

**Walking Before You Can Run:  
Rethinking the Types of Knowledge, Networks and Institutions  
Emerging Market SMEs Need to Benefit from GVCs\***

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Advancing the ability of emerging market SMEs to learn, absorb new technologies and grow is one of the greatest challenges in economic development and to theories of knowledge transfer. We analyze the mechanisms that can facilitate or impede the participation of Latin American SMEs in Global Value Chains (GVCs), and in turn improve their capabilities and productivity. We attempt to shift the focus of attention that scholars and policymakers have towards the types of knowledge and network linkages that emerging market SMEs need to sustainably benefit from GVCs. By drawing on recent work from the knowledge theory of the firm, development, and network dynamics, we call into question a core assumption about the necessary benefits that can accrue to SMEs by being tied more closely to sources of pioneering technologies. We argue instead that in order to overcome legacies of resource constraints and technology gaps, these *SMEs need access to a variety of applied and experiential knowledge* that help them transform their existing organizational capabilities into ones that enable them to implement basic international process and product standards, in turn allowing them to learn from potentially fruitful relationships in GVCs. Because of the way such knowledge is created, through intense interactions and exchanges of tacit knowledge, access is constrained. With a focus on the need for broad based upgrading of SME capabilities, we further suggest that *particular constellations of inter-organizational networks and public-private institutions*, often overlooked in IB research, are best suited to facilitate such access.

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Over the past 20 years, scholars of international business (IB) and development have increasingly debated how emerging market firms might benefit from integrating into global value chains (GVCs) – be they as direct exporters or as suppliers to global buyers and foreign MNC subsidiaries (Alcacer & Oxley, 2014; Gereffi & Sturgeon, 2013; Meyer & Sinani, 2009). This issue is particularly important for the development of emerging market small and medium size enterprises (SMEs), which typically represent the vast majority of firms and the majority of manufacturing output and employment. For instance, in Latin America, SMEs account for an average of 65% of manufacturing production and 80% of employment. (IDB, 2014). Scholars and policy makers believe that increasing their participation in GVCs would not only bring immediate economic benefits, such as improved earnings and wages, but improve the general competitiveness and technological sophistication of SMEs. The basic notion is that with the liberalization of trade and investment, SMEs can become exporters or suppliers of global buyers or MNC subsidiaries, and in turn, benefit from the great spillover effects of these value chains. Put another way, GVCs can become vital sources of technological and organizational upgrading and knowledge transfer for local SMEs, in turn strengthening the SME sector and helping emerging market countries break out of the middle income trap (ECLAC, 2014; OECD-ECLAC, 2013).

However, despite over two decades of increased economic openness, these benefits have not manifested themselves consistently and evenly in emerging market countries. In Latin America the problem is particularly acute as SME productivity and participation in GVCs have advanced minimally, lagging far behind their peers in the OECD as well as in East Central

Europe and Asia.<sup>1</sup> For instance, this concern was at the core of a 2014 report by McKinsey Global Institute (Bolio et al., 2014) about the relative gains in productivity in Mexico after twenty years of NAFTA. Although exports and foreign direct investment have grown significantly, productivity has remained flat. In particular, SME productivity and capabilities have greatly declined, along with real income, by about 20% while SME employment has increased.<sup>2</sup>

This chapter analyzes the mechanisms that can facilitate or impede the participation of Latin American SMEs in GVCs, and in turn impact improvements in their capabilities and productivity. In so doing, we attempt to shift the focus of attention that scholars and policymakers have towards the *types of knowledge and network linkages* that emerging market SMEs need to sustainably participate and benefit from GVCs. By drawing on recent work from the knowledge theory of the firm, development, and network dynamics, we call into question a core assumption about the necessary benefits that can accrue to SMEs by being tied more closely to sources of pioneering technologies. While we do not deny the importance of continued investment into advanced systems and technologies, an overemphasis on such investments and market incentives found in the GVC and international business literatures often neglects the need and complexities for building new firm capabilities, particularly for SMEs in emerging market countries (McDermott & Corredoira, 2014; Morrison et al., 2008).

We argue that in order to overcome legacies of resource constraints and technology gaps, these SMEs need *access to a variety of applied and experiential knowledge* that help them

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<sup>1</sup> Blyde (2014) shows that Latin America tends to participate in GVCs at a lower rate than the EU or Asia, finding that exports from the EU and Asia include 15 and 12 % points more foreign value added, respectively, than Latin American exports.

<sup>2</sup> Moreover, Mexican firms have limited value added in comparison to the value of imported intermediate inputs and technologies. The local content of Mexican exports is only 23% (Blyde, 2014, p. 101), whereas it has reached 60% of China's exports in recent years (Koopman, Wang, and Wei, 2008).

transform their existing organizational capabilities into ones that enable them to implement basic international process and product standards, in turn allowing them to learn from potentially fruitful relationships in GVCs. Because of the way such knowledge is created, through intense interactions and exchanges of tacit knowledge, access is constrained. With a focus on the need for broad based upgrading of SME capabilities, we further suggest that particular constellations of inter-organizational networks and public-private institutions, often overlooked in IB research, are best suited to facilitate such access.

Section I motivates the issue by synthesizing an extensive set of secondary data. The data reveal the importance of SMEs in Latin American economies as well as their weak productivity and GVC participation rates, compared to OECD countries as well as to peer middle income countries in East Central Europe and Asia. Section II briefly demonstrates a shift in public policy in Latin America to support SMEs and GVC integration over the past twenty years. Although generally underfunded, SME support programs increasingly focus on providing incentives for SMEs to build linkages in GVCs and clusters. Yet the limited sustained impact of the policies indicate an overly mechanistic approach to learning and upgrading.

