Introduction

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1. NEW GLOBAL COMPETITORS AND TERRITORIAL CHALLENGES

Today, numerous important challenges are catalysed by the spread of globalisation processes that offer critical opportunities for the exchange of cultures, knowledge, goods and services, as well as raising problems and threats, such as the powerful economic crisis 2007–12 and the uncertainties about the way out towards a sustainable development model for advanced and non-advanced economies. In this new situation, the traditional leadership of western countries in global markets is diminishing due to the increasing integration of many emerging countries, particularly Asian and Latin American in global markets. The market shares of western countries have drastically shrunk, whereas manufactured goods exports of a higher and lower level of sophistication show much bigger growth for these new world competitors, which challenge the competitive capacity of western countries in the medium to long term (United Nations, 2011).

Achieving the process of economic catching-up, so much studied and desired by pioneers of the literature on economic development for many decades (Myrdal, 1956; Rostow, 1956; Hirschman, 1958; Seers, 1969; Wade, 1990; Lall and Teubal, 1998; Rodrik, 2004) has become reality for this wider group of countries, although this does not prevent them from displaying major internal inequalities in terms of access to resources, jobs and wealth. In spite of this, countries like Brazil, Russia, India and China (BRICs) have learned how to combine and profit from different factors (natural resources, workforce and proactive public policies) to build up new capabilities and competitive advantages that have allowed them to obtain notable growth in national and per capita income (Amsden, 1994).

If these challenges represent potential threats for western local and national production systems, the current globalisation also offers potentials and opportunities that local production systems may exploit. These
include easier access to national and international markets (for example, beyond Europe for European Union clusters), production chains and networks (for example, linked as specialized suppliers to multinational companies, or as niche producers to international consortia), institutional support (for example, joining framework programmes), and cultural and knowledge networks (for example, joining excellence or innovator networks, student exchange programmes) that offer high potentials for knowledge absorption and increasing the capabilities of local actors in such wider global landscapes.

With regard to this context of global change and major challenges for different countries and territories, the participants in the first San Sebastian Meeting on Innovative and Competitive Territories, realized in September 2010, met to share analyses, reflections and orientations on the prospective roles of local and regional territories within global development processes. In this book we will refer to the need for a new perspective on many of the issues raised that considers change from the perspective of ‘resilience’ thinking. This involves assessing the quality and strength of two key features of any socio-economic system. These are its potential, measured in terms of the variety present in the economy, from the interaction among diverse entities, innovation emerges; the second element is its connectedness the degree to which it has interlocking systems of organisations, institutions and conventions assisting its governance. These two in combination allow for the capacity of a regional, or any other system, to face destabilising shocks, manage processes of creative destruction through innovation and recover. Recovery may mean forging a new pathway rather than continuing with an established regional path dependence (Folke, 2006).

2. ARE LOCAL TERRITORIES STILL RELEVANT? THE DILEMMA CLUSTERS VS NETWORKS

In the past 30 years, together with the traditional macroeconomic and financial analysis centred on countries and macroregions, the role of local territories has also been much discussed. This has raised issues concerning the potential of industrial districts, clusters of firms, local production systems and, in general, regions as territorial and administrative territories endowed with some degree of homogeneity in terms of cultural traits, production profiles and entrepreneurial dynamics. Nonetheless, more recently, part of the international academic reflection has concerned whether these criteria are appropriate or sufficient given the recognised importance of firms to connect with global knowledge flows (Bathelt et
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al., 2004; Hess, 2004). These act as means to break knowledge lock-ins through the integration of innovation inputs unavailable in local/regional territories.

The consensus on the key role played in this ‘connective’ process by knowledge networks is wide enough to have led to the creation of different institutional programmes and mechanisms that favour their constitution, for example, within the European economic space. Examples include innovation networks measures within the European Union (EU) Framework Programme, and excellence networks and academic networks programmes in member countries, such as Projects of Research of National Interest (PRIN) in Italy and the research projects of Ministry of Science and Innovation (MICINN) in Spain, among others. Here, firms and private centres participate and collaborate to promote innovation, for example, technology centres in the Basque Country, Fraunhofer Institutes or Steinbeis Foundations in Germany, among many others.

Notwithstanding policy attention towards the driving role of networks, the value of clusters and local/territorial production systems is further recognised for various reasons: on the one hand, the existence of these systems in the majority of countries creates opportunities for the promotion of local economies through joint actions and external economies – sharing the existence of skilled human capital, the flow of information and innovation, and the flow of clients, among others (Becattini, 1990; Schmitz, 1995). On the other hand, some have argued that the relevance of clusters and districts relies upon potential flows of knowledge that are hard to transfer through transnational networks due to their tacit knowledge basis built on experience, practice, collective action that, in addition, require face-to-face interaction and exchanges (Audretsch, 1998; Maskell and Malmberg, 1999; Lundvall, 2007b; Parrilli et al., 2010).

In synthesis, territories (clusters, industrial districts, local production systems) and networks represent two crucial and complementary realities economic agents can utilise for the promotion of effective knowledge flows that contribute to the development of given territorial communities. These are their innovative potential and their governance connectivity which together represent their degrees of resilience. In addition, such territories often constitute significant parts of the national economy, in countries such as Spain, China, Italy, and Brazil, among others, where studies have identified hundreds of local production systems that take the form of clusters and industrial districts (Sforzi, 1992; Cassiolato and Lastres, 2001; Bellandi and Di Tommaso, 2005; Boix and Galletto, 2008).
3. SPECIALISED AND CREATIVE TERRITORIES

The debate on specialised and creative firms and territories is fundamental for the competitiveness of territorial systems of production because the effectiveness of external economies, knowledge networks, and interactive knowledge flows determines the development capacity of any territory. It is now known that where these components are missing, the competitive capacity of the local or regional economy is reduced as is its potential to integrate dynamically with national and international markets.

