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Beyond the Blue Banana?

Structural Change in Europe's Geo-Economy

Gert-Jan Hospers
University of Twente - Department of Economics
Faculty of Public Administration and Public Policy
P.O. Box 217 - 7500 AE - Enschede - The Netherlands
Phone: 0031-534894554 - Fax: 0031-534894734
Email: g.j.hospers@bsk.utwente.nl

Abstract. Inspired by the ERSA-2002 congress theme 'From Industry to Advanced Services - Perspectives on European Metropolitan Regions' we devote this paper to the development chances of Europe's core area, the 'Blue Banana'. For centuries, this banana-shaped metropolitan axis running from London to Milan has been Europe's breeding place for innovation and growth. Recently, however, commentators have identified the 'Sunbelt' from Milan to Valencia and the 'Yellow Banana' from Paris to Warsaw (or further eastwards) as future European growth poles besides or even beyond the Blue Banana. Against this background, the present paper explores the question how likely it is that the structure of Europe's economic-geographical system will change in the next decades. For that purpose, we develop a framework of spatial structural change in which insights from Schumpeterian economics, structural change theory and agglomeration theory are combined. On this theoretical basis it is argued that areas with sectoral and institutional diversity provide the flexibility which is needed to absorb new techno-economic developments and to develop 'new combinations'. When applying our framework to the European context, we suggest that despite its industrial tradition the Blue Banana still faces the most favourable future in Europe's service economy. Due to its diversified structure this area rather than the Sunbelt and the Yellow Banana may have the best starting-position to grow in the next decades. Given the continuing strength of the Blue Banana, we propose a localized European policy of 'regional realism'. In our view, such a policy may help the most in bringing about a less unbalanced growth of Europe's geo-economy.

JEL classification: O18, O33, R11, R12
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1 Introduction

Paradoxically, the recent introduction of the euro as a single European currency might be more interesting for regional scientists than for monetary economists. The fact is that member states of the EMU have lost their traditional monetary sovereignty; thus, they cannot use exchange rates anymore to influence international competitiveness. Instead, nations and regions are increasingly thrown upon the particularities of their geo-economic structure to make a difference in the single market (Cooke 1995). Studying the long-term consequences of the euro therefore requires a closer inspection of Europe's geo-economic landscape. What, then, does a recent map tell us about the economic geography of this continent? Although Europe seems to be unified only by its diversity, it is still possible to detect a rather homogeneous economic zone, running from London over the Benelux and the Rhine area towards Milan. This axis, usually called the 'Blue Banana', often has been identified as the area that traditionally has shown the greatest development potential in Europe's geo-economy (RECLUS 1989; Schätzl 1993; Delamaide 1994; Dicken 1998). Recently, however, commentators have suggested that this long-established 'stylized fact' of European development might be subject to structural change. Some suppose that the Blue Banana eventually must give way to the 'Sunbelt', an arch-shaped axis in the southern part of Europe along the Mediterranean coast from Milan to Valencia. Others expect the rise of a 'Yellow Banana' streching from Paris to Warsaw or even further into Eastern Europe. Although such reflections on alleged European growth areas are fascinating, they are not based on a theory. In any case, the speculations do not indicate what theoretical mechanisms cause the stability and dynamics of Europe's geo-economy.

Against this background, the present paper is a first step to explore structural change in Europe's economic geography. How likely is it that the contemporary structure of Europe's geographical system will change in the next decades? What are the main factors behind the long-term evolution of the European economy and what is the possible impact of these factors on Europe's economic future? Obviously, these Grand Questions, as Schumpeter (1954) would call them, cannot be entirely answered in a short paper like this one. Moreover, it is impossible to give firm answers to such questions at all, since tomorrow's geo-economic developments are always surrounded by uncertainty. Therefore, we only intend to search for the main mechanisms at stake, thus hoping to modestly formulate a

'vision'. To develop a vision on Europe's changing economic geography, the rest of the paper is organized as follows. In the next section (section 2) we briefly discuss the 'Bananas' that have been identified as core areas in the European economy. Section 3 lists insights from Schumpeterian economics, structural change theory and agglomeration theory that might be useful to explore spatial structural change. In section 4 we combine these theoretical insights and integrate them into a preliminary framework of spatial structural change. After that, the framework is used to assess the development potentials of Europe's Bananas. Section 6 concludes with some implications of our analysis for European regional policy.