Section III builds our theoretical argument. We begin by critically analyzing two common approaches to the ways in which local suppliers can overcome their inherited technological gaps and benefit from GVCs – absorbing knowledge spillovers as exporters or suppliers to MNCs and as users of frontier R&D from domestic institutions. Our criticism is that MNCs and sophisticated R&D institutions mainly convey to local firms “what” products and processes they need, but often ignore the “how” and “why”. This experiential or applied knowledge is often tacit or sufficiently complex such that it is not forthcoming in a broad scale

from the market or GVCs but rather embedded in local industrial districts and producer communities (Perez-Aleman, 2011; Pietrobelli & Rabellotti, 2011).

Building on a variety of cases in Latin America, Section IV explains how the mechanisms for creating, recombining and disseminating this knowledge are different from the above approaches, but rather depend on particular constellations of public-private institutions and learning networks (McEvily & Zaheer, 1999; McDermott, Corredoira & Kruse 2009; Zuckerman & Sgourev, 2006). In illustrating our approach, we pay special attention to ways in which certain non-market institutions can act as social and knowledge bridges. The review of the evidence allows us to propose some new directions for research about the interaction between GVCs and local networks in emerging markets as well as the ways in which SMEs learn and innovate across countries. By way of conclusion, we note how a focus on SME learning allows management scholars to engage forcefully in the growing public debate about the middle income trap afflicting emerging market countries.

### **I. Weak GVC Participation and Productivity for SMEs**

The main conduits for the transfer of international standards and technology for emerging market countries are exports and FDI.<sup>3</sup> While both have largely increased over the last twenty years for the leading countries in Latin America, their impact is constrained. On the one hand, exports for richer countries like Argentina, Brazil and Colombia remain less than 20% of GDP. On the other hand, when exports and FDI have expanded, they have tended to concentrate in primary sectors or lower valued and natural resource based manufacturing (OECD, 2013; ECLAC, 2014)

An important way to determine the value of international linkages into these countries is to track the participation rates of these countries into GVCs. Figure 1 offers a recent

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<sup>3</sup> See Montalbano, Nenci, Pietrobelli (2016) for a recent test of the relevance of exports, FDI and GVC participation for firms' productivity in Latin America.

comparative snapshot of GVC participation rates.<sup>4</sup> The evidence presented suggests that Latin America is less integrated into GVCs than other regions of the world, particularly its competitors in East Asia and the post communist countries of East-Central Europe (aka, transition economies). Substantial differences occur across countries in the region: in Central America and Mexico an upstream specialization tends to prevail suggesting a relevant presence of foreign inputs in their overall exports through arrangements such as in-bond assembly. But for the typical export processing firm in Mexico the share of domestic value added as a proportion of its exports was equal to 24% in 2013 (it was 28% in 2007). By contrast, the share of domestic value added for China was already 35% in 2000 and rose to 49% in 2006 (Blyde, 2013). In South America a downstream integration prevails, with countries more involved in exporting goods which are intermediate inputs in other countries' productions, typically natural resources and minerals, like for Brazil, Chile, Peru and others.

How might this overall landscape of weak international integration impact SMEs? On average, only 13% of South American SMEs export directly. Figure 2 displays the export participation rates for SMEs across LAC countries using 2010 World Bank Enterprise Survey data. It shows the percent of SMEs that directly export at least 1% of sales with a few exceptions. This pattern holds true across economic sectors with large firms exporting substantially more than SMEs in both manufacturing and service sectors (although the difference within services is less). This export participation by Latin American SMEs is very low compared to Asian countries like Malaysia (55%), Thailand (47%) or South Korea (19%) (IDB, 2014). Similarly, the export intensity of South American SMEs (export sales as a percent of total sales) also tends to lag behind other countries in the region and abroad. While few SMEs in the region are

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<sup>4</sup> UNCTAD's estimates of GVC participation rates i.e. the share of a country's exports that is part of a multi-stage trade process, are the sum of the foreign value added (FVA) used in a country's exports (the upstream component) plus the value added supplied to other countries' exports (the downstream component), divided by total exports.

exporters, when analyzed together a few patterns emerge. SME exporters in Latin American tend to have foreign capital (at least 10% foreign ownership), they tend to be older (16 years or older) and more productive, and they tend to pay higher wages than non-exporter firms (IDB, 2014). Thus, it could be argued that a few strong performing SMEs succeed in their efforts to penetrate export markets and thereby benefit from learning-by-exporting processes (Montalbano et al., 2016), while less productive firms do not have the capabilities and know-how to expand beyond the domestic market.

Table 1 shows that SME exporters in South America represent a large percentage of all exporters, yet their relative importance remains low. For example, while Peruvian SME exporters account for 88% of all exporters, they only account for 3.3% of total export sales. In Chile, despite the fact that 58% of all exporters are SMEs, they only make up 8% of the total export value (and create 21% of jobs directly related to exports) (ECLAC, 2014, p. 102). By comparison, for the typical EU country, about half of export value is created by SMEs. Furthermore, Latin American SME exporters tend to export a small number of products to a small number of regional markets (IDB, 2014).<sup>5</sup>

SMEs are also integrated into GVCs indirectly through supply chains and production linkages with large exporter firms. For example, it is estimated that, at the aggregate level, in Chile there are an average of five suppliers (mostly SMEs) for every export firm, and the evidence suggests that, in the case of about half of all SME exporters, there are 16 other SMEs that provide them with inputs and services (ECLAC, 2014, p. 103). These indirect effects are

