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GLOBALISATION AND LOCAL & REGIONAL COMPETITIVENESS

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## Preliminary Note

1. The project 'Globalisation and Local & Regional Competitiveness' was carried out under the aegis of Working Party No. 6 on Regional Development Policies. In the framework of the Industry Committee's priority theme on Globalisation of Industrial Activities, it has also been associated with the Industry Committee's activity on 'Global Firm Co-operation and Competition: Domestic and International Policy Issues'.
2. The aim of this project is to analyse the impact of the increasing globalisation of industrial and service activities on the conditions of regional and local competitiveness, and to assess its policy implications at various levels of government, both for developed and lagging regions.
3. This report presents the main result of the project. It provides insights from the work on globalisation, competitiveness, and innovation that are relevant to trends in local and regional development. The report, which builds on the results of the Technology Economy Programme (TEP), assesses the importance of "localities" in the development of globally-competitive firms and the impacts of globalisation on regions.
4. In addition, a complementary analysis was made of inward foreign direct investment, based on information requested by the Secretariat. This analysis seeks to determine if such investment tends to increase or decrease levels of concentration and specialisation of economic activities. The analysis was carried out for the United States, Germany, France, the United Kingdom, Canada, Spain, and the Netherlands.

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## **Executive Summary**

Since the second half of the 1980s, foreign investment flows have burgeoned while new forms of co-operation have proliferated even faster. Globalisation, the contemporary stage of internationalisation, pertains above all to the increasing fraction of value and wealth that is produced and distributed world-wide within networks of interlinked firms.

Despite the formation of these global networks and the increased mobility of production factors, this report argues that specific geographic areas are likely to play a critical role when analysing and disentangling the globalisation process. This report assesses the importance of locally-specific characteristics in the construction of globally-competitive firms, and the impacts of globalisation on regions.

When analysing the local environment of globally-competitive firms, geographic clustering of production appears as a striking feature. Clustering, a phenomenon that is almost as old as the industrialisation process itself, is especially pronounced in craft industries, in high-technology, and in certain service sectors. The importance of agglomeration economies, and the limited availability of a highly-specialised and skilled labour force come to the fore as parts of an explanation for this phenomenon. The dynamics of an expanding division of labour, dividing the production process into numerous activities carried out within specialised firms that form part of a closely-knit network of firms, also play a critical role in local economic development. Firms that are located in geographic clusters of production with specific infrastructures, a specialised labour force, and a complex of competitors, suppliers, clients, and service firms, have always had a certain advantage over firms that lack proximity to such valuable assets.

Globalisation is likely to reinforce such geographic clusters of production because increased international competition induces firms to take advantage of all possible economies, whether internal or external. Although low (labour) costs are still important, more and more firms focus on innovation and outsourcing, while pursuing foreign direct investment and forging co-operative agreements. Against all expectations, these processes potentially enhance locational concentration. Close, co-ordinated relationships with customers and suppliers are important for continuous innovation. Local sourcing networks are likely to become increasingly important in a time of flexible and lean production systems. Taking over local firms is a widely-used practice of multinational firms, as are co-operative agreements that provide global firms access to local 'pockets of innovation'. One of the premiums on successful development of strong local firms seems to be entry to international markets, which make these localities springboards for global activities.

What are the implications of globalisation on a more aggregated regional level? For seven Member countries, an analysis has been carried out with the aim to measure the impact of foreign direct investment on regional economies.

The data available have a number of shortcomings, as discussed in the Annexes, to be taken into account. In general, globalisation in the form of inward foreign direct investment often behaves rather similarly to domestic investment and therefore offers little help in reducing regional disparities. On the contrary, it may increase such disparities. This is corroborated by the finding that foreign investment tends to be directed to prosperous more than to lagging regions in the United States, Germany, the Netherlands, and in France's manufacturing sector. In addition, experiences in Spain and Canada reveal that such investment often benefits core regions, to the detriment of more peripheral areas. In the United Kingdom, the core region has also received large shares of foreign direct investment in manufacturing, although certain peripheral regions have attracted even higher amounts of such investment as well. Nevertheless, with the possible exception of the U.K., the analysis shows that regional investment schemes are a locational determinant which is, together with other advantages of lagging regions, apparently unable to offset the gravitational forces that appear to shape the new regional pattern of foreign direct investment.

Globalisation also appears to reinforce specialisation of regions. In the United States, France, Canada, and Spain, the data show that incoming foreign investment reinforces patterns of regional specialisation in 60 to 70 per cent of the cases. This implies that regions geared towards a particular industry have a high chance of specialising further in that industry, due to foreign investment. For example, in the United States and France, foreign direct investment in technology-intensive sectors (e.g. chemicals, pharmaceuticals, and office equipment) is mostly attracted to regions that are already specialised in such industries. On the other hand, foreign investment in the automobile industry tends to contribute to the diversification of regions. Perhaps a reason for this being that, within this industry, access to markets is a more important determinant of foreign direct investment than access to technology.

The ongoing globalisation process and its consequences for localities and regions is shaping a new policy environment. From a national policy point of view, the existence of geographic clusters of innovation and production can be regarded as largely beneficial: they contribute to a nation's innovation, production and export potential, in short to its prosperity. A national R&D policy as well as liberal trade and investment policies are some of the basic ingredients that foster such clusters. However, the implications of globalisation may be less favourable from a regional policy point of view. In most of the countries analysed, innovation clusters tend to be localised in core or intermediate areas, while inward foreign direct investment tends to concentrate in such prosperous and urban core areas as well. Specialisation, another consequence of globalisation, might be an undesirable tendency from a regional policy standpoint, because it increases the vulnerability and may jeopardise the fragile regional economic bases of lagging regions.

An important task for regional policy makers is to see regional strengths and weaknesses in light of a changing international environment. The data in this report show that regions are relatively successful at attracting foreign direct investment in their own specialty industry. Any strategy towards attracting foreign direct investment therefore has a greater chance to succeed when the existing regional production structure is taken into account.

In conclusion, a successful interlinking of local and regional networks with global networks of innovation and production is likely to be the key to the achievement of local and regional competitiveness in the 1990s.

## Chapter 1

### Introduction

#### 1. The process of globalisation

The growing interlinkage of market-based economies has been an important trend of the 1980s that appears to continue into the 1990s. Globalisation, starting largely as a strategic concept, has only recently begun to materialise in official national and international statistics. Being unable to measure globalisation in its totality, researchers have no recourse but to measure single indicators of the trends. These indicators, however, convey important information. Since the second half of the 1980s, international trade and above all foreign investment flows have burgeoned while new forms of inter-firm co-operation have emerged even faster. Co-operation between firms within the same economic block (Europe, North America or Asia) has intensified, while numerous firms have expanded their activities far beyond these boundaries, spawning world-wide networks.

The word 'internationalisation', capturing such developments up to the 1970s, has proven to be too limited. Internationalisation refers simply to the increasing geographical spread of economic activities across national boundaries, and is as such not new. Globalisation, however, is a much more recent phenomenon, a more advanced and complex form of internationalisation which implies a degree of functional integration between internationally-dispersed economic activities<sup>1</sup>.

Globalisation can refer to both markets and activities of firms, but firms rather than markets have become the most significant carriers of the process<sup>2</sup>. Globalisation of markets relates to lower trade barriers, a tendency to more uniform consumer tastes, and improvements in transport and communication allowing firms to disperse their activities and to benefit from scale economies. However, the reality of lasting trade barriers, particularly non-tariff barriers, still widely diverging consumer tastes, and severe competition among domestic players make globalisation of markets proceed at only a modest pace, forcing firms to locate their activities close to their markets. Globalisation pertains, therefore, above all to a set of conditions in which an increasing fraction of value and wealth are produced and distributed world-wide within a system of interlinking firm networks<sup>3</sup>. At firm level, globalisation is (among other indices) expressed by:

- large and increasing amounts of foreign direct investment, which is a frequently-used indicator of globalisation;
- a rise in world trade, especially in intermediate goods, of which much is intra-firm trade;

-- a surge in the number and the extent of international co-operative agreements between firms, in both the fields of R&D, sourcing and production, distribution and marketing.

All of the above developments contribute to the formation of global networks of relationships that have led to new configurations of the world industrial structure, superimposed on the traditional structure of international specialisation. In this new configuration, specific locations have competitive advantages, built up by firms that make optimal use of the increasing returns flowing from a particular area<sup>4</sup>. In other words, limited geographic areas and their specific characteristics continue to play a critical role, despite the formation of global networks of relationships.

This emphasis on a local or regional counterpart to the global dimension contradicts the view of a global economy as a perfectly mobile stock of human, physical, and financial capital. Admittedly, flows of financial capital are increasingly global in nature, but this is not so much the case for physical capital (prone to inertia due to sunk costs) and even less so for human capital. It is tempting to link patterns of international migration to the globalisation process, but more important might be the fact that the great majority of the workforce is, as far as the international dimension is concerned, relatively immobile, due to historical, cultural, linguistic, political, and social reasons.

The nature of the interaction between global actors and the constructed, territorially-specific economic networks on which they depend is therefore very complicated<sup>5</sup>. The map of economic activity is not just the result of decisions made by firms and projected on to the earth's surface. Instead, the global economy is made up of a variety of organisational networks (like those of multinational enterprises, networks of strategic alliances, subcontracting relationships, etc.) that intersect with geographical networks structured around existing agglomerations and concentrations of activities<sup>6</sup>.

The importance of smaller geographic areas in general and that of local and regional networks in particular becomes even more apparent when examining the role of technology and innovation. Much of the networking which arises from interfirm co-operation is international and even world-encompassing in nature, rendering technological activities increasingly 'footloose'. But contrary to the internationalisation of technological activities, one still has to consider the existence of geographically narrower forms of innovation-related networks in local, regional, and national contexts. National technological efforts are strongly embedded in a country's and, even more narrowly, in a region's higher educational infrastructure. National or regional systems of science and technology play an important role because of the physical 'non-footlooseness' of such infrastructures<sup>7</sup>. New technologies and the specialised talent at their origin are therefore likely to continue to be located in 'pockets of innovation' around the world<sup>8</sup>.

Thus, the challenge for any globally-operating firm seems to consist of matching increasingly mobile capital resources to territorially-specific labour forces and technological infrastructures. As the globalisation process proceeds, differences between regions will not only remain, but also -- as this report will show -- become increasingly important.

## 2. Localities and regions as the counterpart of the global dimension

If the specific characteristics and performance of smaller geographic areas are so critical in the globalisation process, what should be the appropriate level of analysis? Which territories are the suitable counterpart of the global dimension? Are these 'sites', localities, or regions of all kinds of sizes?

The concept of 'sites' comes from the French literature, is relatively new and often related to an area on which a firm depends directly for performing its operations. In a narrow sense, a site is a location that offers firms specific resources, whose exploitation generates significant externalities in terms of proximity. Among these resources are (1) the factors of production and infrastructure, (2) the local industrial fabric, (3) the organisation, managerial practices, and the competitive environment of the firm, and (4) an innovative demand side. These four factors have also been referred to as local determinants of competitiveness<sup>9</sup>. A site is therefore a competitive locality, capable of retaining its factors of production and attracting outside investment. However, as will be seen later on, competitiveness is usually related to a particular industry or sector of activity. It is therefore very difficult to designate a locality as a site that is competitive across-the-board. For instance, while a city such as Basel might be a (competitive) site for the fine chemicals and pharmaceuticals industry, this is not necessarily the case for the advertising or the accounting industry.

In a broader sense, the French concept of sites resembles the more Anglo-Saxon notion of localities. This report will refer to localities in general, whether they host competitive industries or not. It is at the local level that one can see clearly the effects of the globalisation process. Yet, localities are hard to define, because notions of what constitutes 'local' depend on geographical, historical, cultural, administrative, economic and social factors. 'Local' can refer to a community, a district, a town, or a small grouping of such entities. A useful definition of a locality is that of an area in which the majority of employees can change jobs without moving home<sup>10</sup>.