2 Beyond the Blue Banana?

In 1989 RECLUS, a group of French geographers managed by Roger Brunet, presented a study on the development chances of urban areas in the European economy (RECLUS 1989). The study was meant as a warning signal for the public authorities in Paris: since France was not connected to the central growth axis from London towards Milan, the French might fail to grasp the benefits from the European single market (Figure 1). It was the press that termed this core zone in Europe the 'Blue Banana', thus referring to its shape and the coloring that was used by the RECLUS mapmakers (Delamaide 1994). Before, historians such as Braudel, Rokan and Tilly already had identified this area as the backbone of European economic development (Heidenreich 1998). According to them, the Blue Banana dated back to Medieval or even Roman times: it reflected centuries-old trade routes (the Alpine-Rhine axis) and the borders of Roman-Catholic and German-Protestant Europe. Moreover, it was along this belt that the Industrial Revolution spread all over Europe since 1800. If anything, the Blue Banana shows how long-term structures may continue to be important to the present day.

The Blue Banana still differs from other European locations in both demographic, economic, infrastructural and cultural-educational aspects. First of all, the Blue Banana is densely populated and highly urbanized. The area comprises many large or medium-sized cities (e.g. London, Amsterdam, Brussels, Frankfurt, Zürich and Milan), in which 40 % of the EU-population (1996) lives (Erzner 1999). Thus, it has been described as the 'city belt',

the 'central European urban region' or even the 'Central Megapolis'. Moreover, statistics show that the regions within the Blue Banana have higher per capita incomes and lower employment rates compared with the rest of Europe (Heidenreich 1998). Besides, this zone disposes of large industrial concentrations (for example the West Midlands and the Ruhr Area) as well as strongly developed service centres, particularly in the field of business services, banking and public administration (Van Dinteren and Meuwissen 1994). Next, the Blue Banana has a well-developed physical and telecommunications infrastructure as well as dense traffic networks. Finally, within Europe this area attracts attention because of its relatively large supply of cultural and educational facilities. Nowhere in Europe one can visist as many exhibitions, museums and conferences as in the Blue Banana, while also most European universities and colleges are located here.

Since the nineties more and more analists and consultants argue that the Blue Banana gradually might loose its dominant position in Europe. In their view, there are other growth areas in the making (see Figure 1). In particular two zones have been identified as future growth poles in the European economy: the Sunbelt in the southern part of Europe and the Yellow Banana in the East (RECLUS 1989; Schätzl 1993; Lambooy 1994; Erzner 1999). The 'Sunbelt', running along the Mediterranean coast from Milan to Valencia, even has been labeled the 'Nord du Sud', i.e. the North of the South. This arch-shaped belt with cities such as Nice, Marseille and Barcelona is said to emerge on the basis of high-tech and service activities combined with a qualified work force and a pleasant working and living climate (RECLUS 1989; Schätzl 1993). Alternatively, the reunification of West and East Germany and the coming enlargement of the European Union with countries from Central and Eastern Europe have provoked some authors to expect the rise of a so-called 'Yellow Banana' from Paris via Cologne and Berlin to Warsaw (Schätzl 1993; Erzner 1999). According to Lambooy (1994), the Yellow Banana may even stretch further eastward and result in a revival of the former Hanseatic cities such as Rostock and Riga. If anything, these speculations suggest that we should look beyond the Blue Banana in studying Europe's development potentials. Paradoxically, then, just when Europe seems to unite, its long-established economic map might start falling apart.

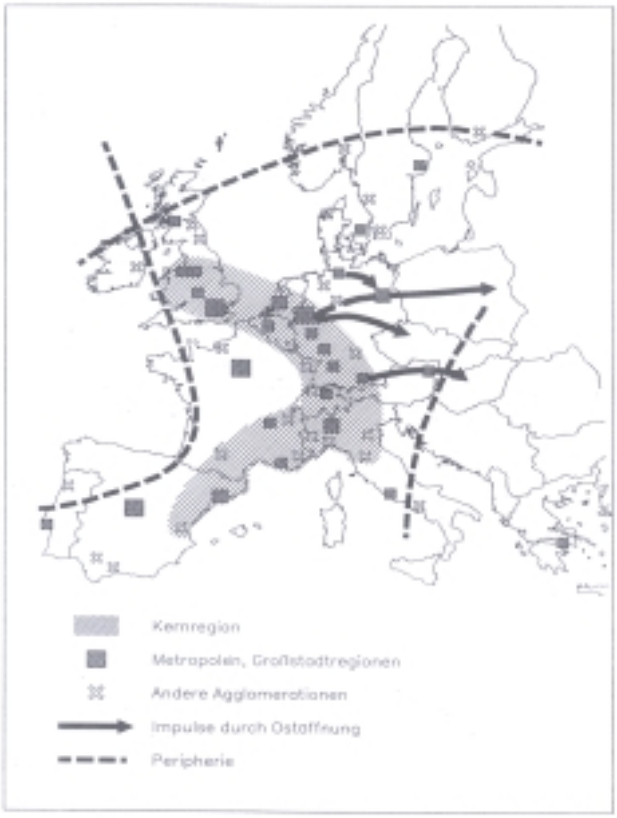

Figure 1. The Blue Banana and beyond. *Source*: Schätzl 1993.

