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Exploring the relationship between upgrading and capturing profits from GVC participation for disadvantaged suppliers in developing countries

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Abstract
The existing literature on global value chains (GVCs) suggests that functional upgrading is a key determinant of whether suppliers are able to capture higher profits in GVCs. However, it is unclear whether the same argument holds for disadvantaged suppliers who face high barriers to achieving functional upgrading. Through a review of existing empirical studies, the present paper aims to explore how disadvantaged suppliers in developing countries increase their profits in the face of barriers to functional upgrading. The findings from the literature analysis suggest that the ability of disadvantaged suppliers to benefit from GVC participation depends on the extent of their managerial agency and their ability to leverage multiple upgrading/downgrading trajectories (whether product, process, or functional) and transform them into profitable outcomes. Copyright © 2017 ASAC. Published by John Wiley & Sons, Ltd.

Keywords: upgrading, functional upgrading, position, global value chains, profit margins

Résumé
Pour les auteurs des travaux existants sur les chaînes de valeur mondiales (GVC), c'est la modernisation fonctionnelle qui détermine si les fournisseurs sont en mesure de réaliser des profits importants dans le cadre des GVC. Mais ces auteurs n'indiquent pas si ce postulat s'applique également aux fournisseurs défavorisés qui, pour réaliser leur modernisation fonctionnelle, doivent faire face à des obstacles majeurs. Dans le présent article, nous explorons, grâce à une revue des travaux empiriques existants, la manière dont les fournisseurs défavorisés des pays en voie de développement augmentent leurs profits en dépit des obstacles qui entravent leur modernisation fonctionnelle. Nos résultats révèlent que la capacité des fournisseurs défavorisés à tirer profit de leur participation aux GVC dépend de la taille de leur organisme managérial et de leur aptitude à transformer les multiples mouvements de modernisation/dégradation (des produits, des processus ou des fonctions) en revenus. Copyright © 2017 ASAC. Published by John Wiley & Sons, Ltd.

Mots-clés: modernisation, modernisation fonctionnelle, position, chaînes de valeur mondiales, marges de profit

Participation in global value chains (GVCs) is considered an effective way for developing country suppliers to access global markets and improve their prospects of earning profits (Gereffi, 1999; Humphrey & Schmitz, 2002). However, high competitive pressures may erode the potential benefits of GVC participation. As a consequence, profit-yielding activities tend to lie outside of the production function (Kaplinsky, 2000; Mudambi, 2013). Therefore, the ability to capture more value may depend on the suppliers' ability to engage in functional upgrading (cf. Shin, Kraemer, & Dedrick, 2012). This type of upgrading is defined as a

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shift away from low-value-added functions such as assembly and production towards higher-value-added functions such as design and branding (Gereffi, 1999; Mudambi, 2008; Pietrobelli & Rabellotti, 2006). Functional upgrading can thus be expected to be a key driver of developing country suppliers' ability to capture higher profits in GVCs (Barnes & Kaplinsky, 2000; Kumaraswamy, Mudambi, Saranga, & Tripathy, 2012; Shin et al., 2012).

The assumption underlying the above argument is that firms possessing unique and/or sophisticated resources and capabilities will be able to negotiate more central positions in value chains and thus improve their financial performance (Gereffi, Humphrey, & Sturgeon, 2005). However, if this assumption is accepted, the question that arises is how developing country suppliers, which often face high barriers to functional upgrading (cf. Buckley, 2009; Buckley & Strange, 2015), can overcome these barriers and improve their profitability in GVCs. Furthermore, in addition to highlighting the general challenges faced by developing country suppliers in the course of their GVC participation, it is important to take into account differences between groups of suppliers within and across developing countries.

For example, suppliers operating in precarious institutional environments such as those of Pakistan or Bangladesh generally find it more difficult to develop capabilities in high-value-added functions than do suppliers operating in more stable economies such as those of Taiwan or China (Hoque, Sinkovics, & Sinkovics, 2016; Khan, Lew, & Sinkovics, 2015; Yeung, 2007). However, even under generally challenging conditions some suppliers may be able to respond to and bypass barriers more effectively due to their existing greater firm-specific resources, larger size, significant industry position (Bair & Gereffi, 2003; Dolan & Humphrey, 2000, 2004; Pickles, Smith, Bucek, Roukova, & Begg, 2006), and/or the more beneficial nature and extent of government support they receive (Xue & Chan, 2013). In this paper, the term "privileged" is applied to developing country suppliers who fit the previous description. On the other hand, we use the term "disadvantaged" in conjunction with suppliers if they face significant barriers within a GVC due to their small size, poorer industry position, poorer GVC position, less supportive home country context, and/or suffer from high competitive pressures from foreign-owned suppliers.

To this end, the current paper seeks to review the extant literature to explore whether—and if so, then how—disadvantaged suppliers in developing countries can capture benefits from GVC participation. While we also make some comparisons to privileged suppliers, the main focus of this paper is on their disadvantaged counterparts. A review of 44 empirical studies on supplier upgrading across the GVC, relational economic geography (REG), and international business (IB) literatures (see Table 1) provides three key findings. Firstly, functional upgrading is more likely to occur in the case of more privileged suppliers than disadvantaged suppliers (e.g. Bair & Gereffi, 2003; Dolan & Humphrey, 2004; Dolan & Tewari, 2001). Secondly, the majority of disadvantaged suppliers in GVCs have rarely been able to achieve functional upgrading. Thirdly, there is an emerging body of empirical literature indicating that disadvantaged suppliers can improve their profit margins without necessarily engaging in functional upgrading in GVCs (see Table 2).

The rest of the paper consists of three sections. The next section discusses theoretical approaches and propositions related to upgrading drawn from the GVC, IB, and REG literatures. The subsequent section discusses the selection criteria for the empirical articles reviewed in this paper, followed by an exploration of the relationship between developing country suppliers' upgrading (or lack thereof) and their profit margins with a special focus on disadvantaged suppliers. The paper concludes with a discussion on the theoretical implications of the findings for IB research.

A General Review of the Concept of Upgrading in Three Bodies of Literature

Here we briefly review how the concept of upgrading has been applied in the GVC, IB, and REG literatures. Such a review is necessary for two reasons. Firstly, while the notion of upgrading is widely used across all three bodies of literature, the concept itself and its applications are often rather fuzzy (cf. Morrison, Pietrobelli, & Rabellotti, 2008). Secondly, each research stream makes specific assumptions about upgrading and its impact on suppliers' profit margins in GVCs. This is arguably a consequence of prevalent ambiguities in the conceptualization of the idea.

Global Value Chain Literature

Gereffi and Fernandez-Stark (2011 p. 4) defined value chains as a "full range of activities that firms and workers perform to bring a product from its conception to end use and beyond. In the context of globalization, the activities that constitute a value chain have generally been carried out in interfirm networks on a global scale". Upgrading is generally described as a shift in a supplier's role in a GVC that increases the value-added of its sourcing activities (cf. Gereffi, 1999). One strand of the upgrading literature focuses on the power of large multinational enterprises (MNEs), their governance strategies, and the implications for developing country suppliers (Dolan & Humphrey, 2000). The fundamental question this body of literature seeks to answer is how the governance of GVCs affects the developmental outcomes for developing country suppliers. Positive developmental outcomes are generally considered "upgrading." Humphrey and Schmitz (2002, p. 1021) differentiated four different types of upgrading possibilities:

- Process upgrading refers to carrying out tasks more efficiently by restructuring existing or initiating new production methods;

Table 1
Functional Upgrading (FU) and Profit Margins (PM) for Domestic Suppliers in Developing Countries

	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
1	Schmitz, H.; Knorringa, P.;	2000	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between US and European buyers and Indian, Chinese, and Brazilian producers in the footwear industry **Difference between privileged and disadvantaged suppliers:** Poor delegation methods and antagonistic labour relations had a negative impact on Indian suppliers' relationship building with their buyers.		**India:** The main competitive advantage is price. Suppliers struggle with regular and reliable product quality, especially in component manufacturing. **China:** The product quality has consistently improved. The country has achieved most-favoured-nation status (product upgrading). **Brazil:** Flexible and faster production, higher product quality than China and Italy (process and product upgrading). **Italy:** Innovation and design (functional upgrading)	Not clear		GVC-moving up the ladder
2	Dolan, Catherine S.; Humphrey, John;	2000	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between UK supermarket buyers and African exporters/producers in the fresh vegetables commodity chain **Difference between privileged and disadvantaged suppliers:** Small size	X	**Disadvantaged suppliers:** Only large exporters have been able to access GVCs. Small growers, exporters, and producers are excluded from the market due to their inability to meet performance requirements. **Privileged suppliers:** Large exporters have acquired new functions including packaging and labelling functions (along with manufacturing).		Profit margins are low due to low bargaining power	GVC-moving up the ladder
3	Humphrey, John;	2000	**Nature of disadvantage for domestic suppliers in developing countries:** Weak competitive position of domestic suppliers (in		**Privileged suppliers:** Downgrading from first tier to second tier by a limited number of large domestic suppliers (small by global	Not clear		GVC-moving up the ladder

