

1. Introduction

Regions differ from each other economically. They compete in different products and geographical spaces, they exhibit different strengths and weaknesses, and they provide different possibilities for growth and development. What fosters growth in one region, hampers it in another. Regional economic development policy should therefore be based on a 'one-size-fits-one' approach and is not particularly helped by a 'one-size-fits-all' strategy propagated by economists in favour of a place-neutral strategy. Such place-based policies should be tailored to the specific regional context for firms and people to accomplish economic growth and higher welfare. This book confirms that the often presumed contradiction of place-based and place-neutral development strategies (see, for example, Barca et al., 2012) should be nuanced in a European context: place-based smart specialization and regional development can reinforce both place-neutral as well as place-specific economic processes. The simultaneous importance of location and network relations in regional economic development is emphasized by the wealth of heterogeneity in the specific trade relations of every region, the resulting region-specific geographical markets on which firms from different regions compete, and the various dynamic competitive relations that are analysed in this book.

In this book a novel methodology is introduced and used to develop smart specialization strategies that are central in the place-based policy initiatives of the new European cohesion policy. The approach provides a solid framework for identifying the key priorities and strengths on which policy actions are able to build, as well as the weaknesses, bottlenecks or missing links which need to be rectified, in the very real context of global competition. As such, the approach gives a foundation for building a place-based smart specialization policy-prioritization logic that integrates the regional profiling element of smart specialization with the implementation of a regional development strategy where policy is targeted at specific actions and interventions that are amenable to measurement, monitoring and evaluation.

In line with earlier theoretical contributions on smart specialization and place-based development (for example, McCann and Ortega-Argilés, 2011), the analysis in this book shows empirically that crucial

inputs in public–private partnership processes of discovery and learning (‘differentiated knowledge base’) on the part of both entrepreneurs and policy-makers regarding the most likely avenues for entrepreneurial opportunities, are subject to international network embeddedness (‘connectedness’), locally unique competitive forces and local institutional circumstances. It clearly shows that a smart specialization strategy is not about becoming increasingly specialized, but is rather about deepening the linkages within the region and between regions (‘relatedness’) with the greater potential for long-lasting scale effects, while at the same time helping regions to diversify and link up in high-potential competitive networks. The pattern and distribution of the intended recipients of policy interventions emerge from an explicit policy-prioritization logic based around regions’ assets, capabilities and weaknesses.

1.1 SCOPE, AIMS AND MAIN CONTRIBUTIONS OF THIS BOOK

Since the early 1990s, the concept of regional competitiveness has become part of a hegemonic discourse within public policy circles in developed countries (Sheppard, 2000; Bristow, 2005). The concept has been enthusiastically adopted as a policy goal by the European Commission and by national governments across Europe. Most policy documents present the concept as a clear beneficial attribute of a local or regional economy (Martin, 2005). Competitiveness is especially portrayed as inducing economic growth, regional export orientations, sources of increasing returns and network and hub-positions of regions in a globalizing world (Porter, 2000; Martin, 2005). Strong economic growth and associated welfare gains are expected if a region outperforms its competitors on relevant conditions. The strategic imperative is to take the required steps to attract and retain innovative firms, skilled labour and knowledge workers and mobile investment, with particular emphasis being placed on the relevant conditions in the microeconomic environment (including offering high-end working and living environments) within which productive firms can prosper.

In the geographical and political discourses on competitiveness, the concept has mostly progressed in measurable and benchmark directions. The emergence of regional competitiveness as a discrete and important policy goal has spawned the development of indicators by which policy-makers and practitioners can measure, analyse and compare competitive performance, and find out who is ‘winning’. Benchmarking exercises have become increasingly popular within the sphere of regional economic policy-making in recent years (Huggins, 2010; Huggins and Izushi, 2012).

The international literature has predominantly been very critical about the limited ability of regional competitiveness circumstances to be copied elsewhere, as a kind of 'one-size-fits-all' policy (Bristow, 2005).

The trouble with many (if not all) performance rankings is that they tend to combine disparate industries and indicators into aggregates that obscure important differences (Cortright and Mayer, 2004). They also compare regions that may initially not be competing with each other on the same markets. The discussion of territorial competitiveness awaits an applied analytical framework that moves beyond the critical and problematizing stand that (actually too easily) is applied in the literature recently (Kitson et al., 2004). An applied analytic framework is needed that takes into account economically valued network relations between places of (mobile) production factors and traded goods. This book provides such a framework. In this publication we argue that for the concept to be valued correctly, regional competitiveness should not be solely identified by structural asset characteristics of cities and regions (summarized in benchmarks or listings), but additionally and alternatively by a theoretically informed analytical framework that uses actual networks of competing and economically valued relations between regions. Conceptually, we therefore introduce *revealed competition* as an indicator for measuring interregional competitiveness, determining which region competes with whom, on what and where. On *individual* markets, benchmarks of the *relevant* competitors can be determined, providing more useful information on competitive advantageous circumstances for every region and sector. We empirically underpin our analytical framework by using a newly created dataset on trade relations between European regions in goods and services (fully introduced in the Appendix).