A region, then, is any sub-national entity that is larger than a locality. Geographers and regional scientists have spent much time on the definition of regions, without any clear consensus. Much depends on the context, and on the availability of data, bringing to the fore a territorial classification that is based on administrative criteria. The European Community, for instance, makes use of a hierarchical division at three levels (the Nuts nomenclature). In the case of Germany, these regions correspond to Länder (Nuts 1), Regierungsbezirke (Nuts 2), and Kreise (Nuts 3). In the case of the United Kingdom, these are respectively Standard regions, Groups of counties, and Counties or Local authority regions. The Nuts nomenclature could be stretched to other OECD countries as well. In the United States, for instance, one distinguishes between Census regions (groups of States), States, and Counties.

The interaction between these different levels is indeed complex, exceeding the mere global versus local dichotomy. On the one hand, the location of a multinational's plant will depend heavily on a particular local

environment. Of importance for the locational choice are the availability of local skills, infrastructure and access to knowledge. On the other hand, once the firm has been established, it will in turn help to shape the region at large, and contribute to its long-term growth. Depending on the context, this report will make reference to both localities and regions as the counterpart of the global dimension.

### **3. The structure of the report**

Chapter 2 attempts to answer the question of how localities can contribute to the creation of globally-competitive firms. It argues that advantages at the local level are increasingly linked to the presence of geographic clusters of specialised economic activity: the locality as a springboard for international activities. Chapter 3 looks at the opposite relationship and examines the consequences of globalisation for different types of regions. The question is addressed of whether globalisation reinforces the trends towards concentration of activities and specialisation of regions. Data on inward foreign direct investment -- an important indicator of globalisation -- are used from several Member countries. The level of analysis here is the Nuts 1 or 2 region, and comparable areas for non-EC countries. Chapter 4 addresses some of the implications of globalisation for regional policy.

## Chapter 2

### The Locality as a Springboard for Global Activities

Firms derive their competitiveness to an important degree from interaction with the external environment. The availability of a good transportation and communication infrastructure, the presence of labour that suits the needs of the firm, and the reliability of supporting companies are only a few of the factors that have a bearing on the functioning of the firm. This chapter discusses how advantages in the direct surroundings of the firm can lead to increased competitiveness that facilitates competition at a global level. It will briefly describe some geographic patterns of production (Section 2.1) and subsequently unravel some of the forces behind local and regional networks of production and geographic concentration of economic activities (Section 2.2). Afterwards, the impact of globalisation on geographic concentration will be treated, and in particular the way in which global networks interact with local and regional ones (Section 2.3).

#### 1. Geographic patterns of production

What is the locational behaviour of firms that maximise the advantages from their external environment? Much depends on the nature of such external advantages, many of them being industry-specific. As a result of industry-specific advantages, considerable parts of economic production are localised in geographic concentrations or clusters of specialised economic activity. Concentration is one of the most characteristic features of the geography of production. It is much more widespread than the well-known example of semiconductors in Silicon Valley. A recent study showed that many other -- internationally competitive -- industries are characterised by geographic concentration. Many leading US advertising agencies are concentrated on Madison Avenue in New York City, while Danish windmill producers are centred in Herning. Large-scale computer manufacturers are headquartered in or near Minneapolis, and pharmaceutical companies are based in Basel, while minicomputers are overwhelmingly made in Boston<sup>11</sup>.

Clustering of economic activities is by no means a new phenomenon. Early examples of industry-clustering are the Birmingham jewellery industry, London's Clerkenwell watch and clockmaking quarter, men's clothing industry in Manhattan, and carpet production in Georgia's city of Dalton, all industries that were built up at least a century ago. Some of these industry clusters have been in decline for many years, and some no longer exist. Others, however, have proven to be remarkably resilient. The origins of Solingen's cutlery and Prato's wool textile industry, for instance, date back as far as the Middle Ages, but continue to be important producers and often successful exporters.

Geographic concentration occurs across a range of industries, from traditional to modern and from manufacturing to services. However, three broad groups are more prone to concentration than others. Firstly, there are craft industries, grouped in small towns or in confined segments of larger cities, so-called industrial districts. Although many such industries have not survived competition from mass production techniques, they are now once again becoming an important part of the production structure in a number of countries, notably in the United States and Italy. Examples of this type of industry are textiles and apparel (New York, Los Angeles), footwear and leather products (Porto Sant'Elpidio), and furniture production (Pesaro).

High-technology sectors form a second -- and much-studied -- group of industries that are prone to clustering. The emergence and rapid growth of sectors and activities like electronics, aerospace, biotechnology and instrumentation have often been geographically restricted to a limited number of localities. Some examples of areas that have benefited from the growth in high-technology industries are Boston's Route 128 (minicomputers), Los Angeles (aerospace), the San Francisco Bay Area (biotechnology), Cambridge, U.K. (scientific instruments), and Hamamatsu, Japan (musical instruments).

Certain service sectors form the third group of activities that is prone to clustering. But contrary to many manufacturing industries, business-related services tend to concentrate in large metropolitan cities. Financial services including banking are among the most concentrated (New York, London, Frankfurt), but so are the advertising sector (London, New York), the motion picture industry (Los Angeles), fashion designers (Paris, Milan), and art auctioneers (London, see Box 1).

## **2. The process of locational agglomeration**

### **~~The role of chance events~~**

How do these clusters of economic activity come into being, and what are the driving forces behind them? The first step in any historic process that leads to the emergence of an industrial cluster of activities is the more or less deliberate locational choice of an entrepreneur (alias pioneer and innovator), who sets the stage for all subsequent activity. Although the initial location can have historic consequences, its underlying reasons are often accidental. In the above-mentioned industries, a specific geographic position or the availability of natural resources hardly ever offer a full explanation.

Much depends on accident and chance events. Small incidents have the potential to start a cumulative process in which the presence of a certain number of firms and workers acts as a trigger for more firms and workers to converge in a particular location. Although the resulting pattern may at some very aggregate level be determined by resource- and technology-related reasons, there is a striking role for history and accident at the ground level<sup>12</sup>. Some early accidents of history have the potential to cause a particular sequence of events, resulting in one locality or the other gaining a significant head-start<sup>13</sup>.

## **Agglomeration economies**

Which are the processes that lead to concentration of industrial activities? Why do certain agglomerated industries grow so vigorously and why do they attract other, competing, firms? It is a long-established fact that external economies -- those external to the firm -- play a critical role, even though they are often difficult to determine. As one analyst put it: "Unfortunately, the issue of externalities is not one that can be easily tackled in practice. External economies, by definition, do not leave a paper trail of market transactions by which they can be tracked and measured"<sup>14</sup>. Nevertheless, external economies are an important source of a firm's productivity. Agglomeration economies, the geographic expression for external economies, arise from a firm's locational association with a larger cluster of economic activities. Put another way, agglomeration economies are economies of proximity that are associated with the spatial clustering of firms, workers, and consumers.

In addressing this issue, two types of agglomeration economies may be distinguished: urbanisation and localisation economies. Urbanisation economies, which are attributable to the size of the city in which the firm is located, increase with city size, up to a certain level beyond which urbanisation diseconomies tend to become dominant. Examples of urbanisation economies are a first-class infrastructure, including access to airports and a modern communication infrastructure, cultural facilities, and the availability of a large local market. Examples of urbanisation diseconomies are congestion, crime, pollution, high wages, and high living costs. For certain industries, especially financial and business services, urbanisation economies are particularly important due to a more general client base that can be found exclusively in large, metropolitan areas<sup>15</sup>. For other industries, the advantages of doing business in such metropolitan areas are not sufficient to offset the diseconomies, with closure or relocation as a consequence.

The second type of agglomeration economies, localisation economies, does not depend on the size of a city but on the concentration of the industry to which the firm belongs in a particular place. Localisation economies are industry-specific and accrue to the individual production unit through the enlarged output of the industry as a whole at that location. Examples of localisation economies are specialised training institutes contributing to a labour force with specific skills, the availability of specialised suppliers and subcontractors, consultancy firms, the technological infrastructure, nearness of customers, etc. Localisation economies bring about industrial clustering since the firms in such an industry are likely to require similar inputs that can be obtained at lower average costs.

Much of the pattern of geographic production as described in the previous section can be explained through the occurrence of localisation economies. For a number of industries, such economies play a more important role than urbanisation economies, as shown by a study on the development of high-technology industries in Japan<sup>16</sup> and a study on the international competitiveness of Swiss industry<sup>17</sup>.

### ~~The local labour force~~

Although low labour costs continue to be an important factor for individual firms, this is not so much the case for the clustering phenomenon. The reason for this being that the arrival of a large number of firms with similar demands would -- given a fixed supply -- push up wages, thus annulling the initial location factor. This has been mentioned as one of the reasons why Japanese automobile transplants in the United States, albeit virtually all located in a region stretching from southern Ontario and Michigan to Ohio, Kentucky and Tennessee, have not so much agglomerated. Indeed, locating plants at some distance from each other has allowed firms to minimise overlaps in their labour markets<sup>18</sup>.

Yet many of the industries that are prone to geographic clustering (craft industries, high-technology, and certain services) depend a great deal on a labour force with industry-specific capabilities. A specialised labour force is both an input and an outcome of the development of a specific industry in a particular locality. During this development, learning-by-doing and on-the-job training continuously raises the collective level of knowledge and expertise among the industry's work force. Learning, in this context, includes the growing ability to continuously invent, differentiate, improve and reconfigure products<sup>19</sup>.

Much learning and, therefore, much technological progress is localised with few spill-overs to other areas. Since knowledge is largely embodied in people, and since long-distance migration is still relatively rare in most OECD countries, it follows that a local labour market in and around a specialised economic cluster is an extremely valuable asset. In addition, the mobility of a well-trained, specialised labour force is likely to be further reduced by the locally-available job opportunities. In other words, labour markets for skilled workers are created as agglomerations are born and grow, representing a tightly functioning network of interdependencies binding the job system and the local population together<sup>20</sup>. Therefore, the crucial need for a skilled, well-trained, and specialised labour force enhances locational agglomeration. Moreover, the local presence of a specialised labour force is an important factor for potential investors, thus anchoring an industry even more.

### ~~Expanding division of labour~~

In addition to agglomeration economies in general and labour markets in particular, the process of localised economic growth can be further explained by the dynamics of an expanding division of labour between firms. This inter-firm division of labour is associated with the on-going specialisation and disintegration of activities, opening-up of new opportunities for related firms, increasing external economies, and an upward trend of overall productivity. A distinction is usually made between vertical and horizontal disintegration.

Vertical disintegration implies that firms prefer to outsource parts of their production process to either upstream or downstream suppliers. Specialised activities at one stage of production create opportunities for innovation and specialisation at other stages, through backward and forward linkages. Vertical disintegration is likely to occur when outputs are

unstandardized and constantly changing, when firms are relatively labour intensive, and when market transactions are relatively efficient. The use of subcontractors is a common expression of vertical disintegration. As a consequence of this process, the number of forward and backward linkages increases. Costs that are associated with these linkages are usually distant-dependent in nature, especially when linkages are unstandardized and unstable, involving face-to-face contacts. In this way, a network of highly disintegrated and therefore interlinked firms in an expanding industry will have a tendency to cluster in space<sup>21</sup>. As will be seen later on, vertical disintegration -- as expressed by outsourcing -- is a common part of the globalisation dynamics.

Horizontal disintegration implies that producers of any one type become more numerous. New firm formation often takes place through the spin-off phenomenon; key personnel leave a firm in order to set up a new venture, often on the basis of experience that has been acquired in the parent firm. In order to reduce risk and to enlarge the chance to succeed, the starting entrepreneur is likely to depend on an established and local network of colleagues, suppliers, clients, servicing firms, and banks with which he has grown familiar during earlier work experiences. Thus, like the case of vertical disintegration, horizontal disintegration is conducive to geographic clustering as well. These clusters serve as a spawning ground for new entrepreneurs, who themselves reinforce the process of locational agglomeration. The strength of such a development process lies above all in the web of geographically-restricted interconnections that establish possibilities for all firms within such an environment.

