the domestic niche knowledge and are therefore unreceptive to unfamiliar foreign knowledge. By contrast, a diversified industrial structure enhances receptiveness to foreign knowledge introduced by MNEs because a broad industrial base expands the number of possible linkages (Wang et al., 2014). Finally, there is a positive role of clustering and economies of scale in determining IFDI spillovers. Geographical clustering of foreign firms increased export spillovers (Anwar and Nguyen, 2011) and facilitated technology spillovers (Bwalya, 2006). The clustering of MNEs also tended increased spillovers in regions with greater network effects and supply chain interactions (Ouyang and Fu, 2012), but lowered them in other regions due to more intense negative competition effects (Jordaan, 2008; Thang et al., 2016).

6.3 Host Country and MNE Compatibilities

In addition to the characteristics of inward FDI and of host countries, the gap-filling compatibilities between FDI and host economies also determine the growth impact of FDI on the host (Fu et al., 2020). Although OFDI from China bears weaker ownership advantages in comparison to traditional FDI from the industrialised countries, its motivation, its location decision and the strong state supportiveness enjoyed by some OFDI firms have meant that Chinese OFDI still has a relative ownership advantage in the low-income countries and in particular, it offers gap-filling compatibilities between Chinese OFDI and that of the host countries (Fu et al., 2020).

In addition to the bottleneck breaking compatibility between FDI and recipient countries, there are a few specific factors being discussed in the literature that affect the compatibilities. These include technology appropriateness, the technological gap, and cultural proximity. Technologies created in developed countries are biased towards capital and skilled labour, which is not appropriate for the developing countries which are abundant in unskilled labour and nature resources (Acemoglu, 2002). Technologies to be transferred should be analysed with consideration of the host country's economic, geotechnical and social conditions (Fu et al., 2011; Fu et al., 2020). FDI from emerging middle-income countries may be more appropriate and easier adopt in low-income countries (Fu et al., 2011). The role of appropriate technology is also reflected in the impact of the technology gap between receivers and transferers on the strength of technology spillovers (Kokko, 1992; Greenaway and Milner, 1990). The existence of a greater technological gap increased the speed of local firms' catchup with MNEs (Wang et al., 2014; Patibandla and Petersen, 2002) and promoted productivity spillovers (Suyanto, Bloch and Salim, 2012), while closing the technology gap would leave limited room for technological spillovers (Fu, et al., 2011; Lin et al., 2011). Girma and Gorg (2007) argue that the efficiency gap matters for productivity spillover benefits and that the relationship follows an inverted-U shape.

Another important dimension of host-investor compatibility is cultural proximity, which was found to influence the depth of linkages formed with local firms, and therefore the speed and extent of knowledge transfer. Both technological and non-technological knowledge (e.g. managerial knowledge) transfers from MNEs are affected by the level of cultural and linguistic barriers (Auffray and Fu, 2015). Cultural proximity can effectively mitigate cultural obstacles, and compensate for the inefficiencies brought

by skill mismatch. Domestic firms which were owned by international experienced diaspora are also likely to survive and upgrade production by leveraging the spillovers of FDI (Morris and Staritz, 2014).

6.4 Conditions for Emerging Economy OFDI to Promote Structural Change

Like IFDI, cross-border knowledge acquisition through OFDI is not automatic (Kafouros et al., 2012). However, the conditions for the effective contribution of OFDI to structural change differ from those of IFDI. More evidence is needed to help us understand the conditions under which OFDI can complement host country characteristics and act as an effective channel to catalyse structural change (Chen and Tang, 2016; Fu et al., 2018).

Ownership

The growing trend of OFDI by SOEs has attracted great attention and debate in the current literature (Cuervo-Cazurra et al., 2014; Ramasamy et al., 2014), particularly with China occupying a leading position in the sphere of global OFDI (Deng, 2007) and with concerns surrounding green investments (Eskeland and Harrison, 2003; Spatareanu, 2007). SOEs face more barriers to entering foreign markets (Cui and Jiang, 2009, 2012), and stated-owned OFDI firms are believed to exhibit different a identity as they benefit largely from public resources and special government loans (Buckley et al., 2007; Luo et al., 2010). Their direct impact on home country growth and structural transformation is limited as they target economics performance indicators less than their privately-owned counterparts (Ramasamy et al., 2012; Lehmann and Lehmann, 2017; Li et al., 2017). Indirectly, OFDI by SOEs may help least-developed regions to overcome infrastructure bottlenecks obstructing structural transformation (Yepes et al., 2007; Liu and Aqsa, 2020).