As Schumpeter (1942) acknowledged, it is clear that the global market is a suitable fit for large firms to perform due to their economies of scale in production, research and development (R&D), marketing and commercialisation; however, small firms still play a crucial role, once connected to large firms as suppliers, and on other occasions for their capacity to specialise in market niches and activities of high added value, both in manufacturing production and knowledge-intensive service provision, in which the size of operations is less relevant than the quality of talent, skills and competences of research and technical personnel. For this reason, many different scientific-technological and production configurations can be found, for example, science and technology parks some of which have achieved world fame for the production of leading-edge knowledge as well as clusters of several firms producing in different technological fields (for example, Cambridge in the UK, Sophia-Antipolis in France, Oita and Kumamoto in Japan, Silicon Valley and Boston Route 128 in the USA, and Zamudio and Miramon in the Basque Country, among many others) (Cooke, 2001; 2005).

These prospects are very much enhanced by the current development of new global demands related to both the more sophisticated consumption pattern of end-consumers as well as the requirements for environmental, social and economic sustainability. This is a sphere which economic development, innovation and globalisation thinking has almost completely neglected. In the sphere of economic practice too, global firms remain largely blind to their continued dependence on carbon-based energy. However, evidence has emerged that in a few smaller countries such as Sweden and Denmark, governments, regions and some clusters have begun broadening strategic niches in eco-production and eco-innovation while finding ready markets in the aforementioned BRICs (Cooke and Eriksson, Chapter 2 in this volume). Most of these countries are bad polluters and major contributors to global warming, but most have policies and production facilities, like Brazil-based bioethanol producer, Petrobras, India’s leading wind energy firm, Suzlon, or China’s equivalent, Goldwind, to seek to mitigate carbon emissions (Cooke and Porter, 2011).
These are early examples of the ‘resilience effect’ as operators realise that eco-innovation is not only a social good but that significant global markets exist that are ready to invest in cleaner energy and production solutions.

In addition to the newer eco-innovation poles and the more established technological innovation complexes, another pole of creativity has also been evolving and contributing to economic development processes at the city-regional level. In fact, the importance of cities has been acknowledged not only in terms of agglomerations of economic activities that benefit from diversification economies and the existence of centripetal forces (Jacobs, 1969; Audretsch, 1998), but also as centres of attraction of a multiplicity of people with distinct competences and cultures, which make it possible the existence of creative, artistic and industrial processes (Florida, 2002a; Saxenian, 2002; Cooke and Lazzaretti, 2008; Johnson, B., 2010). The creativity that can be found in geographies with a very high concentration of people with their own cultures, experience, competences and objectives – as occurs in the cities – cannot be found in other localities characterised by their traditional cultural, social, institutional and human homogeneity. In this literature and the related empirical evidence, diversity and the interaction among different actors are considered essential factors for the creativity of firms and territories.

4. TERRITORIES AND MARKETS

On the basis of such considerations, in general the participants to the First San Sebastian Meeting on Innovative and Competitive Territories adopted an approach that underlines the economic importance of regional and local territories. Each saw them as key places in spurring the competitiveness of small and medium-sized enterprises (SMEs). They further recognised their role in the promotion of economic and social development as a means to respond to the challenges set by globalisation. Along with global economic recession, rising energy prices and climate change regions face massive destabilisation processes. Because of the neglect by multinational companies (MNCs) of seismic shifts in the economic landscape, local communities now confront and even question the standardised regime of mass consumption patterns that led to the empowerment of prevailing business groups and financial holdings operating in international markets. These large firms and their groups and holdings see the world market as spaces to exploit their large capacities and places in which they can pull together resources and benefit on the basis of global strategies and development plans. Contrariwise, regional territories and their local production systems face markets with a new approach, which aims at overcoming the distance...
that traditionally sets them apart from such markets. Although the traditional market of small firms is local and regional, wider spaces accrue every day for high-growth potential SMEs in industrial and service sectors that focus on wider, national and international markets. In particular, this refers to sophisticated markets that require personalised, high-quality and innovative applications that can help them integrate with global value chains and global production networks in a way that enhances their contribution to territorial innovation and development processes at the local and regional level.

In the past thirty years many SMEs and their territories have penetrated wider markets, notably European firms in the EU market). Currently though, SMEs and their territories must take on new challenges and new objectives for which they have neither guarantees nor practice. Are Asian, Latin American and African markets accessible to western SMEs and to their territorial systems of production? Chinese SMEs are succeeding in such processes showing great capacity to reach global markets (Bellandi and Di Tommaso, 2005), mainly on the basis of a ‘low-road of development’ (Pyke and Sengenberger, 1992). However, even this is currently changing in specific segments and sectors (for example, energy, optical fibre, electronics and information and communication technologies (ICTs); see Cooke and Zhang, Chapter 11 in this volume) a feature that also needs to be taken into account by smaller western businesses in envisioning future global scenarios. Is it a solution that can be extended to other firms, particularly to western SMEs with high costs of production that are oriented to pursue the ‘high road of development’ based on innovation, quality and demand sophistication? This is the question that does not appear to have an easy and unequivocal answer; it rather requires attention to concrete phenomena occurring in global markets due to a lower demand in emerging markets for goods and services produced by technologically advanced SMEs (that is, at least in terms of the segments of population that in such markets show sensitivity and purchasing power for such goods and services).

