

MNEs AND CLUSTERS: THE CREATION OF PLACE-ANCHORED VALUE CHAINS

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SOMMARIO

This work discusses the presence and the role played by multinationals (MNEs) in clusters. Recent empirical research has pointed out the increasing involvement of clusters in global value chains (GVCs), however, the role MNEs can play in clusters still requires further investigation.

In particular, stemming from the cluster life cycle approach, we argue that the entry of the MNE in the local context is influenced by the specific stage of cluster evolution. We illustrate the differences between alternative ways of MNEs entry in different stages of cluster life cycle through four case studies of clusters: the Dongguan electronics cluster; the Timisoara footwear cluster; the Montebelluna sport-system cluster and the Riviera del Brenta footwear cluster. Drawing on these examples, we discuss the interwoven evolution of MNEs and clusters, also in relation to the changing position of clusters into global value chains.

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1. Introduction

This chapter discusses the presence and the role played by multinationals (MNEs) in clusters. Recent empirical research has pointed out the increasing involvement of clusters in global value chains (GVCs) (Gereffi and Korzeniewicz, 1994; Gereffi, 1999; Gereffi and Kaplinsky, 2001; Gereffi and Bair, 2001; Gereffi et al., 2005). However, the role MNEs can play in clusters still requires further investigation.

Within the cluster literature, the phenomenon of MNEs-led clusters (Markusen, 1996) has often been considered as an incomplete local development model. The strong dependence of MNE subsidiaries on their headquarters make them incapable of embedding within the local milieu, and being active part in a network of knowledge flows within cluster organizations. In contrast, the international business literature has adopted a very optimistic view, suggesting that MNE subsidiaries may evolve within their corporation as well as within the cluster, building multiple knowledge flows that can sustain new development paths. Our chapter tries to integrate these two perspectives by analyzing the interplay and long-term evolution of clusters and MNEs under the lenses of the global supply chain approach (Sturgeon et al., 2008; Belussi and Sammarra, 2010). In particular, stemming from the cluster life cycle approach (Brenner, 2004; Feldman and Braunerhjelm, 2007; Belussi and Sedita, 2009; Menzel and Fornahl, 2010), we argue that the entry of MNEs in a local context is influenced by the specific stage of cluster evolution. MNEs may play a particular role during the initial stage of a cluster life cycle – the origin – giving rise to the cluster, and thus building place-anchored value chains. However, such anchoring may be more or less intense, and thus generate different effects on the subsequent life stages of the cluster. The extent to which those subsidiaries hire local labour force (not only to perform trivial tasks) and/or develop relationships with local organizations triggers local upgrading processes (Belussi and Sedita, 2009). A lack of embeddedness gives rise to the establishment of a satellite model – as suggested more than 20 years ago by Markusen (1996) – where subsidiaries do not integrate with local social/business/institutional actors and do not promote a local development trajectory. In fact, the entry of MNEs during cluster maturity represents a more intriguing case. The entry of MNEs through greenfield investments or the acquisition of firms having high-technical competences alters local governance mechanisms, and, particularly in the latter case, puts the local chain of subcontractors under heavy control. The more extensive or important the acquisitions of local firms, the more the place-anchored value chain will be managed by MNEs, within a top-down governance system.

We here illustrate the differences among alternative ways of MNEs' entry in different stages of the cluster life cycle through four case studies concerning clusters. Two of the observed clusters originated by foreign investments (the Dongguan electronics cluster and the Timisoara footwear cluster), while the other two clusters attracted MNEs in the maturity stage (the Montebelluna sportssystem cluster and the Riviera del Brenta footwear cluster). The latter cases differ for the intensity through which the phenomenon of MNEs' entry took place. In one case, MNEs were never able to dominate the local cluster, while in the other, MNEs acquired many local SMEs in just 10 years, exerting a deep control over the cluster. Drawing on these examples, we discuss the interwoven evolution of MNEs and clusters, also in relation to the changing position of clusters in global value chains. As we will show, MNEs do not necessarily play the role of cluster lead firms. In the two first cases studied, clusters formed by MNEs lacked of local dynamism in the long run: indigenous entrepreneurs never sprang up, and local companies did not activate learning processes for improving either the production process or the products. Firms remained blocked in their condition of low-cost subcontractors, without developing selling and marketing autonomous functions. They only slightly improved their relative position moving from a low-tech sector to a medium-tech sector, thus increasing the economic value of the individual activity performed. In the second two cases, we observed more variability. The Montebelluna sportssystem cluster was never widely penetrated by MNEs, and local firms grew, transforming into large transnationals or MNEs. By doing so, they were able to keep their position on international markets stable, competing with the largest global firms existing in the sportssystem sector (Nike, Adidas etc.). In the Montebelluna cluster, firms gave rise to a GVC either by creating a satellite district (in

Timisoara, Romania) for the manufacturing of low-tech/low-costs activities, or by outsourcing some activities to firms located in China and other emergent/developing market economy countries. In the Riviera del Brenta cluster, a wave of acquisitions from the two major worldwide fashion and luxury groups (LVMH and Kering) transformed the cluster, where the leading groups now coordinate some local supply chains. In this model the old industrial district has become a specialized area where MNEs have created “place-anchored” value chains. In the Riviera del Brenta cluster only 20–30% of the local activity is now in the hands of endogenous entrepreneurs, able to sell their products on international markets. This process has loosened the embeddedness of firms in the local context, also decreasing their relationships with local institutions, which, initially, were used to co-evolve with local cluster firms..

2. MNEs, clusters and timing of entry: a literature review

Literature has shown that MNEs are often attracted into clusters (Dunning, 2000) in order to gain access to specific pools of resources and competences (Birkinshaw, 2000; McCann et al., 2002; Nachum and Keeble, 2003). Some research has focused on the role played by MNEs entering clusters for local development and for cluster upgrading (Humphrey and Schmitz, 2002; De Propriis and Driffield, 2006; Sturgeon et al., 2008; De Marchi et al., 2014). However, little is known about the role MNEs can play in the different stages of cluster evolution.