### **3. The impact of globalisation on geographic concentration**

The previous section dealt with the interaction between local and regional actors and factors of production, a process that appears to be cumulative once set in motion. This section examines the way in which interlinking global networks of production intersect with local and regional networks. This discussion starts off with the argument that globalisation of industrial activities leads to increased competition. Subsequently, it examines four possible responses to the increasingly competitive, global environment, namely innovation, new forms of industrial organisation, direct investment abroad, and interfirm co-operation.

#### **~~Increased competition~~**

Many firms have been able to increase their international operations in recent years as a result of improved means of transportation and communications, lower tariff and non-tariff trade barriers, and reduced restrictions on foreign investment. Although it is too early to see the uniform appearance of global product markets -- too many tangible and intangible barriers remain in existence while consumer tastes are still widely divergent -- many firms have been able to cover the three main segments of the world market (Europe, the United States, and Japan).

As a consequence of increased international operations, international competition between firms has become more fierce. Although it is certainly

tough for foreign firms to enter new markets on which domestic firms have built up experience and extensive networks of suppliers and channels of distribution, they are inherently competitive and might well succeed in the long run. This increased rivalry, a direct consequence of globalisation of industrial activities, is expressed by a penalty and reward system: becoming an internationally-competitive firm implies that access to a vast and expanding market is secured. A less competitive firm, however, operating exclusively in regional or national markets, risks being expelled from its own market by competitors from other parts of the world. A shake-out phase among the major rivals, from which only the most competitive firms are likely to survive, is the consequence of globalisation in a large number of industries.

Not only has the scope of competition changed in recent years, but so has its nature. It has become increasingly difficult to become competitive by focusing exclusively on low production costs. In former times, performance on

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**Box 1: London's Auctioneers: An Internationally Competitive Service Industry**

British firms have traditionally dominated the world auctioneering industry and continue to do so in an age of increasing competition and globalisation. Sotheby's, Christie's, Phillips and Bonhams are the four leading firms. London is the home base for these internationally-renowned firms.

The fact that the auction has always been a respectable way to buy and sell goods, the mild regulation related to auctioneering, and the large number of British fine arts collections made London into a city where at the turn of the twentieth century hundreds of auctioneers were active. By becoming established early, British auction houses developed the reputation for drawing the best buyers. This in turn provided access to sellers who sought the top prices for their goods. In addition, auctioneers could count on an important support industry: the huge infrastructure of museums and galleries in London provided a base of experts to be called on in authenticating and valuing items. Perhaps most importantly, the auctioneering industry has been able to attract highly educated people, many of them having a strong training in the arts. This skill base contributed to a long and active history of innovation in the British auctioneering industry.

London's auctioneers have successfully adapted to the pressures of globalisation. Admittedly, international markets for the London auctioneers have been important for a long time. British auctioneering firms, however, have been successful in limiting the market share of foreign rivals. Sotheby's, Christie's and Phillips all operate offices and showrooms in other nations in addition to their London facilities and hold auctions all over the world. In addition, modern auctions involve not only those attending, but also bids placed in advance by buyers located all over the world and telephone hookups to buyers during the auction.

Source: Porter, M.E. (1990) The Competitive Advantage of Nations. New York: The Free Press, p. 270-273.

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price was typically the key to gaining and losing market shares, and this is still the case in some industries. Yet, in most industries, focusing solely on price is no longer an effective strategy for obtaining international competitiveness. The pressure to produce and sell high-quality products in combination with attractive prices requires high and continuously increasing product quality, timeliness of service, flexibility, rapid and continuous innovation, and command of strategic technologies<sup>22</sup>. It is in the context of this daunting challenge that firms create and exploit a variety of networks in the fields of innovation, industrial organisation, foreign direct investment, and co-operative agreements. These strategies, inherent to the globalisation process, are a response to the increasingly competitive environment. However, at the same time, they boost international competition even further.

### **Innovation**

The importance of continuous innovation activities in building international competitiveness in a global economy can hardly be overestimated. But how do these innovative activities take place? New insights have indicated that the process of innovation is not so much the outcome of stand-alone laboratories but more one of interaction with a variety of actors, such as competing firms, research institutes, and above all suppliers and users. Many firms, subject to increasing pressures to innovate, seem to benefit greatly from a variety of network interactions that provide access to complementary resources. Such assets have the potential to speed up the innovation process, and give the innovating firm a critical head-start. During the 1980s, seemingly paradoxical forms of co-operation between competitors became a widely-spread phenomenon, especially in the field of R&D. Integrating research and development efforts through co-operative arrangements, and swapping technological expertise are a stimulus to innovative activity, especially when entry-barriers are high and when the firms involved bring in complementary technologies. The importance of research institutes and universities has been rising in recent years as well<sup>23</sup>.

Interaction with suppliers and subcontractors has proven to be particularly important. An innovation within a subcontracting firm can have far-reaching implications for the contracting party, in terms of cost, reliability, and speed of delivery, and so does the reverse pattern. Much attention is now attached to the interaction between users and producers. Producer firms have strong incentives to establish close relationships with user firms, especially when the effects of learning-by-using can be transformed into new products. In the case of complex and specialised equipment, user-producer interaction can be important in every stage of development, from the recognition of a perceived need and product development to that of user-training, and after-sales service<sup>24</sup>.

Many of these network-relations are international in scope. Co-operative agreements between competing firms and university-industry networks are often global, and critical elements in the globalisation process. Numerous are the agreements between combinations of North American, Japanese, and European firms.

Yet, geographically narrower forms of innovation-related networks play an important role as well, as an outcome of cumulative 'virtuous circles' of

knowledge accumulation in local and regional contexts<sup>25</sup>. As illustrated by the persistence of industry clusters that were established a long time ago, localised networks appear to be more durable than international alliances. In contrast to international networks, inter-organisational local networks are reinforced by personal and cultural relations in which trust plays an important role<sup>26</sup>. When put under competitive pressure, many established local and regional production networks turn out to be viable innovation networks as well.

Geographic proximity seems to be particularly valuable when transfer of non-routine information is concerned, requiring frequent face-to-face interaction. Staying close to customers and suppliers appears to be particularly important. Many successful firms are making a concerted effort to develop closer ties to their customers, thus increasing the likelihood of a rapid response to shifts in the market. A recent study showed that closer and more tightly co-ordinated relationships with suppliers appeared in all of the best-practice firms<sup>27</sup>. Similarly, proximity to suppliers and production support facilities has been mentioned as the most important institutional externality for American small and medium-sized enterprises that are export-oriented<sup>28</sup>.

### **~~New forms of industrial organisation~~**

New forms of industrial organisation are a second response of firms to an increasingly competitive global environment. One of the key characteristics of this environment is growing uncertainty about technological change, markets, the behaviour of competitors, etc. Outsourcing, an expression of the process of vertical disintegration that was described in the previous section, is a risk-reducing strategy that leads to less in-house production of materials, components, semi-finished products and business services. Outsourcing increasingly entails activities other than production as well: design and development of components are now often entrusted to suppliers. There are several advantages to an outsourcing strategy. Firms can avoid investment in new or existing plants, and greatly enhance their flexibility, since it is easier to change subcontractors than to close down or reduce a firm's own fixed capacity. Thus, outsourcing allows for risks and costs of certain operations to be externalised, while the firm keeps an amount of control over the operation<sup>29</sup>.

The proliferation of outsourcing has contributed to the evolution of elaborate networks of production, from a local to a global level. International outsourcing to developing countries has been an established practice since the 1960s and 1970s. During the 1980s, OECD countries have become increasingly involved in international sourcing as well, as a response to the need for specialised products, and the preference to ensure supply by securing multiple sources, to avoid trade barriers, etc. International sourcing, as exemplified by intra-industry trade patterns, appears to have been rising from the early 1970s, and is particularly important in the automobile parts industry, in textiles, in communication and in semiconductor equipment<sup>30</sup>.

Despite this powerful trend towards international sourcing, local networks of sourcing have proven to be remarkably resilient. The most important reason for this resilience is likely to lie in profound changes of corporate organisation and methods of production: the gradual replacement of a 'fordist' model of mass production by a much more flexible 'toyotist' model.

The shortcomings of the fordist organisation form, characterised by a rigid work organisation, standardised products, and the need for large and stable markets, become increasingly apparent in a global environment that sets much different requirements for firms. The model of toyotism, characterised by new and differentiated products, quick responses to the market, and polyvalent workers, seems to be much better placed to compete in the new environment, since it combines flexibility, cost reduction and high quality, features that are mutually exclusive and contradictory in the fordist model<sup>31</sup>.

The model of toyotism or flexible production has important geographic implications, due to its combined features of networking, subcontracting and just-in-time delivery. Local sourcing offers considerable advantages since network transactions do not only involve transport of goods but also that of codified information of which transfer costs are highly distant-dependent. Such information costs are especially spatially-sensitive when continual adjustment requires frequent information exchange and renegotiation through face-to-face contacts<sup>32</sup>.

Therefore, local sourcing networks have remained largely intact in Japan, the country where toyotism was 'invented' and where it is widespread. Each large Japanese firm is surrounded by a large number of small and medium-sized subcontracting firms that act as suppliers of components or perform specialist processes according to the specifications and the timetable of the controlling large firm<sup>33</sup>. The inherent importance of such local supply systems can be seen most clearly by abstracting from history's role, when examining Japanese corporations that have established production operations abroad; whether it concerns automobile firms in the United States or electronics firms in Thailand, suppliers and subcontractors usually follow suit, thereby copying industrial supply relations at home.

Another example of the relationship between flexible production systems and geographic concentration of supplier firms comes from the Italian Benetton company, a prototype of the so-called network firm. Whereas Benetton has a strong in-house capacity for design, styling, fashion market forecasting and advertising, 80 per cent of its production output comes from over 350 small and very small, mostly local, enterprises. Almost all of these firms existed prior to their involvement in the Benetton network<sup>34</sup>. In general, many small and medium-sized enterprises have turned from independent producers to local suppliers or subcontractors for larger firms that are part of global networks of production. Such a sourcing pattern exemplifies the interaction between territorially-restricted and global networks of production.

### **~~Foreign direct investment~~**

During the second half of the 1980s, the world stock of foreign direct investment increased rapidly, from US\$ 504 billion in 1980 to \$ 1 402 billion in 1989. The geographic pattern of distribution of this stock has changed quite drastically as well. A larger share of the investment has gone to the OECD countries: three quarters of the world stock can be found in Europe and North America. This boom in foreign direct investment can be largely explained by market access and expansion, and rapid technological change coupled with falling communications costs<sup>35</sup>. Contrary to earlier waves of foreign investment, in which investors were predominantly looking for low production

costs, many of the recent investments are in technology-intensive sectors. Foreign penetration ratios in large OECD countries are among the highest in technology-intensive industries like computers, electronics, automobiles, and chemicals.

For many foreign investors in these industries, proximity to markets and suppliers as well as the availability of a skilled work force have become important location factors. In addition, ameliorated transportation and communication infrastructures have improved firms' ability to effectively scan globally optimum locations, making the assets of such locations more transparent than ever. As a corollary, there are several indications that at least part of the foreign direct investment in recent years has been attracted by internationally-competitive geographic clusters of production. In general, these are localities where external economies are to be reaped, and not exclusively by local firms. Much of the investment in innovative industries is likely to be driven by the opportunity to tap into locally-available expertise and knowledge. Some of this foreign direct investment has been placed in greenfield plants, some of it in acquisitions and mergers. Acquisition of local, often promising, start-up firms is a widely-used practice for foreign investors, especially in the computer, electronics, pharmaceutical and biotechnology industries.

When attracted by internationally-competitive clusters, foreign direct investment tends to have positive effects (see Box 2). Such investments broaden its industry-base, and contribute to the generation of external economies. Such investments also enhance the indigenous technological capacity, since local engineers, scientists, and other skilled workers will have the opportunity to become familiar with foreign practices, that might sooner or later seep to local firms as well. In return, the establishment of research-intensive activities in geographically-restricted centres of innovation and production will help the multinational firm to incorporate practices that can be used throughout its own global operations. When technological competition between multinational enterprises is strong, and corporate strategies of international integration prevail, technological capacity will tend to agglomerate in centres of excellence<sup>36</sup>. However, when the domestic sector is not internationally competitive, a different process might start. Increased concentration of foreign firms in such a region might induce domestic firms to locate elsewhere, if they won't run out of steam and close down altogether.