A research stream that needs to be explored and discussed in depth refers to the most appropriate mode SMEs and their territories can adopt to integrate competitively in global markets. This is a resilience question that emphasises the role that the territory and its firms can develop within global production networks in which many different actors come together. This includes multinational companies, specialised small and medium-sized companies, small and medium-sized capacity subcontractors, other local and/or national niche firms, and service providers for manufacturing companies (Ernst and Kim, 2002; Coe et al., 2008). What seems to be emerging from the system shocks dealt by ‘peak oil’, global warming,
global financial meltdown and economic recession is a desire for change and even for more collaboration between such actors, turning sectors and clusters into platforms of innovation based on ‘related variety’ (Frenken et al., 2007). This is especially true of eco-innovation, which inevitably combines many technologies, but it has been true of ‘platform technologies’ like ICT and life sciences for some time. If the world production of consumer and capital goods is managed through global value chains and networks, what position can the small firms of a cluster assume in order to benefit from participating in these networks and, simultaneously, guarantee a durable and sustainable competitiveness? Also, what interactive learning processes are more likely to set in motion the national and regional innovation systems so as to promote a more competitive participation of clusters and territories in such networks and chains? The answers are neither automatic nor unequivocal since there can be various forms of insertion in global production networks; as a result academic and applied research as well as policy-making have to prioritise it in the agenda as a key topic for development.

5. CULTURE AND SOCIAL HETEROGENEITY AS DRIVERS TO TERRITORIAL COMPETITIVENESS

There are territorial groups and communities that are characterised by a culture that is embedded in a common history that ease the development of their creativity, entrepreneurial spirit and innovation dynamics, what is not always available for all of the agents that operate in a country and its economy. As some of the contributions in this volume highlight, creativity can split between a traditional approach and a non-traditional approach, the latter responding to the requirements and features of ‘younger’ economies which search for a ‘creative’ positioning in markets, through a specific originality in the presentation of contents related to marketing, research and development, engineering, architecture, arts, software and the audiovisual sector, among others. Moreover, this is without excluding the creativity that is found in traditional sectors (for example, food and beverages) that helps identify a creative and innovative territory in the field of cuisine and restaurants (for example, star-ranked restaurants of the Michelin guide, as in the case of San Sebastian and, by extension, of the activities that are linked to cuisine in the Basque Country).

As a few seminal contributors suggest (Saxenian, 2002; Gertler, 2003), creativity and the capacity to create new developmental pathways is not particularly the province of MNCs only. It arises also within specific communities, some having migrated to other territories, such as the Chinese
and Indian high-technology communities in Silicon Valley in the USA. The culture (social capital) of a critical mass of agents within a territory constitutes a key factor to promote any territory, since it delivers a variety of inputs that include both aspects of human capital, that is, skills and standards. These are essential territorial assets in dealing with resilience issues, especially when a significant national investment has taken place in training and educating the people (as happened in many Asian countries over the past three or four decades, see Amsden, 1994). Further elements include tacit-to-explicit knowledge flows based on experience and interaction, and also values that characterise the business and social ethic of a community in the management and leadership of private and public companies and organisations (Lundvall et al., 2002). Finally, the attitude towards diversity is also essential for territorial progress, especially when the accelerated ageing phenomenon that occurs in many European countries, with their need to attract talent, skills and capabilities, converts into a priority issue or ‘Grand Challenge’ provoking a further ‘resilience response’ (Orkestra, 2011).

This issue stresses the need for a new perspective on migration and, in general, even temporary movements of people across territories, especially across advanced economies, in which anxiety faced with apparently uncontrollable waves of people, which modify the social and cultural basis of any territory, promote tensions sometimes spurred by economic crisis. Most EU countries are facing this issue, some, like Italy, for the first time whereas in north America it is the foundation of their societies. A new approach based on resilience thinking is needed to take into account that such new situations also offer the bases for a new meeting among cultures, communities and values. These can enrich one another mutually through a peaceful exchange that helps build joint sustainable solutions to local and global problems that affect everyone (for example, global warming, environmental pollution, excess production in some territories alone, lack of human, and labour rights in advanced and developing economies). All this requires a creative cultural approach in its widest meaning, that is, conceiving the exchange as a conveyor of high returns to both parties, provided it is based on democratic management processes oriented to produce local, regional and national solutions to development issues (see Parrilli, Chapter 10 in this volume).

6. SCHEME OF THIS VOLUME

This volume is structured in four core parts: the first is about conceptual and methodological aspects, the second centres on original accounts of
innovative territories, the third is on innovation across countries and production networks, and the fourth focuses on regional policies as a means to drive resources and consensus to the promotion of innovative and competitive territories. These are parts of a coherent approach that helps analyse challenges and development prospects of local/regional production systems both internally, in terms of potential (for example, what industrial configurations seem most innovative), across territories (for example, what factors promote international integration in international markets and in global knowledge pipelines), and territorial connectivity that helps exploit opportunities for proactive policy actions, especially in the currently de-stabilised context in which the balanced allocation of resources and opportunities – particularly for SMEs – cannot be expected as the automatic result of the working of the market.