Investment Motives

The extent of knowledge acquisition through OFDI will be significantly higher for MNEs with motives such as efficiency-seeking and strategic-asset seeking FDI. By integrating their activities in host countries into investing firms' global value chains, efficiency-seeking OFDI tends to enhance operational efficiency and increase global competitiveness (Luo et al., 2019). During this process, opportunities are open to host

country firms to participate in global production chains, which are crucial to industrial upgrading and structural transformation. Aiming to acquire foreign advanced know-how, strategic asset-seeking OFDI by EE firms upgrades innovation capability and productivity in the home country via reverse knowledge transfer (Chen and Tang, 2016; Fu et al., 2018).

Technological Capabilities

The technological and learning capabilities of firms engaging in OFDI are naturally crucial to cross-border knowledge acquisition (Pavitt, 2005; Kafouros et al., 2012; Muehlfeld et al., 2012; Kafouros et al., 2012). Prior international experience, either through OFDI or through exporting, is a key determinant of this learning capacity (Dunning, 2000). Such experience can facilitate learning by helping to understand the tacit knowledge embedded in foreign technology, improving firms' understanding of foreign markets, creating relationships and broadening networks, and enhancing the depth of the firm's embeddedness in those networks, all of which reduce the uncertainty and information asymmetry which can hinder entry into a foreign market (Wagner, 2007; Ito and Wakasugi, 2007; Fu et al., 2018).

The Technology Gap

As in to our earlier discussion of the impact of the technology gap on the strength of knowledge spillovers, the technology gap is also relevant to OFDI (reverse knowledge transfer) as acquiring foreign technology abroad emerges as a dynamic and risky process. Although one of the central motives of developing country firms conducting OFDI is strategic asset-seeking, an excessive technology gap may make foreign technology prohibitively unfamiliar or expensive to put to use in the originating country market (Fu et al., 2018). By this token, a narrower technological gap may increase the ease with which developing country firms conducting OFDI can adapt, imitate or use foreign technology.

7. Concluding Remarks

7.1 Conclusions

This paper analysed more than 100 journal articles published between 2000 and 2020 concerning the relationship between MNEs and structural transformation in developing countries. We found that both inward and outward foreign direct investment by multinationals had strong potential implications for structural change, in the form of knowledge and technology diffusion, productivity and export growth, export sophistication and diversification, and service sector growth. Nevertheless, ensuring positive spillovers from the presence of IFDI and OFDI was found to be highly conditional on (1) the characteristics of FDI; (2) the characteristics of the host country; and (3) the compatibilities between MNEs and host countries.

There was consistent evidence in support of several further trends, robust to various specifications as well as to geographical and temporal context. (1) The absorptive capacity of the host country, industry, region or firm is crucial to ensuring spillovers from the presence of multinationals. (2) Horizontal and intra-industry spillovers of inward FDI are a two-edged sword, with limited positive spillovers through demonstration effects and labour movement but negative crowding-out effects. However, positive inter-industry and vertical spillovers via supply chain relationships are significant and robust. Often, upstream IFDI into services was found to improve the productivity of downstream domestic manufacturers. However, processing and assembly activities by MNEs involve little embodied domestic knowledge and facilitate limited capability building and knowledge transfer. This type of GVC-based MNE-led activity may lead to easy and quick but shallow industrialisation and structural change in host developing countries. (3) Deregulatory locational competition intended to attract IFDI is unlikely to promote long-term structural transformation in the host country. (4) The spillovers of inward FDI are not automatic, and will often occur only in the presence of active innovation and technology efforts from domestic firms in the host country. (5) Finally, a number of synergies exist between outward FDI and exporting.

7.2 Policy and Managerial Implications

A notable implication of our findings is that they challenge the idea that developing countries' integration into the global economy via IFDI liberalisation provides an automatic pathway to structural change. Regardless of a country's openness to foreign

investment, structural transformation is a process which requires deliberate and appropriate policy programmes, and stripping host governments of their ability to achieve this in order to attract inward direct investment is not conducive to long-term prosperity. Developing host countries must exercise their agency vis-à-vis MNEs, regulating their activities to promote synergy with domestic development objectives and coordinating them into industrial policy plans. With the advantage of presenting a cohesive industrial strategy, self-interested MNEs can be leveraged as a tool for structural transformation. Regarding the transfer of organisational and managerial capital, management localisation strategies present a strong way of ensuring such outcomes.