### **~~Co-operative agreements~~**

A final response to the increasingly globalised and competitive environment is the establishment of co-operative agreements. Inter-firm agreements, which surged during the 1980s, are a main feature of globalisation. As mentioned before, many co-operative agreements are international in nature, involving the largest multinational enterprises. But at least as important might be co-operative agreements with local firms and among such firms. Of particular interest are those co-operative agreements between globally-operating multinational firms and local, sometimes exceedingly innovative, small firms. Despite the striking size difference between such partners, these agreements can be very fruitful because of the complementary assets they bring together. On the one hand, multinational firms can offer

capital, resources, and access to global markets and distribution networks that local, notably small and medium sized, enterprises could never develop on their own. A local firm, on the other hand, can be very attractive for multinationals when it embodies promising innovations or technological breakthroughs.

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**Box 2: Southern California's cardiovascular industry: from local to global players**

The story of Southern California's cardiovascular industry is an example of the development of a local cluster that has been successfully linked to global networks, especially through investments from multinational firms. Due to this fruitful conjugality, Orange County has emerged as a highly-innovative and internationally-leading research and production centre for cardiovascular products and related specialty devices, comprising over a hundred establishments and more than 8 000 employees.

It all started in 1961 when a retired aircraft fuel pump designer and a cardiovascular surgeon opened together Edwards Laboratories in Santa Ana, Orange County. The innovative company attracted excellent biomedical device engineers from all over the US, and became a company that served as a seedbed for numerous spin-offs in cardiovascular and related fields. In the early 1970s, a second wave of spin-offs bolstered the growth of the complex, a development that continued over the 1980s.

The accomplishments of the local entrepreneurs did not remain unnoticed in the industry. Orange County attracted affiliates of several multinational health care concerns, such as Hoffman-La Roche, Medtronic, Baxter, Pfizer, and Siemens. Some of these multinationals started their research-intensive operations as greenfield plants, close to the existing firms. Other investors tapped directly into the available knowledge-base through the acquisition of successful start-up firms. Such acquisitions have sometimes induced initial founders to leave their firm and to start once again a new venture -- supported by a substantial take-over sum. In this way, multinational firms have proven to add considerably to the dynamics and local development of this particular industry.

Source: J.M. de Vet and A.J. Scott (1992) "The Southern Californian Medical Device Industry: Innovation, New Firm Formation, and Location", in *Research Policy*, Vol.21, p.145-161.

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As in the case of foreign direct investment, co-operative agreements between global and local firms are most visible in technology-intensive sectors. Although much is still to be learned about these agreements, there are many examples showing their importance. For instance, when IBM needed software to run on its newly-developed personal computer, an agreement with the then tiny but innovative Microsoft company was opted for as a solution. This agreement accelerated IBM's long-awaited introduction of personal computers, and turned Microsoft into a multi-billion company within a few years. Co-operative agreements between global and local firms are also common among full-fledged pharmaceutical companies and small, innovative biotechnology

firms. Such alliances allow established pharmaceutical firms to be involved in the development of a new generation of medicines for which in-house expertise may not be available. Biotechnology firms, in this way, frequently benefit from capital injections that are much needed to continue the costly R&D process, and have access to large markets and distribution networks. A danger of such inherently unequal alliances is that the multinational firm has the potential to kill off innovative developments within the small firm when these are no longer compatible with its own interests<sup>37</sup>.

Co-operative agreements between globally-operating and local firms are perhaps the clearest example of how global networks of production and innovation can intersect with local and regional networks. The fact that multinational firms in their search for new technology often join firms that are located in specialised clusters of economic activity -- both Microsoft and most biotechnology firms are part of such clusters -- is no accident. Because of their location within 'pockets of innovation', these firms have benefited extensively from a host of agglomeration economies that have helped them to attract globally-operating multinationals.

#### **4. Conclusions**

This chapter has argued that the trends towards a global economy, with much international competition, is likely to reinforce a geographic pattern of production characterised by concentration and clustering of closely-linked activities, especially in craft industries, in high-technology, and in certain service sectors. On its own, this process of geographic clustering is probably as old as the industrialisation process itself. The importance of agglomeration economies, localisation as well as urbanisation economies, and the limited availability of a highly-specialised and skilled labour force have come to the fore as typical explanations for geographic clustering. In addition, the dynamics of an expanding division of labour, both through vertical and horizontal disintegration, have proven to be a critical force in local economic development. The fact that the optimal location of certain types of firms can traditionally be found within localised clusters of production is therefore not new at all.

However, the globalisation process, which is likely to reinforce such concentration, sheds some new light on this pattern of location. Globalisation of industrial activities is exercising pressure on virtually all tradable industries, a pressure that induces firms to take advantage of all possible economies, whether internal or external. Firms that have access to a full-fledged infrastructure and a specialised labour force, while surrounded by a finely-tuned complex of competitors, suppliers, clients, and service firms, evidently have a number of advantages that enhance their chances to survive and successfully compete, more so than firms that lack such essential assets.

It is therefore these tightly-knit local and regional networks that are of importance and that permit access to global networks of production and innovation. Geographic clusters of specialised production prove to be invaluable 'pockets of innovation'. In order to tap into these resources, multinational enterprises set up or acquire local firms or establish co-operative agreements with them. One of the premiums on successful development of strong local firms seems to be entry to international networks, which make these localities springboards for global activities.

## Chapter 3

### Consequences of Globalisation for Regions

Now that the importance of geographic concentration of economic activity in a global age has been noted, a pertinent question is what the consequences of globalisation are for several types of regions. To address this question, the analysis will shift from localities as the direct environment of firms to larger areas of sub-national dimensions. Firstly, some general consequences for host and home regions will be discussed (Section 3.1). An analysis of inward foreign direct investment and its distribution among regions will then be presented. The focus will be on the question of whether incoming foreign direct investment tends to benefit developed or lagging regions, either widening or narrowing regional disparities (Section 3.2), and whether such investment enhances specialisation of regions (Section 3.3).

#### 1. Determinants of foreign direct investment

The recent surge in foreign direct investment is above all due to firms' needs to have access to both technologies and markets. In particular, proximity to the market-place, transportation and communication costs, local quality of life, and differences in taxes among jurisdictions all play a role when locating industries. At stake are the changing dynamics of determinants of foreign direct investment, with a new geographic pattern of investment as a resultant.

Until the middle of the 1980s, much foreign direct investment had to be seen in light of the strategic necessity to introduce cost-cutting measures. With rising cost levels in the advanced economies and increased price competition from other countries, firms often established production operations in low-cost countries, re-importing their outputs afterwards. Earlier work on internationalisation emphasised the serious effects on origin regions when firms move activities abroad. Standardised and routine production were among the most vulnerable activities and since these activities were commonly performed in low-cost or industrially-declining regions within OECD countries, it was above all lagging regions that encountered the consequences of such measures. Although these figures are certainly debatable, it was once estimated that between 1977 and 1986, US direct investment abroad led to a net displacement of 2.7 million jobs in the manufacturing sector, and an additional 700 000 jobs in services and other industries. Making matters worse, the industries in which many jobs were lost (such as nonelectrical machinery, primary and fabricated metals, food, and chemicals) were already among those that were in decline domestically, and so were the regions in which they were located<sup>38</sup>. And while the implications of foreign direct investment for origin regions were often considered negative, the same was often stated for host regions in less developed countries. Among the possible drawbacks of such

investment on host regions were the often simple nature of assembly-like activities ('screwdriver plants'), limited spill-overs to the local economy, and the deterrence to domestic firms that would possibly have created more local spin-offs.

More recent developments concerning the determinants, nature and origin of foreign direct investment have made the above argumentation somewhat less current. Low labour and production costs have become a less important motive for foreign direct investment. It has been shown that, in the long run, employment of multinational corporations increased faster than employment of non-multinationals. In line with the needs for higher product quality and flexibility, automation and robotisation techniques have partly replaced the cost-driven investment flow. Rather than cost-minimisation, many of the recent foreign investments are motivated by the necessity to have access to technology and markets. They are initiated by inherently competitive multinational firms that are in search of new technologies, and that aim to increase their international market shares. Despite the overall decrease in tariff barriers, the use of non-tariff barriers continues to be widespread in the OECD area. And this actual or perceived threat of trade barriers, endangering access to important markets, has in itself been a factor for the recent influx of investment into the United States, the European Community, and the United Kingdom in particular. This change in determinants also has an impact on the nature of foreign direct investment.

As a consequence of these changes in determinants and nature, regional implications of foreign direct investment have changed as well. Overall, the consequences of foreign direct investment on origin regions are perceived as less negative than before. Regions of origin are not necessarily lagging regions, they can also be leading core areas, including the internationally-competitive clusters of activities that were discussed in the previous chapter. For example, origin regions of new foreign direct investment can be found increasingly around Tokyo, Seoul, Taipei, or Munich, areas that have had a vigorous economic growth and that are frequently facing considerable congestion. Besides, foreign direct investment is often related to expansion of activities into new markets or technologies, more so than to displacement of activities.

Because of these changes, the implications of foreign direct investment for host regions have altered as well. Although the advantages and disadvantages of foreign direct investment tend to be very situation-specific, depending above all on the type of investment and the specificities of the host region, more emphasis is now being put on the advantages. Among the advantages of foreign direct investment for host regions are not only the creation of employment, but also access to foreign technology, and the possible use of local suppliers. Foreign establishments perform as least as well or better than domestic firms in terms of value added per employee, level of remuneration, capital investment and productivity. Foreign establishments, however, tend to have lower local content ratios, while the repatriation of profits remains an issue on which it is hard to find unambiguous data<sup>39</sup>.

Nevertheless, the overall desirability of foreign direct investment is probably more widespread than before, as illustrated by the efforts of governments at both local, regional, and national level throughout the OECD area to attract such investment. The need to analyse the new patterns of

foreign direct investment is therefore larger than ever.

## 2. Towards concentration or deconcentration?

Depending on the nature and determinants, foreign direct investment can have two distinctive regional economic consequences, leading either towards concentration or towards deconcentration of activities. On the one hand, it is a fact that multinational firms engaged in manufacturing have a strong motive to invest in areas where costs, especially labour costs, are low. This behaviour might be reinforced now that multinational firms can scan more effectively their range of locational options, thus considering other than only prosperous core areas. For instance, foreign multinationals in the United States have fanned out across the continent over the past 15 years, after having become more familiar with US production<sup>40</sup>. However, the diminishing importance of cost-minimisation as a determinant of foreign direct investment has reduced this potential deconcentration effect.

On the other hand, globalisation is at the same time likely to reinforce a pattern of geographic concentration, enlarging the chances for regions that are already outstanding in an economic activity that is of growing importance. This implies, given the current division of labour between regions, that leading and prosperous regions are better placed to be springboards for global activities than lagging areas. Indeed, factors of production tend to accumulate increasingly in the most favoured locations, and many countries are witnessing a reversal of the trend towards a reduction of regional development disparities<sup>41</sup>. Especially technology-driven investment, more so than market-driven investment, is likely to be attracted by already existing pockets of innovation.

The remaining part of this section will present the conclusions of an empirical analysis on this ambiguous issue. Specifically, the question will be addressed of whether globalisation -- as measured by the inflow of foreign direct investment -- reinforces the trend towards concentration of activities in more prosperous regions. The analysis has been carried out for seven countries that have experienced a considerable increase in the stock of inward foreign direct investment, namely the United States, Germany, France, the United Kingdom, Canada, Spain, and the Netherlands (for details regarding the measuring of concentration and deconcentration, see Annex 1; for data, see Annex 3)<sup>42</sup>.