Part I: Concepts and Measurement: Innovation, Institutions and Change

In the first part, key conceptual aspects are set out. In particular, the openness of local and regional territories to global knowledge pipelines and/or global knowledge frameworks is discussed. These territories are no longer to be understood as self-contained poles of growth and development – as they tended to be in the 1980s – rather, they are impelled to cross numerous borders to attract talent, resources and opportunities not available locally or that belong to different local industries. The openness of these territories, not primarily in terms of exchange of goods and services, but rather of ‘related’ knowledge and innovation platforms are seen as key to promote the integration of territorial economies within dynamic global production networks and international markets. This discussion has methodological implications that need to be analysed and clarified in order to permit original, flexible and updated comparisons across territories. In this way benchmarking practices may deliver useful elements for the interpretation of ‘innovative and competitive territories’ in the current context of globalisation.

In this first part, AnnaLee Saxenian’s (ALS) chapter is extremely meaningful as it looks at the growing importance of global search networks that firms and other actors rely upon to locate collaborators who can either solve a problem they face, or require a solution. On the basis of the success of new high-technology clusters, ALS suggests that local enterprises systematically look for collaborators – including clients – who can help them solve problems, rather than trying to elaborate comprehensive solutions on their own. The author focuses on highly skilled first-generation immigrant professionals in US technology industries who collaborated with their home country counterparts (Taiwan) to develop the context
for entrepreneurial development. Her central argument is that these ‘new Argonauts are ideally positioned to search beyond prevailing routines to identify opportunities for complementary “peripheral” participation in the global economy and to work with public officials on the corresponding adaptation and redesign of relevant institutions and firms in their native countries’. AS argues that ‘Argonauts are the co-architects of further networks that extend and adapt to home-country conditions the web of relations they already know’. Overall, ALS’ argument is that the key contributions of skilled professionals to their home countries are more in the process of external search and domestic institutional reform than through direct transfers of technology or knowledge.

In their chapter, Cooke and Eriksson (CE) describe innovation processes as being based on four complementary theoretical perspectives, which underscore some key elements. These are the regional ‘relatedness’ of industry, ‘path inter-dependence’ of socio-technical systems, ‘pre-adaptation’ and the ‘adjacent possible’. These key elements help explaining both incremental and radical innovation by means of emphasising the relevance of building knowledge in related knowledge fields as a means to benefit from pre-existent knowledge bases, while simultaneously breaking pre-existent lock-ins and path-dependence within the territory. Overall, these drivers help structure an evolutionary analysis of contemporary regional innovation processes. CE apply these concepts to the working of a representative set of regional innovation agencies in central Europe and contrast these with Scandinavian cases, sometimes showing ‘pre-adaptation’ of an innovation from one industry/cluster into a different one, and search practices for the ‘adjacent possible’ in others, with special reference to the region’s strategic response to two global ‘Grand Challenges’: the appropriate, ongoing solution of the climate change issue, and the provision of healthcare services in an ageing global society. In this context, sets of innovative clusters are integrated to maximise ‘potential’ on ‘sustainable cities’ and ‘personal healthcare’ in the shape of ‘interactive innovation platforms’. This discussion is then revised under the lenses of globalisation and the big challenge – for industries – posed by the rise of competition in ICT from Asian ICT competitors. A policy ‘transversality’ approach (connectivity) is proposed as a means to searching for innovation gaps among the interactive cluster elements of innovation platforms.

Within the related methodological section of Part I, Westlake, MacAulay, Gratzke, Bravo-Biosca and Bakhshi focus on the need to elaborate a broader and more complete innovation index, which ‘provides a more up-to-date and comprehensive measure of UK innovation investment that reflects how businesses of all types develop ideas, take them to market, and profit from them’. It also links this investment directly
to productivity growth, one of government’s most important economic priorities and, finally, provides new data on innovation across businesses and industries, and on wider innovation conditions in the UK. WMGBB suggest that it is important to measure a wider set of innovation indicators ‘than just R&D, patents, citations and the proportion of firms who are actively engaged in innovation’. Within this perspective the government should consider the level of investment in innovation as to involve more than R&D, for example, design, training in new skills, organisational innovation, developing new customer offering and brands, and copyright, which represent the seven new areas identified by the National Endowment for Science, Technology and the Arts (NESTA). This wider measure of innovation investment provides a much better indicator of the success of innovation policy in a large set of countries (for example, the UK) whose innovation pattern is based on these complementary areas of innovation.

From a comparative perspective, Navarro Arancegui, Gibaja Martins, Franco Rodríguez and Murciego Alonso (NGFM) develop a benchmarking analysis that is thought to facilitate the extraction of useful elements for development promotion by means of the formulation of a competitive innovation strategy for the regional territory, in so far as the follow-up and assessment of its performance. This work supplies an instrument to promote the development of three phases that are crucial in benchmarking exercises across regions, once the principle of comparability between equivalent entities (that is, regions) is assumed. The first phase is the identification of homogeneous spatial areas upon which to organise the territorial comparison; the second step is the identification of territories that achieve a better performance to facilitate explicit and useful comparisons; and the third benchmarking step is the analysis of the causes of such better or lower performance. This work then realises the comparison on the basis of quantitative indicators available in the main European database (Eurostat), though for further developments, qualitative and participatory analysis should also be included as a means to achieve a more complete comparative assessment.

