

# Regional Economies: a Threat to the Nation-State?

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## Abstract

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One of the main aims of the study is to identify how the modern firm's reliance on the regional production environment varies according to different types of industrial firms. The findings indicate a much greater breadth, diversity and richness than is usually captured by the prototypes normally taken up for analysis e.g. industrial districts and "learning regions". After having thoroughly examined the theoretical and empirical ties between firm and region it becomes possible to discuss the question posed in the title of this article, namely: In what way can an alliance between region and firms influence regional development? Is it possible for actors at the regional level to influence those factors and mechanisms which are deemed critical for the competitiveness of firms and their capacity for development? Is the scope for actors at the regional level greater than that of the EU and the nation state? What is the role of the EU in relation to that of the nation state? The answers in the article to these questions are toning down a future antagonism between regions and nation states and are appreciating an important and clear division of labour between the EU, the nation state, and the region in improving economic performance.

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## The Issue

The market for standard components, investment goods and finished goods is becoming increasingly global in character. Juxtaposed against this increasingly global backdrop a parallel process is at work whereby a firm's ties to the local/regional environment tend to intensify. This familiar paradox has emerged over recent years and has become a highly debated subject in the discipline of economic geography. The apparent contradiction between the global and the local is usually resolved by explanations pertaining to the need of firms for close, physical proximity to the knowledge and competence provided by innovation and production networks. Above all, technological development and the implementation of technological processes demand intense local relationships and make the availability of and accessibility to resources in the local environment imperative. In order to meet the demands of a changing market, local/regional ties have intensified in line with the shift from fordist to post-fordist and increasingly flexible methods of production and specialisation.

In this respect researchers have been quick to identify trends and prototypes for the development of future industry. New industrial districts or "learning regions" are examples of more current objects of regional analysis, and many are of the opinion that they are highly significant for the future of industrial geography. What these production environments have in common is that they are innovative, self-sufficient, closed systems with a high capacity for developing new technology and applying this technology in flexibly organised production systems. In this type of region it is thought that in a broad sense, politics, social organisation, institutions and culture interact with industry and the production system. The effects emanating from these innovative environments spread to regional economies which are characterised by a more open and less flexible structure as far as the build up of competence and knowledge is concerned. Many believe that the process of industrial renewal, as well as the most advanced forms of production, will take place in what are known as "Marshallian islands". Such islands of industry will form a type of fertile archipelago skirting the remaining vast and grey industrial landscape. This prospective view of industrial development finds, however, very little support in terms of current

and internationally accepted examples of such regions. At present there are approximately 20 regions to be found throughout the world, all of which have been researched exhaustively. What is more, all these regions have a particular evolutionary background making imitation problematic and difficult to repeat on a larger scale. Recent research reports, moreover, that a number of these regions are in the process of dissolution, although they are not necessarily losing their competence (Harrison 1997). Large firms, by using their economic strength and adopting of new strategies, act to increase the competition. Within these innovative environments it can now be observed how firms are opening up their networks to the surrounding world. It is not that local/regional ties cease to be significant - on the contrary, competitiveness is created through a combination of regional resources and resources from the wider environment. The picture of reality is rapidly becoming more varied and more differentiated, implying that it is no longer as easy to identify trends or prototypes for the future development of industry.

This predicament has become all the more complex as a result of research which presently identifies several types of growth regions, among them not only high-technology "learning regions" but regions which have, until now, been put to one side and termed "losers". These are, for example, regions dominated by one or more technologically advanced large firms which operate numbers of small firms in the supplier chain (Hub-and-Spoke-Districts), or highly specialised branch regions which are completely run by firms located outside the region (Satellite-Platform-Districts), or those regions dominated by public operations not exposed to competition (State-anchored-Districts). The latter case can include one or more large government institutions such as military bases, state or national capitals, large public universities all of which are surrounded by suppliers and customers. In such circumstances national political decisions completely steer the developmental dynamic of the region in question. In comparison to technologically driven districts (Markusen 1996), all of these types of regions are significant in number.

Political actors at the regional level have been quick to share in of a few of the more appealing and more comprehensive developments. For many the possibility of imitating these self-sufficient and innovative regions has been tempting. The ultimate aim was to attempt to shorten synthetically the lengthy historical course of events which bound together social organi-

sation, institutions, culture and production, a process which can develop and establish a very strong competitive base. For representatives of more open, traditional regions, the aim was instead to improve the region's competitiveness by, among other things, linking their own resource base to the resource base of other regions. In order to establish strong "home bases" for the economy, transport and communication networks have been expanded to link up regions to wider regional conurbations. Parallel to this more physical form of regional construction, regions have also endeavoured to strengthen their financial and technological conditions for development through alliances with other regions, direct capital relations and by establishing direct contacts with political bodies of the EU, via personal representatives.

This regional commitment, which is built upon more or less realistic notions of how the economy and production environment operate, has certainly grown over the past ten years. Simultaneous developments have taken place, as the role played by the nation state and the supra-national level in regional development has changed in character. The EU, for example, has strengthened its role in terms of initiating large investments in dynamic and competitive branches, directed at improving industrial technology, whereby the aim is to upgrade the competitiveness of the EU as a whole in relation to the USA and Japan. From a regional perspective the effects of such investment can be dramatic, but they can also be difficult to predict. At the same time the nation-state, by means of state-led demand, encourages equivalent industrial investments within areas of competence specific to certain regions. Investments can be targeted at combinations of industries which are either concentrated or spread throughout the national regional system. The EU has also strengthened its role as instigator of large investments in infrastructure which either directly or indirectly affect many of the Member States. In terms of the national infrastructure i.e. the development of infrastructure within state boundaries, the nation-state has retained its role. The aim is often to strengthen the resource base of individual regions or to combine a number of regions thereby creating more effective units. Finally, in terms of direct, redistributive and traditional regional policy, the role of the EU has grown considerably compared to that of the nation-state. The redistributive nature of regional policy has, however, little to do with the renewal and dynamism observed in the industrial landscape. The competitiveness of firms and the capacity to de-

velop are no longer considered to be factors which are easily influenced by political decisions or policy planning, but are instead bound up with internal and more sensitive mechanisms in the regional production base.

In what way would an alliance between firms and regions influence the development of regions? Is it at all possible for actors at the regional level to influence those factors and mechanisms which are deemed relevant for the competitiveness of firms and their capacity for development? If so, is it possible that the effect will be greater than that induced by the EU and the nation-state? Can regions, generally speaking, manage without the nation-state and national co-operation if one considers the actual construction of production systems and the demands for continual improvement? In endeavouring to answer these questions it is necessary to explain a number of matters in order to ensure that the discussion does not become too abstract or hypothetically and homeopathically diluted.

The first matter in need of explanation concerns how local/regional ties manifest themselves in economic life, above all with regard to manufacturing industry. Which areas of industry have important local/regional ties? How do these mechanisms and linkages reveal themselves? Can they be influenced externally by any means, or is this a case of an autonomous process that has evolved over time and which does not respond to political interference? How common are innovative regional systems, i.e. new industrial districts, in relation to those regions where the production environment is more open to sources of competence and technology in the national and international landscape? Only when these questions have been answered, hence the next subject of discussion, will it be possible to shed light upon the more comprehensive question regarding the alliance of firms and regions and the implications of such an alliance for the EU and the nation-state. The role of the EU and the nation-state will be taken up for discussion in the concluding section of this paper.