3 Building blocks of spatial structural change

Today, regional science does not offer a comprehensive theory yet that could explain spatial structural change in Europe. Obviously, the neoclassical approach has shortcomings in studying this issue. In orthodox models structural change in time and space is seen as a temporary out-of-equilibrium process that only prevents the market in reaching an optimal allocation of factors and commodities in the long run. Having reviewed alternative economic theories we think that in particular three of them might help us in tracing the main mechanisms behind dynamics in the economic-geographical system: Schumpeterian economics, structural change theory and agglomeration theory. Of course, we cannot discuss these theories at length. Instead, this section focuses on those very insights that constitute the building blocks of our tentative framework of spatial structural change.

3.1 Schumpeterian economics

Since Veblen and Marx we know that technological change and institutions are the main drivers of capitalist evolution. It was the Austrian-American scientist Joseph Schumpeter, however, who developed a theory on technology, institutions and economic development that really succeeded in rivaling neoclassical equilibrium theory. Schumpeter's thinking evolved over his lifetime. In his early work 'The Theory of Economic Development' (1934) Schumpeter considers the entrepreneur developing innovations ('new combinations') as the engine that keeps the capitalist system running (Schumpeter Mark I). Innovations bring about a 'perennial gale of creative destruction' through which the old economic structure is destroyed and a new one is created. In his later work 'Capitalism, Socialism and Democracy' (1942) Schumpeter integrates this entrepreneurial innovation theory with institutional elements (Schumpeter Mark II). Here, he argues that in the long term capitalism can not survive for institutional rather than economic reasons. Due to growing welfare in society the need for capitalist institutions like entrepreneurship gradually will disappear. Furthermore, the rise of big business ('monopolization') and an increasingly hostile intelectual attitude towards capitalist society will undermine the economic system's fundamentals more and more. As a result of this institutional change, Schumpeter expects, only a few huge corporations remain that jointly run the economy in an efficient but mechanical manner ('routinization of innovation'). Thus, for Schumpeter, it is the very success of capitalism that ultimately will lead to its demise.

In the eighties, when scientific interest for long-term economic evolution was growing, Schumpeterian economics got a revival. Disappointed by the lack of explanatory power of neoclassical economic convergence theory Romer (1986) called for models that would internalize technological change. Before, Nelson and Winter (1982) had already taken up Schumpeter's view. They contrbuted to the development of 'evolutionary economics' that explicitly attempts to account for the dynamic and institutional aspects of economic reality. Among other things, the evolutionary approach has led to the notion of 'national innovation systems' that stresses the importance of interactions between economic actors and national institutions for the sake of economic development (Nelson 1993). Economic historians as well played a part in breathing new life into Schumpeterian economics. North (1990), for example, focused on the relationship between institutional change and technological progress in economic history. In his view, technological development is linked to the rate at

which a society's institutions are able to change ('adaptive efficiency'). According to North, the past shows that only a few countries had flexible institutions conducive for growth; most societies, however, got stuck in an institutional setting that hampered them to fully benefit from techno-economic challenges.

3.2 Structural change theory

Structural change theorists construct ideal types of long-run tendencies to explore changes in the economic structure. Building on the work of Clark and Fisher the French scientist Jean Fourastié (1949, 1955) advanced the first structural change theory from a sectoral perspective. Like Schumpeter Fourastié sees entrepreneurial technological change as the engine that keeps the economy running: company-led innovations result both in new commodities and in higher labour productivity. In Fourastié's 'three sector hypothesis', however, these productivity improvements do not take place uniformly in the economy. The fact is that the primary, secondary and tertiary sector differ in their capacity to absorb technological change. According to Fourastié productivity increases can only be high in the secondary sector (manufacturing). In the primary sector (agriculture), however, technological development is at best medium, while in tertiary sector (services), such as personal services, education and administration, productivity improvements are only low or nil. Although total production rises in due time, these inter-sectoral differences in technological progress result in a supply bias to manufacturing: other things being equal, the supply of secondary and also primary products grows much faster than that of services. The point is, however, that households, firms and the government show a demand bias for services. The richer households become due to technological progress, the more they demand services (e.g. leisure) compared to food and goods This variant of Engel's law also holds for firms and the government: the growing importance of technological progress in society brings about an increasing need for intellectual, administrative and organisation activities. Thus, when considered separately, the demand and supply side of the economy evolve in an opposite direction. It is this imbalance between the growth of production and consumption, Fourastié claims, that explains structural change. In trying to match demand and supply, the system has to move from a mainly food and goods-producing economy to a services economy. In Fourastié's view, this transition is associated with big adjustment problems, since society has to shift from the existing institutional structure to a new one.

Thus, structural change will lead to a 'suffering by transition generations' that find themselves placed between the old and the new structure.