**Part II: Territories: Innovative and Evolving**

The second part of the volume analyses concrete cases of regional and local territories within a world of crises, changes and challenges. Particular urban configurations (that is, technological and/or creative cities, polycentric regions) have become the main poles of innovation across larger national territories. A polarisation process has taken place around these centres of political, social and economic activities that should be complemented through appropriate dissemination practices as a way to favour a
more equal distribution of resources and creative factors across regional and national territory.

Within this approach, Vázquez Barquero (VB) describes the new international division of labour across global cities, each one specialised in a particular function (for example, politics, trade, finance and banking, knowledge and information, creativity, culture and amusements). In this connection, there are a number of polycentric urban regions that also polarize innovation and development processes (for example, Randstad in the Netherlands, Hansai in Japan, the Ruhr in Germany, Research Triangle Park in North Carolina and the Pearl River delta in China). The changes related to the intense use of ICT systems promote increasing exchanges across national and international markets. This process led to significant changes in the geography of production, that is, big cities and polycentric regions are leading rather unilaterally the economic dynamics in both advanced and developing countries. The process of economic and institutional change is not uniform across national territories but takes place in these city-regions that represent ‘innovative spaces’ with a lead capacity based upon their higher capacity to undertake strategic innovation through creative systems of organisation, interaction and production (potential). The capacity of these cities and regions to respond to the new challenges (for example, the current crisis) depends very much on the capacity of their firms in transferring innovation and of their institutions to support trust and actions oriented to increase productivity and competitiveness, and later disseminate it to other national and regional territories (connectedness).

Larrea, Aranguren and Karlsen (LAK) focus on social capital as a driver to promote the construction of regional advantage. In the context of the Guipuzcoa province of the Basque Country, LAK argue that the generation of trust is a critical connectivity condition to create collective action between agents that are usually quite separated from one another (for example, innovation agents and firms, politicians and firms). Within such framework, proactive innovation policy could focus on generating behavioural additionality as a means to promote trust and cooperation. Of course, such additionality can be attained not only through measures set up by policy-makers, but also through a participatory economic development process where regional agents participate in the diagnosis and design of the relevant measures. Research can play a role here through the application of the action-research methodology, which can help promoting conceptual frameworks and a common language that help different stakeholders (social and economic agents) building a shared vision of the system in which they participate. It is a process that sets the bases to help building innovative and competitive territories (that is, exploiting ‘potential’).
Lazzeretti and Parrilli (LP) discuss the relevance of creative industries in ‘creative cities’. Culture and creativity are regarded as resources for innovation that can activate new and different economic value chains. Culture has become a creative capacity that can rejuvenate products, sectors, professions and places. Recent studies shift the attention from the artistic and cultural heritage to the human factor and the creative class. Physical assets are not the key elements that justify the relevance of culture here; it is rather the creative capital, embodied in people, that enhances the opportunities delivered by such assets. Creative industries and the creative class are overwhelmingly concentrated in urban and metropolitan areas, which make wider use of new technologies, a by-product of creativity. In this chapter, LP emphasise the creative industries approach and extend it over creative local production systems. The authors offer a concrete application to the cities of Bilbao and San Sebastian (1 million and 200 000 inhabitants, respectively) in order to present a profile of how dynamic small cities can participate in a novel way in booming creative industries. These cities exhibit modern, though familiar configurations as ‘diversified creative local production systems’ that invests resources and people in non-traditional cultural activities such as marketing, R&D in engineering and architecture, and software production, among others.

Within the wider discussion on competitive territories Delgado and Ketels (DK) analyse the measurement of competitiveness. DK document the main features of the diagnostic tool to assess country competitiveness they recently developed with Porter and Stern (Delgado et al., 2010a), and use it to assess Spain’s competitiveness. Their framework incorporates a wide range of these factors into an integrated structure with three main areas: endowments, macroeconomic competitiveness and microeconomic competitiveness. Macroeconomic competitiveness has two related areas: social infrastructure; and political institutions with macroeconomic policy. Microeconomic competitiveness includes the sophistication of company operations and strategies (potential) and the quality of the national business environment (connectivity). The contribution of these factors is influenced by multiple stakeholders, including different government agencies, companies and institutions for collaboration. While macroeconomic competitiveness sets general conditions that create opportunities for higher productivity, microeconomic competitiveness has a direct impact on the way these opportunities are actually translated into better performance. In contrast to previous contributions on the subject, DK propose a comprehensive model, in which the contemporaneous microeconomic environment matters for country prosperity, even after accounting for institutions and endowments. Within the context of Spain, DK strongly suggest that this country is facing a competitiveness challenge, in which
some dimensions of microeconomic competitiveness have become serious constraints for higher economic performance.

**Part III: Innovation and Value Chains**

The third part of this volume opens up the space in which the local territories cultivate their innovation and competitive practices, in particular in connection with active and prominent global value chains and global production networks (for example, aircraft, automotive, ICTs and energy industries, among others), and more in general with international markets. The four contributions of this part highlight some of the international dynamics that have been implemented by multinational groups, for example, Chinese, in order to improve their connection to international markets. In addition, the importance of reaping the benefits of migrant communities – for their endowment of tacit knowledge and social capital – is stressed as a means to promote local development and innovation processes.