Our scale of analysis is European, and the book's main discussion is on the possible policy trajectories on international regional competitiveness that was propagated since the introduction of the Lisbon Agenda in 2000, and accumulated into the current (smart, sustainable and inclusive) growth objectives of the Europe 2020 policy programme that are also central in the envisioned cohesion policy reform after 2013. The European Commission (2004, p. viii) envisions a common future for competitiveness and cohesion policies, stating that 'strengthening regional competitiveness throughout the Union and helping people fulfil their capabilities will boost the growth potential of the EU economy as a whole to the common benefit of all'. Currently, place-based development policies are proposed for future cohesion policy (Barca, 2009), but actually little is known about the relevant competitive circumstances of specialized industries in European regions. This book helps to identify the relevant circumstances and competitors for European NUTS-2 regions. It also fills a gap in identifying the

place-specific local and network circumstances necessary for identifying relevant development strategies in Europe. The approach proposed in this book aims to contribute to place-based development strategies (Barca, 2009) that have recently been extended into smart specialization concepts in European regional development. This policy initiative of the European Union tries to build on a systems way of thinking about innovation and growth, emphasizing the complexity of regional systems and economic networks (McCann and Ortega-Argilés, 2011). Our revealed competition indicator introduced in Chapter 5 provides information to develop a place-based sophisticated benchmark tool that underpins smart specialization strategies for European regions.

Compared to other monographs, this book unites a novel methodology that is not difficult to understand, a thorough conceptual discussion of regional competitiveness, and an up-to-date discussion on regional development policies in Europe in the past and the near future. The book aims to contribute to the current academic discussion on regional competitiveness and the policy debate on smart specialization, place-based development and cohesion policy in the European Union. It introduces a new dataset on interregional trade in Europe and gives tools and examples to address the local discussions on smart specialization strategies proposed by the European Commission. This chapter further introduces the various analytical and conceptual steps taken in our research that will be dealt with in the respective chapters. We will first introduce the types of regions we distinguish in our study. Our study regions are chosen to represent a complete cross-section of European regions, distinguished by size, development stage and sectoral specialization. In the subsequent sections we follow the outline of the book and introduce an up-to-date discussion on place-based development and smart specialization in European regions, the theoretical backgrounds of the regional competitiveness debate, the current European regional economic structure and development paths, measured revealed competition, dynamics in revealed competition, and smart specialization-based revealed competition benchmarking.

1.2 A REPRESENTATIVE CROSS-SECTION OF EUROPEAN REGIONS

In this book we focus on representative region and sector combinations to illustrate the applicability of our data and conceptualization for potential place-based development and smart specialization strategies. These region–sector combinations are presented in Table 1.1. The regions are chosen with respect to their location in Europe, their size, and their sector

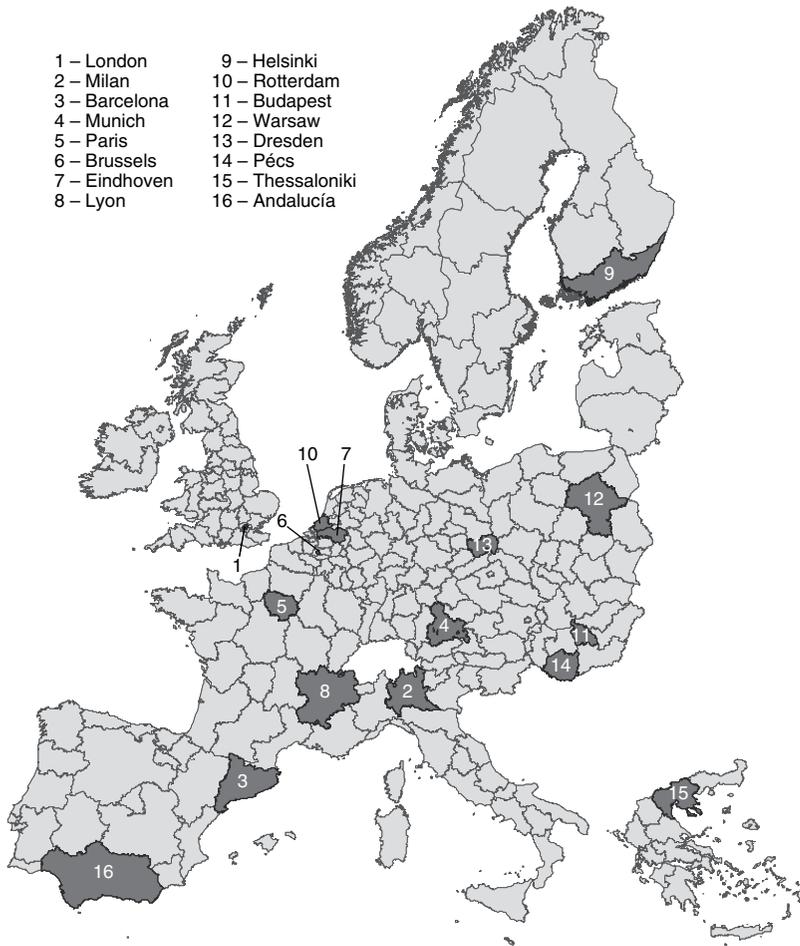


Figure 1.1 The geographical locations of representative regions discussed in this book

orientation. Figure 1.1 shows that the geographical locations of the chosen regions cover the whole of Europe. The group of region–sector combinations presented in grey in Table 1.1 covers a complete scope of type of regions in Europe and is therefore representative of the European Union. We describe the regions using the name of their major city because we think that most readers are more familiar with the city names. In Table A.3 in the Appendix we give all official NUTS-2 region names and the associated NUTS-2 region code.