Empirically, the transformation from an industrial towards a service economy can be observed indeed (Feinstein 1999). 'Tertiarization' represents one of the stylized facts of post-war economic growth in the Western world. In some typical tertiary countries, like the US, the UK, Scandinavian countries and the Netherlands, the share of services in total employment amounts to around 70 per cent (OECD 2000). After Fourastié, Baumol (1967) used structural change theory to argue that the low productivity in services would lead to a 'cost disease of services', especially in arts, police and health care. Bell (1974) and his followers rather focused on the institutional dimension of the service economy, that is dubbed by them as a 'post-industrial' , 'knowledge' or 'information society' (see also Stehr 1994). They contend that service activities ask for skills, knowledge and information; hence, they expect the replacement of the factory system and blue collar work by the education system and white collar work, with all the associated social consequences. Each study on services, however, has to cope with sectoral classification problems, as some economic activities contain both goods and service elements (e.g. mass media and catering). To avoid difficulties in drawing borders between sectors, Pasinetti (1981) removed the sectoral element from structural change theory. The result is a framework in which the interaction between technological progress, production and consumption induces structural change. To be sure, Pasinetti's theory indicates that the economy changes, but it does not say into what direction. Thus, much of the theory's power of expression is lost. Despite the classification problems, we therefore prefer the approach towards structural change that accounts for intersectoral differences in technological development.

3.3 Agglomeration theory

Regional science traditionally focuses on the spatial concentration of economic activities and the dynamics of regional growth. Agglomeration theory is useful in explaining both issues. One of the forerunners of agglomeration theory was the French economist François Perroux, who extended Schumpeter's view with the notion that innovation-induced change is unevenly distributed among economic 'units' - be it indivuals, firms, industries, regions or nations (Perroux 1955). Economists have mainly studied a variant of this general dominantion theory, namely 'growth pole analysis'. A growth pole is 'a propulsive unit in a

determined environment' (Perroux, 1961). Examples of 'propulsive units' are leading firms, key industries or other 'active units' (e.g. universities) that are able to dominate their surroundings. The foundation for a growth pole in a particular place is a profitable action by a propulsive unit (say, an innovation). Due to high income elasticies of demand and high profits, Perroux argues, the unit starts generating externalities ('propulsive effects') in its environment that cumulate and lead to polarization. The externalities coming from the propulsive unit may be both upstream (forward linkages) or downstream (backward linkages) and positive (spread effects) or negative (backwash effects). Perroux mostly discusses the spread effects, that may bring about a pattern in which the growth pole (core) dominates the rest of the economy (periphery). These effects may become 'backwash effects', when a growth pole reaches a mature stage of development. Ultimately, they may result in polarization in reverse, and turn a growth pole to a 'shrink pole'.

In economics Perrouxian agglomeration theory has inspired several authors. Myrdal (1957), for instance, advanced a theory of 'cumulative causation', stressing that a local industry's spread effects work like a magnet and attract other firms and industries to the region. Thus, a self-reinforcing and irreversible process is set into motion that leads to the 'Matthew-effect': the rich (core) become richer, while the poor (periphery) become poorer. Other authors have specified the nature of externalities in agglomerations (see also Boschma and Lambooy 1999). Applying the QWERTY-principle in a regional context, Krugman (1991) discussed the possibity that regions become locked-in into rigid and suboptimal trajectories. To be sure, areas that are specialized in only one industry or some related industries may profit from strong increasing returns ('localization economies'). Due to their monostructure, however, they are more vulnerable to economic and institutional lock-in situations than regions with a more diversified structure. Here, we meet Jacobs (1969), who sees local diversity of economic activity as the most fruitful seedbed for technological progress. She suggests that areas with sectoral variety provide the flexibility needed to absorb new techno-economic developments and 'to add new work to old' (Jacobs, 1969). Recently, the importance of such 'Jacobs' externalities' or 'urbanization economies' for innovation has been emphasized in new concepts, e.g. 'clusters', 'innovative milieux' and 'creative cities'. Although these terms are popular now, we still prefer the Perrouxian 'growth pole', since this very concept suggests the continuous association between temporal (growth) and spatial (pole) aspects of economic activity.

4 Towards a framework of spatial structural change

In this section we do a first attempt to put the theoretical blocks together to build a framework of spatial structural change. Perhaps, our aim to combine Schumpeterian economics with structural change theory and agglomeration theory is too ambitious. Separately, each of the approaches is complex enough. At the same time, the theories show striking similarities (see Table 1). To start, they all are Schumpeterian approaches, in that they view technological change in its institutional context as the main engine behind economic development. Moreover, contrary to mainstream economics, the emphasis is on unbalanced technological change. Finally, the theories are 'meso-economic' rather than micro-economic perspectives, as they focus on structures and developments that can be found beyond the individual but below the aggregate level (sectors and regions).