## Introduction

In recent years a number of studies have pointed to the fact that the growth of the global economy does not eliminate, but is rather a consequence of processes at the local/regional level. Some authors have described this development as “the resurgence of regional economies” (Sabel 1989), or as expressed by Michael Storper: “The global economy may be seen, in this light as consisting, in important measures, of a mosaic of specialised technology districts.” (Storper 1992 p. 91). Economists have paid increasing attention to the local/regional dimension, where the work of Michael Porter (1990, 1994), and Paul Krugman (1991, 1995) has been of particular influence. In this respect the issue is not unique. The field of research is, however, far-reaching and is still very much open for the development of both theory and methodology. Above all there is a great need for empirical work. The tendency has been to look for the specific and the unique, sometimes with the aid of almost anecdotal empirical evidence, rather than to examine more general issues in relation to the “marriage” between region and firm. For this reason we have chosen to designate this type of study and analysis as “the anecdotal approach”, a title which can in certain cases be considered somewhat provocative if not to a certain extent unfair. It is not, however, our intention to provoke. Rather we believe that the experience gained from the study of regions, e.g. “the third Italy”, Silicon Valley, Baden Württemberg and Gnosjö in Sweden, are very valuable and can be regarded as evidence of new ground in terms of regional development. On the other hand we are of the opinion that it is rather more doubtful using this experience when leading a more general discussion about regional conditions and the competitiveness of firms. Another problem arises if these “anecdotal” experiences are to provide the basis for an appraisal of a policy framework directed at the local economy. This is especially applicable for a country like Sweden where the majority of regions are characterised by a relatively mature and on the whole fordist style of industrial production. There are, however, a number of regions in Sweden which offer some hope amidst the grey, fordist mass. These regions are either home to a growing research intensive industry or have benefited from the revitalisation of labour intensive industry. Such regions can pos-

sess features which are usually associated with “new industrial districts”, “learning regions” or bearers of “untraded interdependence”. We have, however, refrained from pursuing these types of firms and regions for a number of important reasons, however tempting it might have been to include them in the analyses. To begin with it is highly probable that we would consequently exclude a very large number of firms and regions. Secondly we would lose the opportunity of evaluating and judging just how widespread this “new” phenomenon really is. Thirdly there is the risk that an analysis which concentrates solely on the region’s role with regard to, for example, “untraded interdependence” and “collective learning”, will exclude other interesting characteristics in the region which can also be significant for the competitiveness of firms. We would also risk underestimating factors concerning the ties between firms and conditions in the national and international environment, and therefore the extent to which a firm is dependent on these environments. With these points in mind we find that there is reason to embrace a more extensive background, which theoretically as well as empirically has the capacity to cope with the vast heterogeneity encountered in relation to the dependency of firms on the regional production environment. This type of approach, which will be termed “the broadbrush approach”, builds upon experience gained from a recently completed research programme, “Firms, regions and international competitiveness”.<sup>1</sup> The point of departure in this analysis is not primarily the region nor any other kind of territorial unit. The focus is instead directed at the firm and its competitive strategy, examining them to see whether regional conditions are of any significance at all, and if so which conditions are important in this particular context. The principal aim is to establish quantifiable relationships which in more general terms are capable of identifying and evaluating the effects that regional conditions have on the international competitiveness of firms and industries. In the long term this kind of broad approach which encompasses the “grey mass” of firms and regions, will provide better opportunities for identifying and interpreting that which is unique and specific.

## Theoretical framework

The theoretical approach employed here is an attempt to treat, within a common framework, aspects concerning location theory and aspects which are normally dealt with in international trade theory.<sup>2</sup> There are obvious parallels between this approach and that of classical and neo-classical theory, for example, Marshall (1890/1920), Weber (1909), Perroux (1950) and Myrdal (1957) and the concepts of agglomeration, industrial districts, growth poles and cumulative growth. Although, perhaps with an element of criticism we have also drawn on theoretical developments within “the new economic geography”, which has in many ways succeeded in vitalising and providing the discipline with some new and exciting dimensions. We have thus drawn on theory introduced by the flexible specialisation school (e.g. Piore & Sabel (1984) “the fusion between social and economy”), the Californian school (e.g. Storper, Walker and Scott’s work on technological districts (Storper 1992), territorial production complexes (Storper & Walker 1989) and flexible production systems (Storper & Scott 1989)) and the latest theoretical developments which discuss the significance of regions in terms of “learning regions” or as “the nexus for untraded interdependence” (see, e.g. Storper 1995; Asheim 1995, 1996; Eskelinen 1996).<sup>3</sup> Storper is of the opinion that the latter aspect is imperative for understanding the “marriage” between region and firm. Furthermore it provides the missing link lacking in earlier attempts to establish a theoretical base (Storper 1995 p.192). The concept is interesting, but we are not, however, entirely convinced that it resolves the theoretical and empirical ambiguity, nor that it really represents something that earlier schools of thought have neglected. Is there, for example, any substantial difference between Marshall’s (1890/1920) “industrial atmosphere” and that which is implied by the term “untraded interdependence”? We will return to the theoretical and empirical possibilities of the concept at a later point in the paper.

### *The product life-cycle revisited*

Another central point of departure in our approach has its roots in the theory of the product life-cycle. We have focused on and endeavoured to develop its capacity to link theoretical aspects concerning location theory, technological change, and international trade and production. The product life-cycle, moreover, provides an important instrument for identifying firms and grouping them in branch aggregates. The firms are grouped according to the manufacture of products which are similar in terms of technology requirements, the demand for resources and market growth.

In view of the theory's aim of linking the factors mentioned above, it is surprising that the possibilities provided by the product life-cycle have not been discussed nor tested more extensively in the research which treats the "marriage" between firm and region in a global economy. It is after all this area of research which often claims to deal with and merge theoretical aspects concerning location theory, technological change and international competitiveness. The extensive criticism directed at the product life-cycle, especially during the 1980s, undoubtedly deterred many interesting attempts to develop the theory further. What we are asserting is that many of the problems connected to the product life-cycle, underlined by the critics, (see e.g. Storper 1985, Taylor 1986 and Dickens 1992, for an overview of the critique) are either exaggerated or can be resolved. The criticism, for example, questioning the relevance of product life-cycle theory in explaining the rapid internationalisation of sales and production observed today, is a criticism we share. The way in which the theory is applied in our approach, however, means that this drawback is of marginal significance. We also support the obvious objection to the fact that not all products undergo the type of life-cycle prescribed by the theory. Criticism has also arisen in conjunction with the difficulties encountered when endeavouring to evaluate the assumptions upon which the theory is built, as it is difficult to set the theory in a concrete analysis. Problems exist regarding the definition of a product and whether it is feasible to categorise branches and position them in the product life-cycle entirely on the basis of a set of similar products. Naturally, determining the level of aggregation for classification purposes is a both difficult and complicated process, as is deciding whether a product or component should be assigned to one category or another. There is

always a risk of inaccuracy and uncertainty during the classification process. This is, however, a common problem whenever attempting to make advanced classifications of manufacturing industry, regardless of the theoretical basis.

It is our opinion, however, that the product life-cycle can quite clearly be employed in order to determine branch aggregates. The reason is that corporate strategies usually take into account portfolios of products at different stages of the life-cycle (Hax and Majluf 1984). Different manufacturing sectors can be shown to have a portfolio of various age that gives us a sectorial measure of innovativeness and a hint of necessary linkages and relations to the environment (Brenner 1994; Whitely, Bean and Russo 1996). These points will be taken up for discussion at a later stage in this paper.

In conclusion it is our opinion that criticism directed at the product life-cycle is hardly sufficient, and that much can be gained by developing the theory to a more abstract level. Doing so would facilitate the analysis of geographical dimensions in terms of technological change, competitive strategy, market growth and the growth of production. After all, this is precisely the point of a product life-cycle orientation. In the version taken up for discussion in this analysis, assumptions are made which act to tone down any tendency toward technological determinism, which in our opinion is the most serious criticism directed at the theory. We also present a much more dynamic view of the production environment and its significance for the competitiveness of firms.

### *Regional “home bases”*

The single most important influence stems from the concept of the home base introduced by Michael Porter in his book from 1990, “The Competitive Advantage of Nations”. The concept has been modified and developed so that it is of relevance in a regional context, and is fundamental to our analysis both in terms of location theory and trade theory. The home base, according to Porter, is the nation in which a firm locates the large part of its core activities, i.e. the head office, R&D and the most important production facilities. The interplay between a firm’s core activities and the

various conditions present in the home base is precisely that which provides the key to understanding why certain branches develop competitive strength while others fail. The home base is, therefore, the platform from which a firm establishes its path to globalisation, and from which a firm's strategies and long-term competitiveness are developed. By differentiating those activities carried out in the home base from those performed in production environments in other countries, Porter facilitates the inclusion of firms with a more extensive, global organisation, where competitive advantage is sought in a variety of different production environments. This implies that the influence exerted on a firm's competitiveness by subsidiaries and branch plants located outside the home base can be incorporated in analyses, while at the same time leaving the theoretical logic intact. It is our opinion that it is necessary to consider such a dimension in order to understand the role played by the region in view of a firm's capacity to develop its competitiveness in an increasingly global economy. This dimension, moreover, facilitates the avoidance of a simple but nevertheless rather attractive dichotomy, whereby the competitiveness of firms is either regarded as a consequence of "highly localised processes" or as "placeless processes". The competitiveness of firms should instead be understood as a combination of "localised" (both in the form of "core activities" situated in the home base, and "peripheral activities" situated in production environments located outside the home base) and "placeless" processes. Not, that is to say, one or the other. The concept we term "placeless process" finds its equivalent in Porter's "system based advantage", i.e. those processes which "are a function of the firm's total worldwide sales volume, its cumulative rate of learning in all its facilities, and its ability to co-ordinate across foreign domestic relations." (Porter 1990 p.60).