It was mentioned before that the nature of foreign direct investment is very situation-specific. It can entail greenfield investments, acquisitions, production, distribution or research activities, and originate in a variety of countries. Unfortunately, the following analysis had to abstract from these variations, for the simple reason that data on the regional distribution of foreign direct investment are extremely scarce and little specific. In addition, comparability of the data between countries is limited. In the case of Germany, use has been made of capital flow figures, data on capital stock have been used for Canada and Spain, whereas employment data have been used for the other countries analysed. Evidently, each of these methods have their particular shortcomings.

## **United States**

The United States, until recently the world's largest investor abroad, has in recent years become the largest recipient of foreign investment. In the year 1987/88, roughly 3.2 million persons were employed in foreign-owned establishments, equalling 3.6 per cent of the total US labour force. The Atlantic states (both Middle and South) host a relatively large share of foreign investment, adding up to 41 per cent of all employment in foreign-owned firms. This pattern has mainly been caused by the behaviour of European investors, for whom the Atlantic states have always been a logical platform for further expansion into the US. But foreign presence is much more limited in a range of interior states, especially in the West North Central region. Employment in foreign firms makes up less than 2 per cent of total employment in sparsely populated states such as North and South Dakota, Nebraska, Idaho, and Montana. The shares are somewhat higher for the Pacific states.

Does the extent of employment in foreign-owned establishments correspond to the prosperity level of states, thus leading to concentration of activities in more developed regions? The highest foreign penetration ratio (4.5) is indeed found in the region with the highest personal income per employee, the Middle Atlantic. At the same time, the lowest penetration ratio (2.3) is in one of the regions with a relatively low personal income (West North Central). On a state level, penetration ratios do turn out to be related to personal income.

## **Germany**

During the 1981 to mid 1991 period, a total accumulated net amount of 36 billion Deutschemark has flowed into Germany, which is spread rather unevenly over the 11 Länder that used to make up Western Germany (Annex 3.2). The German unification is now rapidly changing the pattern of inward foreign direct investment. The net inflow of foreign investment in Eastern Germany was still very limited in 1990, but increased sharply in the first half of 1991. When evaluating the inflow of foreign investment in the 1980s and the beginning of the 1990s, the Land of Hesse in central Germany stands out clearly as the largest gainer, in both absolute and relative terms: this Land has attracted half of all German foreign investment, which is as high as 7 400 Deutschemark per labour force participant. Saar-Land and Hamburg received moderately high amounts of foreign investment per labour force participant. As a result of divestment by foreign investors, Bremen and Lower Saxony have had a negative net inflow over the last ten years. This development is serious, since these Northern German economies are already vulnerable and face structural adjustment problems.

Regional differences in income levels, as measured by GDP per employee are relatively modest, apart from Eastern Germany. When Hamburg and Bremen are, for technical reasons, excluded from the analysis, a strong relationship between income level for Germany's Länder and inflow of foreign investment can be discerned.

## **France**

Although not always acknowledged, the French manufacturing industry is characterised by considerable foreign penetration. At the beginning of 1989, the total employment in foreign-owned manufacturing establishments with over 20 employees attained a level of over 700 000 persons, equalling 21 per cent of all manufacturing employment. Overall, foreign direct investment is relatively concentrated north of the river Loire. Employment in foreign firms -- seen in light of the weight of each of the regional economies -- is among the highest in the Central and Eastern parts of the country. In Alsace, 36 per cent of all manufacturing employment is directly attributable to foreign-owned firms. These figures are at least one of four manufacturing jobs in Picardie, Centre, Haute-Normandie, Burgundy, and Ile de France. Much lower penetration ratios are found in France's more peripheral regions. In the Midi-Pyrénées, one in eight manufacturing jobs is situated in foreign firms, whereas this ratio is one in twelve in Bretagne, and one in twenty in Corsica.

The analysis shows that foreign direct investment in France contributes to a trend towards concentration of activities in the more prosperous regions. For example, Ile de France, by far the richest French region, also has a relatively high foreign penetration ratio, while several peripheral regions with a limited presence of foreign firms have a relatively low GDP per employee. One of the exceptions to this rule is Alsace, an area with a strong foreign presence but relatively moderate GDP figures.

## **United Kingdom**

For some decades now, the United Kingdom has been the most important destination for Europe-bound foreign direct investment. This record can be largely attributed to the revealed preference of American investments, for which the United Kingdom has always been an important platform. The same, however, appears to hold for Japanese investors, who over the last few years have vigorously stepped up their rate of foreign investment disbursement in Europe. Within manufacturing, accounting for one third of the total stock of inward investment, 700 000 persons are employed in foreign-owned firms, equalling one in seven jobs.

As for manufacturing, Scotland records the highest penetration ratio with one in five manufacturing jobs in foreign-owned firms. Almost equally high penetration ratios are found in East Anglia and in Wales. The South East, in absolute terms by far the most important recipient of employment in foreign-owned manufacturing firms, has a relatively high foreign penetration ratio as well. Some semi-peripheral English regions (like the South West, East and West Midlands, Yorkshire & Humberside) have encountered only modest employment effects from foreign manufacturing firms that have roughly one in ten employees on their payroll.

In the case of the United Kingdom, the question of whether foreign direct investment in manufacturing benefits prosperous or lagging regions is a rather ambivalent one. On the one hand, a few peripheral regions like Scotland and Wales with below-average income levels have relatively high levels of foreign-firm employment within their boundaries. Also, the importance of foreign manufacturing firms as employers is slightly larger in assisted than in

non-assisted areas. Yet on the other hand, the number of jobs in the foreign manufacturing sector is by all standards large in the South East, the most prosperous U.K. region. Concerning non-manufacturing, inward foreign investment in the energy sector is concentrated in and around the North East of Scotland, while outlays in the financial service sector are predominantly found in South East England.

## **Canada**

Canada can be counted among the leading recipients of foreign direct investment. Historically, much of this investment has come from the United States, to which most of Canada's population is very close. In recent years some European and Asian countries have become significant contributors as well. In 1990, the stock of foreign direct investment as recorded by Investment Canada amounted to C\$ 14 billion. Much of this investment (44 per cent) is in manufacturing, while other large shares are in the wholesale & retail sector (23 per cent), and resources (18 per cent).

A very large share of total inward foreign direct investment (77 per cent) has been targeted to Ontario, a province that generates 40 per cent of the country's GDP. All other Canadian provinces receive a share of total foreign direct investment that is smaller than would be expected on the basis of their GDP share. Quebec, for example, generates almost a quarter (23 per cent) of Canada's GDP, but this province has only received 9 per cent of foreign investment. Inward foreign direct investment is smallest in Manitoba and Saskatchewan, provinces that generated almost 4 per cent of Canadian GDP but receive only 0.1 to 0.2 per cent of foreign direct investment.

Yet a conclusion that foreign direct investment in Canada benefits the prosperous rather than the lagging regions would be inaccurate. Admittedly, the large gainer of foreign investment, Ontario, has a relatively high GDP per capita of C\$ 20 400, whereas by far the least prosperous province, the Atlantic, attracts only a limited amount of foreign investment. However, the province of Alberta, with a high GDP per capita of C\$ 24,900, attracts rather small amounts of foreign investment, and the same holds for the relatively prosperous provinces of British Columbia and Saskatchewan.

## **Spain**

In recent years, Spain has proven to be an attractive production platform, enjoying a relatively modest cost level together with all the advantages that have come with its EC Membership. As a corollary, amounts of foreign investment in Spain have burgeoned. The inflow of foreign direct investment, totaling Ptas 727 billion in 1987 and Ptas 843 billion in 1988, surged to Ptas 1 245 billion in 1989 and Ptas 1 843 billion in 1990, while staying at such a high level in 1991 (Ptas 1 578 billion in the period January to October). A large and growing portion of this investment involves financial and business services.

The spatial distribution of this foreign investment points to a highly concentrated pattern, focusing on Spain's largest urban centres. Of the accumulated foreign investment flow between 1989 and October 1991, the Madrid

and Catalonia regions host together 75 per cent. Madrid has received a share that is particularly large (44 per cent) in comparison with its role in the national economy (13 per cent of total employment). Andalusia is the third largest host region, but contrary to the above-mentioned urbanised areas, its share in total foreign investment (8 per cent) is rather low compared to its function in the national economy (15 per cent of national employment). All other Spanish regions have attracted only minor shares of foreign direct investment, in the range of 1 to 2 per cent of the national total.

This pattern seems to lead to concentration of economic activities in the more urbanised and prosperous parts of Spain. However, there are a number of notable exceptions to this rule. When measured by GDP per employee, several relatively prosperous regions of Spain, like the Balears, the Basque country, and the Canary Islands, have received relatively little foreign direct investment. In the case of Spain, the pattern of foreign direct investment seems to be not so much a function of income as one of urbanisation level.

### **Netherlands**

The Netherlands, a traditionally open economy, has a significant stock of inward foreign investment in both manufacturing and in services. Foreign investment is heavily concentrated in the Western core region of the Netherlands (Randstad), made up by the provinces of North and South Holland, and Utrecht. The lagging Northern region, somewhat less populated and more rural than other parts of the Netherlands, receives a very low proportion of foreign investment. The Eastern and Southern provinces, no longer regarded as problem areas, hold intermediate positions. In manufacturing, foreign investment tends to be relatively less concentrated. Besides the Randstad, the intermediate regions of Gelderland and, above all, North Brabant have been quite successful in attracting such foreign investment. In services, however, foreign investment is very much concentrated in the Western core area, benefiting all other provinces to only a marginal extent.

Since the Western core region has relatively high income levels, it is not surprising to see that there is a strong and statistically significant relationship between the weight of foreign investment and GNP per capita. Using the GNP measure (instead of GDP per employee), the overall conclusion can be that the pattern of foreign investment reinforces unequal regional economic distribution in the Netherlands.

\* \* \*

In general, the globalisation process as expressed by inward foreign direct investment does not appear to reduce regional disparities. To the contrary, for a number of important recipients of foreign investment, a pattern has emerged that tends to increase regional disparities. In the United States, Germany, the Netherlands, and in France's manufacturing sector, foreign direct investment has been directed to prosperous regions more so than to lagging ones. The experiences of Spain and Canada point to a foreign investment pattern that benefits urbanised and core regions, to the detriment of more peripheral areas. As far as manufacturing is concerned, the U.K. appears to be

the only country analysed where assisted areas in general and certain peripheral regions in particular have attracted above-average shares of such investment.

The data presented do not reveal the impact of investment incentives, often granted in a regional policy context. All that can be said is that, in most cases, such investment incentives in lagging regions have not been successful in attracting shares of foreign investment that are equal to those in prosperous regions. This does not mean that regional investment schemes have failed, since lagging regions are likely to have performed considerably worse without such schemes. However, the analysis does show that regional investment incentives are a locational determinant which is unable to offset the gravitational forces that appear to shape the new regional pattern of foreign direct investment. Of course, beyond these generalities each country has its own specificities that either increase or reduce regional discrepancies. Above all, much depends on the type of foreign investment involved. Those in resources are likely to benefit peripheral regions, whereas investments in services tend to be highly concentrated in core regions.

### **3. Towards specialisation of regions?**

The globalisation trend allows firms to locate distinct activities in the 'value chain' in separate locations. Headquarters, R&D facilities, assembly, and distribution activities all require a different environment. The globally-operating firm can take optimal advantage of the specificities of regions and locate each activity where it fits best. This new division of labour, more extensive than the previous stage in which only production facilities were located abroad, is likely to have pronounced consequences for different types of regions. Certain regions already have a concentration of headquarters activities (New York), while others are specialised in R&D (Silicon Valley), in distribution (Rotterdam) or in assembly operations (Ireland).

But globalisation is also likely to enhance sectoral specialisation. In general, when trade barriers between countries are lowered, incentives increase to organise an international division of labour in which productive activity in each country becomes more specialised<sup>43</sup>. Producing for international markets also means that a much larger field of competitors are confronted. Naturally, not all battles on all fronts can be won and firms therefore have to specialise to attain a share of international markets. Because the requirements for success in industries and segments differ widely, and because a limited pool of resources precludes success in all industries, not only firms but also regions can enjoy dominance in only a few sectors at the same time<sup>44</sup>. Following the logic built up in the previous chapter, firms that are active in the specialised sector benefit from localisation economies that firms in other sectors do not. Thus, firms within the region's specialty industry have a greater chance to grow and prosper than firms in other industries, thereby enhancing further specialisation.