In order to investigate this aspect, we refer to the concept of cluster life cycle (Brenner, 2004; Feldman and Braunerhjelm, 2007; Belussi and Sedita, 2009; Menzel and Fornahl, 2010). Literature has identified three main stages of cluster life cycle: origin, development and maturity. Along these stages we assist to variations in the local population of firms and workers, and in the structure of their social and business relationships. In addition, different phases of cluster development correspond to different stages of the evolution of cluster-specific conditions in terms of quantity and quality of the local pool of contextual knowledge and skills, social norms and business practices.

In the origin stage, the set of cluster-specific conditions are not present. Retrospectively, we can say that the local fabric of institutions, knowledge and competencies has not yet formed. However, the cluster can host some historical sediment of knowledge and competencies, as well as a local culture, not necessarily moulded on the features of a specific kind of industry – which at this stage does not yet exist (Brusco, 1986). The development stage is characterized by the emergence of a set of cluster-specific institutions, knowledge and competencies. The type of knowledge exchanged among the actors in the cluster is mainly tacit, and therefore difficult for external agents to grasp. In the maturity stage, the local population’s growth rate slows down gradually, as does the virtuous cycle of the semi-automatic reproduction of cluster-specific conditions. Part of the tacit, cluster-specific knowledge, previously accumulated, progressively becomes codified, and the production of new pieces of tacit knowledge gradually slows down.

MNEs can enter in different stages of cluster evolution, possibly generating different effects on the inclusion or the positioning of cluster firms in GVCs. Drawing on a review of the literature on clusters and MNEs, the following Table 5.1 summarizes the determinants of MNEs’ location choice in the different stages of cluster evolution.⁴ In what follows, we gave special attention to cluster origin and maturity, because literature reports evidence of MNEs’ entry in clusters mostly in these two stages (see Table 5.1 and Belussi et al., 2013).

MNEs can play an important role in giving rise to cluster emergence (Manning, 2008; Belussi and Sedita, 2009; Mudambi and Swift, 2012; Giblin and Ryan, 2015). Mudambi and Santangelo (2014) argue that the mode of entry, timing of entry and the corporate mandate of the subsidiary have an impact on the transformation of a region from a “shallow pool of resources” to an “emerging cluster”. This process is activated in particular when subsidiaries are autonomous and “competence-creating” (Cantwell and Mudambi, 2005). Pioneering MNEs as first entrants in the region creates a legitimacy of the location that attracts other subsidiaries. The emergence of a cluster depends on linkages and knowledge transfer mechanisms created by these early pioneering entrants (Østergaard and Park, 2015). As a result, the cluster

⁴ Table 5.1 was constructed by collecting all publications present in the ISI-Thomson Reuters Web of Science database (ISI) in September 2016, covering all the literature published until the end of December 2015. We delimited the topic by searching for articles on: ‘industrial district*’ and ‘multinational*’; or ‘industrial district*’ and FDI; or ‘cluster*’ and ‘multinational*’; or ‘cluster*’ and FDI. The table shows the articles retrieved in the most relevant journals in the fields of economic geography, management and innovation, and international business.

can be inserted in different global value chains. However, the outcomes of this insertion can be different. The entry of an MNE can bring an immediate benefit for the local area, in the form of new activities, new jobs, and new potential sources of knowledge spillovers. Nevertheless, the cluster does not exist independently of the MNE, but is instead a result of its presence (Bellandi, 2001; Rugman and Verbeke, 2003; Iammarino and McCann, 2010). If the MNE is inserted in a closed network, linking it to the parent company or to other subsidiaries, and does not develop any relationship with the local area, the knowledge, competencies and capabilities developed internally by the MNE will never spread to local firms. In the medium-term, this “closure” could produce relatively concentrated knowledge governance architectures (De Propriis et al., 2008), being unable to stimulate local growth processes. Moreover, in case of crisis, the MNE might opt for disinvesting rapidly and move the affiliate in another more attractive location. The absence of embeddedness eases this process (Benito, 2005).

In the maturity phase, the entry of an MNE can produce an immediate benefit. In a phase when the local engines of innovation and growth are slowing down or even stopping, the entry of an MNE can help the cluster rejuvenate or substitute worn-out components of the engines. At this stage, local firms have accumulated some knowledge-specific capabilities, but the MNEs could be more effective than local firms in the process of recombination between local and external knowledge. To the extent that MNEs operate as bridges between local and global knowledge and competencies, and create relationships with local organizations – through which these external resources can enter the cluster – the entry of MNEs can positively influence the cluster (Raines et al., 2001; Bathelt and Li, 2013). Conversely, when MNEs operate within closed networks, disconnected from the local context, the effects on cluster development are uncertain.

For sure, much also depends on the type of activities carried out by the multinational in the cluster. Following McCann and Mudambi (2004, 2005), MNEs’ offshoring strategy starts to take advantage of low salaries, but over time they activate a process of local incremental learning and move rapidly toward a process of product improvement reengineering. In other cases, they start to benefit from their new location in terms of innovation and new knowledge absorption (Kenney et al., 2009). Literature has hypothesized that the entry of MNEs in clusters gives rise to a significant process of technology transfer between MNE subsidiaries and local firms (Dunning, 1998, 2000). Some empirical contributions have shown that this has occurred (Crone and Roper, 2001; Holm et al., 2003; Kim and Zhang, 2008; Menghinello et al., 2010; Gugler et al., 2015), while others have been more cautious or critical (Bair and Gereffi, 2001; Phelps et al., 2003; Görg and Greenaway, 2004; Lipsey, 2004; Østergaard and Park, 2015).

For those who claim a positive effect of MNEs, the latter can facilitate cluster upgrading thanks to the presence of spillover effects. However, literature has shown that in order to absorb and benefit from these knowledge spillovers, the cluster must have a certain degree of absorptive capacity (Dunning, 1994; Blomström et al., 2000; Görg and Greenaway, 2004; Humphrey and Schmitz, 2002; Giuliani et al., 2005; Nadvi and Halder, 2005; De Propriis and Driffield, 2006). Thus, the improvement of cluster firms does not always come from functional upgrading, but by the extension and deepening of technological capabilities (Morrison et al., 2008).