(Continues)

Table 1
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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			India and Brazil) in comparison to foreign-owned suppliers in the automotive industry **Difference between privileged and disadvantage suppliers:** Size and resource disadvantages for small suppliers		standards), which have, nevertheless, been able to retain their positions **Disadvantaged suppliers**: Majority of small suppliers either excluded from GVCs or taken over by larger domestic/foreign firms			
4	Barnes, Justin; Kaplinsky, Raphael;	2000	**Nature of disadvantage for domestic suppliers in developing countries:** Global competitive pressures and weak position of domestic (South African) suppliers (in automobile components sector) in comparison to foreign competitors		Stagnation and exclusion of domestic component suppliers: A limited number of domestic component suppliers are adopting new technologies, mainly contributing to low-value-added manufacturing. The rest have been excluded from the chains.	Not clear		GVC-moving up the ladder
5	Dolan, Catherine S.; Tewari, Meenu;	2001	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between developed country buyers and developing country suppliers in the Kenyan horticulture industry and Indian textile industry **Difference between privileged and disadvantaged suppliers:** Size disadvantage for smaller suppliers in comparison to larger suppliers	X	**Privileged suppliers:** Product and functional upgrading has taken place for leading suppliers (moving into full-garment production, expanding backwards in the chain and/or expanding forward into new overseas markets). **Disadvantaged suppliers:** The outcomes for disadvantaged suppliers are not discussed but it is mentioned at the end of the paper that suppliers that are unable to meet	Not clear		GVC-moving up the ladder

(Continues)

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
					buyer demands are excluded. This has mainly been observed in the horticulture sector.			
6	Bair, Jennifer; Gereffi, Gary;	2001	**Nature of disadvantage for domestic suppliers in developing countries:** Competition between foreign-owned first-tier suppliers, large first-tier suppliers, and small-sized second-tier domestic suppliers in the Mexican jeans industry **Difference between privileged and disadvantaged suppliers**: Size and industry position disadvantages for small, second-tier suppliers	X	**Privileged suppliers**: Leading suppliers have expanded within full-package production by building direct relationships with buyers (removing the middlemen). These suppliers are referred to as "a wealthy domestic elite whose control over the local industry is being further strengthened by its exclusive access to the US customers" (p. 1896). **Disadvantaged suppliers:** Stagnation in the same position: The cost pressure is transferred from US buyers to large first-tier suppliers and in turn to small second-tier suppliers. Upgrading is hampered by limited resources and weak ties to foreign buyers.		As a result of reducing costs, second-tier manufacturers/ subcontractors have faced a dramatic decrease in their profit margins.	GVC-moving up the ladder
7	Kaplinsky, Raphael; Morris, Mike; Readman, Jeff;	2002	**Nature of disadvantage for domestic suppliers in developing countries:** Global competitive pressures and weak position of domestic suppliers (South African furniture industry) in comparison to foreign competitors		Increasing dependence of domestic producers on global buyers. Process upgrading (notably computer numerical control (CNC) machinery and water-based paints and varnishes, control of logistics etc.). Small amount of product		There is no systematic analysis but there is an indication that competitive pressures erode benefits/margins in the manufacturing position.	GVC-moving up the ladder

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
					innovation observed within manufacturing. Small degree of design upgrading observed. Overall, decreasing unit prices have squeezed the profit margins for the South African furniture industry as the majority of the profits are grabbed by foreign competitors who are more active in design and marketing.			
8	Talbot, John M.;	2002	**Nature of disadvantage for domestic suppliers in developing countries:** Global competitive pressures and weak position of developing country domestic suppliers (Brazil, India and others) in tropical commodity chains in comparison to suppliers from developed countries.		Unable to engage in forward integration or functional upgrading	Not clear		GVC-moving up the ladder
9	Smith, Adrian;	2003	**Nature of disadvantage for domestic suppliers in developing countries:** Global pricing and competitive pressures, high power asymmetry between Western buyers and domestic suppliers in the Slovak clothing industry **Difference between privileged and disadvantaged suppliers**:	X	**Privileged suppliers:** Functional upgrading to original brand manufacturer (OBM) for a joint venture (Slovak and Dutch owners), and a small number of leading suppliers **Disadvantaged suppliers:** These are small firms working for large domestic firms. They have not engaged in functional upgrading.	Not clear		REG

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			Differences in the size and industry position of suppliers					
10	Bair, Jennifer; Gereffi, Gary;	2003	**Nature of disadvantage for domestic suppliers in developing countries:** Competitive pressures, small size, and weak position of suppliers in the Mexican apparel industry **Difference between privileged and disadvantaged suppliers**: Differences in the size and industry position of suppliers	X	**Privileged suppliers:** A limited number of large suppliers have moved to full-package production. **Disadvantaged suppliers:** Stagnation in the same position	Not clear		GVC-moving up the ladder
11	Quadros, Ruy;	2004	**Nature of disadvantage for domestic suppliers in developing countries:** Developing country suppliers (Brazilian auto-components) integrated into highly power-asymmetric relations **Difference between privileged and disadvantaged suppliers**: Firms with no technical collaboration are disadvantaged in comparison to those with stronger ties to foreign buyers (through technical collaborations).		One or two firms mention support for product design. Compliance with quality standards gives access to GVCs, and upgrading in process engineering, but overall no improvement in product design. The paper does not look into differences in outcomes for different suppliers.	Not clear		GVC-moving up the ladder
12	Dolan, Catherine; Humphrey, John;	2004	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between developed country	X	**Privileged suppliers:** Selected large suppliers have been given the responsibility of managing specific categories	Not clear		GVC-moving up the ladder

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			buyers and developing country (African) suppliers in the fresh vegetables chain. **Difference between privileged and disadvantaged suppliers**: limited number of large first-tier suppliers and large number of small second-tier suppliers		of vegetable products, also known as 'category management'. Supermarket lead firms relinquished their control over these activities. **Disadvantaged suppliers:** Stagnation in the same position			
13	Gibbon, Peter; Ponte, Stefano;	2005	**Nature of disadvantage for domestic suppliers in developing countries:** African suppliers in tier 2 and tier 3 positons integrated into chains with high power asymmetry, high competitive intensity and pressures from other developed and developing country suppliers (sectors including citrus, clothing, cocoa, coffee, cotton, and fresh vegetables)		Tier 3 suppliers have been excluded while tier 2 suppliers face downgrading/ marginalisation.		Poor contract security, no consistent sales, low volumes for tier 2 suppliers. Tier 3 suppliers are excluded from the chains.	GVC: risk-reward
14	Palpacuer, Florence; Gibbon, Peter; Thomsen, Lotte;	2005	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between buyers (in the UK, France, Sweden and Denmark) and suppliers (in a range of developing countries including India,		**Privileged suppliers**: Developing country suppliers in GVCs with French and Scandinavian lead firms have been able to maintain their position. **Disadvantaged suppliers:** Developing country suppliers have been excluded from GVCs led by UK lead firms	Not clear		GVC-moving up the ladder

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			Pakistan, and China) in global clothing chains **Difference between privileged and disadvantaged suppliers**: Differences according to type of chain: Suppliers participating in chains led by UK firms are more disadvantaged than suppliers in French and Scandinavian chains due to high entry barriers and shareholder-oriented thinking in the UK.		due to high entry barriers and financialisation.			
15	Nadvi, Khalid; Halder, Gerhard;	2005	**Nature of disadvantage for domestic suppliers in developing countries:** Weak industry position and precarious home institutional environment for Pakistani surgical instruments suppliers in comparison to German suppliers		**German suppliers** have achieved functional upgrading in contrast to Pakistani suppliers. **Pakistani** surgical instruments suppliers have built capacity to meet international quality standards. However, this has not automatically translated into improved product quality or product innovation.	Not clear		GVC-moving up the ladder
16	Pickles, John; Smith, Adrian; Bucek, Milan; Roukova, Poli; Begg, Robert;	2006	**Nature of disadvantage for domestic suppliers in developing countries:** Global pricing and competitive pressures in the global apparel industry **Difference between privileged and disadvantaged suppliers**:	X	**Privileged suppliers:** Along with functional upgrading, suppliers engage in diverse strategies including downgrading to improve their profit margins. **Disadvantaged suppliers:** The majority of small firms are engaged in low-value, full-package production.	X	Suppliers with diverse strategies have been able to increase their profit margins. Functional upgrading alone does not automatically translate into improved profit margins. For small suppliers, low-value full-package	REG