The first contribution by Amighini, Rabellotti and Sanfilippo (ARS) explores one of the recent aspects of the globalisation process, that is, the rise and the increasing outward expansion of multinational enterprises (MNEs) from developing countries. Among the most promising effects of this phenomenon is a potentially positive impact of outward foreign direct investment (OFDI) through which developing country MNEs acquire new knowledge, which contributes to the technological catch-up of their home countries vis-à-vis the most advanced economies. This literature suggests that the features and global business environment of current emerging country MNEs is different from those of latecomer firms in earlier decades. ‘Modularity of production in an increasing number of sectors, combined with weak national innovation systems (NIS) in many developing countries explain why the sourcing of strategic assets – including technology and innovation – through OFDI has become such an important channel for technological catch-up.’ The modularisation of production in a growing number of sectors, favoured by information technology and technological progress has enabled the disintegration of production processes, allowing the outsourcing of several activities, including production, design and R&D. This is also analysed for digital media in Chapter 2. The phenomenon has two major consequences for the context in which developing country MNEs operate. First, developing countries are increasingly becoming the location of R&D and high-technology activities and not only of mature technology, as was the case in earlier decades. Secondly, strategic acquisitions provide a faster alternative to building technological capabilities in-house (more than through knowledge transfer). These
options make it possible for firms in less developed countries (LDCs) to become acquainted with new technology at an earlier stage, and to learn from its application. These dynamics are analysed through Chinese investments in Italy that respond to strategic objectives in terms of catching up with European tastes and requirements, of quality of products, design and post-service assistance.

Parrilli (MDP) analyses the relationship between global knowledge pipelines (GKP), tacit knowledge (TK) and social capital (SC). MDP stresses that GKP are important not only as conveyors of codified knowledge, but also of TK. In addition to this, MDP extends the concept of TK to include systematically the concept of SC. Traditionally, TK tends to be conceived as individual experiential knowledge based on practice, as part of the human capital embodied in the highly skilled individual expert. Instead, TK also include collective pools of social knowledge otherwise called SC because TK can be created and later transferred by wider communities. In a second operation MDP develops an argument (Parrilli, 2007) on the richness of migrants’ codified and tacit knowledge by asserting that TK flows do not rely only upon highly knowledgeable economic agents such as scientists and engineers, but on a broader spectrum of collective agents who may be part of competitive GVC/GPN/GKP. This discussion has special importance for clusters and districts, where TK flows and SC are undergoing intense transformation processes that demand resilience. Thus there is a need for more thorough theoretical frameworks to represent these changing socioeconomic scenarios, as well as their real constraints and opportunities. These dynamics are then reviewed within two local production systems immersed in global knowledge pipelines: Silicon Valley and Prato. Within such contexts global knowledge pipelines (GKP) bring in TK flows that modify former social homogeneity, breaking common values and understanding though also offering new opportunities to enrich local buzz through new external knowledge. This process is promoted by the inflow of both skilled and unskilled people. MDP concludes with reference to a Krugman-type of approach to undertake a thorough and dynamic analysis of what may develop in such contexts. The overall process needs to be properly assessed by using a development approach that studies the ways in which some centripetal forces more than offset defiant centrifugal forces.

Cooke and Zhang (CZ) study the role of China in stimulating global change in two distinct ways. This chapter briefly explores the manner in which leading Chinese firms penetrate western markets with the objective to base themselves in western R&D locations. CZ show that China seeks to evolve rapidly away from its ‘world factory’ reputation and that its attempt goes through the successful route to generating a significant ‘green
technology’ platform; this endeavour will decide whether it is willing and able to make a global contribution to the environment’s ‘long emergency’ domestically and if by so doing it creates new, more affordable, means that can be replicated worldwide. After discussing three complementary theoretical perspectives (namely, transition, resilience and innovation) that seek to explain transition in the dominant production regime fuelling market-led development from one based on fossil fuels to one based on renewable energies, CZ argue that China’s global engagement has stimulated and been stimulated by all three. In the context of global and local changes, CZ propose an open and innovation-friendly perspective and a socially constructive approach as appropriate to promote change and innovation. Under conditions of proximate path interdependence, innovation is able to occur in line with the key complexity theory concepts of ‘pre-adaptation’ and the ‘adjacent possible’ earlier discussed. Overall, CZ refer to the continuing relevance of proximate knowledge and production geographies because innovative acts generally occur in specific localised spaces even if knowledge from many global locations is recombined to achieve them.

Chapter 12 by Rodríguez-Pose and Comptour (RPC) takes a comprehensive approach to the capacity of clusters to innovation and competitiveness in the current globalised economy. They address a gap in the literature by studying the interaction of the presence of clusters with other factors deemed to promote innovation – such as investment in research and development (R&D), patent applications, or the presence of ‘innovation prone’ socio-economic environments – and economic growth across 152 regions located in 15 EU countries over the period 1995–2006. Using pooled cross-section regressions, RPC’s model intends to capture both the static and the dynamic connection between a series of innovation promoting factors grouped into three different composite variables or ‘innovation filters’ – the ‘R&D filter’, the ‘social filter’ and the ‘clusterisation index’ – specially designed in order to proxy the complex interaction among growth enhancing innovation variables.