Table 5.1 Scientific literature about timing of entry of MNEs in clusters

<i>Reference</i>	<i>Short description</i>	<i>Determinants of MNEs' location choice</i>
<i>ORIGIN</i>		
Giblin and Ryan (2015), IND_INNOV	Longitudinal study on the role of MNEs as conduits of knowledge flows, in the evolution of a technology cluster in medical technology in the West of Ireland.	No direct explanation of the motives
Mudambi and Santangelo (2016), REG_STUD	Investigation of the role of MNEs' subsidiaries in peripheral areas as conduits for global knowledge flows	Knowledge, market and resource-seeking activities
Edgington and Hayter (2013), ECON_GEOGR	Japanese MNEs moved beyond simple assembly-based to embedded clustering in Malaysia. However, such MNEs did not promote a technology upgrading of the cluster because of the poor technological environment in Malaysia, as well as MNCs' strategies that depend on technology from headquarters.	Low production costs
Gibling and Ryan (2012), REG_STUD	Inward FDI can have a positive impact in instigating a clustering process. The unit of analysis is the medical technology sector in Galway (Ireland). Indigenous and foreign-owned MNEs are analyzed.	Policy-driven FDI
Manning, Ricart, Rique, and Lewin (2010), J_INT_MANAG	Many ICT (Information and Communications Technology) clusters in Latin America are originated by FDI	Access to an increasing large pool of science and engineering talent at relatively low cost.
Sajarattanochote and Poon (2009), REG_STUD	This paper examines the geography of technology flows among MNEs located in Bangkok. It finds evidence of limited regional spillovers to first- and second-order neighbours. Technology transfer to Thai firms varies by nationality, sector, size, and age of MNEs.	No direct explanation of the motives.
Zhou and Xin (2003), ECON_GEO; Chen and Karwan (2008), INNOV; Yang (2009), REG_STUD; Lo, Niu, Yang, and Wang (2010), J_CONTEMP_ASIA; Yang and Liao (2010), ANN_REGIONAL_SCI; Zhou, Sun, Wei, and Lin (2011), J_ECON_GEOGR	Fundamental role played by MNEs in the creation of ICT clusters in China (Guangdong in particular, but also Pudong area in Shanghai and Zhongguancun in Beijing). A particular role has been played by Taiwanese and Hong Kong FDI.	Large presence of research infrastructures attracts MNEs in Beijing, while relatively low production costs and market-driven factors attract firms in Guangdong and in Shanghai area. Pro-active IFDI policies play a fundamental role in all cases.
Manning (2008), ECON_DEV_Q	Pioneer MNCs promote the initial development of clusters by customizing local institutions and business practices in accordance with their sourcing needs. This can in turn lead to the attraction of further MNEs	Access to an increasing large pool of science and engineering talent at relatively low cost, as well as to a number of specialized service providers.
Phelps (2008), REG_STUD	FDI in developing countries are at the first stage of cluster formation, while in the subsequent development phase regional policy is important to stimulate local development.	No explanation of the motives
Depner and Bathelt (2005), ECON_GEOGR; Po (2006), GEOFORUM; Zhao and Zhang (2007), REG_STUD	Central role of foreign investors in the creation of several specialized clusters in China (non-ICT clusters such as: automotive, advertising, clothing).	Abundant presence of labour and other productive resources at relatively low cost. Presence of pro-active IFDI policies.
Finegold, Wong and Cheah (2004), EUR_PLAN_STUD	Industrial policy attracts FDI in the Singapore biotechnology cluster.	Availability of research infrastructures and public incentives. Presence of pro-active IFDI policies
Fromhold-Eisebith (2002), ENVIRON_PLANN_A; Audirac (2003), J_AM_PLANN_ASSOC	MNEs triggered regional cycles of learning in the IT industry in Bangalore (India). Inferior cycles, characterized by the absence of MNEs are found instead in Bandung cluster	Favourable geographical conditions, availability of an educated labour force, some R&D infrastructures. Availability of public subsidies & – in later stages of cluster development – availability of networks of suppliers that can meet the MNEs quality and delivery standards.
Sjoholm (2002), J_CONTEMP_ASIA	FDI in Indonesia often concentrate in clusters	Availability of infrastructures and a rich pool of labour. Market-seeking motives.
Thompson (2002), WORLD_DEV	Hong Kong investments cluster around Hong Kong's neighbouring Guangdong province	Geographical and cultural proximity; abundant presence of low-cost labour and other productive resources; market-seeking motives