Spatial structural change	**Schumpeterian economics**	**Structural change theory**	**Agglomeration theory**
Contributors	Schumpeter, Romer, Nelson, North	Fourastié, Baumol, Bell, Pasinetti	Perroux, Myrdal, Krugman, Jacobs
Driving force	New combinations (innovations)	Technological change (innovations)	Innovations
Relevant actors	Entrepreneurs	Producers and consumers	Propulsive units
Nature of change	Perrenial gale of creative destruction	Unbalanced sectoral growth in time	Emergence of growth poles in space
Long-term effects	Demise of capitalism: - monopolization - routinization of innovation	Intersectoral shifts: - tertiarization - institutional transition problems	Polarization: - spread or backwash effects - lock-in or diversity effects

Table 1 Elements of spatial structural change

4.1 Structural change in time and space

The starting-point for our framework is Schumpeter's view on economic development: innovative activities by entrepreneurs generate structural change in that they destroy the existing economic structure and simultaneously create a new one. In exploring this process of 'creative destruction', however, Schumpeter does not specify what structures are likely to be destroyed and where and when this will take place. We think that the other two theoretical perspectives may help us in concretizing the Schumpeterian vision: if anything, structural change theory offers a view on the time-dimension of structural change, whereas agglomeration theory clarifies the spatial implications of this process. Consequently, a combination of Schumpeterian economics, structural change theory and agglomeration analysis might explain why and how economic development varies in time and across space. In our framework the process of structural change is understood as an interaction of supply, demand and institutional factors. Let us start with the supply factors. According to all of the three theories, it is the technology-driven supply side of the economy that determines the economic structure of an area. What is important here, is a sufficient supply of profit-seeking entrepreneurs who are able to create a new structure out of the old one. Without this entrepreneurial function (Schumpeter Mark I) technological developments would not be commercialized, even if consumers asked for it; the economic structure would stay in a status quo. Thus, in the short term entrepreneurs - attracted by new technological opportunities or by high market demands - can set into motion a structural change process. In due time, the organisations these entrepreneurs found (propulsive units) make profits and may grow into Perrouxian growth poles. This economic concentration in space might be seen as the spatial image of Schumpeter's monopolization process, i.e. 'the rise of big business' (Schumpeter Mark II).

Where and when do such sectoral growth poles emerge? In the end, the location of spatially concentrated clusters can be traced back to locational decisions of entrepreneurs in the past. They may have been attracted to a certain location by the availability of production factors, by the existence of a final demand or simply by chance events. To the extent that these factors are a function of and an influence on geographical space, some locations are more likely to be choosen than others. Given the entrepreneurial choice for a particular location, there are opportunities for the start of a polarization process. Because of the spread effects from the growth pole to its surroundings, the area where it is located grows

faster than the rest of the economy. Moreover, the growth pole works like a magnet for producers and consumers from other areas and exhibits Myrdal's process of cumulative causation. In other words, success is breeding success. Like its location, also the moment the pole starts growing ultimately depends on entrepreneurial decisions to innovate. Following structural change theory, however, we think that the economy's demand side plays an important role here. In response to changes in demand an existing growth pole may shrink in favour of new growth poles and, therefore, new locations. Thus, a falling demand can put a growth pole into problems through backwash effects moving upstream and downstream. In the short run, such demand biases are not necessarily serious as they may be responded by new innovations within the growth pole's sectoral specialization. More significant than these short-term product cycles, however, are developments in the demand pattern over the long run. The fact is that during the process of technological change the demand bias for services Fourastié and Baumol point at gradually takes effect. In the long term, technological progress leads to increasing incomes for consumers and to more complexity for firms and government. As a result, society tends to demand more services at the cost of food and goods. Taking into account this regularity, we can derive which growth poles are likely to dominate the economy in a certain point in time and which not. Unsurprisingly, then, most agricultural growth pole are to be found in primary civilizations, most industrial areas in secundary societies and most service centres in tertiary civilizations. This is the conclusion that follows from linking concepts from Schumpeterian economics, structural change theory and agglomeration economics.

4.2 The adaptability of growth poles

The interaction between supply and demand factors in time and space determines how the process of spatial structural change passes off. This process can be seen as a moving landscape of various growth poles that under influence of entrepreneurial innovation as well as demand factors expand or contract over time. What used to be a core growth area in one stage of economic development, may become a less-favoured peripheral location in another stage. This does not imply that former growth poles lack development chances when the geo-economic system enters a new era of growth. On the contrary: the theories we dealt with also point to two types of factors that determine the ease with which growth poles can adapt to novel circumstances.