A general analysis of specialisation in textiles, apparel, machinery, and transportation equipment in four US regions (Midwest, South, West, and North-east) and four largely comparable European countries (Germany, France, Italy, and the United Kingdom) by Paul Krugman sheds some light on this issue.

The United States, the prime example of a large open market without any internal trade barriers, shows a relatively high level of specialisation compared to the European countries that have encountered such barriers to a much larger extent. For instance, most of the US automobile industry can be found in the Midwest, whereas this industry is much more dispersed across the large European countries. In terms of the economic roles they play, US regions are thus very distinct from each other. As a consequence of European integration in general and the attainment of the single market in particular, a similar trend might be expected in Europe<sup>45</sup>. This logic of specialisation might be stretched even further once truly global markets without trade barriers come into existence.

In what follows, an attempt is made to determine whether globalisation -- as measured by the inflow of foreign direct investment -- reinforces the specialisation trend in regions. In other words, is concentration of specific economic activities in distinct regions likely to be increased or diminished by globalisation? And how does foreign investment relate to the geographic pattern of domestic industries? These questions will be addressed for four countries that have received substantial amounts of foreign direct investment, and for which detailed data on the industrial structure have been made available; the United States, France, and to a limited extent Canada and Spain. For details regarding the methodology and statistical results, see Annex 2.

### **United States**

In the United States, the geographic distribution of employment in foreign-owned firms varies widely from industry to industry. A large share of foreign employment in petroleum (39 per cent) goes to the West South Central, especially to Texas. In the chemicals industry, a large fraction of employment in foreign firms (29 per cent) can be found in the South Atlantic, while a similarly high percentage of the foreign employment is localised in the primary and fabricated metals industry of the East North Central. The latter region also hosts 30 per cent of the employment by foreign-owned firms in the automotive industry, notably in Ohio and Michigan. In this industry, the states of Tennessee, and North and South Carolina record a large share of the foreign employment as well. In finance (except banking), New York alone records almost half (46 per cent) of all employment in foreign firms. Other industries, like the food and kindred products industry, machinery, and a number of service industries, lack such concentrations of foreign employment, and are more equally spread over the country (see Annex 3.1a).

Does the distribution of employment in foreign firms correlate with the production structure in domestic industries? If this is the case, it means that foreign investment enhances specialisation. Otherwise, foreign investment can be said to stimulate diversification of the state's economic base. When addressing this question, a somewhat more systematic analysis is needed, for which the reader is advised to consult Annex 2.

An important conclusion from the exercise (see Table 2 of Annex 2), is that foreign investment contributes to specialisation of the US states in two of three cases, namely in those 68 per cent where the representation of the foreign segment of a particular industry matches that of the domestic segment.

According to this method, the presence of foreign direct investment has contributed to the diversification of the regional economy in one of three cases (32 per cent). Foreign and domestic patterns match relatively often in petroleum, real estate, other manufacturing, machinery, finance except banking, primary and fabricated metals, and in chemicals products. Externalities, as described in the previous chapter, are likely to play an important role in industries like petroleum and chemicals (an existing infrastructure, including ports, and pipelines in addition to the obvious natural resources), finance (stock exchanges, financial expertise, location of corporate headquarters, etc.), and machinery (suppliers, skilled labour). It is somewhat more difficult to explain the patterns in real estate, and in other manufacturing, a very broad group where industry-specific reasons are likely to play only a minor role.

Within the food and kindred products and the automotive industries, the distribution of foreign employment follows the domestic pattern much less frequently, in just one of two cases. Concerning the food and kindred products industry, it is indeed not very clear why foreign direct investment should follow the domestic pattern, since there are likely to be rather few externalities to be reaped in this traditional industry. The pattern of investment in the automobile industry is ambiguous. Foreign investors tend to invest in the same part of the country as the domestic automobile industry, in the so-called 'Transplant Corridor', stretching from Southern Ontario, Michigan, and Illinois, to Indiana, Ohio, Kentucky, and Tennessee. However, foreign investments fail to exactly match the pattern of the domestic industry by employing relatively few persons in Michigan, and more in the Southern states.

## **France**

In the case of France, an analysis was carried out of 11 selected and specific manufacturing industries in which foreign direct investment has played a significant role. The importance of each of these industries, representing 43 per cent of total manufacturing employment, varies considerably among the 22 French regions, thus showing a pronounced pattern of regional specialisation. For example, over half of all employment in the office automation industry can be found in the Ile de France region including Paris. Slightly lower concentrations of jobs in this core area can be discerned in pharmaceutical and electronic equipment firms. Yet, large parts of the rubber industry are located in Picardy (foreign firms) and the Auvergne (domestic firms, notably Michelin). Instruments manufacturing is overrepresented in the East, mostly in Alsace and adjacent Franche-Comté. The automobile industry in turn is located according to a more diffuse pattern throughout the Northern part of the country (see Annex 3.3a).

The answer to the question whether in France over- and underrepresentation of the foreign segment follow the pattern of specialisation in the domestic segment, is given in Table 3 of Annex 2. A general conclusion from the exercise is that the representation of the foreign segment matches the domestic segment in 61 per cent of the cases, thus leading to further specialisation of the French regional economies in the majority of cases. However, the presence of foreign direct investment has led to a diversification of the regional economy in 39 per cent of the cases. Employment in the foreign

and domestic segments tends to match closely in technology-intensive industries like office equipment and pharmaceuticals. Specialisation occurs also relatively often in fine chemicals, electronic equipment, tool equipment and instruments. Foreign investment in automobiles follows the domestic pattern to only a limited extent. Thus, foreign automobile plants appear to have contributed to diversification of most of the regions concerned.

## **Canada**

In Canada, for which the analysis could be performed for only seven provinces and five sectors, foreign direct investment is primarily found in the manufacturing sector, and least significant in the business and services industries. Alberta has received a relatively large share of foreign investment in resources, although not as high as the GDP figures in this sector would anticipate. Ontario has attracted a very large part of foreign investment in manufacturing (85 per cent of Canada), not only in absolute terms but also in light of its manufacturing contribution to GDP. Quebec has received somewhat more foreign direct investment in manufacturing than in other sectors, but much less than would be expected on the basis of GDP shares. Foreign investment in two different service sectors (business and other services) has relatively often been directed towards British Columbia (see Annex 3.5).

As a general finding of the specialisation-analysis (see Table 4 in Annex 2) foreign direct investment can be said to reinforce the pattern of regional specialisation in 64 per cent of the cases. Inward foreign direct investment in Canada contributes, therefore, more often to specialisation than to diversification. Beyond this general finding, the five sectors concerned reveal a diverging picture. Most importantly, foreign direct investment in manufacturing and other services (including finance and insurance) reinforces the existing structure of provincial economies more often than other industries. Put another way, provinces that derive their GDP for a relatively large share from manufacturing also tend to attract a corresponding share of foreign investment in this sector. The distribution of foreign investment in wholesale and retail and business services has not led to further specialisation. Although the limited amounts of investment in this sector should be kept in mind, business services have been successfully attracted by the Western provinces, thereby diversifying their regional economies.

## **Spain**

The question of whether foreign direct investment enhances patterns of specialisation is particularly relevant to Spain, a country that has witnessed a large influx of foreign investment in recent years. Of the limited investments in agriculture, a large share (45 per cent) has been directed to Catalonia. This is surprising, since this region employs only 5.8 per cent of Spain's agricultural labour force. Also, around one third of foreign direct investment in manufacturing has been targeted to Catalonia (35 per cent), and another third has gone to Madrid (32 per cent). These figures are especially high since Catalonia and Madrid employ together only one third of Spain's industrial labour force. Andalucia has attracted a fair share (11 per cent) of foreign investment in manufacturing and a similar share (12 per cent) in

construction. Foreign investment in services, the largest of all flows and contributing substantially to the pattern of concentration that was discerned in the previous section, is exceedingly concentrated in the national capital (53 per cent), and to a less extent in Catalonia (29 per cent) (see Annex 3.6).

As shown in Table 5 of Annex 2, the distribution of recent foreign direct investment flows follows the sectoral employment structure in 62 per cent of the cases, while diverging in 38 per cent. Thus, the recent inflow of foreign investment has contributed to specialisation, at least at the level of these five broad sectors. The importance of these sectors, however, diverges widely. Only between 1 and 2 per cent of all foreign investment has been in either agriculture or construction. Foreign investment in manufacturing (39 per cent of all foreign investment) follows the employment structure only to a certain extent. A more detailed analysis could discover the underlying characteristics of some specific sectors. The pattern in services, with over half of total foreign investment, enhances specialisation most notably.

\* \* \*

Even though the underlying databases as well as industrial and regional classifications are different from country to country, the patterns as described above are strikingly similar. In all countries analysed (the United States, France, Canada, and Spain), the data presented show that globalisation, when measured by incoming foreign investment, reinforces patterns of regional specialisation in 60 to 70 per cent of the cases. Analogous to the conclusions from Chapter 2, this implies that regions that happen to be geared towards a particular industry have a fair chance of specialising even further in that industry, due to foreign investments. Although such a prospect tends to be beneficial for prosperous core regions, this is not the case for lagging regions, for at least two reasons. First of all, these regions attract relatively small overall amounts of inward foreign direct investment. Secondly, they only help in a minority of cases with the much-needed diversification of such regional economies. The next chapter (Chapter 4) will draw some more conclusions from this analysis, laying out some of the possible implications of globalisation for regional policy.

## Chapter 4

### Implications of Globalisation for Regional Policy

Although it is often argued that globalisation has increased the mobility of capital and labour, this report has shown some evidence that such mobility is not likely to reduce differences between regions. To the contrary, geographical concentration and specialisation have been discerned as important trends at both local and regional levels. Even though these trends are not necessarily instigated by globalisation, they are certainly reinforced by it. And greater mobility of capital and labour could well contribute further to concentration and specialisation.

Throughout this report the significance of geographic clustering of activities at a local level has been emphasised. The impacts of these clusters, however, exceed regional boundaries and significantly affect the economic performance of nations as a whole. Due to increasing competitive pressures, nations are increasingly compelled to specialise in the production of goods and services for which they have built up competence. Much product-specific excellence is likely to be found in discrete regions, in clusters of production and innovation, where externalities of all sorts are critical. And even though the size of these clusters can be small, the impact on their national economies in terms of trade and investment flows can be considerable.

These clusters of production and innovation are particularly powerful since they tend to stand out in their ability to adapt to new circumstances, demonstrating a flexibility that is indispensable for survival in a rapidly changing international environment. Part of this flexibility arises from the internal structure of these localities; their qualified and adaptable labour force, an industrial structure that leans towards small and medium-sized enterprises, and an emphasis on outsourcing that allows rapid changes in product design. But another part of this flexibility is linked to the fact that these local and regional networks are increasingly intertwined with global networks of innovation and production. As a result of these global linkages, leading and advanced clusters can take advantage of crucial changes in the international business environment, much earlier than nationally-operating firms that lack access to such networks. Thus, from a national policy point of view, the existence of geographic clusters of innovation and production can be regarded as largely beneficial -- they contribute to a nation's innovation, production and export potential, in short to its prosperity, while flexibility usually keeps these clusters competitive in times of profound economic and structural change. A national R&D policy, as well as liberal trade and investment policies are some of the basic ingredients for fostering such clusters.

The implications of globalisation are much more complicated for regional

policy makers, limiting their room to manoeuvre. Of course, lagging regions can profit from the presence of the above-mentioned clusters of innovation and production, as illustrated by examples throughout this report. Yet, the localisation of such clusters within lagging regions tends to be somewhat rare and sporadic. Indeed, most innovative clusters of production are localised in core or intermediate areas. This pattern is likely to be reinforced by the spatial distribution of inward foreign direct investment that tends to concentrate in more prosperous or at least in more urban core areas in most of the analysed countries.