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			Size differences between domestic suppliers within Central and Eastern European countries				production led to an increase in profits.	
17	Selwyn, Ben;	2007	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between developed country buyers (Retailers from UK and Europe) and developing country suppliers; grape producers from North East Brazil pressure from local unions; strategic advantages of local workers		Improvement of processes (process upgrading) and workers' conditions	X	Profitability has been maintained or increased to some extent.	REG
18	Avdasheva, Svetlana;	2007	**Nature of disadvantage for domestic suppliers in developing countries:** Competitive pressures, weak position, and higher power asymmetry for Russian furniture suppliers in captive governance chains		The prospects are low as resource requirements are high and there are many barriers to functional upgrading. Suppliers working with global buyers in captive chains have engaged in process upgrading, and to some extent product upgrading, but have struggled with functional upgrading.	Not clear	Although no explicit analysis, it is mentioned that margins for manufacturing position are low and functional upgrading is required for high profits to be made.	GVC-moving up the ladder
19	Murphy, James T.;	2007	**Nature of disadvantage for domestic suppliers in developing countries:** Weak home institutional context of African suppliers (furniture makers) **Difference between privileged and disadvantaged suppliers**:	X	**Privileged suppliers:** Creative and responsive innovation: the study reports that only a few firms are able to gain access to design activities. **Disadvantaged suppliers:** Lower level of innovation was observed and no functional upgrading.		**Privileged suppliers:** The majority of large suppliers perform well due to their high levels of capabilities and resources. **Disadvantaged suppliers:** The study reports improvements in	REG

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			Privileged suppliers are older and larger, more customer- and quality-oriented, and are able to use their resources to bypass institutional barriers. Disadvantaged suppliers focus on volume and cost.				performance for some suppliers but it is not clear what is driving this improvement.	
20	Busser, Rogier;	2008	**Nature of disadvantage for domestic suppliers in developing countries:** Weak competitive position of Thai domestic firms in comparison to Japanese-owned suppliers in the Thai automotive industry		Japanese assemblers buy the majority of components from Japanese-owned suppliers in Thailand. The majority of these firms have achieved product and process upgrading and some have achieved functional upgrading (product design). Only a few Thai domestic suppliers achieved product and process upgrading and none achieved functional upgrading.		It is mentioned that Thai-owned domestic suppliers have weaker performance than Japanese-owned suppliers.	GVC-moving up the ladder
21	Gibbon, Peter;	2008	**Nature of disadvantage for domestic suppliers in developing countries:** Weak position of domestic suppliers in comparison to foreign competitors; lack of access to end-markets (Clothing industry)		Downgrading of marketing and design	X	The link between upgrading and performance is not explicitly analysed. There is some evidence of the positive financial implication of downgrading.	GVC: risk-reward
22	Neilson, Jeff; Pritchard, Bill;	2009	**Nature of disadvantage for domestic suppliers in developing countries:** Weak home institutional environment and integration	X	**Privileged suppliers:** Product and process upgrading is observed. Some large firms have achieved functional upgrading as well.	Not clear	Not systematically analysed but functional upgrading is implicitly equated with value creation.	REG

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			into power-asymmetric chains (tea and coffee industry) **Difference between privileged and disadvantaged suppliers**: Size difference between large and small suppliers		**Disadvantaged suppliers:** Product and process upgrading is observed in some cases. Functional upgrading does not occur for small firms.			
23	Ponte, Stefano; Ewert, Joachim;	2009	**Nature of disadvantage for domestic suppliers**: Weak position of domestic suppliers (grape growers, private cellars, producer wholesalers, marketers in the South African wine industry) in comparison to foreign competitors	X	There is a general trend of product and process upgrading and downgrading among the 28 firms interviewed. Among the 14 small suppliers, the majority are private cellars and producer wholesalers that are either growing their own grapes or buying from others. There is a trend away from grape growing towards buying grapes from other suppliers. Among the 14 top suppliers (large), there is a trend towards marketing and reduced involvement in wine making. Downgrading is observed as well in terms of reduced operational involvement in European markets.	X	Although no explicit firm-level figures are presented that show the link between upgrading and profit margins, it is implied that diverse upgrading/ downgrading practices lead to improvements in margins for both small and large South African suppliers.	GVC: risk-reward
24	Fujita, Mai;	2011	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between developing country suppliers and their buyers	X	Minor upgrading in production for both tier 1 and tier 2 suppliers **Privileged suppliers:** In the Japanese chain, the majority of tier 1 suppliers build higher capabilities	X	Not systematically analysed but it is mentioned that upgrading leads to high margins.	GVC-technological capabilities

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			in the Vietnamese motor industry **Difference between privileged and disadvantaged suppliers**: Tier 1 (majority large-sized, state-owned) and tier 2 (majority small-sized, private enterprises) suppliers		within the production function than tier 2 suppliers. In terms of technological capabilities, they have upgraded to an 'adaptive' level. **Disadvantaged suppliers:** In the Japanese chains tier 2 suppliers did not improve as much as tier 1 suppliers. Only a few reached an 'assimilative' level of technological capability in engine components			
25	Sato, Yuri;	2011	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between developing country suppliers (Indonesian motorcycle producers) and their buyers	X	The majority of firms have deepened their capabilities for production management within the production function. Only a few have acquired design capabilities but they have not been able to exercise those capabilities due to the high power asymmetry.	X	Not systematically analysed but it is discussed that suppliers have been able to successfully improve their profits after building capabilities.	GVC-technological capabilities
26	Murphy, James T.; Schindler, Seth;	2011	**Nature of disadvantage for domestic suppliers in developing countries:** Weak home institutional context and high power asymmetry between foreign buyers and Bolivian suppliers in woods product industry **Difference between privileged and disadvantaged suppliers**: Differences in terms of size, resources, and value chain position of suppliers in brokerage global	X	**Suppliers in conventional GPNs/privileged suppliers:** • New product development (functional upgrading to design) • Processing improvement (supply-chain management) **Suppliers in brokerage GPNs/disadvantaged suppliers:** • Improving access to wood supplies • Adding value to simple wood products	X	Not systematically analysed but it is discussed that the selected suppliers are being successful and increasing profits in international markets. The differences in terms of firm success/ profits across brokerage and conventional GPNs are not discussed.	Economic geography

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			production networks (GPNs) in comparison to suppliers in conventional GPNs Suppliers in brokerage GPNs lack the capital and resources to meet the demands of conventional GPNs.		• Accessing intermediaries that can provide links to Chinese end market			
27	Nadvi, Khalid; Lund-Thomsen, Peter; Xue, Hong; Khara, Navjote;	2011	**Nature of disadvantage for domestic suppliers in developing countries:** Weak home institutional context of Pakistan and India in comparison to China (in sports goods industry) **Difference between privileged and disadvantaged suppliers**: Differences in home institutional context between Pakistani (disadvantaged) and Chinese (more privileged) suppliers	X	Chinese suppliers have moved to more advanced stitching functions. The same has not occurred for Pakistani and other football suppliers.	Not clear	The share of export revenue for Pakistan has decreased, while for China it has significantly increased. Firm-level data are not provided.	GVC-technological capabilities
28	Ozatagan, Güldem;	2011a	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between developed country buyers and developing country suppliers (automotive production)	X	Functional upgrading as a result of changing lead firm strategies	Not clear	Functional upgrading has not led to entering niche functions as design does not produce different profits than production.	GVC-moving up the ladder
29	Özatağan, Güldem;	2011b	**Nature of disadvantage for domestic suppliers in developing countries:**	X	Suppliers are moving to product design functions. This is driven by	Not clear		GVC-moving up the ladder

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			High power asymmetry between developed country buyers and developing country suppliers (automotive production)		changes in lead firm strategies.			
30	Nadvi, Khalid;	2011	**Difference between privileged and disadvantaged suppliers**: Weak home institutional context of Pakistan in comparison to China (in football manufacturing industry)	X	Chinese firms have deepened their capabilities in specific functions. The same has not occurred for Pakistani suppliers.	Not clear	While firm-specific data are not provided, country-level export performance figures indicate that China is significantly ahead of Pakistan.	GVC-technological capabilities
31	Navas-Alemán, Lizbeth;	2011	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between developed country buyers and developing country suppliers (in furniture and footwear industries)	X	Firms in market governance and multi-chains have achieved functional upgrading. This is true for both small and large firms.	X	Functional and other kinds of upgrading lead to improvements in export performance.	GVC-moving up the ladder
32	Lund-Thomsen, Peter; Nadvi, Khalid; Chan, Anita; Khara, Navjote; Xue, Hong;	2012	**Nature of disadvantage for domestic suppliers in developing countries:** Type: Mix of small and large factories for football stitching in Pakistan, India, and China; high power asymmetry between developed country buyers and developing country suppliers **Difference between privileged and disadvantaged suppliers**: Weak home institutional context of Pakistan in comparison to China	X	Chinese firms have successfully maintained and strengthened their existing position as a result of process upgrading. Pakistani suppliers have focused on quality but this is less highly valued by the buyer.	Not clear		GVC-technological capabilities