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<sup>5</sup> The average exporter firm in Colombia, Chile, Ecuador and Peru exported five products to three destinations between 2007 and 2009. However, the median exporter firm in these countries only exported two products to one destination (IDB Exporter Dynamics Database). Nonetheless, SMEs have the potential to contribute to export diversification. For example, in 2008 SMEs in Peru and Argentina each exported over one thousand products that were not exported by large firms (IDB, 2014); in contrast, large firms only exported between 195 to 330 products not exported by SMEs.

increasingly common, as exposure to international markets and technologies for developing countries comes increasingly via participation in fragmented value-chains managed by MNCs. New evidence shows that 28% of exports worldwide are made by intermediate products produced in third countries (31 in developed countries and 25 in developing countries respectively). In Central America this percentage stands at 31 while in South America only at 14, largely due to the importance of natural resources and commodities exports with little foreign inputs from South America, and assembly operations in Central America and Mexico (see above and UNCTAD, 2013, p. 127). In fact, of the little data available, SMEs tend to participate more in export oriented chains than in direct export operations. For example, in Chile, some 4,800 SMEs carried out direct export operations in 2010, whereas at least 33,000 served as suppliers to export companies (ECLAC, 2014, p. 129).

While the above evidence gives an admittedly partial picture, it does suggest that SME exposure to international knowledge bases is constrained by the overall structure and industrial organization of multi-stage GVCs. The question is how this structure and quality of the linkages can impact technological change and productivity. On the surface, the growing evidence from case studies reveals that firms that have successfully integrated into GVCs have been able to upgrade their products, processes and functions (Gereffi et al., 2013, Pietrobelli and Rabellotti, 2007). Moreover, greater participation by SMEs in GVCs would enable these firms to indirectly access foreign markets and thereby maintain greater interaction with larger, more established firms in the chain. This has the potential to create spillover effects through improved processes to meet quality standards (leading to greater efficiency and productivity), as well as access to new technology and organizational practices.

Yet, it is still unclear whether these forces are a cause or effect with relationship to SME productivity gains during the same period. As shown in Figure 3, in comparison to advanced countries, SMEs in South America are much less productive than their larger counterparts. For example, the labor productivity levels of small firms relative to large firms ranges from 16% to 36% in South America but from 63% to 75% in Europe (where large firms=100 percent) (OECD-ECLAC, 2013, p. 46). These discrepancies in productivity affect the earnings of workers, creating larger wage gaps than found in OECD countries. These differences, though slightly less, remain in comparisons of SME productivity in East Asia and post communist countries of East Central Europe (IDB, 2014)

The combination of the productivity and GVC participation data could best be construed as a Catch 22 for Latin American SMEs. The forces of competition and isomorphism from participating in GVCs should likely improve their productivity, but their lack of productivity, and inability to change their capabilities, can prevent them from entering the more sophisticated supply chains in the first place. We now briefly discuss how support for SMEs in Latin American has increasingly focused on integrating them into GVCs and local clusters, but their limited impact appear to be a reliance on market incentives while neglecting capabilities development.

## **II. The Shift in GVC Policy and its Limitations**

Historically, government support for SMEs and exporting firms in Latin America has not been very strong. Public support for SMEs in South America is very low and ranges between 0.03% and 0.09% of GDP, which is five to nine times less than average investments in SMEs by OECD governments. This is matched by the limited budgets for export promotion agencies in the region (OECD-ECLAC, 2013).

SME and export support program grew in the 1990s, but focused mainly on generic forms, focusing for instance on employment generation or on access to financing. In general, these approaches proved ineffective, especially in addressing the capabilities-productivity problem mentioned above (OECD-ECLAC 2013; Tan 2009; WEF 2010) More recently, some countries have reformed their policy approach and acknowledged the relevance of knowledge transfer and capabilities creation, and in turn their dependence on getting SMEs linked into learning networks to access different types of knowledge resources (public and private). To a certain degree, this shift is reflected in two different strategies to integrate SMEs into international markets. The most common approach in Latin America has been to design export programs specifically targeted at SMEs. The problem here is that SMEs are constrained by the pre-existing concentration of exports in natural resources and primary goods. Most of the current efforts of export promotion agencies in the region are focused on helping existing producers within a structured industrial base (for example, suppliers of locally made goods for the domestic market) gain the ability to sell their products internationally (Gonzalez and Hallak, 2014, p. 17). An alternative comes especially from East Asia, where countries lack natural resources. This strategy focused on integrating SMEs into global value chains based on production activities only (Gereffi, 1999).

These two different strategies toward SME integration into international linkages have varying end goals. The first strategy accomplishes the overarching goal of becoming an exporter, although SMEs must have ex ante certain capabilities (i.e. technology, know-how), making it harder for many small firms. The second strategy enables SMEs to interact indirectly with export markets through value chains. This approach requires firm-level support, as entering a GVC does not ensure that local (SME) firms will benefit (Morrison et al., 2008): the efforts to build a

solid base of technological capabilities is needed. These two approaches are not mutually exclusive and, in the case of South American countries, could be complementary (Gonzalez and Hallak, 2014).

The more effective programs have focused on promoting linkages among domestic firms and with GVCs, following the logics that clusters have core values as cognitive systems (Camuffo & Grandinetti, 2011) and can promote collective action for generating common resources (Casaburi et al., 2014, Pietrobelli & Rabellotti 2007). These are usually joint actions by governments and private actors (creating private services or KIBS), ranging from export financing (most notable in Colombia) to business partnership programs like the Development Partnership Projects (PROFOs) (Chile), business development centers (Argentina, Chile, El Salvador), outsourcing exchanges (Argentina, Brazil, Colombia, Mexico), supplier development schemes (Argentina, Brazil, Chile, Mexico), horizontal network programs (Honduras), clusters and production chains (Peru), clusters (Argentina, Brazil, El Salvador, Mexico, Nicaragua, Uruguay) and export consortia (El Salvador, Uruguay) (ECLAC, 2007; OECD-ECLAC 2013).