The first category of these determinants has to do with economics and refers to the degree of diversification of economic activities in the growth pole. Highly specialized areas can profit from strong Perrouxian spread effects during the stage of high demands for the commodities they produce. Due to their monostructure, however, such growth poles may fall into the techno-economic lock-in situations Krugman is warning for. Besides, whenever the demand for these areas' output decreases their initial success may turn out to be the very fail factor: because of strong interfirm relationships, backwash effects can easily spillover from one organisation to another, both upstream and downstream. As such, areas with a monostructure are vulnerable to the inevitable continuation of the economy-wide process of structural change. Conversely, growth poles disposing of a rather diversified economic structure are likely to experience less serious adjustment problems. In this Jacobian view, it is the variety of these locations that protects them from getting locked into rigid and suboptimal trajectories. The idea is that settings with sectoral diversity offer room for unexpected knowledge exchange, creativity and thus innovation. We think that such generic growth poles have more opportunities than specialized environments to absorb new techno-economic developments and have more chance to develop Schumpeterian 'new combinations'.

The second category of factors that affects the adaptability of growth poles is of an institutional nature. The institutions associated with the growth pole may act as constraints or incentives to structural change. Authors such as Fourastié, Bell and North remind us that institutions tend to lag behind structural change. The reason for this 'institutional inertia' is the past-binding resistence of a community's values, norms and traditions. Close interfirm relationships, vested interests, conservatism and sectoral lobbies may paralyse entrepreneurship and limit the ability of growth poles to react to new circumstances. This institutional argument, being similar with Schumpeter's vision that capitalism evokes a 'routinization of innovation', complements the economic factors mentioned before. Together, they explain why the initial success of growth poles ultimately might contribute to their decline. We expect, therefore, that the economic need for institutional change may result in Fourastian transition problems for growth poles. Obviously, there is a close connection between an area’s institutional structure and its degree of economic diversification: highly diversified locations are more likely to show institutional flexibility than areas that are dependent upon specific activities. In short, we assume that diversity

rather than specialization facilitates the adaptability of growth poles to the requirements that are dictated by the technology and demand-driven process of structural change.

5 Spatial structural change in Europe

In this section we return to the initial question how likely is it that the contemporary structure of Europe's geographical system will change in the next decades. On the basis of our framework it is possible to reflect upon this question from a theoretical perspective. The framework indicates that service centres are likely to comprise Europe's modern core area with the most opportunities for future growth. The assumption is that these service conglomerations have overtaken the former central positions of industrial respectively agricultural zones in earlier phases of European history. In today's post-industrial society, we expect those two past growth poles to be the less favourable locations in Europe. In this line of reasoning, we can divide Europe's economic-geographic system in three broad 'ideal types' of territories: (1) core service areas, (2) intermediate industrial areas and (3) peripheral agricultural areas (cf. Heidenreich 1998; Rodríguez-Pose 1998).

5.1 A typology of European territories

The category of core service areas contains large and wealthy urban conglomerations with high shares of employment in the service sector. These locations have passed successfully through the transition period from an industrial to a service society and now profit from spread effects in the tertiary domain. Generally, these areas have a diversified economic and institutional structure and advanced educational and infrastructural facilities. Such 'innovation-prone' locations have been denoted as 'new growth spaces' (Rodríguez-Pose 1998) and 'creative cities' (Asheim and Clark 2001). Representative examples are London, East Anglia, the Randstad, Berlin, Frankfurt, Milan, Paris and Barcelona. Compared with these contemporary growth poles, intermediate industrial areas are less dynamic: they often have to cope with adaptation problems. Here, overspecialization in manufacturing together with a rigid institutional structure have created lock-in situations that hamper the restructuring towards a service economy. Moreover, due to a bad public image, these regions - also known as 'old industrial areas' (Steiner 1985) or the 'rustbelt' (Cooke 1995) -

often go through a polarization process in reverse. This group comprises previous industrial heartlands like the Ruhr Area, the West Midlands, Yorkshire, Nord-Pas-de-Calais, Lorraine and Basque Country. Finally, peripheral agricultural areas are the least advantageous type of territories in Europe. These are mostly poor rural regions stuck into a centuries-old agricultural tradition; thus, they have experienced major difficulties in making the switch-over to an industrial or services economy. This economic backwardness is often caused by an isolated location, an 'innovation-adverse' context and insufficient infrastructural facilities. Among the areas in Europe that have been condemned to this 'development without autonomy' (Trigilia 1992) we find many Mediterranean regions, like the Mezzogiorno, Andalusia, Centro and the Greek Islands.