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
33	Murphy, James T.;	2012	**Nature of disadvantage for domestic suppliers in developing countries:** Weak home institutional context and high power asymmetry between foreign buyers and Bolivian suppliers in woods product industry **Difference between privileged and disadvantaged suppliers:** Differences in terms of size, resources, and value chain position of suppliers in brokerage and associative GPNs in comparison to suppliers in conventional and diasporic GPNs: suppliers in brokerage and associative GPNs lack the capital and resources to meet the demands of conventional GPNs.	X	**Suppliers in conventional and diasporic GPNs / privileged suppliers:** • New product development (functional upgrading to design) **Suppliers in brokerage GPNs / disadvantaged suppliers:** • Improving access to wood supplies • Adding value to simple wood products **Suppliers in associative GPNs / disadvantaged suppliers:** • Stagnant in low-value-added tasks	X	Not systematically analysed but it is discussed that suppliers in conventional, brokerage, and diasporic networks are able to create and enhance value, which is taken as an improvement in financial performance.	REG
34	Contreras, Oscar F.; Carrillo, Jorge; Alonso, Jorge;	2012	**Nature of disadvantage for domestic suppliers in developing countries:** Competition with foreign-owned suppliers in the domestic market and size disadvantages (Mexican automotive industry)		Majority of firms started in high-value-added functions. While the functions have not changed, some companies have dissolved and some diversified, while others have remained connected to MNC buyers.	Not clear	Suppliers are able to build trust with their main clients	GVC-technological capabilities
35	Darby, Paul;	2013	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between lead firms (from Europe) that control the academies in Ghana and local football player academies in Ghana; additionally, foreign competitive		They have upgraded the quality of players produced and the educational level.	X	While there has been no change in the functional position of the supplier in terms of control, two enterprises have managed to extract higher value from the relationship.	REG

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	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			pressures from academies all over the world					
36	Rossi, Arianna;	2013	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between developed country buyers and developing country supplier (cut-make-trim, CMT, suppliers in apparel industry of Morocco)	X	Suppliers that engage in functional upgrading also face high pressure to fulfil buyers' demands, which in turn leads to the marginalisation of workers.	X	The increase in profit is a function of other types of upgrading, including process upgrading, in addition to functional upgrading.	GVC-moving up the ladder
37	Smith, Adrian; Pickles, John; Buček, Milan; Pástor, Rudolf; Begg, Bob;	2014	**Nature of disadvantage for domestic suppliers in developing countries:** Global competitive pressures and global economic crisis for Slovak apparel industry **Difference between privileged and disadvantaged suppliers**: Differences in resources between foreign-owned and domestic (being in a weaker position) suppliers	X	**Privileged suppliers:** Foreign-owned firms have upgraded from simple CM (cut-make) to CMT positions but not to design. **Disadvantaged suppliers:** Domestic suppliers have struggled to maintain their existing position in CM/CMT through product and process upgrading.		While there are no firm-level data, the data provided indicate losses in employment due to the economic crisis. The impact has not been systematically analysed	REG
38	Ponte, Stefano; Kelling, Ingrid; Jespersen, Karen Sau; Kruijssen, Froukje;	2014	**Difference between privileged and disadvantaged suppliers**: Weak home institutional context and high power asymmetry between Bangladeshi suppliers and their buyers in comparison to the situation for Thai, Vietnamese, and Chinese suppliers (in aquaculture industry) **Difference between privileged and disadvantaged suppliers**:	X	Functional upgrading has not taken place for Bangladeshi suppliers. Some level of functional upgrading has taken place for Vietnamese and Chinese suppliers. Thailand has achieved a profitable position in design and branding.	X	Profitability has not increased for Bangladeshi suppliers. Improvement has occurred for the suppliers in the other countries.	GVC: risk-reward

(Continues)

Table 1
(Continued)

	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
			Differences in terms of industry position between tier 1 and tier 2/3 suppliers					
39	Pavlínek, Petr; Ženka, Jan;	2015	**Nature of disadvantage for domestic suppliers in developing countries:** Developing country suppliers (automotive suppliers in the Czech Republic) integrated into power-asymmetric chains (foreign assemblers and foreign-owned tier 1 firms)	X	Tier 1 suppliers (foreign-owned enterprises) have further expanded in production (component manufacturing-related functions) due to their large size, strong resources, and capital intensity. In comparison to tier 1 suppliers, tier 2 and 3 suppliers have invested more in non-production-related activities (functional upgrading).		Tier 1 suppliers have created and captured higher value than firms in tier 2 and tier 3 positions.	REG
40	Smith, Adrian;	2015	**Nature of disadvantage for domestic suppliers in developing countries:** Weak home institutional context and global economic crisis (mix of CMT suppliers and original equipment manufacturing, OEM, suppliers) in Euro-Mediterranean regions **Difference between privileged and disadvantaged suppliers**: Differences between suppliers engaged in original design manufacturing (ODM) and full-package production (privileged) suppliers and suppliers engaged in CMT (disadvantaged, limited financial resources)	X	**Privileged suppliers:** Majority of ODM/full-package production firms have achieved functional upgrading and increased the scale of their production. **Disadvantaged suppliers:** Only one CMT firm is engaged in functional upgrading. The majority of the CMT firms have stagnated in the production functions. They have engaged in product and process upgrading.		Economic security is greater for those firms that have achieved functional upgrading. However, product upgrading has allowed disadvantaged firms to survive in an uncertain political environment and to maintain their status quo. Process upgrading has helped them to maintain employment during uncertain times.	REG

(Continues)

Table 1
(Continued)

	Author	Year	Upgrading challenges for developing country suppliers	FU	Observations	PM	Observations	Theoretical area
41	Plank, Leonhard; Staritz, Cornelia;	2015	**Nature of disadvantage for domestic suppliers in developing countries:** Weak home institutional context and global competitive pressures for CMT and OEM suppliers in Romania's apparel industry		Suppliers engaged in functional downgrading, product and process upgrading, and diversification to other markets.	X	Survival and basic profitability: The impact has not been systematically analysed.	REG
42	Khan, Zaheer; Lew, Yong Kyu; Sinkovics, Rudolf R.	2015	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry within chains and weak home institutional context for SMEs in the Pakistani automotive industry		Product and process upgrading has occurred to some extent but firms are unable to engage in functional upgrading due to lack of information sharing by buyers and weak institutional support.	Not clear		IB
43	Choksy, Umair Shafi;	2015	**Nature of disadvantage for domestic suppliers in developing countries:** Weak home institutional context and high power asymmetry for a software service provider		It has established a position in application design and development. It has built a reputation in the industry.	X		IB
44	Hoque, Samia Ferdous; Sinkovics, Noemi; Sinkovics, Rudolf R.;	2016	**Nature of disadvantage for domestic suppliers in developing countries:** High power asymmetry between MNE and small-sized apparel suppliers		Small suppliers have successfully engaged in process upgrading.	X		IB