The findings of our investigation also highlight the need for cross-border or multilateral agreements among developing countries to limit locational deregulatory competition to attract IFDI. We have seen that such extreme deregulation pushes host countries to the point of indifference, allowing MNEs to appropriate any surplus, operating with limited accountability and without contributing to development outcomes in host countries. Meanwhile, host countries should nonetheless give great consideration to which *type* of IFDI to encourage, taking into account the technology gap between host-country and investing firms, as well as multidimensional cross-country investment compatibility.

In the long run, both home and host governments should promote indigenous innovation and R&D efforts in tandem with encouraging the transmission of foreign knowledge, aiming to maximise the benefit of FDI and any synergies between the two. Absorptive capacity should also be promoted vigorously before home (host) countries consider implementing programmes to encourage OFDI (IFDI). This extends to human capital stock, technological and managerial capacity, R&D, financial development and a range of other metrics, not only at the firm level but also at the industry, regional and national level.

7.3 Limitations and Areas for Future Research

While there exists insightful evidence from surveyed literature suggesting a significant role of the MNEs in structural change in emerging and developing countries, there are

good reasons to be cautious about the causality of these relationships. Caution shall be drawn in our conclusions. Moreover, given the sometimes jarring disconnect between the intra-industry and inter-industry effects of inward FDI, host countries are presented with the dilemma of endeavouring to capture the benefits of vertical integration without suffering from negative competition effects. Can an active industrial policy programme and support for domestic firms allow host-country firms to weather initial competition pressures and ultimately gain from the long-term benefits of value chain integration? And how would this issue manifest itself in countries with a low state capacity (both administrative and fiscal), especially in Sub-Saharan Africa?

Given the clear importance of absorptive capacity in harnessing the benefits of both inward and outward FDI, more work needs to be done on how best to measure absorptive capacity. Does technological capacity, R&D intensity, the abundance of human capital, or some composite or alternative measure best explain the capacity of developing countries to absorb the productivity, technological and managerial benefits of MNEs? Should absorptive capacity be measured differently at the firm, industry, regional and national level? Does using different measures of absorptive capacity yield different policy implications? Finally, more research on how best to promote and improve absorptive capacity will lay the groundwork for firm-level and macro policies which promote the capture of benefits from FDI.

A crucial area for future research will be to determine the extent to which the observed benefits of FDI for TFP growth and export sophistication reflect a genuine increase in the value added and productivity of domestic firms. Firstly, if the presence of MNEs improves host-country TFP, is this the result of the exit of unproductive domestic firms due to competition pressures, and the entrance of productive foreign firms? Or, does it reflect a rightwards shift of the entire productivity distribution as a result of domestic firms learning from MNEs? If the observed productivity growth is indeed the result of the introduction or more productive foreign firms, can this nonetheless provide benefits for domestic producers? Or will it simply crowd-out indigenous firms, reducing the space for native market leaders?

Similarly, when an improvement in export sophistication is observed as the result of the presence of MNEs, we must investigate in greater depth the extent to which this

truly reflects a gain in local value added, or an increase in the amount of indigenous skill and knowledge embodied in exports. Does this ostensible improvement merely reflect a form of processing trade with few linkages to the domestic economy, either because local firms are processing the sophisticated inputs of MNEs, or because MNEs operating in the host country are importing inputs, processing them in-house and subsequently exporting them? If that is the case, can host country firms still derive benefit?

Further, developing countries are not only recipients of FDI, but are increasingly originators, creating global titans such as Tata Steel, Huawei Technologies and Ethiopian Airlines. Although a growing field examines the particular impact of Chinese FDI on recipient countries, more research must be done on the nature and role of growing South-South FDI, and specifically on the impact of outward direct investment on structural upgrading in the *originating* country.

Note also that the scope of this paper was restricted to topics directly relevant to structural transformation. The effect of FDI on human development outcomes, including its relationship to gender and health, may in some cases outweigh or even enhance its effect on structural change, and such topics have been covered extensively in the literature. Future research shall also examine the negative environmental effects of international investment and how MNEs can contribute to a sustainable structural transformation in developing countries - the pertinence of that topic will only grow in coming years.

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