### *Clusters and agglomerations*

There are additional aspects in Porter's analysis which are interesting to bear in mind, both in terms of theory and methodology, even if they are not considered to be of the same fundamental significance for our own analysis. The concept of clusters i.e. the significance of spatially (nationally) concentrated operations, horizontally and vertically interwoven, is with-

out doubt interesting in a regional context. The concept of clusters, introduced by Porter, is influenced by and linked to a long theoretical tradition which deals with similar phenomena, for example the different variants of agglomeration introduced by Weber (1909) and Marshall (1890/1920), Perroux's (1950) growth poles and Dahmén's (1950) development blocs. Contemporary examples of production/innovation systems are provided by Piore & Sabel's (1984) flexible networks, Storper's (1992) product based technology learning (technology districts) and Lundvall's (1992) national innovation systems. In this case, however, the conditions incorporated in Porter's concept are of more relevance, making the concept more attractive in terms of our analysis compared to the other variants mentioned above. This is despite the fact that Porter is rather vague and that he does not break any new ground as far as the significance of geographical proximity is concerned (this is actually one condition which presents a worthwhile opportunity for developing the concept). The concept of clusters, however, is far more logical with regards to economic rationality, which is thought to provide the motive for the formation of relations between firms. The theoretical basis of clusters is embodied in the value chain of the individual firm, i.e. how different functions are organised and carried out internally by the firm, and how these individual chains can in one way or another be linked together with the value chains of other firms and to the larger value system as a whole. The character and the extent of both vertical and horizontal relations, which are characteristic of cluster formations, are determined by the contact points of different functions in the individual value chains, and how these match the contact points in other value chains. The different types of linkages which are established can be accounted for depending on where the strongest points of contact are to be found within the value chains. The concept of clusters encompasses, therefore, both linkages which generate static advantages, i.e. the cost efficiency of production systems, or those linkages which result in dynamic advantages, related to a firm's capacity for continual renewal and innovation. The strongest points of contact in the value chains are likely to be determined by the types of products manufactured by firms, the type of technology employed and the competitive strategy pursued. The grouping of firms within certain branches is, therefore, beneficial to a certain degree. Hypothetically speaking, it facilitates the assessment of the significance and the nature of conceivable links between firms. Only then is it feasible to discuss

whether these links are regional, national or international in nature i.e. which links benefit from the geographic proximity of other firms and which are less sensitive to distance. By prematurely imposing geographical limitations upon the boundaries of a cluster for reasons of accuracy, one risks excluding important links which may lie outside the defined limits of the analysis. For the same reason, even Porter's nationally defined clusters are subject to criticism, i.e. links between national borders are overlooked despite the implication of global networks.<sup>4</sup>

Another important condition present in Porter's analyses is that the significance of cluster formation is judged in terms of how these clusters affect the firms within them and their competitiveness on the global market. Consequently Porter allows for a more critical treatment of the cluster phenomenon, that is to say that not all clusters are of a favourable nature and not all lead to heightened international competitiveness.<sup>5</sup> Our aim is similar in terms of testing the significance of regional cluster formation.

## Explanatory Model

### *Assumptions*

A central assumption in our analyses is that a firm establishes its competitiveness in the region where its head office, R&D and important parts of its production facilities are located. The focus is therefore on the core activities of a firm and how these are connected to and influenced by the regional production environment. Hence it is assumed that production or other activities which take place in branch plants or subsidiaries outside the firm's own region, in the national or international environment, will not exert the same influence on the long term capacity of the firm to improve its competitive advantage. On the other hand it is highly feasible that other sources of advantage may well be sought in external production environments. The strength of the home base is not only related to its traditional export potential (link 1 in figure 1) but to the capacity of the firm to penetrate new and growing markets (link 2), as well as establishing production facilities and other activities abroad (link 3). Much of the analysis of inter-

national competitiveness tends to be biased towards export performance and thereby tends to ignore or minimise the importance of investment in foreign production (see, for example, Storper 1992, where technology districts are identified and assessed purely in terms of export performance). Employment in Swedish subsidiaries abroad is nearly as extensive as in Sweden itself. It is therefore essential to take both theoretical and empirical account of foreign production in any explanatory model of Swedish international competitiveness.

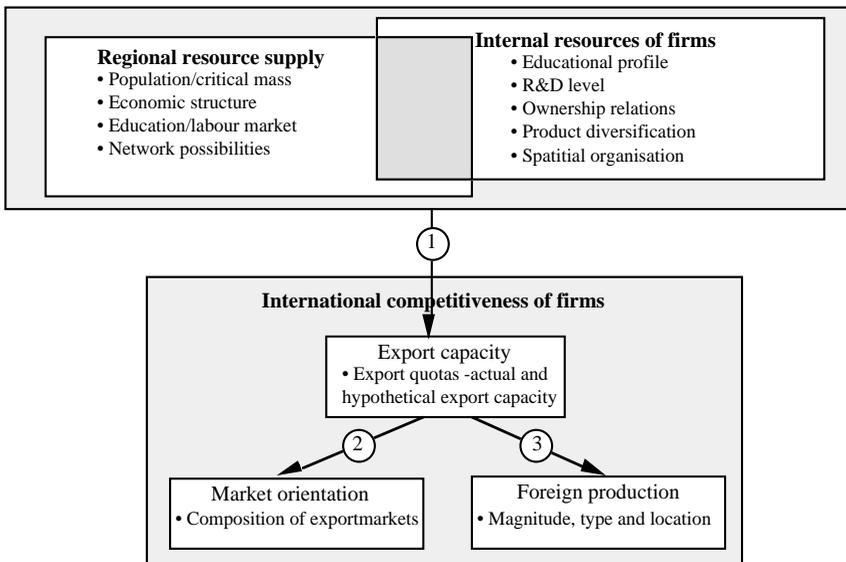


Figure 1. The explanatory model

Another central assumption is that the strength and character of dependence on the home base will have specific implications that are associated with differences between industrial sectors in relation to the level of technology, resource requirements and competitive strategy. In spite of these differences, an explanation must be sought within a general theoretical framework that focuses on the role of regions and the regional mechanisms which affect the capacity of firms continually to improve their products and raise the cost efficiency of their production processes. These mecha-

nisms are realised through the interactive and dynamic relationship found between an industrial sector and the regional production environment and the extent to which the home base meets the particular requirements of the industrial sector.

The assumption that a significant, close relationship between region and firm exists does not necessarily threaten the nation-state. Whether this poses a threat or is of benefit to the nation state, depends entirely upon the nature of the relationship and the interest shown by the state, which in turn determines whether such a relationship will be profitable in the long term. To begin with, however, it is necessary to carry out a theoretical and empirical examination of the question fundamental to this analysis, namely whether a marriage between region and firm actually exists, and upon what economic rationality such a marriage is built. This leads us then to the essence of the discussion, that is to say if and therefore why, certain relationships benefit from geographical proximity while others with partners in the national and international environment seem to function regardless of distance. Only once this has been established will it be appropriate to take up the discussion as to whether an alliance between firm and region in a global economy poses a threat to the autonomy of the nation-state.