Table 2
Disadvantaged Supplier Strategies

Authors	Year	Supplier's position	Managerial agency
Strategy #1: Legitimacy			
Murphy, James T.; Murphy, James T.; Schindler, Seth;	2012 2011	Suppliers retained their existing position by improving their production and logistical capabilities. Some suppliers acquired design responsibilities but this had no direct link to their profitability.	Suppliers have established credibility/legitimacy (author's term: "relational proximity") through meeting buyer demands by gaining insights into buyer's needs and demonstrating their reliability despite an uncertain political context.
Contreras, Oscar F.; Carrillo, Jorge; Alonso, Jorge;	2012	The founders of the supplier firms are reported to be ex-employees of MNEs. They started out supplying their ex-employers in high-value-added functions. There is no shift observed in the functional position of the firm.	Suppliers have established legitimacy through a four-stage trajectory of becoming trustworthy suppliers of the MNE buyers. They started as routine suppliers, built up their reputation and became more frequently used suppliers. They progressed to become, firstly, permanent suppliers and finally partner suppliers.
Darby, Paul;	2013	Highly asymmetric relationship between EU football academies and Ghanaian low-tier academies. They are coordinated by a number of football academies in the EU, which creates a link between the Ghanaian academies and football clubs. There is no shift observed in the functional position of the academies.	Right to dream (RtD), one of the academies in Ghana, has managed to create distinctive football players, something that is underpinned by its emphasis on education. The emphasis on education has contributed to the programme being highly valued by the academy students (some benefits include educational scholarships for the US, life skills, international and local curricula). This has resulted in highly motivated and capable players getting the opportunity to play in reputable football clubs.
Choksy, Umair Shafi	2015	The software company was already working on software design services along with software development functions and established this role through its relationship with the buyers.	In its relationship with the MNE, the software services supplier demonstrated highly responsive and flexible behaviour in response to the MNE buyer's changing specifications, including improving the applications' user experience. Successful completion of the first project with an MNE increased the legitimacy of the supplier and gave it the credibility to work with other big-name companies. This legitimacy has become the core driver for the supplier to improve its profit margins.
Hoque, Samia Ferdous; Sinkovics, Noemi; Sinkovics, Rudolf R.;	2016	No functional upgrading	The core driver of enhanced profit margins is the increasing capacity of suppliers to acquire knowledge from sources other than their MNE buyer, and the consistent meeting of buyer demands.
Strategy #2: Diversification			
Sato, Yuri;	2011	While the levels of capabilities are low in the design and planning functions, the study reports that suppliers are deepening their capabilities within the production function.	The development of brand-specific factories allowed the separation of Japanese from non-Japanese clients and contributed to the building of trust with specific clients as well as to an increase in the scope of opportunities to (a) work with new clients and (b) work more autonomously.
Fujita, Mai;	2011	Besides deepening their production capabilities, local suppliers are investing in planning capabilities.	The core driver of profit margins is not the upgrading of functional positions in GVCs but the supplier's capacity to increase the scope of its

(Continues)

Table 2
(Continued)

Authors	Year	Supplier's position	Managerial agency
			opportunities (working in existing and new chains) and reduce its dependency on specific lead firms.
Navas-Alemán, Lizbeth	2011	Suppliers acquired capabilities in production, design, and branding, through engagement in multiple value chains.	The core driver of increased profit margins is the supplier's capacity to increase its freedom and integrate itself into multiple value chains, including national, regional, and global value chains.
Strategy#3: Adaptation/Survival			
Pickles, John; Smith, Adrian; Bucek, Milan; Roukova, Poli; Begg, Robert;	2006	Large suppliers have diverse upgrading/ downgrading strategies. Small suppliers (in particular garage firms) are mainly working in low-value-added functions.	After a regional economic crisis in the 1990s, small garage firms identified a niche opportunity in low-value/low-quality products in the region. The market (comprised of these small garage firms) operated about 3,000-4,800 stalls, including second-hand clothing, generating a total turnover of 10 million euros per week.
Selwyn, Ben;	2007	Suppliers are maintaining their production functions. In response to intensive demand, the farm suppliers are engaged in improving their productivity (process upgrading).	The intensive demand of buyers encourages suppliers to engage in upgrading the quality of their labour. As a result, any disruption in the labour process affects on-time delivery. The core driver of a supplier's success is its capacity to handle the pressure from its customers and the unions (representing the rights of labour).
Gibbon, Peter;	2008	Downgrading of position, from marketing and design, has taken place.	The decision by the supplier to downgrade was underpinned by its critical assessment that the profitable opportunities were higher overall in the low-value-added segments.
Ponte, Stefano; Ewert, Joachim;	2009	Small growers and cellars are moving towards buying grapes for wine production rather than growing them internally. Large ones are downgrading by divesting from European markets and engaging in regional functional upgrading (towards the marketing of wine).	The capacity of small growers to move to grape buying rather than making, and that of large producers to move to marketing to one location and downgrading in others, demonstrates managerial agency to make survival decisions in the context of changing global competitive pressures.
Rossi, Arianna;	2013	Some firms have achieved functional upgrading due to pressure from foreign buyers. However this led to further marginalisation. Firms that engaged in product and process upgrading seemed to be more successful.	Successful firms (those that engaged in product and process upgrading) have responded to the buyer pressure in an effective manner. These firms have resisted giving in to the pressure, have maintained discretion, and have still managed to earn profits. For example, these firms have worked on their efficiency, worker conditions, and wages, which has in turn improved their ability to meet buyer demands without compromising the conditions of their workers.
Plank, Leonhard;Staritz, Cornelia;	2015	First phase: downgrading (1994-2004) Second phase: upgrading within production (2004-2013) Third phase: adding new markets and new functions, and offshoring low-value-added tasks to poorer regions (2013 onwards)	The enhancement and maintenance of profit margins seemed to the result of suppliers' ability to continuously shift their positions in GVCs. During the first phase, suppliers to downgraded their functions and provided services in low-value low-quality production. In the second phase, they provided full-package production to remain competitive. In the final phase, they moved back into design functions.

- Product upgrading refers to a shift towards manufacturing products with higher unit values;
- Functional upgrading refers to acquiring new functional positions that have higher skill-content and represent more profitable opportunities;
- Inter-chain upgrading refers to the shift from low-value-added to high-value-added GVCs.

While product and process upgrading are considered to strengthen the existing position of suppliers, functional upgrading can be considered a shift to a higher-value-added position (Humphrey & Schmitz, 2002). Dolan and Tewari (2001) viewed upgrading as a critical factor in the creation of the interorganizational capacity to meet buyers' demands. However, perceived challenges go beyond gaining and maintaining access to international markets, and include obstacles to increasing profit margins. To this end, functional upgrading is generally perceived as a key driver of increased profit margins for developing country suppliers (Barnes & Kaplinsky, 2000; Kaplinsky, 2000). More specifically, Kaplinsky (2000) suggested that production functions in GVCs tend to add limited value and are less knowledge-intensive. Barriers to entry are low in these functions, which creates tremendous competitive pressures. As a result, the profits earned by developing country suppliers tend to be low. In contrast, preproduction (e.g., R&D and design) and postproduction (e.g., marketing) activities have the capacity to generate higher profits due to comparatively higher barriers to entry, lower competitive pressures, and the concentration of control with a few firms in the industry (Kaplinsky, 2000; Shin et al., 2012).

Another strand in the upgrading literature focuses on the development of technological capabilities. Studies in this area are most concerned with the learning processes through which suppliers become successful or unsuccessful in building firm-level capabilities (Kawakami, Sturgeon, & Ajia Keizai, 2011; Sato, 2011). Morrison et al. (2008) observed that systematic attempts to understand the "learning" dimension in value-chain relations are somewhat limited. They furthermore recommended the integration of the GVC approach with the technological capability (TC) accumulation approach. In contrast to a more mechanical view (cf. Morrison et al., 2008) that considers firm upgrading to be a shift from manufacturing to higher-value-added activities such as branding, the TC approach considers the level and depth of TCs as the central unit of analysis. In line with this thinking, Pietrobelli and Rabellotti (2006) considered functional upgrading to be a process of acquiring and deepening TCs. This implies that functional upgrading is not restricted to a movement "up the ladder" (i.e., moving from production to design), but also includes the acquisition and deepening of TCs at any stage of the value chain, such as from a low level to a high level of skill in cut-trim-make capabilities in the garment sector (cf. Kawakami et al., 2011).

A third strand of the upgrading-related literature adopts a "risk-reward" approach (Gibbon & Ponte, 2005). Studies in this domain focus on the critical evaluation of the concept of upgrading. Ponte and Ewert (2009) have argued that the concept of upgrading in GVC studies tends to take a normative and implicitly 'high road' approach in which suppliers are expected to shift to high-value-added functions. Gibbon and Ponte (2005) offer a somewhat different approach to upgrading, which is oriented towards studying how developing country suppliers achieve a "better deal" out of their engagements with GVCs. They consider upgrading to be an outcome of a risk-reward analysis that makes predictions about which upgrading/downgrading strategy will produce the highest reward and lowest risk for a supplier. In contrast to regarding a narrowly defined concept of innovation as the main driver of either "moving upwards" (cf. Morrison et al., 2008) or deepening firm-level capabilities, Ponte and Ewert (2009) propose that such outcomes may be the result of a

> …general exposure to different managerial models, different end markets, and increased demands placed by retailers on time-to-market, packaging materials, and/or food safety standards. Upgrading […] may also arise as a result of abandoning innovations developed within a firm or cluster to accommodate buyer demands and/or changing consumption trends. (Ponte & Ewert, 2009, p.1637).