Table 1.1 Region–sector combinations analysed in this book

	Total production	Agriculture	Financial & business services	Manufacturing		
				Low- tech	Medium- tech	High- tech
London						
Milan						
Barcelona						
Munich						
Paris						
Brussels						
Eindhoven						
Lyon						
Helsinki						
Rotterdam						
Budapest						
Warsaw						
Dresden						
Pécs						
Thessaloniki						
Andalucía						

We distinguish the large agglomerations (inner-) London, Milan, Barcelona, Munich and Paris. These regions are large diverse economies embedded within world city networks (Taylor, 2004; Ni and Kresl, 2010). We therefore analyse the complex of all industries and services in Milan, Barcelona and Paris. London and Paris are both dominant players on the market for financial and business services and are therefore discussed from this perspective, while we discuss the medium technological industries in the region of Milan, and the high technological production in the region of Munich. The implication of the place-based development strategy discussion is that European medium-sized city-regions have not declined in importance compared to larger urban ones, which has been indicated in monitoring publications by the OECD (2009b, 2011d, 2012a, 2012b), but there was until now little empirical support for this by explanations based in economic network studies (compare Bontje et al., 2011). We therefore study Brussels, Eindhoven, Lyon, Helsinki and Rotterdam–The Hague as examples of this group of medium-sized regions. Helsinki and Lyon are typical centres for high technological producers while Eindhoven hosts a large number of medium technological firms. In Brussels we focus on the financial and business services. The city of Rotterdam is mainly known for its harbour, but the NUTS-2 region of South-Holland in which it is

embedded also hosts one of the largest horticulture sectors in Europe (Westland area). We therefore focus on the agricultural sector in the region of Rotterdam–The Hague.

The peripheral regions and (Eastern European) emerging market economies are often considered as problematic regions from an economic perspective, as they are characterized by relatively low levels of income. These regions do have economic potential and have higher growth rates (especially in productivity, and more so in capital cities) than the Western regions (Marrocu et al., 2012; Dogaru et al., 2011). We have selected Budapest and Warsaw as typical large agglomerations in these emerging markets with specializations in the medium technological industry and the financial and business services, respectively. Warsaw is also analysed from the perspective of a large and diverse economy. Dresden and Pécs are analysed as medium to small-sized emerging markets. We analyse the Pécs economy with respect to agriculture and low-technological industries, while we focus on the total economy and the low-technological industries in Dresden. Thessaloniki and Andalucía are both large and typically peripheral regions. The total complex of production is central in our discussion of Thessaloniki's economy. Andalucía is analysed especially with respect to the large agricultural sector in this region.

1.3 PLACE-BASED DEVELOPMENT STRATEGIES AND SMART SPECIALIZATION OF EUROPEAN REGIONS

In Chapter 2, European spatial development trajectories are placed in the current policy discussion of smart specialization and place-based development. Regional competitiveness is introduced as an essential element in smart specialization policies of regional development in a networked competitive setting and not a purely local-assets setting. The origins of the smart specialization concept are thoroughly discussed to clarify the different elements of place-based smart specialization policies. Place-based smart specialization strategies integrate regional profiling with the implementation of a regional development smart specialization strategy where policy is targeted at the key priorities and strengths on which policy actions are able to build, as well as the weaknesses, bottlenecks or missing links which need to be rectified, in a network of economic relations. Any specific policy action and intervention should also be amenable to measurement, monitoring and evaluation, taking the specific regional network position into account.

The approach of network connectedness proposed in this book intends

to contribute to precisely this recent policy discussion on place-based or place-neutral development strategies in the European Union. This debate is highlighted in the context of a series of recent major policy reports: the place-neutral policies in the 2009 World Bank report (World Bank, 2009) and the European place-based development strategies in Barca (2009) and Barca et al. (2012). Place-neutral strategies rely on the agglomerative forces of the largest cities and metropolitan regions to attract talent, trade and growth potential. Based on current economic geographical theories of innovation and density of skills and human capital in cities and globalization, spatially blind approaches argue that intervention, regardless of the context, is the best way to resolve the old dilemma of whether development should be about 'places' or about 'people' (Barca et al., 2012, p. 140). It is argued that agglomeration in combination with encouraging people's mobility not only allows individuals to live where they expect to be better off but also increases individual incomes, productivity, knowledge and aggregate growth (World Bank, 2009). Consequently, development intervention should be space-neutral, and factors should be encouraged to move (people and production) to where they are most productive. In reality, this is equivalent to a movement of people and capital to the large agglomerations in Europe. Following this line of reasoning the short-term underutilization of the factors of production are push factors stimulating movement towards booming economic centres of activity. However, as was argued in Barca (2009), short-term underutilization of factors of production also implies the costs of 'missed' production. These short-term costs can hardly be ignored or labelled 'short term' in the situation of the 2010s where European country unemployment levels have risen to more than 20 per cent of the labour force, and regional unemployment levels are even higher. Clearly, a regional hands-off policy may not be appropriate in these extreme cases.