Part IV: Territorial Policies: Emerging from the Crisis

This part is about the prospects of public policy stimulating local, regional and national production systems to take on the global ‘Grand Challenges’. It is argued this is best achieved by improving connectivity so that positive effects from such integration improve the innovative ‘potential’ of local economies. In the best possible world territorial policies are not needed because markets allocate efficiently and effectively resources and opportunities; however, in the concrete world with significant cost/price
cross-country gaps in addition to current imbalances in terms of endow-
ments, purchasing power, technology, human capital, institutional thick-
ness across different regions and countries, the proactive role of public
policy is crucial to re-stabilise economies and to offer new opportunities
for catching up to laggard countries and regions, while guaranteeing
options for continued growth to other territories that are on the right
path. This discussion on public policy remains conscious of the need to
acknowledge the individual path that each regional and national territory
has the freedom to pursue on the basis of its own history, idiosyncrasies,
endowments and capabilities.

With a developmental purpose, Bianchi and Labory (BL) stress the
importance of taking a broad view to growth that implies a long-term
process of improvement that is simultaneously economic, social, politi-
cal and cultural. Industrial policy choices must also be made holistically,
considering the interdependencies between instruments and policy levels,
between strategy and organisations, and between the organisations and
their environment. BL develop a model centred on four main develop-
ment levers, including innovation, territory, entitlements and provisions.
This model creates an instrument (‘sundial’) to determine the appropriate
policy mix for each specific context on the basis of the strength of these
four levers. These latter can determine development through a virtuous
spiral: innovation determines regional development and social improve-
ments, which in turn enlarge entitlements, allowing more people to take
part in the development process that enables further innovation. These
elements and their links indeed determine possible learning mechanisms,
which may be strengthened through appropriate mixes of four types of
policies, that is, human capital policies, innovation policies, structural
policies and social policies. BL apply the ‘sundial’ model to Brazil, South
Africa and China in a way that shows how interrelated are industrial,
policy and technological policies. These cases also exhibit the infinite
set of actions that can be implemented within different policy levels, for
example, town, province, region and nation, whose coherence can only
be guaranteed by outlining a territorial strategy for long-term industrial
development.

Cuadrado-Roura (CR) focuses on lessons learnt from regional policies
within the European context, where regional policies have often been a
response to the existence of regional disparities in GDP per capita, unem-
ployment and productivity rates, which have a profound effect on regional
economic welfare. Other specific problems have also justified some types
of regional policies, such as those aiming to solve problems of industrial
decline or to slow down the concentration processes of economic activities
in metropolitan areas. With regard to traditional regional policy, based
Innovation, global change and territorial resilience

upon offering subsidies to firms locating their new plant in designated assisted areas, the regional policies developed from the 1980s onwards represent a different phase in Europe’s evolution (when countries confronted resilience issues in the form of a deep recession process and budgetary constraints). The increasing importance of EU regional policy from the end of the 1980s to the present has made the difference in particular with reference to the main objectives and strategies of applied regional policies, which paid much more attention to efficiency problems than to the equity-oriented policies.

Perló Cohen’s (PC) contribution focuses directly on the effects of the global crisis on cities and towns and on the policies that can be set up to reactivate their economies. In his analysis PC stresses that large cities have a greater percentage of globalised sectors that are more vulnerable to recession but, at the same time, their economies tend to be more diversified and thus more resilient in absorbing shocks inside their wide-ranging urban economy. Small cities that are highly dependent on vulnerable sectors are in the most difficult position. Urban economies based on small and medium-sized companies operating locally demonstrate more resilience and more experience gained in former crises, and also less dependence on bank loans and less exposure to international markets. The Organisation for Economic Co-operation and Development (OECD) survey he quotes says that ‘Local economies with lower skills, lower employment rates, and lower levels of specialisation are particularly exposed to the crisis because they offer limited compelling reasons to retain investment and jobs and are competing largely on price based factors which erode significantly in a downturn’. In such context, public policy matters, although over-specialisation caused regional problems in the past. Central governments may decide to cut their budgets heavily, for example, an action already seen in Ireland, Greece and the UK; this is going to affect the local governments, which experience a strong decrease in budget resources. Some of these cities will follow certain policies over others: some assign their resources to help rescue businesses (for example, most cities in Mexico); other local governments prefer using measures of a social nature, such as benefits for the unemployed and for the poorest part of the population; whereas yet other cities such as Rotterdam, Jyväskylä, and Turin choose developing comprehensive plans that combine actions in several areas. In conclusion, PC proposes that each city, with its own characteristics, resources and limitations, should generate its own response to combat the crisis.

Landabaso (ML) argues that a more geographically balanced distribution of economic activity throughout the territory is likely to encourage its overall competitiveness, and promotes social cohesion by helping
people work where they choose to live, preserving communities and a rich regional diversity that matters in an economy driven by innovation. Such an approach ‘may help liberate latent energies and unblock economic potential where they are currently most underutilized and needed, not to speak of diminishing environmental problems and external diseconomies in central regions and urban centres. Therefore it might be safe to assume that regional differences will progressively rest in the future on the way this intelligence is valorized or left idle’. For ML regional differences will depend more on having infrastructures and policies to effectively exploit this intelligence in the form of innovation and which are capable of attracting more talent from elsewhere than regions that do not, but nevertheless possess the raw material required in a latent form. The proposed regional development policies based on innovation are about ‘learning to fish’ and making the ‘cake’ grow (creation target) rather than on cutting it in pieces for those who need it (redistribution target) or simply providing people with fish (assistance target). It is about empowering regions to help themselves, and not about charity. ‘The capacity of key regional players to interact, share a vision and jointly commit efforts and resources is of paramount importance for the development prospect of a region.’