Kearns and Gorg (2002), INT_J_TECH_MANGE; Wickham and Vecchi (2008), EUR_PLAN_STUD	Irish software cluster originated by industrial policy, which included the attraction of FDI. Over time, foreign and indigenous firms link together.	Availability of various productive resources at relatively low cost; good institutional environment; availability of public incentives and presence of pro-active IFDI policies.
Brown (2000), EUR_URBAN_REG_STUD; van Winden, van der Meer, and van den Berg (2004), INT_J_TECH_MANGE	The rise of ICT clusters in some European countries is centred on MNEs. Indigenous MNE quickly become key drivers of the Stockholm and Helsinki ICT clusters [H]	Strong role of IFDI policies in Ireland. MNEs locate in Amsterdam mostly because of the presence of a well-developed service industry and of a number of research infrastructures.
Harrison (1994), ENVIRON_PLANN_A	Silicon Valley was created by, and remains profoundly dependent on, major MNEs and on the fiscal and regulatory support of the national government.	Availability of research infrastructures and IFDI policies.
Young, Hood, and Peters (1994), REG_STUD	Review of the circumstances under which “developmental” MNE subsidiaries may emerge in host regions and give rise to clusters.	No direct explanation of the motives.
<i>DEVELOPMENT</i>		
Demirbag and Glaister (2010), J_MANAGE_STUD	MNEs offshore R&D projects to locations where science and engineering talents and infrastructures are strong.	Access to an increasing large pool of science and engineering talent at relatively low cost.
Bagchi-Sen and Smith (2008), REG_STUD	Bangalore’s biotechnology cluster was funded by the state government of Karnataka. Later entrants were attracted by IFDI policies.	Presence of pro-active IFDI policies
Chen (2008), J_DEV_STUD; Zhou (2005), ENVIRON_PLANN_A	MNCs continue to enter in the Zhongguancun multimedia technologies district (Beijing) in the 1990s.	Presence of MNEs; access to an increasing large pool of science and engineering talent at relatively low cost; market-seeking behaviour
Ivarsson (2002), J_ECON_GEOGR	Swedish regions in their development phase attract FDI. Evidence of knowledge creation and transfer among cluster firms and MNEs.	Knowledge-seeking and competence-seeking motives.
<i>MATURITY</i>		
Østergaard and Park (2015) REG_STUD	Technological lock-in and exit of firms contribute to the decline of a wireless communication cluster in North Jutland (Denmark). MNEs have a contradicting effect, being quick to leave the cluster in case of crisis. Embeddedness is good to prevent rapid move of the MNE in case of troubles.	Knowledge-seeking and competence-seeking motives.
Potter and Watts (2011) J_ECON_GEOGR	Global networks and MNCs appear in the mature stage of development, as demonstrated in the Sheffield metals industry cluster	Knowledge-seeking and competence-seeking motives.
Cantwell and Zhang (2011) INT_J_TECHNOL_MANAGE	The interaction between MNEs and local networks depends upon the type of cluster, whether a general centre of excellence or a specialized centre. These two principal kinds of cluster are associated with different structures of local knowledge spillovers between firms.	No direct explanation of the motives
Hervas-Oliver and Albors-Garrigos (2008), ENTREP_REGION_DEV; Hervas-Oliver, Albors-Garrigos, and Hidalgo (2011), INT_J_TECHNOL_MANAGE; Oliver, Garrigos, and Porta (2008), EUR_PLAN_STUD	In the Castellon (Spain) and Sassuolo (Italy) ceramics clusters, home-grown multinationals rose in the maturity phase and then create inter-cluster links along the GVC by locating foreign plants in the two clusters [H].	Knowledge sourcing, and in particular sourcing of cluster-specific knowledge. Presence of knowledge and productive complementarities; proximity to the clients.
Asmussen, Pedersen & Dhanaraj (2009), J_INT_BUS_STUD	The presence of a strong cluster is a sufficient condition for subsidiary competences to arise.	Market and knowledge-seeking purposes
Majocchi and Presutti (2009), INT_BUS_REV	MNEs invest in existing consolidated clusters, but not in the development phase, when local entrepreneurial activity is more consistent and the rate of creation of indigenous firms is high.	No direct explanation of the motives
Whitford (2001), ECON_SOC; De Propriis, Menghinello, and Sugden (2008), ENTREP_REGION_DEV	Italian IDs internationalization has moved from exports to FDI. home-grown MNEs raised in the maturity phase of the home-cluster [H]	Abundant presence of labour and other productive resources at relatively low cost.
Amdam, Lunnan, and Ramanauskas (2007), ENG_ECON	Norwegian furniture cluster firms conducted FDI in Lithuania [H].	Abundant presence of labour and other productive resources at relatively low cost.

Biggiero (2006), ENTREP_REGION_DEV	Different patterns of IDs relocation, between selective and replicative strategies [H]	Mostly resource-access and cost-driven migration of firms from the West to the East of European clusters.
DeMartino, Reid, and Zyglidopoulos (2006), ENTREP_REGION_DEV	MNE invest in mature cluster in their home-country – the case of optics/photonics cluster in Rochester, New York.	Abundant presence of labour and other productive resources at relatively low cost and market seeking motives push location in Asia, while technology-seeking motives in Germany
De Propriis and Driffield (2006), CAMB_J_ECON	MNEs located in clusters are able to benefit from the spillovers generated by the cluster firms.	Technology-seeking motives.
Mason and Harrison (2006), REG_STUD	MNE enter the Scottish clusters in their maturity and trigger a process of positive entrepreneurial recycling.	No direct explanation of the motives
Perez-Aleman (2005), IND_CORP_CHANGE	Analysis of two successful clusters in Chile: the agro industry cluster for the conservation of tomatoes and the aquaculture cluster of salmon production. These cases reveal a positive interaction among the state, the MNEs and the local firms. The emergence of a dynamic cluster depends on building institutions that enable the coordination of learning, capabilities, and product/process improvements.	Resource-seeking motives (presence of a well-developed salmon aquaculture)
Tallman and Fladmoe-Lindquist (2002), CALIF_MANAGE_REV	The article shows how MNE can gain sustained competitive advantage in the global market place developing dynamic capabilities. In the area of capability building, firms can tap into foreign clusters acquiring knowledgeable firms	Knowledge-seeking and competence-seeking motives.
Teubal, Avnimelech, and Gayego (2002), EUR_PLAN_STUD	MNEs enter the Israel ICT cluster mostly at its maturity stage, acquiring some of its most successful firms.	Knowledge-seeking and competence-seeking motives. Availability of a large number of R&D infrastructures
Cornford and Robins (1992), REG_STUD	The development of the Northeast England cluster specialized in media tech has been eroded by the entry of MNEs.	No direct explanation of the motives

Notes: The scientific articles (ISI database) that explain the timing of entry of MNEs in cluster are listed in the table (origin and maturity stages). They are identified with authors' names, year of publication and ISI abbreviated journal title and are grouped by stage of entry/origin of the MNE in the cluster. On search criteria see note 2. [H] refers to the presence of home-grown MNEs, i.e. to local firms that become MNEs.

3. Methodology and description of the four cases

The longitudinal, comparative case study research was based on a collection of surveys carried out by the authors, addressed to firms belonging to four important clusters: two in Italy, one in China, and one in Romania. Our selection was guided by the principle of covering different cases in terms of the cluster phase in which the MNE emerged or entered/originated in the cluster. More specifically, the units of analysis are firms located as follows: the Montebelluna sportssystem cluster, Italy; the Riviera del Brenta footwear cluster, Italy; the Dongguan information technology (IT) cluster, China; and the Timisoara footwear cluster, Romania. In each cluster, besides entrepreneurs, we also interviewed several members of local organizations such as business associations, local governments, universities or research centres. These original sources were complemented with secondary sources. Table 5.2 presents the case studies. Related publications made by the authors on the topic are also reported. Table 5.3 summarizes the information on the four clusters analyzed.