Place-based development strategists on the other hand claim that the polycentric nature of a set of smaller and medium-sized city-regions in Europe, each with their own peculiar characteristics and specializing in the activities to which they are best suited, creates fruitful urban variety, which enhances optimal economic development. The interactions between institutions and geography are critical for development, and many of the clues for development policy lie in these interactions. To understand the likely impacts of a policy, the interactions between institutions and geography, therefore requires explicit consideration of the specifics of the local and wider regional economic context (Barca et al., 2012, p. 140). Following up on this debate, the discussion of place-based development strategies in the European Union has recently been extended into smart specialization concepts that built on a systems way of thinking about innovation, entrepreneurship and growth (Foray et al., 2012). It empha-

sizes issues of economic potential, allowing for the complexity of regional systems and economic networks (McCann and Ortega-Argilés, 2011). A smart specialization strategy identifies regional factors and endowments related to location factors and clusters (Martin, 2005), but should simultaneously assess a region's position in international value chains and networks of trade, knowledge and foreign direct investment (FDI) that co-determine regional potentials (McCann and Ortega-Argilés, 2011). Smart policy-making then should build explicitly on insights from local and network data to make the most appropriate choices given the challenges that a region faces. Although much smart specialization strategy documentation stresses the international network orientation of regions, there is little to no international comparable data available for economic networks between European regions. Our revealed competition indicator introduced in this book provides the opportunity to develop a place-based sophisticated benchmark tool that underpins smart specialization strategies for European regions.

The differences between place-neutral and place-based policies are less pronounced than it seems. In place-neutral development strategies, insights in interregional economic networks are equally valuable as for place-based development strategies. Moreover, place-based policies are often place-neutral policies targeted at locations where economic problems exist. Place-based policies try to improve the capabilities of firms and people in locations characterized by economic problems. They involve them in the economic process and, if necessary, stimulate them to move to regions where they can reach their full economic potential. Place-based policies also imply facilitating firms and people in the economically most successful regions to build on their success. The *relation* of regional economic endowments with economic network positions is central in place-based policies. This gives the possibility to include those regional policies that may prove economically successful for a region, and especially preclude those policies that support only regional vested interests and have no regional economic potential. Proper place-based policies therefore reinforce place-neutral processes and prevent precisely those policies that proponents of place-neutral policies are so vehemently against.