Our classification of geo-economic areas makes clear that the pattern of economic activity in Europe is unevenly distributed. Both in economic and geographical terms, there has grown a borderline between the wealthy economic base of core service areas and the poorly developed structure of peripheral agricultural areas (see also Moucque 2000). Theoretically, this core-periphery pattern may be subject to change thanks to a further 'tertiarization' of the economy. Then, the growth poles of the future are likely to be found in those locations that succeed the best in taking advantage of new opportunities in the service economy. In this respect, it is hard to predict which areas will be the winners and which ones the loosers. Based on our framework, however, we expect that the Blue Banana from London to Milan will be the European growth axis in the next decades - even despite its orginal industrial base. To be sure, some of Europe's intermediate industrial areas, such as the West Midlands and the Ruhr Area, are located in this city belt. These regions have had problems in finding a new place in the post-industrial order, as they are locked-in into rigid economic and institutional trajectories. At the same time, most other locations in the Blue Banana are typical core service locations. Metaphorically, therefore, one could speak here about the emergence of a ripe banana with only a few brown spots.

5.2 The importance of diversity

The main reason why we believe that the Blue Banana will continue to play a dominant role in Europe's economy is its economic and instititional diversity. Especially large and densely populated cities such as London, Amsterdam, Frankfurt and Milan show the variety that may have helped them to reduce the Fourastian transition problems from industrial towards

service centres. The variety in sectors, cultures and people that can be found in these urban environments provides the flexibility needed to absorb techno-economic developments that may result in new Perrouxian growth poles. Due to the large absorptive capacity of the Blue Banana, entrepreneurs can profit from the dynamic externalities Jacobs had in mind. Subsequently, easily 'new combinations' can be discovered - both in the literal and Schumpeterian sense of the word (Hospers 2001). Variety in producers and consumers adds to input and output: it increases the chance that existing economic activities (e.g. manufacturing) combined with structural, economy-wide developments (say, tertiarization) result in innovation. Examples of 'new combinations' of old and new activities are specialized business services (management/financial consulting), transportation, communications and all kinds of repair and leisure services. Thus, thanks to its generic economic and institutional legacy we are of the view that the Blue Banana probably will keep the lead in Europe's future development.

This is not to say that there are no chances for other regions in the European service economy. In addition to the Blue Banana new growth poles might emerge in Europe. Which future prospects these new areas have depends upon their capability to solve transition problems and to make use of the rising demand for services. From this perspective, the 'Sunbelt' from Milan to Valencia indeed may have growth potential (RECLUS 1989; Schätzl 1993). The pleasant living climate and attractive environment of this area along the Mediterranean coast offers opportunities to expand touristic, cultural and leisure services. It is questionable, however, whether the same scenario holds for the 'Yellow Banana' that some analists expect to emerge from Paris to Warsaw (Schätzl 1993; Erzner 1999) or even further eastwards, thus including the former Hanseatic cities (Lambooy 1994). In our view, the lack of a service-orientation in the former communist societies seriously hampers the transition from an industrial towards a postindustrial era. Like peripheral agricultural areas in the Mediterranean, most regions in Central and Eastern Europe still have to cope with economic and institutional inertia. Without public support directed at accompanying communities in the structural change process, these less-favoured areas probably cannot adapt to the advanced Western European service economy. It is beyond the scope of this paper to elaborate on this issue. For now, we confine ourselves to the following general point resulting from our framework: where Europe's areas are going, certainly depends upon where they are coming from.

6 Conclusions and policy implications

In this paper we set ourselves the ambitious goal to search for the major mechanisms behind structural change in Europe's geo-economy. Thus, we hoped to assess the future development potentials of the Blue Banana, i.e. Europe's traditional growth axis from London to Milan. At this point, we may conclude that spatial structural change is a complex process in which technological change, intersectoral differences, agglomeration effects and institutions interact. The framework in which we tried to combine these elements is still very preliminary; obviously, it needs more theoretical depth and empirical support before any firm conclusions can be drawn. A first application of the framework to the European context suggests, however, that the Blue Banana - despite its industrial tradition - still has the most favourable perspectives in the European service economy. Due to its diversified structure we expect that this area rather than the Sunbelt and the Yellow Banana has the best starting-position for economic growth in the next decades. This 'vision' sheds another light on European regional policy: perhaps, the authorities in Brussels should allow more for the strength of the Blue Banana in devising policies for Europe's regions. It might be more feasible, then, to strive for optimal differences between less-developed areas and the Blue Banana than to aim for maximal regional balance in Europe. In the end, such a 'regional realism' will be in the best interest for Europe as a whole.