Table 5.2 Basic characteristics of the four clusters analyzed

	<i>Dongguan electronics cluster</i>	<i>Timisoara footwear cluster</i>	<i>Montebelluna sportssystem cluster</i>	<i>Riviera del Brenta footwear cluster</i>
<i>MNEs entry timing</i>	Origin	Origin	Maturity	Maturity
<i>Sample size</i>	30 companies and 5 local organizations	30 companies and 9 local organizations	30 companies and 10 local organizations	50 companies and 2 main local organizations
<i>Year of fieldwork</i>	2004; 2005; 2010	2003; 2016	2003; 2004; 2006; 2011	2000; 2005; 2016
<i>Related Publications</i>	Bellandi and Caloffi (2008, 2010)	Belussi (2010b)	Belussi (2010a); Sammarra and Belussi (2006); Belussi et al. (2011)	Belussi and Scarpel (2002); Belussi and Caldari (2005)

3.1. The Montebelluna sportssystem cluster

The Montebelluna cluster, in the province of Treviso (Italy), includes about 400 companies and 6,000 employees located in the cluster, while about 11,200 workers are employed globally by Montebelluna firms (Aida 2013 and Museo dello Scarpone data) (Belussi, 2010a). Montebelluna is the world leader in technical sport shoes, ski and trekking boots, motorcycle boots and bicycle shoes. Its main competitors are specialized MNEs, while – to our knowledge – no other sportssystem clusters are competing with the district. The Montebelluna sportssystem cluster originated in the 1950s when the number of firms multiplied, forming a thick entrepreneurial area characterized by the diffused presence of SMEs. The cluster take-off was facilitated by the presence of several leading firms, such as Tecnica (established in 1890), Dolomite (1897) and Nordica (1926). The growth of the European markets during the 1950s, and the enthusiasm for mountain excursions, stimulated local firms to introduce innovative new products, such as plastic ski boots and various types of climbing and technical sport shoes, conceptualized by the most innovative local firms. The innovativeness of the cluster was strongly supported by the sedimentation of specific competencies of the local firms and their direct access to external sources of knowledge. The hub-and-spoke structure of the cluster became evident in the 1990s, when it embarked in a twofold model of international growth. Three important local firms (Tecnica, Geox and Stonefly) became MNEs, while huge external FDIs, made by GVC leading firms, entered the cluster (Rossignol, Roces, HTM, Lange etc.). Half of the founders of the district successfully remained active on the market even after the third generation. Some MNCs entered the cluster during the 1970s, such as Salomon that acquired S. Giorgio; Nike, which acquired Bauer; HTM (Head, Tyrolia and Mares), which acquired Brixia S. Marco and Munari. In the 1990s also Benetton – an Italian-owned company established in the Region of Veneto – started a process of local firms' acquisition by buying Nordica. After a while, Nordica was sold to another local firm (Tecnica). Nike, which acquired one local plant (Bauer) in order to gain access to local knowledge concerning several technical shoes' components, abandoned the cluster after a few years, selling the firm to a group of entrepreneurs (now Novation). Novation is a high-tech firm now producing new carbon components for various industries (auto, mechanics and frame glasses). In the last years, Tecnica acquired two important foreign companies, Blizzard and Lowa. Montebelluna firms (and in particular Garmont, Grisport, Lotto Sport, Tecnica, Scarpa, Alpinestars, and Geox) manage a larger number of productive and commercial units outside the cluster. They have now reached the status of MNEs, being large firms owing multiple firms and subsidiaries abroad.

For two decades local leading firms activated an intense process of manufacturing relocation, and employment levels and the local number of firms decreased dramatically. The development of the Montebelluna cluster after the 1990s saw the leading firms and also some medium-size firms outsourcing abroad the low-value activities of manufacturing, giving rise to FDIs and GVCs located in emerging countries, in Asia and other Eastern countries (Romania and Hungary) (Chiarvesio et al., 2010). In recent years, MNEs have located their prototype development and design branches in Montebelluna. A concentration process is in place, favouring the most innovative firms and leading to a shrink in the total number of firms. In relation to the model of knowledge acquisition, the most important global innovative actors are located in Montebelluna, which is now a local pole of excellence for technologies related to winter and summer sports items, based on innovation in mechanical engineering and advanced plastic moulding. As regards employment, the interviewed firms confirmed the presence of a high percentage of qualified workers. When firms recur to offshoring, they continue developing in-house the tertiary functions of design,

management, logistics and research. The presence of designers within the firms is quite common. In addition, firms also use external (local and global) designers. The impact of multinationals in the cluster has been marginal, via a rapid entry and exit. One of the latest entries of famous MNEs is that of the Turkish group Zylan, which acquired Canguro in Verona and the brand Lamberjack, transferring in Montebelluna all of the group's design activity for high-fashion shoes. Zylan has also acquired the European distribution channels of Canguro, and now it is commercializing its "designed in Italy" Turkish sport shoes. Local large leading firms – which base most of their activity in the local context – possess high innovation and export capabilities, but they do not show an MNE-like growth path.

3.2. The Dongguan electronics cluster

The Dongguan IT cluster emerged during the 1980s, thanks to the localization of a group of MNEs in the area of Dongguan, in the Province of Guangdong (China). They were attracted by three main factors: the proximity to Hong Kong and the Shenzhen area (which hosted the first Special Economic Zone in China); the presence of a huge reservoir of low-cost labour; and the presence of FDI attraction policies. The Dongguan cluster exhibits the typical features of a satellite industrial platform, populated by a large number of MNEs.