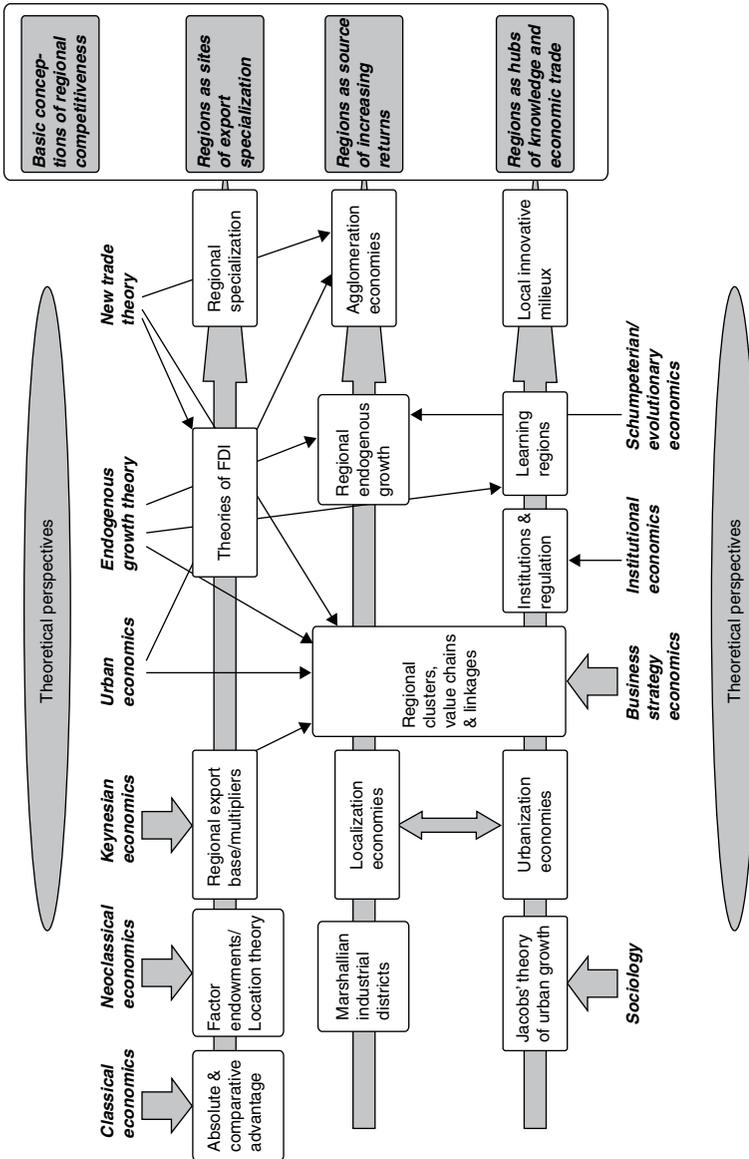
1.4 THEORETICAL FRAMEWORKS ON REGIONAL COMPETITIVENESS AND BENCHMARK STUDIES

In Chapter 3 the debate on competitiveness and regional development is introduced, including a discussion on its conceptual usefulness and

definitions. The competitive position of regions and different conditions generally used in benchmarks studies related to regional economic development are thoroughly discussed from a regional economic theoretical perspective. The practice of regional and urban benchmarking is questioned, and the relation between regional comparative advantage (leading to specialization) and revealed competitive advantage (based on market overlap) is introduced and discussed.

Martin (2005), in an eclectic approach, distinguishes six macroeconomic theoretical approaches that contribute to the competitiveness debate (see Figure 1.2): classical theory; neoclassical theory; Keynesian economic theory; development economics; new (endogenous) growth theory; and new trade theory. Each of these major schools of economic theory carries implications – explicit or implicit – for the notion of ‘competitiveness’ as it relates to nations and in some cases firms, and which therefore are of direct relevance to any discussion of ‘regional competitiveness’. In addition to macroeconomic perspectives, Martin (2005) argues that the understanding of regional competitiveness also requires some insights in some complementary perspectives that can be derived from microeconomy as well as sociology. Of the many theories and concepts that exist, four schools are discussed with a clear relevance for a better understanding of regional competitiveness (Figure 1.2): urban growth theory, ‘new’ institutional economics, business strategy economics and Schumpeterian or evolutionary economics. Although all of these theories have relevance to the understanding of competitiveness, they often lack a territorial dimension that is so crucial for understanding regional competitiveness (Martin, 2005, p. 13).

The obvious source for such theories is the field of economic geography, which may be taken to include three streams of literature: economic geography proper; regional economics; and the so-called ‘new economic geography’ within economics. Yet, although economic geographers have long been concerned with regional development and with the factors that make for regional economic success, traditionally they have not cast their analyses explicitly in terms of regional ‘competitiveness’ or ‘competitive advantage’, or even ‘productivity’. Therefore, the field of economic geography has drawn heavily on neighbouring disciplines (see Figure 1.2). In discussing regional competitiveness, Martin (2005) distinguishes three basic conceptions of regional competitiveness that cut through all theoretical disciplines. The first sees regions as sites of export specialization. This notion is closely related to factor endowment and export-based economics. The second view understands regions as a source of increasing returns. This notion belongs to the heart of economic geography proper, but has also been adopted by the ‘new economic geography’. The



Source: Adapted from Martin (2005), p. 14.

Figure 1.2 Conceptions of regional competitiveness in theoretical disciplines

third view regards regions as hubs of knowledge and economic trade. This notion extends the above concept both to ‘softer’ factors, including sociological and institutional elements (Boschma, 2005), and has also been labelled ‘new industrial geography’, but also to harder factors related to trade and FDI relations (Gardiner et al., 2004). Essential for all theoretical disciplines is the notion of who actually competes with whom, on what and where. Besides locational attributes, network attributes are needed for understanding this basic question, but until recently data limitations prohibited a thorough analysis of network dynamics in trade and knowledge. We conclude that our newly introduced approach (focused on international competitiveness of European regions) potentially contributes to many theoretical research fields, and also that simple benchmark studies that only compare locational attributes of regions and cities are generally inaccurate, opportunistic and only partially informed in nature.

1.5 SETTING THE STAGE: EUROPEAN REGIONAL DEVELOPMENT PATHS AND ECONOMIC STRUCTURE

There is a burgeoning body of literature on the possible additive influence of network proximities in relation to regional physical proximity, but until now these are predominantly focused on networks of knowledge relations (Basile et al., 2012; Moreno et al., 2005; Ponds et al., 2010; Varga et al., 2012; Vinciguerra et al., 2011). The relation between development paths and economic structure should be conceptualized on the regional level since trade relations are important networks for the identification of regional and interregional economic supply and demand opportunities, as well as knowledge related to this trade (pecuniary externalities; see Cresenzi and Rodriguez-Pose, 2012). The different types of regions in Table 1.1 are chosen because we expect that they have different development opportunities depending on their location and position in the network of trade in specific products, in combination with their locational geographic, economic and institutional strengths and weaknesses. Chapter 4 presents the economic structure and positions in interregional trade networks of European regions – important predetermined aspects that influence the course of economic development of regions considerably. An analysis of European sectoral specializations and clustering is provided. Specialization is measured on the regional level and the sectoral level (with the Theil indicator based on location quotients). This chapter provides detailed empirical insights in clusters that are defined in terms of sectors in relation to their regional suppliers (backward linkages describ-

ing subcontracting and intermediate deliveries). Openness is introduced as a new indicator that describes the quality of an industry's inputs network related to an optimal network derived from the Krugman–Venables–Fujita model on geographical economics (new economic geography). European regions are presented in a typology on the clustering and specialization dimensions, ranging from specialized to diversified economies on the one hand, and from autarkic to interregional open economies on the other.