Comprehensive reviews of these policies have noted wide variation in success, with weaknesses emanating from neglect for SME capabilities (Casaburi et al., 2014; OECD-ELAC, 2013; Maffioli et al., 2016; Pietrobelli & Rabellotti, 2007). A reliance on economic incentives and voluntary action largely privileges either large firms or already advanced SMEs. First, the use of fiscal and credit instruments tended to benefit large firms and the most capable SMEs, which may spur healthy competition but also induce further dualism across firms (Ferraro and Stumpo, 2010, p. 89). Second, a focus on collective efficiencies tends to view the problems of SMEs as mainly issues of scale, looking to aggregate physical, human and financial resources but lacking longer term learning relationships. Third, cluster building and GVC linkage

programs still suffer from institutional and governance weaknesses – capable firms enter into agreements for joint action but tend to be smaller communities with exclusive membership (OECD-ECLAC 2013).

Notice that this shift in policy offers opportunities for SMEs to learn from GVCs and one another. But their impact in general in improving participation rates and productivity has been limited. We now turn to how these different limitations have a common problem rooted in conventional approaches to advancing capability upgrading via GVCs and knowledge spillovers.

### **III. Cutting the Gordian Knot**

Presenting the problem of SME productivity as both a cause and effect of poor GVC integration does not mean one is left in a conceptual cul-de-sac, spinning round in circles. Rather, it is simply intended to force one to consider these problems as highly interactive. To clarify the paths of interaction, it is best to return to the basic assumptions behind the dominant imported approaches to stimulating firm upgrading.

As mentioned in the introduction, the first approach stresses how through market competition and isomorphism local suppliers will invest in the necessary absorptive capacities and vertical ties with MNC subsidiaries to adopt more advanced process, products, and functions (Blalock & Simon, 2009; Kumaraswamy, Mudambi, Saranga & Tripathy, 2012; Spencer, 2008). The second approach comes from a combination of the innovation systems and network literature. Derived from experiences in advanced industrial countries, this approach emphasizes the importance of building public and private institutions for advanced R&D. (Nelson, 1993) Uniting the two is the research showing how firms can benefit from ties to certain institutions and firms with strong resources, stature and pioneering technologies (Baum & Oliver, 1991; Owen-Smith & Powell, 2004).

While we do not deny the importance of investments in advanced R&D and technologies in emerging markets, these approaches overlook core problems in the relationship between knowledge transfer and upgrading – namely a mis-specification of the types of knowledge and the constraints suggested in the knowledge theory of the firm – that are simply magnified in the context of emerging markets and SME growth. The underlying assumption from the standard views is that local firms with greater access to advanced technology and practices will have the sufficient incentives and resources to learn faster, accelerate capabilities upgrading, and improve productivity. Some firms may indeed succeed. But from a broad based upgrading perspective, three concerns arise here from work on the knowledge theory of the firm that highlights the limits on transfer.

The first concern is about the ease of knowledge transfer even with relatively standardized systems. Much of the work on emerging markets believes that because MNCs tend to bring more mature, modularized production systems, with discrete packages of technologies and interfaces, then the relevant knowledge and practices are highly standardized and can be “bought off the shelf” or easily replicated by suppliers. (Gereffi, Humphrey & Sturgeon, 2005) However, the work on even apparently highly modularized manufacturing sectors within advanced countries such as automotives, aircraft, and energy equipment has shown increasingly how the diffusion of capabilities for lean production, TQM, and continuous process improvements depends on the tacit knowledge of translating the codified practices from one context to another (Camuffo & Cabigiosu, 2012; Sako, 2004). Moreover, recent research notes how even within MNCs, subsidiaries often have difficulties because they lack the original experiential knowledge of implementation to overcome the ambiguities of cause and effect when developed processes are transferred from one context to another. (Szulanski et al., 2004)

These concerns have led researchers to emphasize how very focused learning relationships are critical for effective knowledge transfer. Researchers on the automotive industry, for instance, have shown that learning customer-supplier relationships emerge as firms jointly invest in specific routines and interactions that “permit the transfer, recombination or creation of specialized knowledge” (Dyer & Singh, 1998: 665). New knowledge and capabilities emerge for suppliers when they engage in regular, disciplined discussions with customers about adapting product designs and processes that yield joint experiments and routinized collective problem solving (Dyer & Hatch, 2006; MacDuffie & Helper, 2006).

The point here is that even with the most codified products and processes, suppliers need to make very specific investments into their own capabilities, but the relevant knowledge about how to best assess those investments and transforming their own more backward systems into more sophisticated ones is not necessarily available on the market. Practice transfer and implementation into a new context is highly complex and demands rather specific relationships, resources, and tutelage (Camuffo & Grandinetti, 2011).

This same logic leads then to a second concern about the degree to which MNCs can provide the relevant knowledge and conduits for a broad base of firms. It is becoming increasingly evident that the very competitive advantage an MNC derives from internalizing and transferring proprietary knowledge to its subsidiaries (Kogut & Zander, 1993), can actually impede its interest or ability to transfer such knowledge to suppliers, especially more backward ones. Collaboration with MNCs in sophisticated supply chains – from advanced manufacturing to fresh produce – demands that suppliers maintain a minimum level of capabilities or absorptive capacities.