International Business Literature

Within the IB literature, the main actors of interest are the MNE and its subsidiaries (Rugman, Verbeke, & Nguyen, 2011). Recent research has examined suppliers as strategic actors, but this scholarly attention is still relatively limited (Hoque et al., 2016; Khan & Nicholson, 2014; Liu & Zhang, 2014). Through this recent attention there are two prominent theoretical perspectives that cross paths with the literature on GVC analysis. According to the smiling curve perspective (cf. Mudambi, 2008), the majority of knowledge-intensive and high-value-added activities such as R&D, design, branding, and marketing are located in advanced economies, whereas production activities are typically located in emerging economies. From a value capture perspective, while all actors benefit from the overall value created, most of the value tends to be captured by firms involved in upstream and downstream activities. In other words, firms involved in activities connected with assembly and production tend to capture less value (Shin et al., 2012).

The other theoretical perspective is that of the global factory (Buckley, 2009; Buckley & Ghauri, 2004). The latter is a complex organizational form that provides MNEs with the ability to engage in a mix of externalization and internalization decisions in geographically dispersed markets (Buckley & Ghauri, 2004; Buckley & Strange, 2015). Under the global factory arrangement, MNEs internalize their core firm-specific capabilities and externalize noncore

capabilities to suppliers that are often situated in developing countries (Buckley, 2009; Buckley & Ghauri, 2004). Global factories are perceived as orchestrators that can maintain control over activities without direct ownership (Buckley, 2009). While Buckley (2009) acknowledged the possibility of supplier upgrading, he stressed a number of barriers stemming from an asymmetrical distribution of entrepreneurial capabilities, information, financial resources and innovation capabilities that favour the global factory.

While scholars advocating some form of smiling curve perspective adopt a more positive outlook (Awate, Larsen, & Mudambi, 2012; Kumaraswamy et al., 2012; Lorenzen & Mudambi, 2012), Buckley and Strange (2015) are relatively sceptical about the developmental impact of the geographical shifts in economic activity. They have underpinned their arguments by highlighting the inconclusiveness of empirical results in terms of income distribution across GVCs.

In a similar vein, building on Rugman and Verbeke (1990), Buckley and Verbeke (2016) have suggested that expected benefits from global governance approaches are "strongly exaggerated and costs severely underestimated" (Buckley & Verbeke, 2016 p.749). The underlying argument is that developing country suppliers may not possess or fully control the necessary firm-specific advantages to engage in functional upgrading. Furthermore, MNEs are in a strong position to control high-value-added functions, capture high margins from GVCs, and marginalize developing country suppliers (Buckley, 2009; Buckley & Strange, 2015).

The global factory view furthermore echoes Hymer's dominating perspective on MNEs. Hymer (1971) stated that an MNE "is a social and political (power) structure that organizes large numbers of people, as employees, customers, suppliers…The large corporation does not operate under the state but alongside it and in some cases above it" (p. 140). In line with this perspective, Hymer (1972) considered externalization a process by which MNEs control and coordinate the strategic functions (level 1 and level 2 functions) and subcontract day-to-day operations (level 3 functions) to independent suppliers (Strange & Newton, 2006). Both the global factory and Hymer's perspective on externalization consider the MNE to be the main hub of control and influence. There is an implicit assumption that a supplier's growth is determined by the influence and power of the MNE it supplies.

Relational Economic Geography Literature

Relational economic geography (REG) is a subfield of economic geography that looks into the interconnections and interdependencies between different economic actors (firms, governments, nongovernmental organizations [NGOs]) on various geographical scales (Bathelt & Glückler, 2003; Yeung, 2002). The REG approach builds upon the GVC literature in two main ways. Firstly, it brings the context of suppliers into the analysis. For REG scholars, "context" represents a dynamic interconnection between local factors (national institutions, clusters, competition, etc.) and global factors (global standards, buyers, MNCs, host institutions, etc.). This means that a supplier firm's ability to earn profits in a GVC is regarded as path-dependent and influenced by the heterogeneous context within which it operates (cf. Coe, Dicken, & Hess, 2008; Coe & Yeung, 2015). Consequently, differences across types of supplier, scales of operation, and institutional contexts are better accounted for. For the purpose of this study, we have drawn upon this approach to identify and explore differences in the value capture trajectories of developing country suppliers in general and disadvantaged suppliers in particular.

Secondly, the REG literature focuses on the contingent nature of suppliers' agency in GVCs (Darby, 2013; Murphy, 2012; Murphy & Schindler, 2011; Yeung, 1998). Anchored in the notion of power, Allen (2003) argues that the possession/ownership of specific assets (resources, positions, capabilities) cannot be equated with obtaining benefits from these assets. He argues that the process of exercising a capacity is a relational concept and is contingent upon how actors interact, interpret, and negotiate with each other. The implication of Allen's (2003) ideas for the relationship between upgrading and enhanced value capture is the following. The process of acquiring and deepening certain capabilities within functional or other areas needs to be differentiated from the capacity to reproduce the conditions under which these capabilities can be profitably exploited in other contexts, as well as from the capacity to leverage and recombine these capabilities in order to remain, or become more, competitive. Such differentiation also needs to take into account the ongoing interactions, contestations, and negotiations between buyers and suppliers. In other words, it is not sufficient for a supplier to possess the capacity to act based on the possession of necessary capabilities, competencies, and resources. There need to be other conditions in place that allow suppliers to exercise their agency (Bandura, 2006).

Synthesis

Within the GVC literature section, we discussed the different types of upgrading, with a special focus on functional upgrading. From an IB angle, we predominantly focused on two general views. First, there is a more optimistic outlook that emphasizes the positive effects MNEs may create through their economic activities in developing countries. Second, in contrast, there is a rather sceptical view that challenges this optimism by suggesting that developing country suppliers may not have the necessary firm-specific assets to benefit sufficiently from participating in the global economy (cf. Buckley & Verbeke, 2016).

The third body of literature (REG) we consulted to achieve a better understanding of upgrading allows for the

following deduction. Upgrading can be viewed as a context-driven and contingent phenomenon in which the development and/or possession of certain functional capabilities needs to be investigated separately from the capacity to transfer these capabilities to and leverage them in different contexts (cf. Allen, 2003). Especially inspired by this last view, we have dedicated the remainder of this paper to exploring the implications of upgrading for developing country suppliers' profit margins by reviewing existing empirical studies with a special focus on disadvantaged suppliers.

Selection and Analysis of Empirical Studies

In order to explore the relationship between developing country suppliers' context, upgrading, and financial outcomes, it is important to select the studies that effectively capture the differences between disadvantaged and more privileged suppliers in developing countries. Therefore, the criteria used to select the empirical studies were the following. Firstly, this paper only focuses on empirical studies and excludes any theoretical, conceptual, or unpublished working papers. Secondly, in order to qualify for our sample, empirical studies needed to explicitly or implicitly, yet substantially, address the topic of supplier upgrading in GVCs. We also included studies investigating social dimensions of upgrading, alongside economic dimensions. Thirdly, studies focusing exclusively on country-level or cluster-level measures of upgrading were excluded from the sample. Instead, we concentrated on papers that considered firm-level outcomes. Fourthly, we only selected articles for analysis if they, at least partially, focused on domestic suppliers. Finally, in order to identify disadvantaged suppliers and differentiate them from more privileged suppliers, the empirical studies were required to include a sample of suppliers falling under one or more of the following categories: small size, weak industry position (e.g., tier 2 or tier 3 suppliers), unfavourable, restrictive environment (e.g., rural villages, weak government policies, political instability, etc.), exposure to high uncertainty, high level of competition from foreign suppliers or foreign-owned suppliers competing with domestic suppliers in a given developing country, and high power asymmetry between suppliers and their foreign buyers.

The timeframe chosen was the period between 2000 and 2016. We used the following steps to implement these criteria: Firstly, we used the Scopus database and the Global Value Chain Initiative (www.globalvaluechain.org) website to search for and identify key empirical studies on upgrading. Search terms included upgrading, supplier development, supplier capability, and GVC. The results were then limited to studies in business and social sciences. We further narrowed down the search results by shortlisting only those papers published in journals in the fields of IB, REG, economic sociology, and development.

The search stage was followed by importing the identified empirical studies into the CAQDAS (computer-assisted qualitative data analysis) software, Nvivo. We used the query functions in Nvivo, including word-search, frequent words, and matrix coding, to identify the most relevant articles that met our criteria. We further used the classification function to categorize different dimensions of the articles. These features helped us to shortlist only those articles that sufficiently covered the topic of upgrading and took into account differences in types and contexts of suppliers.

This initial analysis yielded 44 academic articles that we deemed sufficiently relevant for a more in-depth investigation. Table 1 presents an overview of the papers based on three main dimensions: upgrading disadvantages for developing country suppliers, functional upgrading, and profit margins. Not all papers in Table 1 specifically distinguish between disadvantaged and privileged suppliers. In some papers, we could only identify disadvantaged suppliers in terms of high foreign competitive pressures or highly power-asymmetric relationships with their buyers (Barnes & Kaplinsky, 2000; Kaplinsky, Morris, & Readman, 2002; Talbot, 2002). The table also indicates the main disciplinary background—namely, GVC/moving up the ladder, GVC/technological capabilities, GVC/risk and reward, REG and IB. Furthermore, wherever it was discernible, we indicated the occurrence of other types of upgrading, such as product and process upgrading, in the observations column.