In addition to this concentration phenomenon, the tendency towards specialisation is likely to pose still more problems for lagging regions. In itself, specialisation is not problematic as long as the pertinent industries keep growing and as long as firms maintain or expand their market shares in it, thus contributing to the growth of the region. However, every type of monoculture has its drawbacks, e.g. market collapse or saturation. Global trends can render certain industrial processes or products obsolete very quickly. When a region's firms are unable to adapt and to move on to more promising market segments in a time of increasingly shorter product cycles, they are likely to get into severe problems and, with them, the region in which they are located. Lessons from the past show that excessive regional specialisation can lead to an industrial monoculture in which adjustment can be dangerously slow. The list of traditional examples of regions with structural adjustment problems can now be augmented with numerous illustrations from regions of Central and Eastern Europe.

Specialisation in lagging regions might thus be an undesirable tendency from a regional policy standpoint, especially because it increases vulnerability and jeopardises fragile regional economic bases. The underlying reason for the disappointing performance of lagging regions can often be found in an unbalanced production structure, featuring industries of the past rather than those of the future. Specialisation in those industries of the past should be avoided at all cost, and diversification into other industries has been a common policy response. Diversification attempts have been especially pronounced in regions that suffered from a monoculture, as in mining, steel, and textile regions.

Yet diversification efforts in lagging regions are unlikely to be supported by the globalisation process. An increasingly pervasive competitive environment can hardly be regarded beneficial for a lagging region that wishes to make inroads in new industries in which no previous experience and expertise has been gained. Ideally, foreign investment could help in this diversification and adjustment process, by bringing in new production methods, skills, capital and technology. However, the existing evidence suggests that, despite investment incentives, foreign investors are not very inclined to such behaviour, since they follow existing patterns of specialisation in the majority of cases. In general, regions are relatively successful at attracting foreign investment within their own specialty industry. The preceding analysis has shown that given a region's overrepresentation in a particular industry, the chance of having foreign overrepresentation in that industry is strong as well. However, when a region faces underrepresentation of the domestic sector in a particular industry, its probability of having foreign overrepresentation is substantially smaller (see Tables 3.2 and 3.3). An exception to this rule

comes from the automobile industry, a sector in which foreign investment has above all been channelled into other than prosperous core areas.

Which are the policy implications for regional and local authorities to be drawn from this analysis? First of all, regional restrictions on FDI, such as sector ownership limitations, outright restrictions on certain activities, or local content or employment requirements tend to limit the growth and influence the pattern of FDI in often undesirable directions. During the 1980s, lagging regions have stepped up their efforts to attract foreign investment, often through regional development and investment agencies. Many of these efforts have been unfocused, or centred around the acquisition of high-technology industries without necessarily taking into account the region's strengths and weaknesses. The material that has been presented in this report shows that the effectiveness of such an approach should be questioned. An important task for regional policy makers is to draw the consequences of regional strengths and weaknesses in a changing international environment. Basing future growth on existing technological capabilities is a proven concept. The inheritance of a technological and human infrastructure is essential for the further development of an industry and, even more importantly, endows the region with the flexibility that it needs for future adjustments. A derived policy conclusion is that any strategy aimed at developing regional economies in general and attracting foreign direct investment in particular has a greater chance of success when the existing regional production structure is taken into account.

As a corollary, local and regional governments are likely to influence investment behaviour more successfully when focusing on specific rather than on general industry needs. Agencies that are in charge of the attraction of foreign companies often use arguments that sound remarkably similar: a central location, a good transportation network, a diligent labour force, and proximity to an airport or golf course come up invariably, leaving foreign investors without much information to discriminate. A study of the growth of regional high-technology industries in Japan showed that costly investments to improve exogenous factors such as well-equipped universities and public R&D institutes are not highly beneficial when they are of a too general nature<sup>46</sup>.

The conclusions from a recent KPMG study on the behaviour of European investors in the United States is illustrative in this context:

"Proximity to key industries and market suppliers is the most important reason European companies gave for choosing to locate their US operations where they did. Contrary to accepted wisdom, state and local tax incentives were heavily outweighed by economic, environmental and infrastructural issues in attracting foreign investment. The research confirms that location of foreign direct investment by state is most closely associated with the location of markets and industries that are already well established and that match the capabilities of the foreign investor. The results perhaps indicate that state and local policies that capitalise on the strength of indigenous industries may be more effective in attracting foreign direct investment than general promotion programs that provide tax and other financial incentives to all foreign investors."<sup>47</sup>

Equally, there is some reason to question regional policies that aim exclusively at luring foreign investment, without providing a sufficient follow-up. More important than the initial localisation is the long-term performance of foreign firms. Local determinants of competitiveness (e.g. the local industrial fabric, and the competitive environment of the firm) might therefore be more effective than lists of location factors. Such determinants could well be the base for an effective regional policy because they keep a region's long-term pursuits in mind.

There is one more reason to question short-term foreign investment acquisition strategies: these practices usually emphasise subsidy transfers in the form of local tax concessions, subsidised land costs, etc. Globalisation leads to a situation of transparency in which firms can more fully compare the attractiveness of several localities. National or international government policies should ensure that these localities do not engage in disorderly competition among themselves to attract outside firms<sup>48</sup>.

A final remark considers the spurious dilemma between an exogenous and endogenous policy approach. During the 1970s and 1980s, following a period of extensive foreign investment, it became gradually clear that foreign presence alone was not enough to keep regional economies afloat. In addition, it became apparent that over the long run, the objectives of multinational firms like maximising global rates of profit or increasing world-wide market share, may lead to volatile shifts in local and regional performance, notably in the form of sudden divestiture.

As a reaction to this external dependence, much emphasis during the 1980s has been put on endogenous development. The potential of a region was rediscovered, new firm formation encouraged, and small business and 'incubator' centres were launched one after another. Although this laudable approach has been successful in mobilising regional potentials and creating employment, it has not been able to shelter regions from the international environment. Especially in technology-intensive industries, it has proven impossible to become a viable competitor on the basis of exclusively local endowments: access to technology and markets has to be increasingly sought on an international scale.

The 1990s are likely to see the emergence of a regional policy that combines the two previous approaches. In selecting a new strategy for regional policy in the age of globalisation, neither endogenous development nor dependence on foreign investment are an adequate policy posture. Rather, a combination of both approaches, linking global to local interests, has the best chance of success. The blurring of global and local interests is reciprocal. Even when using their own resource potential to its full, local industries still face the task of acquiring some of the necessary ingredients for success from the international scene. Similarly, the full benefits for the presence of foreign production firms depends on the extent to which they can be integrated into their new environment. Such relationships are not only beneficial for local suppliers that benefit from technology transfer, it is also a prerequisite for new flexible production systems, like that of 'toyotism'. In this way, foreign firms will be anchored to the regional economy, merging local and global interests, and making sudden divestiture much less likely than before.

A successful integration of geographically-restricted and global networks of production and innovation is likely to be the key to the achievement of local and regional competitiveness in the 1990s. Regions that will succeed in forging these links are likely to witness rapid economic development in the years to come. Yet areas that fail to do so will above all face the drawbacks of globalisation, as reflected by a poor economic performance that might justify a call upon a limited set of effective and innovative regional policy instruments.

## Annex 1

### Measuring Concentration and Deconcentration

For seven Member countries, an analysis has been carried out with the aim to measure whether the inflow of foreign direct investment reinforces the trend towards concentration of activities in more prosperous regions. This annex presents the data on which the analyses have been based as well as the results of the regression analyses. For main conclusions, see Chapter 3.2.

#### United States

For detailed data on foreign direct investment, the US Department of Commerce/Bureau of Economic Analysis 1987 Benchmark Survey on Foreign Direct Investment in the United States (Washington D.C., August 1990) has been consulted. This publication gives information on the employment of US affiliates by state and by industry. A US affiliate is a business enterprise that operates in the US but that is owned or controlled, either directly or indirectly, for at least 10 per cent by a foreign owner. One of the advantages of this source is the detailed availability of data on foreign direct investment in a number of service industries, such as financial services (excluding banking), insurance, and real estate. Data on gross state product per employee (1988) have been taken from the US Department of Commerce's Survey of Current Business. Gross state product is the market value of the goods and services produced by labour and property located in the state. It is the State counterpart of the Nation's gross domestic product (GDP). The number of employees has been calculated on the basis of the US Department of Labor data on the civilian labour force and the number of unemployed (as of March 1988), as presented in Employment and Earnings (May 1989).

A regression analysis shows that there is a weak positive, and statistically significant, correlation between penetration ratio and personal income per employee for the 51 US states (coefficient of determination = 0.09, significant at the 0.05 level).

#### Germany

Data on German inward foreign direct investment flows come from the Deutsche Bundesbank. The presented values concern foreign assets within Germany, and are expressed in millions of Deutschemarks. The presented values are the balance between new investments and divestment, thus explaining the negative values that arise in several regions in a number of years.

Hamburg and Bremen are the Länder with the highest average income levels, but the main reason for those levels is their restricted territories,

confined to urban agglomerations that are naturally more prosperous than the surrounding rural areas. When Hamburg and Bremen are taken into consideration, only a very loose relationship between the accumulated net inflow of foreign direct investment and the prosperity of regions can be detected (coefficient of determination for 11 Länder = 0.11). However, when these two cities are excluded, a strong positive and statistically significant relationship between income level for Germany's Länder and inflow of foreign investment can be discerned (coefficient of determination for 9 Länder = 0.68, significant at 0.01 level).

## **France**

Detailed data on the stock of foreign direct investment are available from the annual study on l'Implantation étrangère dans l'Industrie, the latest issue reporting on the situation as of 1 January 1989. This source has several advantages, namely a breakdown by industry and region at the same time, and the availability of data on the foreign penetration ratio. A disadvantage of this source is the fact that data are exclusively available for the manufacturing sector. Firms are considered foreign when at least 20 per cent of their capital consists of foreign participations. Only firms that have more than 20 employees are taken into account. In the analysis, 22 French regions are distinguished, excluding overseas departments and territories.

A regression analysis shows that there is a positive and statistically significant correlation between the penetration ratio and GDP per employee figures for the 22 French regions (coefficient of determination = 0.33, significant at 0.01 level). One can assume that this pattern would be even more pronounced if foreign investment in services were taken into account, due to the gravitational pull of the French capital for this type of activities.

## **United Kingdom**

Data on the activities of foreign-owned enterprises in the U.K. have been obtained from the Department of Trade and Industry. Data on the spatial distribution of inward investment are only available for manufacturing, which accounts for one third of the stock of inward investment. The accuracy of these data is dependent on the response rate of the firms concerned and figures are thought to be a reasonable guide to what is happening, while not being an exact record. These data are equally presented in Business Monitor, a publication of the Government Statistical Service (Report on the Census of Production 1989).

A regression analysis for the 11 U.K. regions points to a slightly positive, although statistically non significant, relationship between income level (GDP per employee) and foreign penetration ratio (coefficient of determination = 0.19).

## **Canada**

Data on foreign direct investment have been obtained from Investment Canada, which does not provide the information in deflated terms. For that

reason, the foreign direct investment numbers have been subsequently deflated to 1986 dollars using the national implicit price deflator for gross domestic product.

A regression analysis for the 7 Canadian provinces fails to establish a statistically significant relationship between GDP per capita and foreign investment ratio (coefficient of determination = 0.07).

### **Spain**

Data on inward foreign investment have been obtained through the Ministerio de Economía y Hacienda. These data refer to an accumulation of the import of capital, in millions of pesetas, in the years 1987 to October 1991, and 1989 to October 1991 for data concerning the regional breakdown. The sectorial breakdown is the one according to the Clasificación Nacional de Actividades Económicas (CNAE). Some figures on foreign investment cannot be distributed to a single region, in which cases they have been classified under 'Other' (Varias).

A regression analysis of the 17 Spanish regions shows a moderate, but statistically non significant, relationship between a region's income and its foreign investment share (coefficient of determination = 0.21).