In emerging markets, this capabilities gap is amplified. (Pietrobelli & Rabellotti, 2011; McDermott & Corredoira, 2010; Spencer, 2008). Even if local firms know ‘what’ they are to produce for the MNC customer, they do not really know ‘how’ or ‘why’. Learning the latter aspects comes from practice, iterative experiments and practical examples (White, 2002) and is more pronounced when tacit knowledge needs to be transferred and forces lead firms to engage in active collaborations with their suppliers (Pietrobelli and Rabellotti, 2007). These translation problems are reinforced when the firms are far from the technological frontier and lack key resources, as adaptation of the standards demands combining them with complementary inputs, like skills and know-how, which are not readily available (Perez-Aleman, 2011). In the context of an emerging market, conscious efforts to build and strengthen technological capabilities is acknowledged to be essential to exploit the potential offered by GVC integration, and often forgotten by standard GVC theories (Morrison et al., 2008). MNC subsidiaries have a limited interest in guiding such detailed, continuous training of lower tiered firms, preferring to work with a select few that made significant ex ante investments in their own systems (Giuliani et al., 2005; Kumaraswamy et al., 2012; Quadros, 2004; Gereffi et al., 2005).

Such observations have multiplied in a variety of settings -- from statistical work showing how Argentine autoparts suppliers gain few benefits for process upgrading solely from direct ties with MNC customers to case studies in agricultural and simple manufacturing sectors in Mexico, the Caribbean, Nicaragua, and Chile, where local suppliers may be aware of international standards but lack the resources and know-how to implement them in a broad based and sustained manner (Perez-Aleman 2005, 2011, McDermott & Avendano 2014, Piore & Schrank, 2014). For instance, recent work on GVCs in Argentina, Brazil and Mexico with modular, standardized technologies, as with the automotive sector, consistently shows how the

majority of local suppliers are rarely supported by chain lead firms (the MNCs) to implement consistently international process and product standards. This is all the more concerning given the growth in R&D investments by the MNCs in Brazil and Mexico in the last 20 years (Albornoz & Yoguel, 2004; Dutrient et al., 2002; McDemott & Corredoira, 2014; Quadros 2004). This barrier even transcends to functional improvements in more basic manufacturing like clothing and footwear. Work on the shoe and related sectors in Brazil has shown how lead buyers, MNCs, discouraged local suppliers from investing in design, marketing and sales to prevent their challenge to the core competencies of the MNCs (Bazan & Navas-Aleman, 2005; Schmitz, 2006).

This discussion turns our attention then to the mechanisms and institutions that could help local suppliers, especially very resource constrained SMEs, overcome the gap. Our third concern is that the logic of the first two undermines the effectiveness of the response to these problems offered by the standard innovation systems approach (Nelson, 1993), that often overemphasizes the domestic investment into advanced R&D. This focus, while helpful for long term goals, overlooks the knowledge needs for SMEs and practicality of the use of limited resources. Growing evidence shows that innovation in emerging markets mostly focuses on incremental changes to absorb and apply existing practices and technologies. (Perez-Aleman, 2011; Pietrobelli and Rabellotti, 2011; Thun, 2006). Science and technology institutions have historically been very underfund and have weak capacities, while the linkages among them and local firms are limited (Baruj et al., 2009; Sutz, 2000).

This stream of research instead places greater emphasis on non-market institutions that provide low cost access to technology application and extension services, such as in metrology, standards, testing and quality (Pietrobelli and Rabellotti, 2011). These types of services draw on

knowledge of production systems through practical examples within the resource and organizational legacies at hand. It seeks to recombine old habits and practices into new process capabilities that can meet needed performance standards (Perez-Aleman, 2011). Such an institutional view follows the notion that sustainable, dynamic clusters or industrial districts are cognitive systems that must be anchored in a network of institutions that help firms access both new standards and technologies and the knowledge and resources to translate them to the local organizational context (Camuffo & Grandinetti, 2011). Ideally, the institutions encourage inter-firm learning and specific services that help the firms understand how they can constantly improve their capabilities and why they are doing so. A typical example in the context of Latin America, comes from the state of Espirito Santo in Brazil, where local SME manufacturers overcame barriers to implementing standard production systems through the development of relational learning chains among themselves and large lead firms. This was fostered by the local government actively encouraging the development of a variety of public and private intermediary institutions that provided complementary support services and focused on matching the interests and needs of small and large firms (Villaschi et al, 2007). The learning process uses the advanced technologies and standards as benchmarks and taps into local applied and experiential knowledge to accelerate the ways in which local SMEs to adapt and improve their practices to meet them over time.

The next section explores in greater depth how these mechanisms can come about by focusing on the interaction between local producer networks and alternative non-market institutional forms. In doing so, we highlight two key constraints – the potential exclusionary nature of key institutional resources and the balkanized nature of existing producer communities. We then propose solutions to relieve them.

#### **IV. Experiential Knowledge, Networks and Bridging Institutions**

Consistent with the recombinatory view of innovation (Fleming, 2001), the research from emerging market countries suggests that to improve their capabilities suppliers need to access a diversity of applied, experiential knowledge via the constellation of the evolving non-market institutions, such as schools, business associations, and government supported centers for training and extension. As Breznitz (2005) has noted, the distinguishing traits of these institutions to support innovation are that they provide reliable channels for collective learning and knowledge diffusion as well as create forums and programs that infuse the system with trust and cooperation. Recent research in manufacturing and agriculture shows how certain industry associations and public R&D and training centers, though lacking in substantial material resources, facilitate upgrading of firm capabilities (especially in SMEs) because their services can act as repositories of diverse applied knowledge drawn from the local contexts, provide mentoring relationships, and foster collaborative inter-firm relationships (Lengyel & Bottino, 2011; McDermott et al., 2009; Perez-Aleman, 2011). In a highly resource constrained and volatile environment, like Latin America, this discussion opens analysis to a greater variety of institutional configurations for firms to improve their process capabilities. The diffusion of diverse knowledge may occur through training programs, applied practice sharing or repeated demonstration experiments via collective non-market institutions. Moreover, such activities do not necessarily demand the financial, organizational and human resources associated with the collective provision of pioneering technologies.