### *Why regional home bases?*

Regardless of the precise advantages associated with the regional production environment, there are a number of conditions which can be seen to be of equal benefit to many firms. As a result of geographic proximity, the resource base within a region can be expected to be more accessible in comparison to resources located outside the region. The opportunity for close contact between individuals, businesses and organisations establishes an important basis for the creation of durable and efficient industrial and social networks. From this point of view, the conditions in one region can be considered to be so vital to the core functions of a firm, that the resources available in other regions are no longer attractive. The production environment is considered, therefore, to possess such significant comparative advantages so as to bind the core activities of a firm to a particular region, despite the fact that developments within information and com-

munication technology provide good opportunities for the decentralisation of operations and functions.<sup>6</sup> The theoretical basis for such a statement rests upon two basic forces which work to maintain the concentration of core activities in a certain region. The first is linked to costs of decentralisation, i.e. that the decentralisation of production or other operations to branch plants in other regions is associated with an increase in operational costs. Malmberg (1990) provides theoretical support of how the costs of decentralisation affect the location of firms and the establishment of branch plants. An elementary point concerning the locational advantages/profits associated with the establishment of branch plants, is that the benefits must be greater than the costs incurred as a result of spreading out operations. As long as operational costs and costs related to restructuring are higher than the advantages gained from decentralisation, firms will refrain from establishing branch plants, even when setting up production facilities in other regions is clearly advantageous. Accordingly, existing branch plants risk being shut down if the advantages associated with location diminish over time and are no longer adequate to cover the costs of decentralisation. Malmberg also concludes that the costs vary according to the different functions carried out within a firm. The more advanced and complex the activity, for example R&D and advanced production activities, the higher the costs of decentralisation, thereby decreasing the likelihood of the establishment of branch plants. The advantages to be gained in other regions can rarely compensate for the difficulties and costs associated with running long distance operations. The costs of spreading out operations of a more standard and routine nature, for example the production of less complex, price competitive products, tend to be significantly lower. Hence the likelihood of establishing branch plants increases. The operational costs associated with this type of operation tend to be significantly lower and can probably be offset by more cost efficient production units operating in smaller regions with a weaker resource base.

The advantages firms gain from foreign production are associated with the same kinds of costs resulting from the establishment of branch plants in the national environment. The costs of decentralisation are, however, assumed to increase once national borders are crossed. Other kinds of advantage, beyond those related to location, are necessary, therefore, in order to compensate for the costs and risks linked with production abroad. The costs of running and co-ordinating foreign operations increases in con-

junction with physical distance and as a result of cultural and linguistic barriers. What is more, when establishing units abroad, a firm faces a number of competitive disadvantages not experienced by domestic firms. As an "outsider" it is more difficult to build up contacts with the authorities, suppliers and the labour market. It is often necessary to compensate for poor knowledge of local market conditions by purchasing external services. The high costs of decentralisation, and the risks and problems associated with running foreign operations, imply that the advantages gained from production in other countries have to be substantial. Beneficial conditions related to labour market and transportation costs rarely offer sufficient compensation. As a rule either sophisticated comparative advantages or a number of different advantages in combination are required in order to balance the risks and the costs following decentralisation.

The existence of decentralisation costs and how these vary between different functions and operations within a firm, provides theoretical support for the fact that a firm's core activities tend to be concentrated in the home region. The reason for such regional concentration is likely to be a consequence of the efficacy of a firm's external linkages rather than a result of a firm's internal transaction costs. The concentration of a firm's core activities in the home region is primarily a result of the limited opportunities a firm has to search for dynamic advantages in foreign production environments. Quality, durability and efficiency are the characteristics upon which a firm's dynamic advantages are built, in terms of its external relationships with the production environment. In this respect, the physical proximity provided by a firm's own home base, the accessibility of resources and the traditions linked to a firm's regional production environment, are so vital that other regional production environments are excluded. Consequently, it is important to accentuate the significance of such invaluable external relationships, and progress made due to informal, voluntary agreements between actors not regulated by formal contracts. Mutual arrangements and close contacts between individuals and firms, and informal networks for the transferral of information, competence and technology are some examples of this type of co-operation. It is often considered highly difficult to access such networks and to build up such relationships in foreign production environments (Porter 1990). The combination of decentralisation costs and the efficiency of external relations act as an important force, on the one hand maintaining the concentration of a firm's

core activities in terms of location, while at the same time tying these core functions to the production environment of the home base (Lundquist 1996). This does not, however, exclude those firms which pursue a strategy of decentralisation, whereby advantages are sought in other production environments. Above all this applies to larger firms which are generally more complex in terms of location patterns. Operations and units located outside the firm's own region are considered as a rule to gain rather more basic types of advantage which complement activities in the regional home base in different ways. Only in exceptional cases can branch plants and subsidiaries replace the dynamism lacking in the home base where the core activities of a firm are located. Subsidiaries abroad, for example production and R&D facilities, are not in this respect any different from domestic subsidiaries located in the home market, but instead tend to complement rather than compensate for any disadvantages in the production environment where the core activities are located. In terms of analysis, however, it is important to consider the relationships which exist within a concern and the way in which these relationships influence the geographic location of firms belonging to the concern. For example, the presence of branch plants and subsidiaries in the national and international environment affects the internal resource supply of firms in different ways, thereby also affecting the nature and extent to which a firm is dependent on regional conditions.

However, when it comes to MNCs, there is a trend towards increasing shares of innovation generated outside the home country and integrated within the MNC. The shares of US patents of the largest firms attributable to R&D in foreign locations rose from about 12 percent in the beginning of the 70's to nearly 19 percent in the late 80's. Figures for European MNC's showed on average that 31 percent of patents granted were generated through reasearch outside the home country indicating an even higher propensity to internationalise their innovatory capacity. This development indicates that the advantages of concentrating R&D facilities (traditionally connected to economies of scale and scope, control of innovation and networks with local firms and organisation) seem to be increasingly counterbalanced by advantages of decentralizing the innovation system. These advantages can be summarized in terms of linkages between innovatory activity and foreign production, local markets, suppliers and customers, and absorption of cutting edge technology in the host country (Cantwell &

Immarino 1997). “Balanced” advantages of decentralization are not however, contrary to the importance of the home base with its concentration of R&D, management and core production. The noticeable decentralization of R&D facilities can most often be contained within home base related concepts like “center of excellence” and “multiple home basis” (Sölvell, Zander and Porter 1991). These are concepts covering the MNCs’ tendencies of separating home bases for different product groups and product lines.

### *The nature of interaction*

The conditions which are considered to be significant in the home base vary from firm to firm depending on the position of the firm’s products in the product life-cycle. For certain activities advantages associated with advanced innovation and communication are decisive in the production environment. Much more basic factors, on the other hand, such as those which are purely production related, are considered to be highly important in other types of operation. In order to analyse and understand the significance of the region, it is vital to carry out a theoretical and empirical examination of the variation and diversity which exists between regional production environments. It is also important that the approach employed takes into account the heterogeneity of industries and the varying degree to which firms are dependent on their production environment. Hence attention should be paid to differences in the use of technology, the need for resources and competitive strategy. It is imperative that the analyses are carried out using narrow branch aggregates which maximise similarities in the level of technology, competitive situation and external resource requirements. By doing so it is possible to identify regions where the composition and quality of the production environment should be beneficial for a certain type of firm, and therefore promote the continual improvement of products and/or production processes. If the same type of firm were to be located in a region where the production environment did not match the resource requirements of the firm to the same degree, the firm would not be expected to have the same capacity for enhancing its competitive advantage. In turn this would be reflected by diminished competitiveness in

the international arena compared to firms located in regions with favourable production environments. These simple assumptions provide the key to understanding the regional differences in the international competitiveness of different industrial branches.

## The approach and the empirical material

The assumptions upon which the analysis is based have been tested in conjunction with a very extensive and in many respects unique empirical data set. Using a postal survey, approximately 800 firms located in 24 Swedish regions have been examined. The question included concerned, among other things, export rates, export markets, the extent of foreign production as well as different forms of international co-operation. In addition, information has been collected regarding the internal resources of firms, organisational principles and regional location patterns. In total this survey, which was carried out in the beginning of the 1990s, covers a third of the Swedish manufacturing industry facing international competition. It should also be pointed out that the focus of the analysis is on firms and not their branch plants, i.e. only those firms which have their core activities based in one of the regions depicted in the survey. It is possible to verify the branch plants and subsidiaries of a firm via information gathered in the postal survey. Any branch plants located in regions not covered by the survey are consequently excluded. The approach depicted here has been explained at an earlier stage in this paper and focuses on the significance of the home base and the assumption that the international competitiveness of firms is established via a firm's core activities, i.e. the head office and adjoining R&D and production facilities. It is the core activities of a firm which absorb the resource supply of the production environment, regardless whether the home base consists of a region, a province or a nation. Only marginal advantages can be gained through production in branch plants. Consequently, information about the region as a production environment and the subsequent possibilities for improvement and development, can be provided, above all, by those firms located in the regions in question. The fact that exter-

nally controlled branch plants can be highly significant in terms of employment does not affect the approach of the analysis chosen here.