We distinguish, based on these two dimensions, four different types of regional characterizations (revealed economic strategies) based on regional openness (network) and cluster orientations in combination with specialization versus diversification strategies:

1. **Product specialization:** a region specializes in a limited number of sectors obtaining intermediate products from suppliers in other regions.
2. **Supply chain specialization:** a region specializes in the complete supply chain of a limited number of sectors. Thus also the intermediate products used in the production come from the same region (industrial districts; Porter, 1990).
3. **Self-sufficiency:** a region follows a diversification strategy producing all sorts of goods and services, including the intermediate inputs required for the final product.
4. **Trade dependent diversification:** a region follows a diversification strategy producing all sorts of goods and services but obtains its inputs by importing intermediates from a vast array of different regions.

We find in Chapter 4 that preconditions and network orientations of regions are of crucial importance for their potential development path. In our conceptualization, the open network approach and the cluster approach fundamentally differ from each other. If in the former, agglomeration advantages are shared among a group of different regions; in the latter a region tries to capture and appropriate the agglomeration benefits by itself. We find that large and small regions in the core of Europe are generally characterized as diversified and open. Small regions appear to be more specialized than large regions in the core of Europe but they are far more diversified than peripheral regions. The size of the large regions allows them to engage in a diverse range of activities while the small regions may be able to 'borrow this size' from their neighbours. The central position of both types of regions fosters trade of inputs with many neighbouring regions and they can therefore be classified as 'trade

dependent diversified'. Large regions in the periphery show relatively high rates of diversification and clustering. Internal mass is an important driver of diversification (Farole et al., 2009). A location outside the core, though, seems to be a crucial determinant of the self-sufficiency development path of some regions (Frenken and Hoekman, 2006). Small, peripheral regions on the other hand are typically supply chain specialized regions. They appear to make use of the full extent of localization economies, with specialization on a limited range of products and all relevant intermediate inputs (Gardiner et al., 2004).

In Chapter 4 we argue that place-based policies have much to gain from taking into account their location in Europe and their specific economic structure. Regions in the core of Europe may benefit from a thick network of interactions with their neighbours while this is barely possible for the peripheral regions. The awareness of the level of specialization/diversification and clustering/openness, together with the comparison with other similar regions, can be of help in the design of smart specialization and place-based regional policies. For instance for a small, peripheral region, it may prove convenient to focus its resources and policies to a limited number of sectors (specialization and cluster strategies). It will, however, be difficult to get a sufficient economic return to cluster-promoting investments if these sectors have a natural tendency to spread (for example construction, low-tech manufacturing, and many services) and there is little economic benefit of specialization or clusters. On the other hand, if a region has the right preconditions, investment in sectors that have a tendency to concentrate (high-tech manufacturing, tourism, financial and business services) may be repaid with the appropriation of localization economies. It is important to keep in mind that once a sector has already concentrated in some specific regions, it is very hard to move such an agglomeration elsewhere. This makes a focus on cluster or specialization policy more appropriate for these small regions.

1.6 REVEALED COMPETITION (2000)

A well designed specialization policy should take into account regional interactions and regional complementarities. In Chapter 5 therefore our measurement of revealed competition of European regions by market overlap is introduced. Competition is traditionally related to the contest between firms for consumer or inter-industry demand and a firm is considered to have a good competitive position if it has a large market share and succeeds in improving or maintaining this share. In this chapter, we apply a newly developed trade network approach to determine in which

regions in Europe firms are the most successful in gathering a share of the European market. By investigating market overlap, we learn which markets are most important for firms, and from which regions they obtain strongest competition. These important markets and the regions with competing firms differ with respect to the location of the firm and the type of product traded. We illustrate the method by typical case studies for different types of European regions.

From the analyses in the chapter, it becomes clear that the competitiveness of a region is to a large extent determined by its trade connections with other regions. These trade connections show with which regions a city competes, on what, and where. The major European agglomerations of Paris, Milan and Dublin are seen as important competitors by almost all regions (based on our trade network measured for the year 2000). The case studies show the many different competitors with whom specialized regions compete, on what, and where. These specialized regions may not face competition from as many regions as suggested by common specializations only. Eindhoven, Milan and Budapest are all specialized in medium-tech manufacturing, but do not face mutual competition in the same degree. Eindhoven faces a lot of competition from Milan, but Milan does not face the same magnitude of competition from Eindhoven. They also compete (more) with firms from other regions. Although specialized firms in the Budapest region may show a lot of similarities in magnitude and reach of their export orientation in comparison with Dutch regions, for instance, they focus on different regions and markets altogether. Geographical proximity for manufacturing goods and hierarchical functional proximity for (high-end) services coincide in practically all regional trade patterns analysed. A general conclusion may be that the technologically more advanced production is more concentrated, more internationally traded and receives the most international competition.