On a more concrete level, a European policy of 'regional realism' might ask for more decentralization and localization than the current EU policy of just dividing Structural and Cohesion Funds among Europe's regions. If anything, our research on spatial structural change points to the importance of an area's past in assessing its perspectives for the future. Oddly enough, this inheritance aspect of the future is often neglected in policy discussions. Public authorities frequently ignore the question whether the preconditions for new economic activities are present in a local economy. Inspired by success stories such as Silicon Valley and Bavaria, many policy makers currently try to create growth poles from scratch, especially in the field of information and communication technology (ICT) and biotechnology. With our framework in mind, we cast doubts on the usefulness of such regional policies of copying 'best practices'. Governments wishing to accommodate structural change could better take an area's economic and institutional context as the starting point. Within this structure, they can assist market parties in searching for

interesting 'new combinations' that connect an area's particularities with over-all trends of structural change (e.g. the emergence of a knowledge-based services economy). In Finnish regions, for example, public authorities have contributed to the upgrading of the traditional forest industry by linking it to developments in ICT en biotechnology. This approach has resulted in new applications such as e- and bio-forestry (Hospers 2001). In our view, such localized policies of 'trend through tradition' do justice to the diversity of Europe's geo-economy. Only by bearing this diversity in mind, we believe, it is possible that besides the Blue Banana also the rest of Europe will profit from further European integration.

References

Asheim B, CLARK E (2001) Creativity and cost in urban and regional development in the 'New Economy'. *European Planning Studies* 9: 805-811

Baumol WJ (1967) Macro-economics of unbalanced growth: The anatomy of urban crisis. *American Economic Review* 57: 415-426

Bell D (1974) *The coming of post-industrial society: A venture in social forecasting*. Heinemann, London

Boschma RA, Lambooy JG (1999) Evolutionary economics and economic geography. *Journal of Evolutionary Economics* 9: 411-429

Cooke P (1995) Introduction. In: Cooke P (ed) *The rise of the rustbelt*. UCL Press, London

Delamaide D (1994) *The new superregions of Europe*. Dutton, New York

Dinteren JHJ van, Meuwissen JAM (1994) Business services in the core-area of the European Union. *Tijdschrift voor Economische en Sociale Geografie* 85: 366-370

Erzner F (ed) (1999) *Wirtschaftsgeographie*. Cornelsen, Berlin

Feinstein Ch (1999) Structural change in the developed countries during the twentieth century. *Oxford Review of Economic Policy* 15: 35-55

Fourastié J (1949) *Le grand espoir du XXe siècle: Progrès technique, progrès économique, progrès social*. Presses Universitaires de France, Paris

Fourastié J (1951) *Machinisme et bien-être*. Édition de Minuit, Paris

Heidenreich M (1998) The changing system of European cities and regions. *European*

Planning Studies 6: 315-332

Hospers GJ (2001) New combinations: Have policymakers learned from past mistakes? *New Economy* 8: 139-143

Jacobs J (1969) *The economy of cities*. Random House, New York

Krugman PR (1991) *Geography and trade*. MIT Press, Cambridge, Massachusetts

Lambooy JG (1994) Structure and transformation: Regional capitals. In: Kooij P, Pellenbarg P (eds) *Regional capitals: Past, present, prospects*. Van Gorcum, Assen

Moucque D (2000) A survey of socio-economic disparities between the regions of the EU. *EIB Papers* 5: 13-24

Myrdal G (1957) *Economic development and underdeveloped regions*. Duckworth, London

Nelson RR (ed) (1993) *National innovation systems: A comparative analysis*. Oxford Univerity Press, Oxford

Nelson RR, Winter SG (1982) *An evolutionary theory of economic change*. Belknap Press, London

North DC (1990) *Institutions, institutional change and economic performance*. Cambridge University Press, Cambridge

OECD (2000) *The service economy*. OECD, Paris

Pasinetti LL (1981) *Structural change and economic growth: A theoretical essay on the dynamics of the wealth of nations*. Cambridge University Press, Cambridge

Perroux F (1955) Note sur la notion de 'pôle de croissance'. *Économie Appliquée* 8: 307-320.

Perroux F (1961) *L'économie au XXe siècle*. Presses Universitaires de France, Paris

RECLUS (1989) *Les villes europeénnes: Rapport pour la DATAR*. RECLUS, Montpellier.

Rodríguez-Pose A (1998) Social conditions and economic performance: The bond between social structure and regional growth in Western Europe. *International Journal of Urban and Regional Research* 22: 443-459

Romer P (1986) Increasing returns and long-run growth. *Journal of Political Economy* 94: 1002-1037

Schätzl L (ed) (1993) *Wirtschaftsgeographie der Europäischen Gemeinschaft*. Uni-TB, Stuttgart

Schumpeter JA (1934 [1980]) *The theory of economic development*. Oxford University Press, London

Schumpeter JA (1942 [1976]) *Capitalism, socialism and democracy*. George Allen and Unwin, New York

Schumpeter JA (1954) *History of economic analysis*. Oxford University Press, London

Stehr N (1994) *Knowledge societies*. SAGE Publications, London

Steiner M (1985) Old industrial areas: A theoretical approach. *Urban Studies* 22: 387-398

Trigilia C (1992) *Sviluppo senza autonomia: Effetti perversi delle politiche nel Mezzogiorno*. Il Mulino, Bologna