In addition to three city regions, Stockholm, Gothenburg and Malmö, the survey covers 21 labour market regions (A-regions) in Sweden. These have been chosen to represent the different types of region located throughout the country in terms of the composition and dynamism of the local economy. The production environments of these regions have then been assessed according to approximately forty variables which characterise regional features linked to innovation, knowledge, production and communication. The sample chosen for the survey represents a broad spectrum of regions differentiating aspects such as local economic activity, the conditions present in the production environment and thereby the effect these conditions have on the competitiveness of different branches of industry.

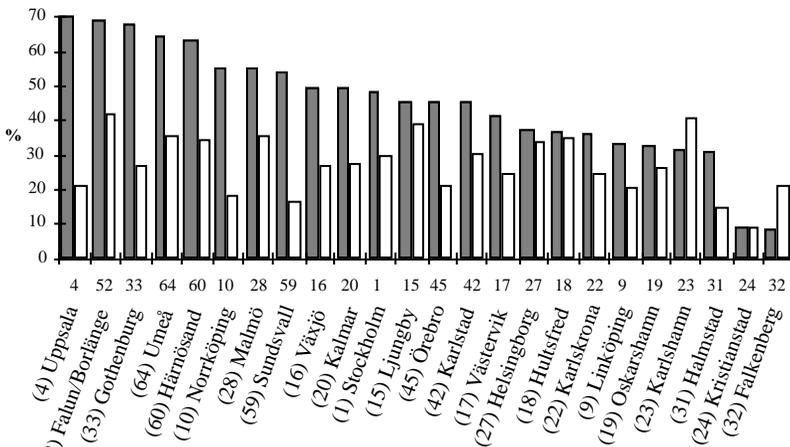


Figure 2 Export rates of firms in the 24 regions included in the survey, divided in total industry (grey bars) and small firms (white bars).

### *Industrial structure and export capacity*

The large regional variation in international competitiveness measured in export rates is presented in figure 2. This variation extends from regions where the entire industry has an export rate which exceeds 70 percent, to those regions which focus almost completely on serving the domestic market. These differences can be due to regional variations in the composition of industrial branches, or because the export capacity of certain branches can actually vary from region to region. This latter point is interesting as it indicates the regional differences in the international competitiveness of industries. In order to capture this relationship it is imperative that narrowly defined branch categories are employed in the analysis, otherwise we would risk mistaking differences linked to branch structure with those differences associated with the region. The statistical analyses, therefore, have been carried out employing narrow industrial segments which maximise similarities in terms of the dependency of firms on particular regional conditions, technology levels, and the degree of internationalisation. The product life-cycle provides the theoretical basis for determining branch aggregates. In total 16 sub-sectors were identified<sup>7</sup> which, generally speaking, can be positioned in one of the phases of the product life-cycle. The division of industry focuses on differences related to conditions specific to certain regions and the dependency of sub-sectors on such conditions. Hence it is appropriate to link the division of industry with regional variations in the resource supply of the production environment. Accordingly a central platform is provided from which to interpret and explain regional differences in the location patterns and international competitiveness of the different sub-sectors. In the following section the 16 sub-sectors have been combined to compile three main groups of branches, so as to provide an overview of the results from the analyses:

- 1) Growth branches
- 2) Mature branches
- 3) Stagnant branches

Table 1 presents the significant range in terms of export rate which is apparent between the main branch categories, the sub-sectors and the differ-

ent sizes of firm. At the same time the branch composition of the regions examined in the survey varies greatly, again regarding the three main categories, the sub-sectors and the size of the firms. It is necessary to consider these relationships in the analysis and this is accomplished by a weighting procedure which divides the export rate into a structural component and a competitiveness component. The structural component gives the regional export rate which can be expected, hypothetically speaking, in terms of the regional composition of sub-sectors in the main branch categories. The competitiveness component is made up of the difference between the hypothetical value, given by the structural component, and the actual performance of a sector in terms of export. The competitiveness component therefore describes something which cannot be explained by differences in the composition of the sub-sectors, but which can be connected to the divergent performance of the main branch group in a region when compared to what the equivalent composition of sub-sectors would have achieved at the national level. The observed deviation is the object of analysis. The competitive component can be positive, i.e. when the performance of the branch group is better than the hypothetical value. It can also be negative when the export rate is lower than the hypothetical value, and it can be neutral, that is to say when the actual value only deviates marginally if at all from the hypothetical value. If the competitive component is positive then the region has a comparative advantage compared to the national value for the branch category as a whole. Table 2 presents the regions which have a comparative advantage/disadvantage in the three main branch categories. Table 3 contains the equivalent information with regards to the small firms covered in the analysis.

**Table 1** Export rates in main groups of branches and in subsectors

	Export rates All firms	Export rates Small firms (25-99 empl.)
<b>Growth branches</b>	<b>62.8</b>	<b>36.0</b>
Electronics	62.0	41.3
Mixed R&D	64.4	17.0
<b>Mature branches</b>	<b>60.0</b>	<b>27.7</b>
Consumer durable goods	77.8	24.5
Investment goods	56.4	28.3
Intermediate goods	44.2	28.4
Ship building	13.5	2.0
Capital intensive food ind.	9.8	3.1
Capital intensive forestry ind.	73.4	38.2
Petroleum	34.5	8.9
Chemicals	58.1	51.3
Metal goods	20.1	3.3
<b>Stagnant branches</b>	<b>29.1</b>	<b>25.5</b>
Labour intensive food ind.	7.7	21.9
Labour intensive Forestry ind.	45.0	45.9
Labour intensive ind. facing competition from developed countries	32.1	15.6
Labour intensive ind. facing competition from developing countries	40.5	19.4
<b>Total</b>	<b>53.6</b>	<b>27.2</b>

Table 2 Regional comparative advantages/disadvantages.

A-region	Growth branches	Mature branches	Stagnant branches	Total regional industry
1 Stockholm	+	-	-	0
4 Uppsala	+	-	-	+
9 Linköping	-	-	-	-
10 Norrköping	-	0	-	0
15 Ljungby	•	-	-	-
16 Växjö	-	-	-	-
17 Västervik	-	0	-	-
18 Hultsfred	•	-	+	0
19 Oskarshamn	-	-	-	-
20 Kalmar	+	+	0	+
22 Karlskrona	•	-	+	+
23 Karlshamn	•	-	+	-
24 Kristianstad	•	-	-	-
27 Helsingborg	+	0	-	0
28 Malmö	-	+	+	+
31 Halmstad	•	-	0	-
32 Falkenberg	•	-	-	-
33 Göteborg	0	+	-	+
42 Karlstad	-	0	+	0
45 Örebro	-	+	-	0
52 Borlänge	-	0	0	0
59 Sundsvall	-	+	+	+
60 Härnösand	•	0	+	0
64 Umeå	•	+	-	0

- + = regional comparative advantage  
 - = regional comparative disadvantage  
 0 = neutral  
 • = Branch group absent in the region

Source: Postal survey 1990

**Table 3 Small firms**

A-region	Growth branches	Mature branches	Stagnant branches	Total regional small firms
1 Stockholm	-	+	-	0
4 Uppsala	-	-	-	-
9 Linköping	0	0	-	-
10 Norrköping	-	0	-	-
15 Ljungby	•	+	+	+
16 Växjö	+	0	0	0
17 Västervik	•	-	+	0
18 Hultsfred	•	+	0	0
19 Oskarshamn	-	+	-	-
20 Kalmar	•	-	0	0
22 Karlskrona	•	-	0	0
23 Karlshamn	•	0	+	0
24 Kristianstad	•	-	+	0
27 Helsingborg	+	0	-	+
28 Malmö	-	0	+	+
31 Halmstad	•	+	+	0
32 Falkenberg	•	+	-	-
33 Göteborg	+	0	+	0
42 Karlstad	-	+	0	+
45 Örebro	-	-	0	-
52 Borlänge	-	-	+	+
59 Sundsvall	•	-	-	-
60 Härnösand	•	-	+	0
64 Umeå	•	-	-	-

See table 2 for explanations of signs.