1.7 DYNAMICS IN REGIONAL COMPETITIVENESS (2000–10)

In Chapter 6 the dynamics in revealed competition are analysed and the mathematical properties of the proposed methodology are more thoroughly discussed. The development in revealed competition is measured for the period 2000–10. We show that geographical clusters of regions in Europe strengthened their competitive position in industrial and agricultural trade, while the largest urban regions are particularly important for growing export positions of business and financial services. We show that improving competitive positions of regions is related to different segments

(sectors) of the economy for different regions. We also find evidence for Central and Eastern European countries' growing integration into the European competitive economy. This again emphasizes the importance of place-based development strategies.

1.8 REVEALED COMPETITION BENCHMARKING

In Chapter 7 we discuss revealed competition benchmarking. Knowing the 'real' competitors for industries means that more focused and targeted benchmarks can be constructed in which regions are only compared with their *actual* competing regions. Locational or network characteristics of these other regions may provide clues for improvement of one's own region (note that this reasoning involves intuitive learning opportunities and does not imply a formal test of causality). Chapter 7 shows variances in importance of locational attributes in competitors compared to individual scores. The locational factors used for benchmarking are the cluster, openness and specialization indicators introduced in Chapter 4 together with (available) indicators generally used in benchmarking studies. The cluster and openness indicators are sector specific and only relevant within their own sector. The regional specialization indicator is relevant across sectors. The more commonly used indicators are grouped in the following factors: public knowledge, private knowledge, agglomeration size, and accessibility by road and rail, accessibility by air, access to the internet, labour market, and foreign direct investments.

The trade network-based applications and descriptions in this book show the wealth of heterogeneity present in relative competitiveness linkages between regions in Europe. As argued, the major competitors differ per region and within each region even per sector. This is caused by the differences in market overlap per region and per sector. This calls for a careful addressing and evaluating of place-based policies of regional, national and European governments. The debate on regional development and regional competition has inspired a number of policies aimed at attracting and retaining mobile resources, such as physical and human capital (Martin, 2005). Among many, we recall fiscal incentives for Foreign Direct Investment or the creation of an optimal environment for business to flourish. Next, local governments have been attempting to increase the level of amenities their regions offer, since mobile, highly educated workers are sensitive to this (Florida, 2002). In addition, some policies have been aimed at the creation or fostering of clusters (real estate projects, incentives for firms to group together, collaborations with local universities), while some others have been incentivizing networking (collaborations with

international actors in business and academia; Huggins and Izushi, 2012). The European Commission has had a strong regional development policy via its cohesion policy that is now to be reshaped, preferably in place-based and smart specialization local policies. Knowing the 'right' competitors for industries, means that more focused and targeted benchmarks can be constructed and used in these policies. In Tables 1.2 to 1.4 we summarize the result of the benchmark analyses (comparing 'real' competitors only) for the case study regions in this book. The tables are a concise representation of the benchmarks presented in Chapter 7 and they can be interpreted visually, suggesting a possible investment agenda related to smart specializations. Dark fields indicate that a sector in a region underperforms on that indicator and that investment may tend to improve the sector's competitive position vis-à-vis its competitors. More specifically, the length of the bars signifies the importance of an indicator for its competitors while the shading of the bar indicates the score relative to its competitors. A long bar shows that the sector- and region-specific competitors are strong with respect to this indicator. A white bar means that a region has a higher score than the average of its competitors, while a darker colour implies that the sector in that region underperforms if compared to the average of its competitors. The higher the degree of underperformance, the darker is the colour. A black bar signifies that the region has a normalized score less than 30 per cent of the average of its competitors. The bar of agglomeration size is thinner in Table 1.2. This indicates that we are mainly interested in the reasons why agglomeration size is important. Underlying factors that may induce agglomeration economies are specialization, concentration and cluster strength. These are analysed by separate indicators in the revealed competition benchmark.

Table 1.2 shows that the large agglomerations in Europe in general have a strong position relative to their competitors. This is an expected result because their performance has made them strong and large agglomerations in the past. However, it is striking that even the best regions underperform on certain indicators if compared to their actual competitors. Milan clearly underperforms on its knowledge creation while Munich even underperforms on its concentration of high-tech manufacturing. In the case of Paris and Milan we also observe that different factors may be important for different sectors. Thus while in Paris private knowledge is important (has a long bar) for total production, it is not important (has a smaller bar) for the financial and business services. We can also see that in Milan a concentration of financial and business services is important for total production, but apparently not for medium-tech manufacturing. Finally, we observe that the score on an indicator of a region relative to its competitors may change according to the sector. This is because firms

Table 1.2 The revealed competition benchmark of large agglomeration regions in Europe