The first foreign investors to settle in the town were a large group of Taiwan-based MNEs, which established the low-tech productive phases of personal computers and electronics production in the area. These MNEs were, and still are, first-tier suppliers in the GVC led by the most famous producers of personal computers. As the local environment could not offer qualified local suppliers, Taiwanese multinationals moved the whole subcontracting system and all suppliers from Taiwan to Dongguan. The number of MNEs has gradually increased (from around 100 in the beginning of the 1980s to around 1,500 in 2010), and the Taiwanese investors have been followed by a large number of European and Asian investors. Today, the area hosts Taiwanese MNEs such as Delta Electronics, GVC Corporation, BBK Electronics, Qisheng Electronics, Tecsun, Nintaus Digital and Gigabyte Electronics. "Foxconn city" or "Ipod city" – named after the famous Taiwanese multinational Foxconn, which manufactures (also) for Apple – is located not far from Dongguan.

In the initial phase, Dongguan electronics factories were assembly plants of low-added value laptop components and similar IT products fuelled by the productive capacity of a large number of migrants coming from various areas of mainland China. Only in a later phase, companies started to carry out more complex manufacturing or logistical phases in the cluster.

The growing density and technological complexity of MNEs in the 2000s facilitated the development of the cluster. However, it never really became a high-tech and knowledge-oriented cluster. Indeed, to describe the behaviour of these multinationals, some authors have used the term "closed network" (Yang, 2006). In fact, the MNEs' subsidiaries have relationships with the parent company, other subsidiaries or with their Taiwanese subcontractors. Only a few authors report the existence of relationships between the Taiwanese subsidiaries located in China and Chinese companies (Tong and Wang, 2002). In most cases they have not established any backward or forward linkage with Chinese firms, and the cluster has remained relatively not much integrated in the local context. The fact that MNEs make an extensive use of migrant workers does not help the integration of the IT industry in the local context (Bellandi and Caloffi, 2010). Indeed, migrants are temporarily present in the city and after 2–3 years they return to their place of origin.

The inflow of FDIs slackened during the second half of the 2000s. Some MNEs reduced their activities in Dongguan, both by relocating some assembly plants in the cheapest areas of mainland China, or by moving some higher value-added activities in the area of Shanghai. The area was hit by two different forces. On the one hand, the local increase in the cost of labour and the competition from other areas that implemented FDI attraction policies (the Go-West policies constitute a striking example) diminished the attractiveness of Dongguan (and that of the whole Province of Guangdong) as a target area for the localization of assembly plants (Becker, 2014). In 2004, the monthly minimum wage was RMB 450 per month, while it amounted to 1,510 RMB in 2015 (Fang and Lin, 2015). On the other hand, the emergence of agglomeration diseconomies (pollution and overcrowding) and the low presence of well-educated human capital resulted in a business and social environment that was not attractive enough for high value-added investments.

The main impact of the presence of MNEs can be summarized as follows. In the first stage of cluster emergence, the presence of MNEs brought new jobs, infrastructure and knowledge on managerial practices that enriched the area. However, an indigenous industry has not emerged, at least not yet. In fact, only a very small group of Chinese-owned enterprises have started to work as subcontractors for the foreign enterprises localized within the cluster. Although some of these firms could survive the exit of the MNEs from the cluster, the overall medium-term impact is very uncertain (OECD, 2000; Whalley and Xian, 2010).

In order to change this trend, the local government has engaged in a continuous interaction with foreign investors, in order to try to embed them in loco. At the same time, huge investments in the creation of education and research infrastructure have been made in order to improve the absorptive capacity of local firms and workers, without being successful in creating a regional innovation system. Finally, the MNEs do not seem to have promoted social upgrading. A recent report by the National Labour Committee (2009) has denounced the very poor labour conditions of workers employed in the assembly lines of a Taiwanese MNE, and this is not the first case.

3.3. The Riviera del Brenta footwear cluster

The Riviera del Brenta footwear cluster originated in the 1960s (Italy) and rapidly grew as a typical Marshallian district. The area was already well-known for its artisanal specialization in shoe production, but the first industrial firm, Voltan, was created in 1898. Such firm was the first to introduce the automated machinery of the assembling line (manovia) in the production of women and men shoes. Voltan learned to use such machineries in the United States, where the entrepreneur had emigrated because of the poverty existing in Riviera del Brenta, as well as in the whole Region of Veneto. Voltan can be considered the anchor firm of the district. Throughout the years, many of its skilled technicians and qualified workers have created a number of spin-offs.

Initially, the district produced medium-quality shoes for the national market. The big development of the district occurred after WW II, and especially during the 1970s. Gradually, the district started to produce high-quality shoes for women (Belussi and Scarpel, 2002).

Nowadays, the Riviera del Brenta shoe production accounts for about 15% of the total amount of Italian sales of the sector. It produces about 20 million pairs yearly of which 90% are exported. At the end of the 1990s, after decades of development, the crisis arrived when the Chinese competition and the shrinking of the market for middle-quality shoes bitted the cluster. Considering only shoe producers, the number of firms decreased from 500 in 2000 to about 200 in 2015, and the local employment levels diminished from 8,000 to about 7,000 workers (clearly the average size of the firms grew over time). The craft abilities of the local firms were no longer sufficient to guarantee their survival. A process of hierarchal concentration initiated.

When MNEs started to enter the cluster, acquiring some of the local firms, they worked as gatekeepers of knowledge, bringing knowledge about fashion trends and design into the cluster, moving the cluster from a typical Marshallian district towards a hub-and-spoke model. Consequently, local firms began to produce fit-to-the-market luxury shoes, such as Rossimoda. At the same time, only in few cases very labour-intensive tasks were outsourced to low-cost foreign firms, mainly located in Eastern European countries. Many firms in the district have now been acquired by foreign MNEs, as in the case of: Rossimoda, acquired by Monique and Arcad (now Manufacture de Souliers Louis Vuitton – LVMH); Guardi by Armani; Lamos by Prada; and Iris by Gibò. Also Dior is going to expand its investments in the area with a Greenfield investment, as well as François-Henri Pinault with Kering, and Yves Saint Laurent, Balenciaga, Stella McCartney, and Gucci entered the cluster with the brand Bottega Veneta. Two important local firms remained independent and built an aggressive brand policy: the Ballin group (a medium-sized firm) and the Calzaturificio Renè Caovilla (luxury brands, specialized in women shoes for haute-couture, well known among US actresses). Recently, the local association of entrepreneurs launched Restart, a project oriented to the “rejuvenation” of the local production, and Ci Divertiamo, a start-up company founded by Giuseppe Baiardo, which is oriented to scouting new talents and promoting the creation of new firms by local young stylists.