Source: Postal survey 1990

## Main findings

Over the next few pages the extensive regional variation in industrial structure, competitiveness and type of production environment presented above will be analysed. The findings will be discussed in terms of the assumptions upon which the explanatory model is based. The discussion highlights a number of central questions with the aim of illustrating the significance of the production environment, and how the production environment influences the localisation and competitiveness of industry. The following questions will be taken up: How important is the regional production environment for the expansion and competitiveness of firms? Which types of firm appear to be most/least dependent on the production environment? Can these differences be related to the different categories of branch? Are small firms more dependent on the production environment than large firms? Which types of resources and links to the production environment appear to be most important? Do these differ from branch to branch or depending on the size of firm? The aim is to identify those types of firm which are highly dependent on a regional home base, and illustrate the factors which can explain such ties. It will also be discussed whether it is possible for local and regional actors to influence these factors.

### *The prevailing pattern*

The most important conclusion reached in the analyses, perhaps, is that the extent and character of a firm's dependency on the home base varies strongly according to whether the firm belongs to a branch experiencing growth, maturation or stagnation. Clear variations are also apparent with regard to the size of firms. This is primarily a consequence of the extent to which firms are dependent on the home base (see figure 3), while the nature of dependency, generally speaking, is reflected all the more by the position of the branch group in the product life-cycle. These fundamental characteristics are clear both with regard to explaining the variation in the regional composition of branch categories (i.e. what percentage of a region's total industry is made up by one branch group), and with regard to international

competitiveness. There are, however, several interesting differences between these two aspects. Two thresholds can be employed in order to describe schematically the relationship between aspects concerning localisation and competitiveness (Lundquist 1996 p.216 ff). The first threshold concerns the likelihood that a region can attract a particular branch of industry. The second threshold deals with the possibility that the industry in question can become internationally competitive. The size of the thresholds and the relationship between them varies from branch to branch. As far as the most advanced industries within growth branches are concerned, it is obviously the first threshold which acts as the greatest barrier for the majority of regions in Sweden. This is apparently due to the fact that the production environment in the majority of regions is so weak in terms of resources, that the fundamental conditions necessary for this type of industry are not available. Consequently these regions are also excluded as possible location sites. The second threshold concerning international competitiveness places even greater demands on the production environment. The inverse relationship is true, however, as far as firms in stagnant branches are concerned, i.e. where the first threshold is low and the second threshold is high. This is illustrated by the fact that this branch category is represented in nearly all Swedish regions, whereas there are only a few regions where the branch category is internationally competitive. It would be interesting to discuss what these thresholds could imply for the scope and limitations of a regional economic policy. On the one hand these thresholds give us an idea of what is required in order to create a favourable environment for a certain type of firm, and on the other hand they illustrate which regions possess the prerequisites for the creation of such conditions through policy planning. Another point of interest is that the thresholds of different sectors can conflict. If a region encourages the creation of conditions favourable for one type of firm this may in turn imply the deterioration of conditions necessary for the expansion and competitiveness of existing industry.

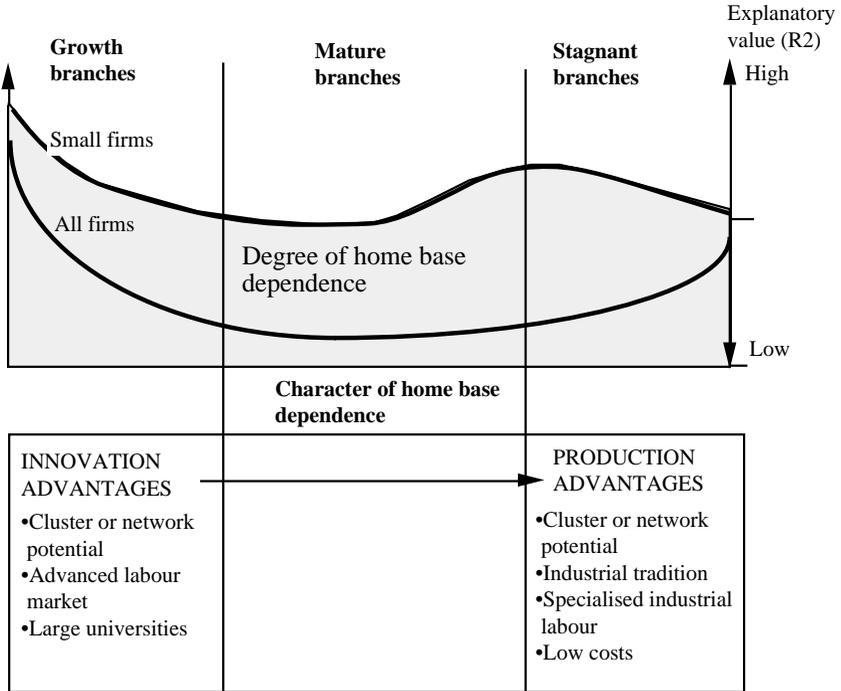


Figure 3 Strength and character of home base dependence

Dependency on the home base is at its greatest in the introductory stage of the product life-cycle where firms belonging to growth branches have the majority of their products. Statistical analyses show that nearly 75% of the regional variation in terms of a branch group’s relative size and export capacity is explained by differences in the resource supply of regions. The significance of the regional production environment diminishes greatly for those firms belonging to mature branches. Above all this relationship concerns the influence the home base has on international competitiveness. It should be pointed out, however, that the regional variation of this branch’s export capacity is just as great as in other branches. This has obviously very little to do with differences in regional resource supply. What this actually implies is that this type of firm can be highly competitive in a wide spec-

trum of regions, ranging from the most advanced types of production environment to those which are of a significantly more basic character. For those firms which belong to stagnant branches the significance of the home base is reaffirmed. This applies primarily to the branch category's relative regional composition of which 70% can be explained by differences in the regional production environment. The international competitiveness of the branch category demonstrates a comparatively weaker association with the regional home base. Statistically speaking roughly 40% of the regional variation can be linked to differences in regional production environment.

Figure 3 also clearly illustrates that small firms, throughout the different branch groupings, have more accentuated ties to the home base. One explanation for this is that the internal resource base of small firms is more restricted in comparison to large firms, thereby increasing the demand for additional external resources. Small firms are less likely to belong to a larger concern, and in geographical terms their location patterns are less complex. Consequently the possibilities for small firms to complement or compensate for the lack of resources in their own home base by harnessing resources in foreign production environments are limited. The regional production environment is of greatest significance for small firms in those branches experiencing growth. Almost 90% of variation in competitiveness is related to differences in regional resources. The explanatory value decreases, however, to roughly 50% for small firms which belong to mature and stagnant branches.

### *Which are the most important resources provided by the home base?*

The results of the analyses clearly show that those firms in branches experiencing growth are highly dependent on advanced regional conditions. The single most important factor determining the competitiveness of firms is considered to be the potential for establishing horizontal networks between firms of a similar technological capacity and with similar labour demands. As far as labour is concerned, the availability of a highly skilled work force from a scientific and technological background, is particularly important.

On the whole it is difficult for firms within mature branches to find

variables in the production environment which can significantly influence international competitiveness. The quality of the local labour force is, however, of certain importance. A weak correlation exists between international competitiveness and the regional availability of factory workers with a secondary school education. The competitive strength of mature industries is more likely to be a consequence of differences in the internal resource structure of firms (see Lunquist, 1996). These differences can either be particular to the individual firm, or are tied to the competence and knowledge possessed by larger concerns to which firms often belong. Another common feature is that these firms are often large and have taken steps to internationalise their activities at an early stage. Many such firms possess extensive internal resources both in and outside Sweden.

Conditions present in the home bases of industries in the stagnant phase of the product life-cycle, are those which indicate low cost production opportunities for the manufacture of more basic and price competitive products. This situation is demonstrated by a very strong negative correlation with all forms of advanced regional resources. It has already been noted that the international competitiveness of this branch category demonstrates weaker ties to the regional production environment compared to the regional location patterns of this branch category. The interesting point here is that the production environment in this context is of a more advanced and specialised nature. In those regions where this type of industry has a comparative advantage, higher demands are placed on the composition of the labour force as well on the general level of education as a whole. The regional potential for establishing networks consisting of firms of a similar technological level, also increases in significance. It can also be maintained that this type of firm has benefited from improvements in the national infrastructure which in turn enhances regional transport links to the national network.