Hence, while the programs discussed in Section II that focus on encouraging SMEs to build linkages to one another and to MNCs are a good start, they are not sufficient. Rather, the public-private institutions vital for SME upgrading trigger both direct tutelage and social

learning among the actors. Here we begin to specify the conditions under which such institutions will likely emerge and be sustained.

First, the growing evidence points to the importance of access to diverse experiential knowledge which comes from collective learning and organizations. Consider two sets of research from agriculture where the international process and product standards are already well established but where upgrading is a product of collective action. Perez Aleman (2005, 2011) studied in detail the rise of fresh produce suppliers in Chile and dairy farmers in Nicaragua. In both cases, while the MNC buyers could specify the standards, the local producers had severe difficulties implementing them, even with long histories of professional ties. Similar the above example in Espirito Santo, great changes came about when governments and foreign agencies collaborated with associations of local producers. Together they first established the key product and process standards, and a system of local monitoring to ensure compliance. This certification process signaled to foreign firms the seriousness of the commitment and reliability of products. Next they established common organizational resources, from cooperatives to training centers, to help firms understand directly the how and why of the standards, and most importantly how to improve gradually their own practices toward those needed for the supply chain. The organizations are necessarily embedded into the industry or region so they can draw on, integrate and diffuse to experiential and applied knowledge gathered from the firms themselves. This accelerates learning since the centers are both a repository of this knowledge and then encourage mutual learning among the producers.

However, the experience of fresh produce suppliers in Mexico reveals limits to this approach alone, particularly how the common resources can become exclusionary. In their study of export suppliers of a variety of products, from tomatoes to mangos to melons to green onions

to citrus and avocados, McDermott and Avendano (2014) reveal that upgrading of practices and avoidance of outbreaks of food safety problems came only when producers created associations which then collaborated with local governments and the USDA to define the key standards and implement monitoring and regulatory steps to ensure consistent compliance. At the same time, these actors, mainly with their state governments, created subsidized training and certification programs to help firms implement the practices, despite their original backward levels. The problem, however, has been that most of these programs, and the associations themselves, exclude the vast majority of producers. To gain access to the programs, one has to be a member of the association, which in turn restricts membership largely due to significant fees. In the meantime, the Mexican government agencies, at both the federal and state levels, have made limited progress to create publicly accessible support institutions for this type of knowledge diffusion.

Another limitation is that reliance on very locally embedded institutions can constrain sustained learning and upgrading. To the extent that the SMEs and the relevant centers are part of local network or industrial district, local ties can encourage knowledge sharing, but they can also block firms from accessing new knowledge, be it advanced or experiential, from other regions or networks (Giuliani and Bell, 2005). This balkanized, closed network nature of producer communities not only can retard continuous learning for these firms but it also can limit the transfer of their applied knowledge to other less capable regions and networks.

To overcome these constraints – those of exclusive access and those of redundant knowledge – we suggest a few organizational traits to be applied to the aforementioned institutions. First, while governments, external agencies and industry leaders may focus on creating collective resources for applied and experiential knowledge close to producers and

linked to the value chains, a key institutional trait would be more encompassing public – private, or non-market institutions that can act as social and knowledge bridges across different producer communities. The idea here is that structures and programs can be designed in a variety of ways to help SMEs access a variety of knowledge resources – directly and indirectly. The indirect channel comes from training, R&D, and benchmarking programs that continually draw on and are embedded in a diverse set of localities or inter-firm networks. The direct channel comes from programs and forums that help the firms themselves begin to learn from one another, particularly those from previously isolated producer communities.

For instance, recent research on Argentine autoparts producers showed that the most effective non-market institutions – a combination of public testing and training programs and encompassing sectoral associations had both traits (Corredoira & McDermott, 2014). Despite their limited resources, the simple testing programs accelerated learning and knowledge transfer because they integrated experiences of restructuring from suppliers embedded in several different industrial districts. This allowed two types of recombinatory learning – one was the recombining of adaptation experiences from the suppliers and another was then helping integrate them with the standards demanded from the MNC customers. Indeed the same study shows that suppliers did learn from MNCs when they already were participating in such public programs. The associations did not provide the direct training, but rather were some of the very few forums where suppliers from different regions could exchange knowledge among themselves and discuss upgrading issues with the MNCs. A similar dynamic can be found in the successful salmon clusters in southern Chile. Government agencies and producer associations collaborated to create intermediary institutions to help firms learn international product and process standards, build an industry wide compliance system, and create the training and research

services to enable a large number of firms to convert their existing capabilities into ones that could meet the standards (Perez-Aleman, 2005; Pietrobelli & Rabbellotti, 2011).

Second, research suggests that the relevant public-private institutions can be designed with discreet but basic governance rules that can reinforce both open access and the bridging qualities. Drawing on work from other dynamic industrial districts in the world, McDermott et al (2009, 2007) found that the public private institutions at the center of the transformation of the Argentine wine sector had two important governance traits: rules of inclusion and rules of participatory governance. These rules demanded that government actors and a variety of relevant industry associations jointly govern and invest into these institutions. These rules helped improve the responsiveness of programs to different types and communities of firms, ensuring that their needs be met, if not immediately, at least over time. They also allowed the programs to draw on a variety of new and applied knowledge resources from these participating actors and their communities. In turn the relevant institutions first created programs that were synthesizing and disseminating applied knowledge from different producer communities and from the international markets. They also created programs that helped firms learn from one another, and especially build professional relationships across previously isolated wine making and grape growing regions. These joint, inclusive governance traits have also been found fundamental to the sustained success in clusters feeding GVCs in industries and contexts as varied as fisheries and agriculture in Chile, clothing and footwear in Brazil, and footwear and manufacturing in Mexico (See Pietrobelli & Rabbellotti, 2007, 2011, for reviews of these cases).