Even if the entry of global fashion multinationals (such as Armani, Kering-Gucci, Puma, Prada, LVMH-Louis Vuitton,) downgraded some firms, limiting their commercial capabilities (Amighini and Rabellotti, 2006), it did not penalize the overall innovative capability of the cluster, which still very much relies on the role played by the local Politecnico Calzaturiero (secondary school providing vocational training), specialized in innovation and training activities. Such entry has undoubtedly changed the structure of the local district, imposing a process of concentration led by foreign MNEs. Many small subcontractors, which did not start to work for the MNEs, have closed their activities. However, the cluster as a whole is still alive and has maintained a satisfactory level of activity. The interviewed entrepreneurs think that the entry of MNEs saved the Riviera del Brenta cluster, creating a fully place-anchored value chain. However, the “side effects” of loosing market autonomy must be still better evaluated. Contrary to Buciuni and Pisano (2015), we think that the effects of global knowledge integrators on the success of clusters will be fully understood only in the medium to long term. It is still too early to say that this district has overcome the crisis.

3.4. The Timișoara footwear cluster⁵

The origin of the Timișoara footwear cluster in Romania is rooted in the presence of a bulk of state-owned companies (such as Guban, Filty and Banatim in Timișoara; Libertatea in Arad; and Solidaritatea in Oradea) that produced shoes. Banatim was founded in 1900 by an Austrian entrepreneur. In 1948 the company was taken over by the State and its name changed to “Banatul”. Filty, once the biggest local firm, was privatized after the revolution of 1989, and it still exists. The cluster took off after 1989, thanks to the entry of foreign investors who acquired many state companies on the brink of economic collapse, and created brand new plants. MNEs came to Romania mainly to explore the cost opportunity offered by local labour costs, and created a typical satellite cluster in Timișoara (Markusen, 1996). Since its beginning, the cluster was characterized by the presence of Italian entrepreneurs (from Veneto, Marche, and Emilia-Romagna) investing in Timișoara taking advantage of low salaries, good technical competences of local workers (thanks to the previous manufacturing tradition) and low cultural distance.

In the first years of the 1990s Filty was re-launched by a group of Romanian managers who founded a cooperative among former employers. The members of the cooperative started to work as subcontractors for several new Italian firms, but also continued to operate as subcontractors for Adidas and other foreign firms. Their large manufacturing capacity allowed them to reach the significant size – if we consider the typical footwear firm – of about 1,400 workers (data refer to 2003). The true problem is that they were not able to sell any part of their production abroad, because they had no contacts with international designers for the production of their collections, nor did they have any marketing and selling experience abroad. The lack of connections in the GVCs negatively affected the success of local firms, hampering the upgrading process. The Timișoara district lost its attractiveness over time, and its occupational levels continued to diminish; currently, the largest local firm, Filty, employs only 251 workers (2015). Considering the group of the most dated firms, only Filty and Guban are still active, covering only the national market demand with semi-luxury shoes.

Local firms are mainly subcontractors of Western companies and the main products are footwear items of medium-quality for men, women, teenagers and children. Outside of the MNEs’ activities, the cluster has a very low share of endogenous entrepreneurs and of innovative capabilities. The firms’ competences are limited to manufacturing, and they lack design and marketing capacities. Moreover, the cluster’s collective organizations and institutions are weak.

MNEs were not interested in building these capabilities in Romania, because they were already developed in other well-established industrial districts, whose access was simpler for MNEs. MNEs located in the area do not have many knowledge links with other local firms, but they mainly work with their headquarters located in Italy or Germany. Thus, there are little knowledge spillovers at the local scale. The low degrees of technology transfer also depend on the low absorptive capabilities of local companies. The primary aim of the MNE is to use cheap labour and quickly re-export goods, without making any effort to upgrade the skills

⁵ We thank Ruscanu Loredana for her help with the 30 interviews conducted in June 2016.

of the local labour force. Foreign firms operate just for one large client: that is, the company's headquarters or a leading foreign firm such as Cesare Paciotti or Calzaturificio Magli. The benefits of the MNE's entry in the cluster are ambiguous. On the one hand, they are the triggering factor behind the cluster development, but, on the other hand, they did not stimulate local entrepreneurship; the MNE subsidiaries appear to be footloose investments that could soon end up being relocated to lower salary countries. This was the case, for instance, of Geox, which dismissed the large plant Technic established in 2012, and moved the production to Chinese subcontractors with lower labour costs. During the years 2000–03, the cluster reached its maximum size of about 300 firms, employing about 30,000 workers. In the subsequent decade, no new important local start-ups (or MNE spin-offs) fed the cluster. Recently, also the old local firm Guban has been sold to foreign investors. Production moved to China and to other low-cost countries.

Local firms are currently small, with declining internal occupational levels, and the total employment has decreased to about 20,000 workers. A marginal fringe of Romanian entrepreneurs is now producing low-cost shoes for the internal market, but the cluster is no longer specialized in shoes; it is now formed by subcontractors working for electronics and components for the automotive industry. Timișoara does not exhibit any chain upgrading, but a horizontal transfer to new industries, which may pay higher wages and demand better skills.

All service activities – such as research, design and marketing – are developed in Italy and abroad in the MNEs' headquarters. Also for this reason, we did not find any evidence about knowledge transfer dynamics from the MNEs to the local context.