The subsequent in-depth analysis sought to determine whether the selected studies report any empirical evidence of the existence of functional or other upgrading and its implications for developing country suppliers' financial performance.

Results

The key finding from the analysis of the 44 studies suggests that disadvantaged suppliers do engage in distinctive strategies to improve their profit margins without necessarily having sufficient resources or capabilities to engage in functional upgrading (Choksy, 2015; Pickles et al., 2006; Plank & Staritz, 2015). The overall analysis in Table 1 yields three observations that support the above proposition. Firstly, disadvantaged suppliers are rarely able to achieve functional upgrading in GVCs (Dolan & Humphrey, 2000; Humphrey, 2000; Schmitz & Knorringa, 2000). Secondly, the occurrence of functional or other upgrading does not necessarily enhance disadvantaged suppliers' ability to capture higher profits (Pavlínek & Ženka, 2015; Plank & Staritz, 2015; Smith, Pickles, Buček, Pástor, & Begg, 2014). Furthermore, there seem to be distinctive strategies that suppliers can adopt to improve their profit margins in GVCs.

General Trends in Upgrading for Developing Country Suppliers

Twenty-five of the 44 empirical studies we reviewed report some form of functional upgrading. In contrast, 19 do not report any form of functional upgrading. In addition to limited internal and institutional resources, the review identifies two underlying factors that influence the extent of the barriers faced by developing country suppliers. First, relationships between developed country buyers and developing country suppliers tend to be characterized by high power asymmetries (Quadros, 2004; Schmitz & Knorringa, 2000). Global buyers often use their power to increase the pressure for on-time delivery and efficiency, to reduce costs and to lock developing country suppliers in (Dolan & Humphrey, 2000; Murphy & Schindler, 2011). The second challenge stems from increased global competition (Kaplinsky, 2000; Kaplinsky et al., 2002). In other words, many developing country suppliers struggle with the consequences of their weak position within GVCs compared to the positions of their buyers and other foreign-owned or controlled suppliers (Barnes & Kaplinsky, 2000).

Approximately half of the studies that report functional upgrading contain cases of developing country suppliers having succeeded in moving to more profitable niches within manufacturing, or to positions involving limited design and branding (Bair & Gereffi, 2001, 2003; Dolan & Humphrey, 2000, 2004; Dolan & Tewari, 2001; Fujita, 2011; Pavlínek & Ženka, 2015; Rossi, 2013; Sato, 2011; Smith et al., 2014), and half reported functional upgrading to design and branding functions (Murphy, 2007; Murphy & Schindler, 2011; Pickles et al., 2006; Ponte & Ewert, 2009; Ponte, Kelling, Jespersen, & Kruijssen, 2014; Smith, 2003, 2015).

Finally, the link between functional upgrading and profit margins for developing country suppliers has not been systematically studied except by Pavlínek and Ženka (2015). Most studies simply tend to assume that functional upgrading can be equated with higher margins (Barnes & Kaplinsky, 2000; Kaplinsky et al., 2002).

Comparison between Privileged Suppliers and Disadvantaged Suppliers

The analysis of the 25 studies that report some form of functional upgrading (either outside of design/branding or within design/branding) suggests that it is more likely to occur in the case of privileged suppliers than disadvantaged suppliers (e.g. Bair & Gereffi, 2003; Dolan & Humphrey, 2004; Dolan & Tewari, 2001). Privileged suppliers in these studies had better access to and stronger connections with buyers (Ponte et al., 2014; Quadros, 2004; Schmitz & Knorringa, 2000). They were larger and possessed more resources (Dolan & Humphrey, 2000; Humphrey, 2000; Ponte et al., 2014; Smith, 2003), a stronger industry position (Bair & Gereffi, 2001, 2003), and a more supportive institutional environment than their more disadvantaged counterparts (Nadvi, 2011; Nadvi, Lund-Thomsen, Xue, & Khara, 2011). These factors allowed privileged suppliers to bypass some of the barriers that are characteristic of developing countries, and engage in product, process, and functional upgrading within manufacturing (Bair & Gereffi, 2001, 2003), or even into design and branding functions (Smith, 2003).

In contrast, studies point to the marginalization and at times exclusion of disadvantaged suppliers. There is also evidence of downgrading and stagnation (Barnes & Kaplinsky, 2000; Humphrey, 2000; Talbot, 2002), an inability to compete with foreign and larger domestic suppliers (Avdasheva, 2007; Bair & Gereffi, 2001; Nadvi & Halder, 2005), exclusion or lock-in (Palpacuer, Gibbon, & Thomsen, 2005; Quadros, 2004), and barriers to functional upgrading for smaller and/or lower-tier suppliers (Bair & Gereffi, 2001, 2003; Dolan & Humphrey, 2000).

For example, a number of studies refer to the case of Pakistani suppliers and their inability to compete with China due to the weak home country context of Pakistan. Nadvi et al. (2011), Lund-Thomsen, Nadvi, Chan, Khara, and Xue (2012), and Nadvi (2011) reported that the Chinese football manufacturing industry has surpassed the Pakistani industry in terms of export performance. They explain this observation by Chinese suppliers' ability to move to more advanced functions of football production, deepen their firm-level capabilities, and strengthen their existing position. In contrast, while Pakistani suppliers have improved their product quality, they have been unable to improve their firm-level capabilities.

Ten studies in our sample report functional upgrading for disadvantaged suppliers. Examples include a shift to design functions by Turkish automotive suppliers (Ozatagan, 2011a, 2011b), the upgrading of Brazilian footwear and furniture suppliers in product design and marketing functions (Navas-Alemán, 2011), the deepening of production capabilities in the Indonesian and Vietnamese motorcycle industries (Fujita, 2011; Sato, 2011), and the functional upgrading and downgrading of Eastern European suppliers in the apparel industry (Pickles et al., 2006), among others.

Further analysis reveals that, among the 10 studies that report some form of functional upgrading for disadvantaged suppliers, four fail to show a clear link between functional upgrading and profit margins (Crestanello & Tattara, 2011; Ozatagan, 2011a, 2011b; Smith, 2003). Instead, there is an implicit assumption that, if a supplier is able to shift its position to high-value-added functions, it will automatically transform its results and achieve higher margins.

Finally, our analysis reveals that disadvantaged suppliers who did improve their financial performance in GVCs exercised some form of managerial agency to leverage the effects of upgrading/downgrading. Fifteen of the 44 studies report an increase in profit margins for disadvantaged suppliers. For example, Hoque et al. (2016) explored small Bangladeshi apparel suppliers' strategies for accessing and

acquiring knowledge from diverse sources. This knowledge acquisition process allowed these suppliers to engage in process upgrading, which in turn led to an increase in their overall profitability. Similarly, Ponte and Ewert (2009) revealed a positive relationship between product upgrading and suppliers' profit margins. Pickles et al. (2006) and Plank and Staritz (2015) found that downgrading can also lead to an improvement in suppliers' financial performance. Furthermore, Selwyn (2007) demonstrated how improvements in workers' conditions contribute towards firms' financial performance.

However, while functional upgrading is reported in 9 of the 15 studies, it does not seem to be the main determinant of the disadvantaged suppliers' increased profit margins, as we will show in the next section (see Table 2)

Disadvantaged Suppliers' Strategies for Improving Profit Margins

From the 15 papers that report positive outcomes for disadvantaged suppliers, three main approaches stand out. The first strategy targets increased legitimacy for suppliers within the position they already occupy. This strategy is likely to occur under highly asymmetric power conditions (Choksy, 2015; Contreras, Carrillo, & Alonso, 2012; Darby, 2013; Murphy, 2012). The second strategy involves suppliers' attempts to diversify into new positions to reduce their dependency on single GVC actors and thus bring more balance into existing asymmetric relationships (Fujita, 2011; Navas-Alemán, 2011; Sato, 2011). The third strategy aims to enhance suppliers' responsiveness and adaptation under highly competitive and turbulent conditions (Pickles et al., 2006; Plank & Staritz, 2015).

Six of 15 papers report instances of suppliers successfully increasing their profit margins through establishing legitimacy in the eyes of their foreign buyers (Choksy, 2015; Contreras et al., 2012; Darby, 2013; Murphy, 2012). For example, Choksy (2015) introduced the case of an offshoring services provider (OSP#A) in Pakistan and its relationship with a large US-based MNE. During the initial stages of OSP#A's process of building a relationship with the MNE, the latter imposed strict standards and frequent monitoring to oversee the progress of the project. OSP#A was already working on both the design and development of the software application. However, both functions were highly dependent on the interaction with and approval of the client (the MNE).