The upshot is that the governance form of relevant non-market institutions supporting an industry can have significant impacts on the interaction between the institutional resources and network learning. Similar to the work on KIBS in advanced industrial districts, our suggestions

for the governance traits not only allow the institutional configurations facilitate knowledge recombination and flows (Camuffo & Grandinetti, 2011) but potentially restructure existing network linkages, be they among local actors or with GVC chains.

## **V. Concluding Remarks**

In this chapter, we have argued that GVCs and the related MNCs can act as critical sources of advanced technology and knowledge transfer as a means to help emerging market countries upgrade the vast majority of their economies – namely SMEs – and in turn, break out of the middle income trap. Our discussion of Latin American SMEs and related GVCs has suggested that simply linking local firms closer to pioneering knowledge can not overcome inherited capabilities gaps. Rather, higher level learning demands first giving SMEs greater access to a variety of applied, experiential knowledge. This shift forces International Business (IB) and management scholars to rethink the learning processes and the interaction between networks and institutions.

While local firms naturally may benefit from exposure to pioneering practices and technologies, the vast majority of SMEs do not have the capabilities to capture those benefits or even link into the relevant value chains. The presence of MNCs and GVCs are unlikely to help them make the leap. In turn, a growing set of research suggests that diverse experiential knowledge can more effectively help SMEs upgrade their practices and organizational capabilities to then engage global buyers and MNCs in a more sustained fashion. Such an approach would also help accelerate the growth of a broad based SME supplier network.

We further argue that the same research offers some direction on the types of policies and institutions that can facilitate such a process. For instance, non-market institutions can be most effective in providing the relevant knowledge and training when they are structured to act as

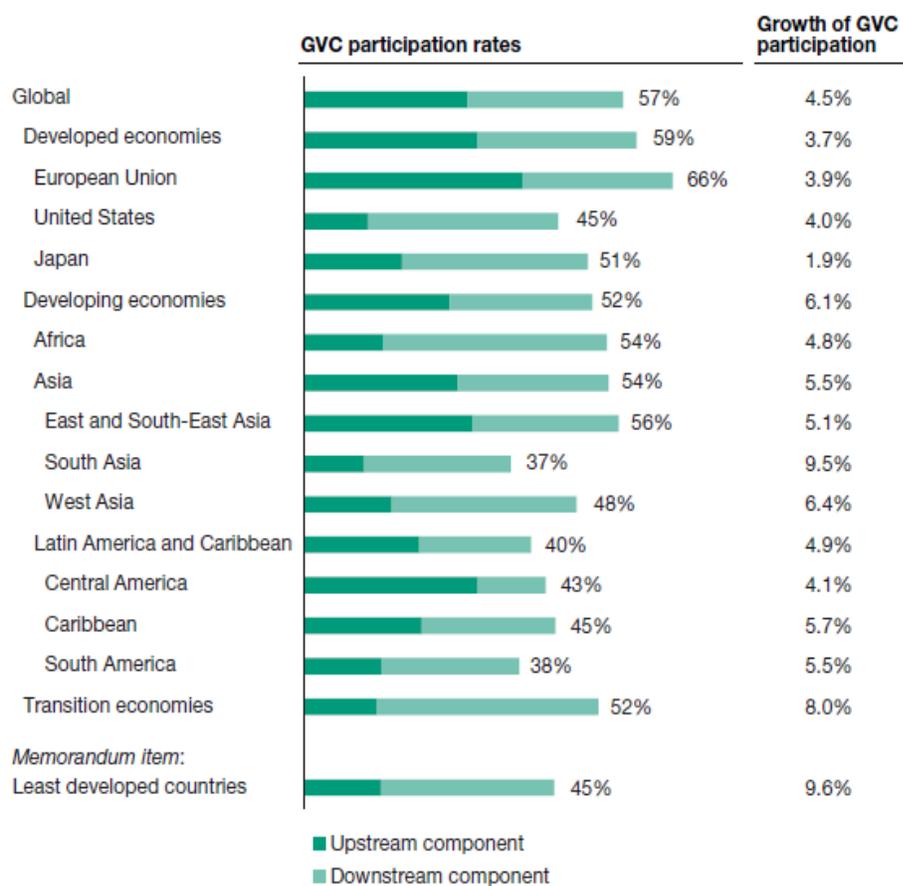
social and knowledge bridges across previously isolated producer communities. Such a design not only facilitates the gathering and synthesizing of diverse knowledge resources but also can accelerate the formation of new horizontal professional learning networks among firms. Lastly, the governance form of these institutions can both initiate and anchor such a learning structure.

In focusing on the learning conditions for SMEs in emerging markets, IB and management scholars can make two critical benefits for their fields. First, such research offers scholars a key opportunity to engage in the major debate about developing countries breaking out of the middle income trap. (Doner & Schneider 2016) This debate explores new ways that emerging market countries can greatly improve the productivity and innovation capabilities of a broad base of firms via domestic investments and different GVC strategies. However, this work is more macro-based, with unclear assumptions about firm and network-level learning and capabilities. IB and management scholars have much to say on these issues at levels of analysis often overlooked by development scholars, particularly regarding the evolution of learning capabilities, the variety of MNC strategies in collaborating with local suppliers, and the variety of knowledge creation pathways.