	Inner London	Milan	Barcelona	Munich	Paris
	Financial and business services	Regional production	Regional production	High-tech manufacturing	Regional production
	Financial and business services	Medium-tech manufacturing	High-tech manufacturing	Regional production	Financial and business services
Private knowledge					
Public knowledge					
Connectivity by road and rail					
Connectivity by air					
Connectivity internet					
Foreign owned companies					
Cluster orientation					
Network orientation					
Concentration of medium-tech manufacturing					
Concentration of high-tech manufacturing					
Concentration of financial and business services					
Concentration of agriculture					
Agglomeration size					

Table 1.3 The revealed competition benchmark of strong medium-sized regions in Europe

	Brussels Financial and business services	Eindhoven Medium-tech manufacturing	Lyon High-tech manufacturing	Helsinki High-tech manufacturing	Rotterdam–The Hague Agriculture
Private knowledge Public knowledge					
Connectivity by road and rail Connectivity by air Connectivity internet					
Foreign owned companies					
Cluster orientation Network orientation Concentration of medium-tech manufacturing Concentration of high-tech manufacturing Concentration of financial and business services Concentration of agriculture Agglomeration size					

Table 1.4 The revealed competition benchmark of peripheral regions and emerging economies in Europe

	Budapest Medium-tech manufacturing	Warsaw Regional production	Warsaw Financial and business services	Dresden Regional production	Dresden Low-tech manufacturing	Pécs Agriculture	Pécs Low-tech manufacturing	Thessaloniki Regional production	Andalucia Agriculture
Private knowledge	High	High	High	High	High	High	High	High	High
Public knowledge	High	High	High	High	High	High	High	High	High
Connectivity by road and rail	Low	Low	Low	Low	Low	Low	Low	Low	Low
Connectivity by air	Low	Low	Low	Low	Low	Low	Low	Low	Low
Connectivity internet	Low	Low	Low	Low	Low	Low	Low	Low	Low
Foreign owned companies	Low	Low	Low	Low	Low	Low	Low	Low	Low
Cluster orientation	Low	Low	Low	Low	Low	Low	Low	Low	Low
Network orientation	Low	Low	Low	Low	Low	Low	Low	Low	Low
Concentration of medium-tech manufacturing	Low	Low	Low	Low	Low	Low	Low	Low	Low
Concentration of high-tech manufacturing	Low	Low	Low	Low	Low	Low	Low	Low	Low
Concentration of financial and business services	Low	Low	Low	Low	Low	Low	Low	Low	Low
Concentration of agriculture	Low	Low	Low	Low	Low	Low	Low	Low	Low
Agglomeration size	Low	Low	Low	Low	Low	Low	Low	Low	Low

from different sectors operate on different geographical markets and therefore have different competitors.

In Table 1.3 we see the benchmark results for the strong and medium-sized regions in Europe for different sector specifications. Here we see that competitors are often larger (the regions underperform on agglomeration size) and the underlying factors that are related to this compared to their competitors are identified. Helsinki, for instance, is clearly smaller than its competitors but seems to compensate for this by a strong cluster orientation and a concentration of high-tech manufacturing. The medium-tech manufacturing sector in Eindhoven underperforms on precisely these cluster and concentration indicators, which may therefore be important aspects to improve in future policies, contributing to a better agglomeration position.

Table 1.4 shows the benchmark for our selected peripheral and emerging market economies. This gives a very different and, in terms of development possibilities, much more problematic picture than the results for the large and medium-sized regions. We see a lot of dark shaded and long bars, signifying underperformance on many important indicators. The region of Warsaw, for instance, seems to be mainly strong in attracting foreign capital but still underperforms on many of the other distinguished indicators when compared to its competitors. The Dresden region sticks out as performing exceptionally well on knowledge creation when compared to its direct competitors. The underperformance of Dresden appears relatively small. The Pécs region is clearly specialized in agriculture: its present strengths lie in the structure of the agricultural economy, with a strong cluster and concentration. The Thessaloniki region seems to underperform on almost all indicators, suggesting that large investments in many factors would be needed to make its economy competitive.

1.9 POLICY CONCLUSIONS

The book concludes in Chapter 8 with a discussion of the introduced methodology and its link with place-based and place-neutral policies. The main conclusion derived from this book is that regional economic development policy should be based on a 'one-size-fits-one' approach. This is in line with the OECD (2011d) which argues that 'the supposed conflict between place-based, as opposed to place-neutral policies, is overblown'. The place-based policy question that remains and to which this book gives a partial answer is what policy mixes work in what circumstances. Place-based policies are 'people and firm based policies in places' targeted at the improvement of conditions such as regional education levels and

accessibility to improve the needs of firms and people to enhance welfare and stimulate growth given the specific regional context. Proper place-based policies reinforce place-neutral processes and preclude those policies that support only regional vested interests and have no regional economic potential. In this way place-based smart specialization and regional development can reinforce both place-neutral as well as place-specific economic processes in order to accomplish economic growth and a higher welfare. This calls for a careful addressing and evaluating of place-based policies on different governance levels, ranging from the region itself to the country and the European Union.