Compared to each branch category as a whole, the international competitiveness of small firms demonstrates a consistent link with production environments of a more basic character. This can be due to the technology levels associated with small firms and to the fact that the range of products manufactured by small firms is generally less advanced. The same fundamental concept employed with regard to large and medium sized firms, also applies in explaining the relationship between the production environment and small firms. Hence the single most important determinant is

where in the product life-cycle the majority of the products are to be found. This in turn has the effect of highlighting those factors which are deemed to be of fundamental importance in the production environment. Small firms established in research intensive industries are said to be at their most competitive in relatively advanced production environments, while within stagnant branches the competitiveness of small firms is linked to production environments of a much more basic character. It is interesting to note that the existence of regional concentrations of small firms does not imply that these firms will be internationally competitive. This applies to regions which generally speaking have a high percentage of small firms, and also those regions where agglomerations have formed consisting of branch specific firms. Hence it is not only the extent to which firms are dependent on the regional production environment which changes according to stage in the product life-cycle. The shift from one stage of the product life-cycle to the next also implies a qualitative change in the nature of the relationship between firm and regional production environment. Despite these differences, there are certain factors (specific to each branch category) which can be said to be vital for the competitiveness of industry namely, critical mass, the potential for establishing regional networks and encouraging co-operation between firms, the composition of the regional labour market and general education levels. Figure 4 summarises the groups of variables which are of greatest significance for the different categories of branches in terms of location and competitiveness.

Variables in the production environment	Significance of production environment in terms of:	
	Localisation	Competitiveness
Population	G    Ⓞ	M
Geographic location/ communication/transportation possibilities	S    M	G    S    M
Labour market/ education	ⓄG   ⓄG   ⓄS   M	ⓄS   ⓄM   M
Economic structure, industrial tradition and horizontal network	ⓄS   ⓄM   M	ⓄG ⓄG ⓄS ⓄS ⓄM

**G** =Growth branches, **M** =Mature branches, **S**= Stagnant branches

G, M, S =small firms in Growth, Mature or Stagnant branches

The letters indicate a marked connection between the variables and the branch categories. The letter is circled if the connection is strong.

**Figure 4** What conditions in the home base are the most significant in terms of localisation and competitiveness?

### *Additional features of international competitiveness*

A more extensive analysis of the regional variation in international competitiveness explores different aspects related to patterns of export and foreign production. The analyses demonstrate clearly that the more competitive a branch category is within a region, the more advanced the composition of export markets will be. A greater number of export markets is, therefore, implied including a higher percentage of long distance exports, both physically and psychologically speaking. A similar relationship can be noted between a region's comparative advantages and the extent and nature of foreign production. As far as export patterns are concerned, the geographic location of regions in Sweden is of no bearing whatsoever. The analyses clearly show that physical distance separating manufacturers from their export markets is not consequential in terms of creating competitive

advantage. Proximity to an export market can possibly be advantageous for those categories of branches which contend with regional comparative disadvantages. Geographical distance, however, is of no relevance whatsoever for those firms in the same branch category with a strong competitive position.

Branch category		Number of export markets	Percentage to Nordic countries	Percentage to USA	Percentage to Asia
TOTAL	<b>G</b>	+++	---	+++	+++
	<b>M</b>	+++	--	++	
	<b>S</b>	-	--	++	+
<hr/>					
SMALL FIRMS	<b>G</b>	++	---	+++	+
	<b>M</b>	++	--	++	+
	<b>S</b>		-	+	+

+++ = strong positive correlation,

--- = strong negative correlation

**Figure 5** Correlation between regional comparative advantages and the number of export markets, percentage of total export to the Nordic countries, USA and Asia.

This relationship becomes particularly distinct in an analysis of “border regions” or regions which due to their location can be seen to provide firms with advantages linked to the neighbouring export market. Branches located in such regions do not, however, have a higher percentage of exports to the market in question, compared with the same branches situated in other regions. This situation is exemplified by the regions covered in the survey which lie in Skåne in the South of Sweden. For example, the branch categories located in the Malmö region which are comparatively more

competitive than branches located in other regions in Sweden, have a significantly lower export rates as far as the Danish market is concerned compared to that of the national average. Those industries with a strong competitive market position tend to “leap-frog” the Danish market in favour of more distant markets which offer larger sales opportunities. Weaker branch categories may, however, possibly benefit from the proximity of the Danish market, and thereby have slightly higher exports compared to equivalent branches located in other areas of Sweden. It follows therefore, that there is no reason to believe that firms located in the Malmö region will gain any decisive advantages purely due to the fact that the region neighbours important European markets. With this in mind it is also unlikely that the completion of the Öresund bridge will induce any fundamental changes concerning this aspect (Lundquist 1998). Hence it is not the geographic location of firms per se that ensures success in neighbouring markets, but the industrial structure and competitiveness of firms due to the quality of the regional production environment. Regions located in the North of Sweden are, therefore, neither disqualified nor inconsequential as far as European member state markets are concerned, despite long distances in terms of transport. Location can consequently be regarded as a rather weak advantage/disadvantage which can be substituted without too much difficulty or compensated for by developing more advanced and specialised factors. What is more, a less favourable geographic location can provide the impetus for the creation of more durable competitive advantages (see Lundquist 1996, 1998 for a further discussion).

## Regions and firms in alliance - A threat to the nation-state?

One of the main aims of the study was to identify how a firm’s reliance on the regional production environment varies according to different types of industrial firm. The findings of the analyses indicate a much greater breadth, diversity and richness in detail than is usually captured by the prototypes normally taken up for analysis e.g. industrial districts and “learning re-

gions". The broad relationships which have been discussed in the previous pages offer, if not a complete understanding, at least a much more extensive perception of the circumstances. This in turn facilitates a greater appreciation of the structure and international competitiveness of industry and its relationship to the regional production environment. After having thoroughly examined the theoretical and empirical ties between region and firm, it is now possible to discuss the questions put forward in the introduction to this article, namely: In what way can an alliance between region and firms influence regional development? Is it possible for actors at the regional level to influence in any way those factors and mechanisms which are deemed critical for the competitiveness of firms and their capacity for development? Is the scope for actors at the regional level greater than that of the EU and the nation-state? What is the role of the EU in relation to that of the nation-state? Is it possible for the regions to develop without the reinforcement of the nation-state, when one considers the actual construction of production systems and the need continually to improve these systems?

According to the analyses there are two main categories of industry which have significant ties to the regional production environment. In view of the questions stated above these two types of industry are naturally of extreme relevance. The first category consists of firms which are largely dependent on the conditions present in the regional home base in order to develop their competitive situation and facilitate their expansion. The majority of the products manufactured by these firms are either in the initial stage of development or in the final stage of the product life-cycle and are therefore experiencing decline. Small firms, almost regardless of branch, are also relatively dependent on the home base. In rough terms this would mean that approximately half of the industrial employment in a country like Sweden, subject to international competition, would fit in to this category. These are the firms which can justifiably be said to form an alliance with the regional production environment.

The majority of products associated with the second category are manufactured by branches in a more mature stage of the product life-cycle. In terms of employment the second category is equally as extensive as the first. This type of firm is much less dependent on conditions present in the regional home base. In this case the major regional differences observed in the competitiveness of firms can only be associated with the regional re-

source supply to a very limited extent. Within this category of branch, the firms which are least dependent on the production environment and which consequently attach little significance to their own home bases, are primarily large multinational firms. The absence of strong ties to the regional home base is not, moreover, substituted by strong links to the national home base. The multinational firm does not demonstrate any sense of territorial affiliation whether regarding the regional or national arena.

Fundamental differences can be observed in the degree to which firms are dependent on the production environment. These differences imply that a large proportion of industry in Sweden, as much as 50%, can not be influenced to any great extent by measures aimed at changing existing conditions in the regional production environment. At least in theory, therefore, it would be more rewarding to focus regional policy measures on targeting the remaining 50% of industrial activity. This is presuming, of course, that the most central and significant factors highlighted in the analysis are susceptible to measures introduced via planning. In turn this raises the question regarding which political actors would have the most at stake and the greatest potential to pursue successfully an industrial economic policy at the regional level.