However, the supplier ultimately succeeded in changing the dynamics of the relationship. On the one hand, it continually responded to the MNE's coordination needs by creating multiple ways of communicating its progress (e.g., through an onsite manager, presenting demo versions of the software application, increasing the scope of its availability for requests from their MNE client). Furthermore, OSP#A provided training on time-zone issues for its employees and created a platform for its clients to get in touch irrespective of the time in Pakistan. The use of agile communication techniques not only created transparency that was valued by the client but also streamlined the supplier's internal processes, which resulted in increased efficiency.

On the other hand, given the nature of the project, it was in the client's interest to interact more collaboratively, both to reduce coordination costs and potentially improve outcomes. OSP#A's successful completion of the project led to increased legitimacy and trust. This manifested in the following three ways. The client provided a positive reference that was instrumental to OSP#A's expansion in the US and acquisition of additional clients. Second, as a consequence, the supplier gained access to more advanced technological projects. Finally, the client adopted a more collaborative way of interacting, in place of the initial, authoritative stance. In summary, OSP#A gained the capacity to participate in a more democratic way and contribute to important decision-making processes.

Three of the 15 empirical studies describe a diversification strategy (Fujita, 2011; Navas-Alemán, 2011; Sato, 2011). While suppliers adopting a legitimacy-enhancing strategy seek to improve their credibility in the GVC though relationship and trust building, the suppliers examined in these three papers attempted to break out of a particular GVC, either partially or completely. For example, Sato (2011) described the experience of Indonesian motorcycle suppliers exposed to highly power-asymmetric relationships with their Japanese buyers. In response to buyer pressures, the suppliers improved the depth of their production management capabilities. This was facilitated by their long history of working with Japanese buyers who placed significant emphasis on production management. Although production management capabilities gained through this relationship helped the Indonesian suppliers to meet buyer demands, their profit margins remained low. As a result, in order to improve their profitability, many of the suppliers opened brand-specific factories. Such practices increased the efficiency of client audits. Furthermore, separating their Japanese from non-Japanese clients ensured that the relationship with their Japanese buyers remained untarnished. Furthermore, the establishment of non-Japanese-buyer-specific factories helped the suppliers to reduce their dependency on their Japanese clients and expand the scope of their client portfolios. These actions reflect a higher degree of freedom and independence, rather than a change in suppliers' value-chain position.

The remaining six empirical studies provide insights into how suppliers can increase their responsiveness in a highly competitive and turbulent environment (Gibbon, 2008; Ponte & Ewert, 2009). The data from these papers exemplifies the capacity of disadvantaged suppliers to handle external pressures in a constrained environment and make effective decisions to stabilize profit margins. For example, Plank and Staritz (2015) studied the case of Romanian suppliers working under intense global competitive pressures,

further challenged by a global economic crisis. The upgrading trajectories of these apparel suppliers were shaped by the contextual conditions at both local and global levels. During the 1990s, Romania opened up its economy and promoted a special policy, also known as the "Lohnsystem." This policy encouraged Romanian suppliers to downgrade from capital-intensive activities to more labour-intensive low-value-added services for foreign buyers. Many of the state-owned firms had previously had design and branding departments before adopting this process. They were reduced to providing functions of sewing fabric and finished products based on the patterns and designs provided by Western buyers. During this phase, Romanian suppliers further strengthened their position in apparel production by acquiring and deepening product and process capabilities, including improvements in delivery, speed, and flexibility related to fast fashion-sourcing principles and shifting to more sophisticated products (e.g., from men's cotton shirts to men's wool jackets).

The Romanian apparel industry reached its peak in 2004. However, the industry's growth then started to slow due to increasing competitive pressures and increasing labour costs. The global economic crisis further contributed to these challenges, as demand in the end-markets declined. Between 2005 and 2013, the number of firms in Romania's apparel industry fell from 6,000 to 4,300. In order to survive in this context, suppliers adopted a number of measures. The key driver of suppliers' financial performance during the industry's high-growth period was the downgrading of production. However, this high-volume-low-value strategy was not sustainable under the new circumstances. As a result, some suppliers began to offer higher-value-added services to some clients in order to be able to continue delivering low-value-added services to other clients. In addition, a number of suppliers diversified into new end-markets, including domestic markets. This gave them the opportunity for functional upgrading (moving into design and branding functions). Another strategy entailed the relocation of low-value-added activities to poorer regions.

Discussion

This paper set out to review the empirical literature related to the implications of upgrading for developing country suppliers, with special focus on disadvantaged suppliers, in terms of their profit margins (Murphy & Schindler, 2011; Plank & Staritz, 2015). Based on the analysis of 44 empirical studies, we have concluded that under certain conditions, disadvantaged suppliers are able to capture more gains in GVCs by other means than functional upgrading or in addition to it (Pavlínek & Ženka, 2015; Pickles et al., 2006). Disadvantaged suppliers tend to operate under challenging conditions in terms of their institutional environment and high degree of competitive pressure. In consequence, shifting to higher-value-added functions is generally difficult for these suppliers (Smith et al., 2014; Tokatli, 2013). Notwithstanding this, the review of the empirical literature identified three strategies that suppliers can adopt in order to improve their financial performance. Such strategies include legitimacy enhancement, breaking out of captive GVCs through diversification, and adaptation to adverse environments (Darby, 2013; Ponte & Ewert, 2009; Sato, 2011).

The results furthermore point to the importance of adopting a more contextually shaped and agency-oriented view of upgrading, in which suppliers actively design and implement strategies to capture higher profits in GVCs. In line with Allen (2003) and Bandura (2006), these strategies can be differentiated from the process of product, process, and functional upgrading. In contrast to these classical definitions of upgrading, these strategies address the creation of conditions under which suppliers can exercise their managerial agency and, consequently, utilize different upgrading/downgrading trajectories and transform them into profitable outcomes.

These findings challenge a prominent IB view that suppliers are not able to reap sufficient benefits from participating in GVCs (cf. Buckley & Strange, 2015; Buckley & Verbeke, 2016), due to a lack of (or a lack of control of) firm-specific assets. To this end, the perspective of separating the possession of capabilities/assets from the capacity to utilize them, and studying the conditions that foster the actual act of utilizing them, can be considered an important avenue that needs more attention in the IB literature. As evidenced by the case of OSP#A in Choksy's (2015) study, the assumption that suppliers lack the firm-specific assets and/or capabilities necessary to benefit from GVC participation may not necessarily be true. In this case, the supplier's success in building legitimacy created the capacity to leverage its existing capabilities. In other words, the main barrier to capturing more value in the GVC was not the firm's lack of capability. Rather, the client's assumptions about the supplier's credibility erected barriers against the supplier's leveraging of its own existing capabilities. The establishment of its legitimacy created the conditions that subsequently allowed it to fully utilize and capitalise on its capabilities.

This perspective furthermore contributes to the GVC literature in two ways. First, it moves away from structural approaches whereby disadvantaged suppliers are considered dependent upon global or developed-country buyers to support and promote upgrading processes (Gereffi et al., 2005). Attributing managerial agency to suppliers enables the investigation of suppliers' strategies for learning, unlearning, contesting, and collaborating with other actors to accrue higher profits from GVC participation (Kawakami et al., 2011). Secondly, investigating supplier agency and the conditions fostering the exercising of that agency goes beyond suppliers' intent to learn in order to fulfil buyers' demands.

As the review revealed, strategies geared towards establishing legitimacy, breaking out of captive relationships, and adapting to uncertain environments are approaches that resulted in improved conditions that in turn allowed suppliers to carry out a wider range of actions.

In light of the above, future research may wish to accord more attention to the necessary conditions fostering supplier action and to the identification of a wider range of supplier strategies that can help create and improve these conditions. The current study did not specifically control for geographical area or type of industry (e.g., low-technology labour-intensive versus high-technology capital-intensive). Further study is needed to account for these factors. Connected to the nature of the industry is the degree of benefits lead firms reap from supplier upgrading. It is expected that lead firms will be less keen on building barriers to their suppliers in industries where they directly benefit from supplier upgrading. Furthermore, the selection of empirical studies for this review was mainly contingent on whether they contained at least a sub-sample of disadvantaged suppliers. In order to conduct a more in-depth comparison between disadvantaged and privileged supplier strategies, future research would need to adopt a different selection strategy. Also, more empirical work is needed to further advance our understanding of the relationship between upgrading and value capture.

JEL Classifications: F23, D23, L23, L50, M16, O30

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