Aragón, Aranguren, Iturrioz and Wilson (AAIW) highlight the importance of taking a participatory approach to regional (cluster) policies. The Marshallian industrial districts together with Porter’s work to promote the competitiveness of industrial clusters have been especially influential among regional policy-makers who established clusters as a key focus for regional economic development. Indeed, given their prominent and widespread position on regional policy agendas, the evaluation of cluster policies is a critical yet under-examined issue. AAIW analyse the Basque Country Autonomous Community (BCAC) in Spain as one of the pioneers of regional cluster policy. The cluster policy today supports 11 priority clusters, nine of which have been supported since the 1990s, and five emerging ‘pre-clusters’. In recent years various evaluations have been made of different aspects of the policy, although it proved challenging to come to a holistic evaluation of policy as a means to achieving its ultimate aim of enhancing the competitiveness of the regional economy. Regional policies that centre on networks, social capital and local learning are not best suited to traditional methods of evaluation. They are characterised by intangible objectives and complex relationships; thus flexible and dynamic policy processes, requiring similarly systemic, dynamic and flexible evaluation processes seem more appropriate. With such objectives in mind, AAIW suggest that processes of ‘participatory evaluation’ are more effective for such policies and can additionally serve as a tool to mobilise communities and strengthen the learning capacity of the involved agents.
In line with the creative destruction approach, Cooke and De Propris (CDP) take a ‘resilience perspective’ for which ‘a robust system is one that has the capability to withstand serious system-shock and re-stabilise itself albeit not exactly at the same equilibrium point as the status quo ante’. This position has recently been changing, especially in connection with studies of the implications of human abuse of the environment in the form of human-induced desertification, resource over-exploitation and climate change, which all seem the result of the failure of regulation in liberal market regimes. Within the EU crisis-response policy, CDP examine this proposition in two innovative areas: its record on climate change policy; and its response to the global financial crisis of 2007–09 by re-balancing the European economy towards ‘smart sectors’, notably the creative and cultural industries. On the first, CDP verify a shift from a purely responsive to a more agenda-setting policy mode at EU level, whereas on the second, they observe proliferating creative and cultural industries as a crucial component of the current technological shifts but poor attention by the EU to these industries as well as to eco-innovation sectors and clusters. This is because the EU’s traditional sector-based policy initiatives are clearly ‘way too narrow as the current crisis has set in motion a process of systemic resetting, whereby certainties are undermined and techno-economic paradigms are flipped over’. For this reason, in the context of the current crisis and of the parallel weak strategic policy approaches, the way ‘out’ and ‘forward’ should be ‘on the technological platforms which will underpin the new techno-economic paradigm, namely, digital, design and cleantech’.

7. MAIN CONCLUSIONS

This volume produces a set of relevant insights which might trigger further academic discussions as well as further policy orientations to face the revolutionary global changes that are happening currently, that impose epochal transformations in the objectives of production and consumption and, as an effect, in the way production is organised and the division and specialisation of labour takes place on a global scale. Within such a (resilience) perspective the importance of networks is now recognised and is to be associated in a complementary way to that of local production systems such as districts and clusters. The first breaks the borders, lock-ins and path-dependence of former closed local systems, and adds knowledge and other intangible assets, whereas the second reaffirms the value of proximity, especially when this proximity is more than geographical and includes relational, institutional, social and tacit knowledge aspects that fertilise
the potential and connectedness of networks and local systems within globalised markets.

The creative and cultural industries as well as the specialised high-technology territories represent further key drivers for ‘innovative and competitive territories’ in that they supply knowledge and cultural inputs that are essential for territorial economies that want to maintain a leading edge over competitors or, at least, to keep working and managing a decent market share to satisfy workers’ demands for jobs and purchasing power. Large and small cities together with technopoles or science and technology parks crowded by high-technology innovative, including eco-innovative, firms as well as by knowledge-intensive business services and creative industries represent collective innovative agents and/or territories that offer these opportunities and responses to the new demand(s) of the globalised market.

The capacity of local territories to develop such local/regional production and service systems is to be seen not only in terms of the internal capabilities that are created and renewed. In fact, these would not be enough to guarantee a sustainable territorial competitiveness. This objective requires the analysis and discussion on the positioning of local production systems within global value chains and global production networks. This discussion connects the strength and sustainability of production to dynamics and changes that are taking place outside the borders of the local system and even of the national territory. Multinational companies, big trading companies, large retailers, such as supermarkets, all play key roles in defining the margins for growth of the thousands of local production systems situated in the western world as well as in emerging markets. These dynamics take different forms, some of which are more favourable to local growth, whereas others imply significant bottlenecks and limitations. Policy matters in order to encourage the most appropriate options vis-à-vis the most inefficient and ineffective.

The potentials of dynamic, innovative and eco-innovative production and service-based local systems depend not only on their nature and knowledge base, or on their connection to global value chains (GVCs) as market leaders or as specialised first-tier suppliers for large world leading business groups; they also rely upon their capacity to be open and to integrate within their abstract knowledge borders the potential contribution of ‘heterogeneous social capitals’ that come with travelling skilled individuals as well as with wider migrant communities. These are not only useful and sustainable in political terms as the bases for more tolerant and peaceful ‘industrial atmospheres’, but also because they accompany a wealth of cultures, social capitals, tacit knowledge bases, and creative and entrepreneurial assets which represent strengths and activate important economic dynamics for the promotion of local and global development.