The essential combination of advanced factors vital for the competitiveness and expansion of those industries experiencing growth is only attainable in a few regions. As far as Sweden is concerned, these favourable conditions are present in a very limited number of regions, largely in city regions or university towns. Present in these regions are the extensive "untraded interdependence" and the innovation and dynamism associated with the conditions found in "Marshallian islands" and in new industrial districts. Some important differences should, however, be noted. Regions in Sweden, including the majority of dynamic European city regions, are not independent, innovative systems. Rather the networks which act to harness competence at the regional level are open and respond to the national and international environment. The conditions which facilitate the dynamic interplay between the production environment and operations of this kind, are not present in regions of a less growth orientated nature. The threshold for advanced types of industry, as far as the relationship between region and firm is concerned is, in other words, very high. Hence the majority of regions found in Sweden and the rest of Europe are eliminated as possible sites of location. For these regions it is not even feasible to try

and create the conditions necessary for attracting this type of industry through the implementation of regional policy measures, at least not in the short or medium term and not as far as present economic and political frameworks are concerned. Attempts to steer the development of production environments in regions where the prerequisites for growth are absent not only risk failing completely but also avert attention away from the needs of existing industry located within the region. Regional policy measures with the aim of enhancing advanced industry should, therefore, be directed at those regions which possess the necessary conditions. The intensification of measures aimed at improving the local production environment, through investments in universities and colleges, the creation of tailor-made, specialised research and education programmes, and by improving local communication and information networks, in regions where conditions are already favourable is naturally a sensitive issue from a political standpoint. The alternative would be to distribute resources and investment more evenly, but at the same time risk wasting initiatives in regions where the conditions for growth are inadequate.

Even where conditions are already favourable and where the regional home base is strong, the difficulties of influencing or “improving” regional conditions through the implementation of policy measures should be pointed out. The competitive strength of firms and the dynamism found within certain regions is the result of a long, historical process in which networks of firms have had a dominant role. The influence of political actors at the regional level in such matters has on the whole been marginal at the very most. Consequently it is not entirely clear how it would be possible to forge an alliance between region and firm and ensure that such an alliance would lead to practical results.

The scope for political involvement is stifled by barriers which act to make the alliance between region and firm much weaker than expected. How then can the nation-state (disregarding its supportive and distributive role) influence the dynamic development of regions? The nation-state continues to play a decisive role, for example, in improving the conditions for industrial clusters specific to national competitiveness. The important components of such clusters are often divided between several strong regions located throughout the nation. Political objectives, such as welfare policy, are set up by the state in order to stimulate and co-ordinate investment activity and improve the factors of production, while the state also acts to

regulate the activity of actors at all levels in the national economy. The power the state wields in influencing dynamic regions located within national boundaries is still of decisive importance. What is more, many clusters considered significant from a national point of view are not incorporated in the general technology policy of the EU, therefore necessitating the attention and mobilisation of the nation-state in this sphere.

Another area of concern stems from the familiar problems faced by actors at the regional level and the difficulties they face in actually improving the regional production environment, not to mention creating dynamic regions. Alternatively many have adopted the notion of creating links between existing resource environments thereby increasing the resource base of the region as a whole. By pursuing the aggressive expansion of transport and communication networks, regional conurbations can be formed by physically linking adjacent regions. The development and growth of transnational regions tends to draw the attention of regions within national boundaries, and demands for inclusion usually follow. Once again this calls for the further involvement of the nation state.

## A complementary approach

The research referred to builds on quantitative data and shows to what extent the firms' competitiveness, their exports and other foreign engagements are connected to preconditions for production in the regions. The statistically explained variance indicates an interesting but varying connection between the firms' performances and their environment.

However, an equally strong interest is directed towards the residuals in a second stage of research, not referred to in this paper. For example, in many regions there are firms which are successful although the innovative and productive preconditions for their particular undertaking may not be the best. There are also firms which lack competitiveness although the preconditions are "optimal" in their regions. The reasons for this are found in the firms' internal resources, in the ways they organize innovation and production and in their sometimes extraordinary interplay with environ-

mental preconditions. Sometimes it can be these deviations from the statistically normal that can lead to an improved understanding of why enterprises in certain regions prosper while others do not.

In this second stage of the research process knowledge is deepened. Through in-depth interviews with firm managers (some 100 firms) the firms' competitive situations and adopted strategies are explored as well as their interplay with those options and restrictions that are found in the regions. Half of the interviews are primarily directed towards firms with "normal" performances in their regions, half of the interviews are directed towards those firms that deviate in surveys and statistical inquiries. The theoretical framework behind the interviews extends far beyond the geographic discipline. Questions analyzed concern competitive strategies, product innovations, technology and forms of production, labour organization, cooperation with customers, suppliers, related companies, labour market, education, transport, the importance of central and local governments and other public authorities, etc. Independent of this inter-disciplinary approach, the ambition is consistently: to understand how competitive strength is created or lost in different environments and how the interplay goes between the firms' internal resources and the external resources in the (regional) environment.

The results of this second step of our study are summarized in a separate article (Jonsson 1998 see also Jonsson & Olander 1998). However, something should be said here about those issues that the complementary approach is dealing with.

First, the interviews are used for confirming "normal" results brought about by the quantitative analysis, which they do surprisingly well. Second, they are used to illuminate interesting deviations from the normal. Innovative activities are in focus to a great extent. Is it possible for instance to any other companies than divisionalized MNCs to split core activities between their home bases and other regions in order to tap into innovative activities of importance to their own production? How could such strategies be carried out, organizationally and spatially, if they after all could be found? How much innovative activities are actually channelled through the production system, that is linked to basic relations with customers, sub-contractors and suppliers? How could companies with strong internal resources, (usually big knowledge-intensive firms operating in mature markets), maintain their competitiveness without any apparent strong or easily detectable

linkages to their home basis or any other regions? Is it meaningful to talk about “learning regions” and related concepts in other than a very few cases in view of empirical data covering the grey mass of economic activities? Will it soon be time to stop inventing new concepts for things already known outside geography, in favour of basic hard empirical work in order to reveal mechanisms of spatial reality? Third, since the interviews have a future-oriented approach as well, they are used to discuss companies’ strategies and plans concerning future home-base relations, changing relations to customers, sub-contractors and suppliers and resulting spatial patterns against the background of increasing internationalization and international competition. Fourth, further policies for regional and local competitiveness will be discussed as a result of the findings.

## Notes

- <sup>1</sup> See Lundquist 1996, Lundquist & Olander 1993, Jonsson, Lundquist & Olander 1996, Jonsson, Lundquist & Olander 1997
- <sup>2</sup> Krugman (1991, 1994) has similar goals of forming a connection between location theory and trade theory. As will become clear this is where the similarities between Krugman's "geographic economy" (for an analysis of Krugman's work in this field in relation to the "new economic geography", see Martin & Sunley, 1995) and our own approach end.
- <sup>3</sup> An overview as well as a critical analysis of the debate and the establishment of a school of thought regarding the role of the region in the global economy is given in Storper (1995).
- <sup>4</sup> This criticism of Porter's focus on nationally defined home bases has been pointed out by e.g. Dunning (1993), Rugman & D'Crutz (1993), Cartwright (1993) and Reinert (1993).
- <sup>5</sup> Compare Storper's discussion about "The Californian School's" problem in differentiating between "good agglomerations and bad ones". (Storper 1995, p.201) Storper maintains that this problem is a result of theoretical weakness, i.e. the focus on localised input-output linkages. This is true, but only partially so. An important explanation lies in how one attacks the issue empirically speaking. In order to assess agglomerations it is vital to strengthen simple gini-coefficients and national trade patterns with data which actually measures the performance of agglomerations. Hence it is necessary to begin with the individual firm and region. Another aspect is that Porter's concept of clusters includes "un-learning" which Maskell & Malmberg 1995 maintain is a decisive factor for creating competitiveness. "Un-learning" is one example of the hysteria regarding terminology used within the area of research, i.e. a complicated, new name for an entirely obvious relationship; in this case, the fact that processes of renewal in clusters and networks also demand the ability to "de-programme" out of date knowledge and to break with traditional structures in order to make room for new structures and innovations. In Porter's (1990 p. 171 f) discussion about "the insular cluster", this obvious relationship is taken up as different sides of the same coin.
- <sup>6</sup> The assumption that a firm's core activities are retained in the home base is supported by Lundquist (1996). Regardless of which sector a firm belongs to it is shown in Lundquist's analyses that a very high percent of R&D operations are concentrated in the region where the firm has its head office. On the other hand production is located to a much higher degree in units outside the firm's regional home base.
- <sup>7</sup> The identification of sectors was compiled by Olsson & Vinell (1987). For a more thorough analysis of links to the product life-cycle see Lundquist & Olander (1992, 1993) and Lundquist (1996).

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