Second, and conversely, exploration of the limits of SME learning in these contexts can force IB and management scholars to rethink basic assumptions about firm learning, the types of international linkages facilitating local innovation, and the broader institutional configuration that underpin these processes. For instance, much of the work in IB and management often captures success factors (at the firm, network, and institutional levels) for winning firms. In expanding the scope of research to a broader set of winning and losing SMEs, researchers can re-examine core assumptions about firm capabilities, network relationships, and knowledge complexity that shape different processes for learning and technological change. At the same

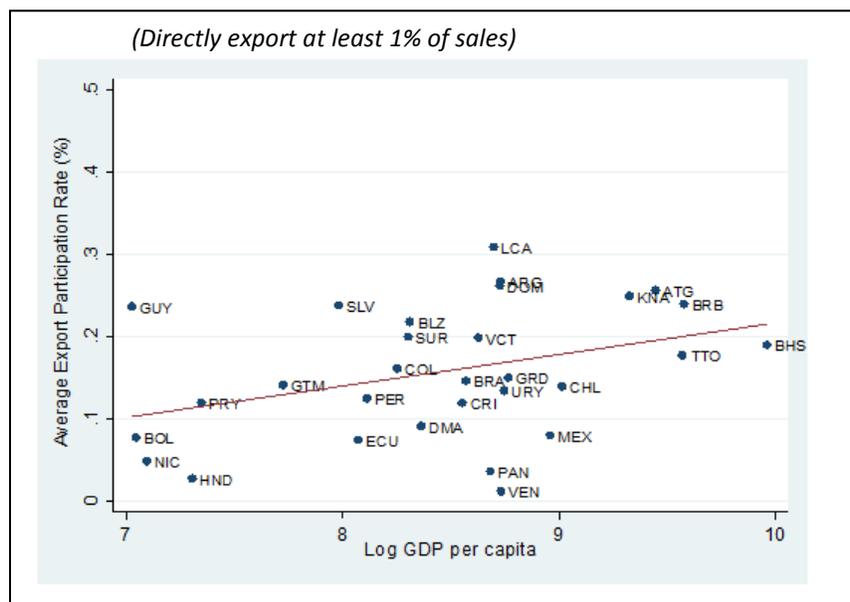
time, such an agenda would force business scholars to combine different disciplinary methods to capture data and measure effects that can be overlooked in traditional data sets. This would be consistent with scholarly mission of IB in pioneering interdisciplinary research that re-frames fundamental assumptions in strategy and organizational theory, which are often derived in the contexts of advanced industrial economies.

Figure 1. Global Value Chains participation rates, selected regions, 2011



Source: UNCTAD (2013, p. 127)

Figure 2. LAC SMEs Direct Exporters (%), 2009-2010



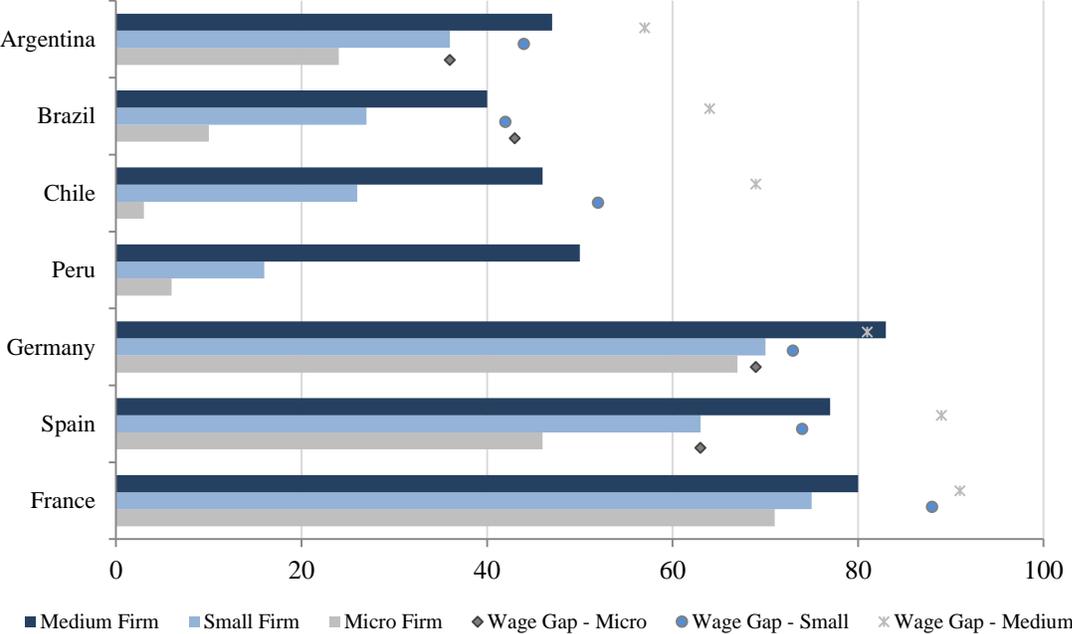
Source: Authors' Calculations, using data from World Bank Enterprise Surveys (2010) and World Development Indicators (2010).

Table 1. SME Export Indicators for Selected South American Countries (2010)

	Argentina	Brazil	Chile	Colombia	Peru
SME Exporters (% of total export firms)	76.1	61.2	58.3	71.1	88.0
SME Exports (% of total exports)	6.0	7.5	7.0	4.5	3.3
SME Export Markets	LA	LA, EU	LA, U.S.	LA, U.S.	LA, U.S.

Source: Data taken from ECLAC (2014, p. 102). EU = European Union, LA = Latin America, U.S. = United States.

Figure 3. Relative Productivity & Wage Gaps in Selected South American and EU Countries (Large firms=100)



Source: Adapted from from data in OECD-ECLAC (2013, p. 47); Wage gap data from 2006.

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