Table 5.3 Overview of the Montebelluna, Dongguan, Riviera del Brenta and Timisoara clusters in the GVC

	<i>Montebelluna</i>	<i>Dongguan</i>	<i>Riviera del Brenta</i>	<i>Timișoara</i>
<i>Product</i>	Technical sport shoes, ski and trekking boots, motorcycle boots and bicycle shoes	Laptops and other IT products	High-quality fashion shoes, mostly for women	Former shoe cluster (mostly for women). Currently a wide array of products
<i>Number of firms and employees</i>	400 companies and 6000 employees	1500 companies in 2010	200 companies and 7000 employees	150 companies and about 5000 employees
<i>Export propensity</i>	Very high	Mainly indirect, through the MNEs located in the cluster	Very high	Low. Shoes producers supply the national demand
<i>Local firms</i>	Global lead firms and OBMs	OEMs, stage suppliers	Global lead firms, OBMs and OEMs	OBMs and OEMs
<i>Supporting industries</i>	Machinery, Chemical industry, mould producers; textile and clothing industry	Logistics	Pattern makers, Designers, Logistic	Logistics
<i>Local institutions</i>	Museo dello scarpone (Boot museum), Chamber of Commerce	Business associations of foreign producers	Politecnico Calzaturiero, specialized in innovation and training activities	None are relevant to the cluster activity
<i>Major recent transformations</i>	Concentration process that is favouring the most innovative firms and leads to a shrink of the total number of firms. Montebelluna is now a pole of excellence for technologies related to winter and summer sports items and leading firms are coordinating GVC	Emergence of diseconomies of agglomeration, rise in wages and low presence of skilled workers are diminishing the attractiveness of the cluster for low-cost activities. At the same time, the cluster is not yet enough attractive for high-value activities. MNEs are changing the structure of their GVC to locate some activities outside the cluster	With the entry of MNEs, Riviera del Brenta has transformed into a hub-and-spoke cluster	The footwear cluster imploded. Foreign companies have gradually left the cluster. Without those foreign firms, Timișoara exits the GVC in which it was inserted

4. Discussion and conclusions

We explored the modality through which MNEs and clusters are intrinsically interlinked. Our paper analyses the heterogeneous evolutionary patterns of MNEs and clusters, and tries to detect some major implications in terms of prevailing knowledge acquisition, diffusion models and cluster performance. There are three ideal-type phases of cluster life cycle: origin (emergence), development (increased number of firms and employees) and maturity (stability or relative decline of firms and/or employees). Among said phases,

we found the presence of an unavoidable heterogeneity, which characterizes not only the variety of triggering factors at the basis of the FDI choice of entry, but also the role played by MNEs in each phase, and the size distribution and roles played by local cluster firms. The cases presented above show that in some instances MNEs are the main actors that gave rise to the cluster. In other situations they entered (or emerged in) the cluster in the maturity phase. In both instances, MNEs are building place-anchored value chains, but in the latter case they operate also as competence seekers that are able to leverage their networks to effectively manage dispersed knowledge assets. They do this by tapping into a cluster to assimilate and integrate local knowledge (Mudambi, 2002).

The impact of MNEs on the knowledge governance of the cluster, and economic and innovative performance, does not indicate a unique direction. There is a relevant difference between types of clusters and timing of entry. In the case of clusters generated by MNEs, the MNEs that originated the cluster try to take advantage of resources that are abundant in the locality, which give them some short-term advantages. Being the cluster populated mostly by MNEs, each one keeping its knowledge linkages with headquarters and external-to-the-cluster partners, the knowledge acquisition model is the direct-peer (as illustrated by Belussi et al., 2011). Small indigenous firms (often subcontractors) are almost excluded by the process. This is the case of Dongguan and Timisoara, where the presence of external MNEs produces limited or no impact in terms of support for the growth of new endogenous entrepreneurship and innovation patterns.

In the maturity phase, the entry of foreign investors can result in increased levels of concentration in the governance of external knowledge flows. The process is exemplified by the Riviera del Brenta case: the pool of local knowledge – which is in a lock-in phase, with local entrepreneurs being less and less capable to find new uses for old knowledge bases – is captured and reused by the MNEs that enter the cluster through acquisitions or greenfield investments. The overall impact of the MNEs seems to be positive because they saved the productive capacity of the cluster. However, we are in the presence of a puzzling situation where processes of functional degrading combine with product upgrading.

In the Montebelluna cluster, the entry of MNEs generated a relative low increase in knowledge flows. Some types of knowledge spillovers arising from the presence of MNEs were produced, but mainly related to commercial strategies. Indeed, several local businesses have tried to imitate some marketing behaviours of MNEs. However, the role of foreign MNEs is still marginal, while home-grown MNEs are playing an important role in the district.

Nevertheless, it is worthy to notice that, in general, as the industry grows worldwide and the cluster reaches the maturity stage, the role of agglomeration and geographical proximity diminish in importance, leaving peripheral global firms, located outside the cluster, to grow faster. In addition to that, the maturity stage is often associated to a decline of the innovative activity of incumbent firms, due to 1) the exhaustion of the technological opportunities, 2) the decreasing variety across firms, and 3) the cognitive lock-in (Ter Wal and Boschma, 2011; Tödtling et al., 2017). Global producers gain increasing relevance, together with their global value chains. This happens, for instance, in the case of Nike and Adidas. Therefore, cluster evolution, as also suggested by Trippel et al. (2015), must be analyzed from a multi-scalar perspective, which combines industry-driven explanations with cluster-specific ones, within an interpretative framework which accounts for the geographical scale of the growth driving factors. On the basis of these considerations, we argue that foreign firms localized in Northern countries show a better innovative and economic performance than firms in Montebelluna, because of their location within advanced regional or national innovation systems, which proved to be more dynamic than those of the Veneto region or Italy. Thus, a dynamic cluster such as Montebelluna suffers from being an “island” not supported by an advanced institutional and technological context.

In the Riviera del Brenta cluster, some localized pools of skills still play an important role: this happens where local craft skills are used for manufacturing luxury shoes. Nevertheless, the most crucial competitive capabilities are those of firms coming from outside the district, which are inserted in business networks stretching on a global scale and combine different types of resources, skills and market accesses. The presence of these MNEs in the cluster gives rise to a model of place-anchored value chains.

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