### **The Netherlands**

Data on foreign investment by region come from the Dutch Central Bank. They have been analysed, but cannot be presented due to confidentiality problems.

The province of Groningen has been excluded in this analysis, since income figures are severely distorted by the allocation of the benefits of natural gas exploitation to this province. There is a strong and statistically significant relationship between the weight of foreign investment and GNP per capita in the 11 remaining provinces (coefficient of determination = 0.67, significant at 0.01 level). However, when using the indicator GDP per employee (indexed and in ECUs) as used in EC publications<sup>49</sup> and elsewhere in this report as well, this relationship is no longer present (coefficient of determination = 0.0). At first sight, the GNP figures appear to be more realistic, but only careful scrutiny could reveal the underlying forces behind this discrepancy.

## Annex 2

### Measuring Specialisation of Regions

This annex presents the analysis which aims to measure whether the inflow of foreign direct investment reinforces the specialisation of regions. For the main conclusions of this analysis, see Chapter 3.3.

#### The methodology explained

The following analyses are based on the use of location quotients, a widely-used technique in the field of geography. This quotient computes the weight of an industry in a regional economy as compared to the industry in the national economy. Location quotients are based on the difference between the real and the expected value. The expected value is based on the estimated share of the larger reference sector and area (the national economy), assuming constant proportions. A theoretical value of 100 implies that the real and the expected value are equal; the regional pattern conforms to the national situation. A value under 100 means underrepresentation of the sector concerned, while a value above 100 represents regional overrepresentation and thus specialisation. For the computation of location quotients, use is often made of employment data (as in the case of the US and France) or GDP data (as for Canada and Spain). For tables with location quotients, see Annexes 3.1b, 3.3b, 3.5 and 3.6b.

For Spain and Canada, location quotients have been calculated and paired for the foreign segments and for the total of each industry. For the United States and for France, location quotients have been calculated for both the domestic and the foreign segments, and paired for every industry in every state. As an example of this technique, Table 1 (the top left part of Annex 3.1b) illustrates location quotients for two industries in a number of US states. The table shows that employment in the domestic segment of the food and kindred products industry is lower than one would expect on the basis of national data. But for a number of states, employment in the foreign sector is much higher than expected. Employment in the chemicals industry is low in both domestic and foreign segments for all states, except New Jersey which is clearly specialised in this industry, notably in pharmaceuticals.

How can these pairs of location quotients be analysed in a more systematic way? Regressing location quotients is a method. However, this method brings about a number of problems. Especially, very high location quotients, indicating a high degree of specialisation, affect the results excessively. Yet, elimination of these 'outliers' would distort the results even more since exactly such outliers are of great interest. The results of the regression analyses are therefore not reported here.

Table 1

**An example of the use of location quotients, based on employment in  
foreign and domestic firms in US states (1987/1988)**

State	Food & kindred prod.		Chemicals		All industries	
	foreign	domestic	foreign	domestic	foreign	domestic
Connecticut	170.2	19.7	65.7	51.2	100.0	100.0
Maine	120.5	94.6	11.8	25.5	100.0	100.0
Massachusetts	53.7	55.6	61.8	43.4	100.0	100.0
New Hampshire	107.4	26.6	19.3	21.5	100.0	100.0
Rhode Island	43.0	44.5	57.9	57.2	100.0	100.0
Vermont	37.6	95.3	-	35.8	100.0	100.0
New Jersey	105.4	62.0	215.5	233.7	100.0	100.0
United States	100.0	100.0	100.0	100.0	100.0	100.0

An alternative method classifies the above results according to four possible situations. Firstly (A), there can be overrepresentation of both the domestic and foreign segments in relation to the nation-wide size of the industry and the weight of the region. Secondly (B), there can be both domestic and foreign underrepresentation. Under both circumstances (A+B), domestic and foreign representation match each other, thus contributing to a pattern of regional specialisation. This is clearly the case in the above example of the chemicals industry, where foreign direct investment reinforces the domestic pattern of specialisation in all valid (excluding missing) cases.

Alternatively (C), overrepresentation of the domestic segment can occur with foreign underrepresentation, while, fourthly (D), domestic underrepresentation can also coincide with overrepresentation of the foreign segment. In these last two situations (C+D), domestic and foreign segments do not match, and the inflow of foreign direct investment has contributed to diversification of the regional economy. Using the above example, one can notice that this is more or less the case for the food and kindred products industry, where in the majority of cases foreign investment has not followed the weak representation of the domestic industry (situation D). A similar analysis has been carried out for all US states, and for France, Canada, and Spain.

#### **Limitations of the analysis**

At least four limitations of this analysis should be taken into account. Firstly, the phenomenon of industrial concentration, as described in Chapter 2 of the report, is most prevalent on a low level of analysis, relating to localities and very specific economic activities. The available data relate to a more aggregated level of analysis, identifying regions and broad to very broad classes of economic activities. Secondly, external economies as

described in the report are most accessible to foreign investors in technology-intensive production and R & D. These activities, however, represent only a small portion of all inward investment and are likely to be snowed under by other forms of investment. Unfortunately, the data on inward foreign direct investment do not allow a separation of these different activities. Thirdly, much of the analysis of foreign direct investment is based on employment figures. These only correspond to investment figures when productivity levels are assumed constant across all regions of one country. Finally, foreign direct investment is only one indicator of globalisation, although an important and concrete one.

### **United States**

The data on foreign direct investment (for details concerning these data, see Annex 1) have been matched with the employment structure by using the Bureau of the Census' County Business Patterns. This is an annual series that includes data on State and County level, tabulated by industry (two-digit SIC codes). Figures have been taken for March 1988, which is very close to the 1987 Benchmark year. The data on foreign direct investment could be matched with the two-digit SIC codes in all but two cases. For the petroleum sector, foreign direct investment includes employment in wholesale and retail, while this is not the case in the domestic sector. For the automotive industry (SIC 371), employment by state had to be estimated by the employment in the transportation equipment sector (SIC 37). This estimation is less reliable in California and Washington, because of a large presence of aircraft industries in those states.

Table 2 shows the results of the specialisation analysis for the United States, according to the above-described methodology. The classification of pairs of location quotients has been carried out on the basis of the data presented in Annex 3.1b. For conclusions to be drawn from the data, see the pertinent section in Chapter 3.3.

### **France**

Concerning the analysis in Chapter 3.3, the data source distinguishes between 35 manufacturing sectors, many of which receive hardly any foreign direct investment. Therefore, only industries have been selected in which foreign direct investment plays a significant role. Industries where location depends largely on natural resource endowments have been omitted as well. Eleven remaining industries, as listed in Annex 3.3, have been analysed. For more details concerning the data used, see Annex 1.

Table 3 shows the results of the specialisation analysis for France. The classification of pairs of location quotients has been carried out on the basis of the data presented in Annex 3.3b. For conclusions to be drawn from the data, see the pertinent section in Chapter 3.3.

Table 2

Comparison of patterns of specialisation and diversification  
in foreign and domestic segments per industry for US States,  
based on location quotients, in per cents, 1987/88.

Percentage of states where situation applies

Industry	Number of regions	(A)	(B)	B)	(C)	(D)	(C+D)	Total
Petroleum	33	36.4	45.5	81.8	3.0	15.2	18.2	100
Food & kindred prod.	51	25.5	27.5	52.9	25.5	21.6	47.1	100
Chemicals & allied pr.	42	21.4	50.0	71.4	16.7	11.9	28.6	100
Prim. & fabr. metals	43	25.6	46.5	72.1	11.6	16.3	27.9	100
Machinery	48	27.1	45.8	72.9	12.5	14.6	27.1	100
Automotive	21	14.3	38.1	52.4	19.0	28.6	47.6	100
Other manufacturing	48	35.4	39.6	75.0	16.7	8.3	25.0	100
Wholesale trade	49	22.4	42.9	65.3	22.4	12.2	34.7	100
Finance no banking	44	9.1	63.6	72.7	15.9	11.4	27.3	100
Insurance	48	18.8	43.8	62.5	12.5	25.0	37.5	100
Real estate	35	28.6	51.4	80.0	2.9	17.1	20.0	100
Services	49	22.4	38.8	61.2	26.5	12.2	38.8	100
Total	511	24.1	44.2	68.3	16.0	15.7	31.7	100

(A): Domestic and foreign segment overrepresented

(B): Domestic and foreign segment underrepresented

(A+B): Domestic and foreign segment match, specialisation

(C): Domestic segment overrepresented, foreign segment underrepresented

(D): Domestic segment underrepresented, foreign segment overrepresented

(C+D): Domestic and foreign segment do not match, diversification

Source: US Department of Commerce, Bureau of Economic Analysis and Bureau of the Census; US Department of Labor, Bureau of Labor Statistics.

Table 3

Comparison of patterns of specialisation and diversification in foreign and domestic segments for selected industries in French regions, based on location quotients, in per cents of valid cases, per 1-1-1989.

Percentage of regions where situation applies

Industry	Number of regions	(A)	(B)	(A+B)	(C)	(D)	(C+D)	Total
Fine chemicals	18	16.7	50.0	66.7	22.2	11.1	33.3	100
Pharmaceuticals	15	20.0	60.0	80.0	13.3	6.7	20.0	100
Tool equipment	17	23.5	41.2	64.7	23.5	11.8	35.3	100
Industrial mach.	20	10.0	45.0	55.0	30.0	15.0	45.0	100
Lifting & handl. eq.	18	33.3	27.8	61.1	27.8	11.1	38.9	100
Office equipment	17	5.9	76.5	82.4	5.9	11.8	17.6	100
Electric equipment	21	9.5	33.3	42.9	28.6	28.6	57.1	100
Electronic equipment	21	23.8	42.9	66.7	4.7	28.6	33.3	100
Automobiles	18	11.1	27.8	38.9	22.2	38.9	61.1	100
Instruments	17	23.5	41.2	64.7	17.6	17.6	35.3	100
Rubber industry	14	14.3	35.7	50.0	14.3	35.7	50.0	100
Total	196	17.3	43.4	60.7	19.4	19.9	39.3	100

(A): Domestic and foreign segment overrepresented

(B): Domestic and foreign segment underrepresented

(A+B): Domestic and foreign segment match, further specialisation

(C): Domestic segment overrepresented, foreign segment underrepresented

(D): Domestic segment underrepresented, foreign segment overrepresented

(C+D): Domestic and foreign segment do not match, further diversification

Source: Ministère de l'Industrie et de l'Aménagement du Territoire (1991): L'Implantation étrangère dans l'Industrie au 1er janvier 1989. Paris: Service des Statistiques Industrielles (SESSI).

## Canada

Using the same framework as for the preceding country analyses, slightly different situations have been categorised. Table 4 presents the percentage of provinces where foreign direct investment enhances or weakens the pattern of regional specialisation, as expressed by GDP per sector and region. The classification of pairs of location quotients has been carried out on the basis of Annex 3.5. For the conclusions that can be drawn from this analysis, see the pertinent sections in Chapter 3.3.

Table 4

**Comparison of foreign direct investment and GDP by sector  
for the Canadian provinces, based on location quotients, in  
per cents of valid cases (1990).**

**Percentage of provinces where situation applies**

Industry	Number of regions	(A)	(B)	(A+B)	(C)	(D)	(C+D)	Total
Resources	3	33.3	33.3	66.7	0.0	33.3	33.3	100
Manufacturing	6	33.3	50.0	83.3	0.0	16.7	16.7	100
Wholesale & retail	5	20.0	20.0	40.0	20.0	40.0	60.0	100
Business & services	5	40.0	0.0	40.0	20.0	40.0	60.0	100
Other services	3	33.3	66.7	100.0	0.0	0.0	0.0	100
Total	22	31.8	31.8	63.6	9.1	27.3	36.4	100

(A): GDP and FDI in sector both overrepresented

(B): GDP and FDI in sector both underrepresented

(A+B): GDP and FDI in sector match, leading to more specialisation

(C): GDP in sector overrepresented, FDI in sector underrepresented

(D): GDP in sector underrepresentation, FDI in sector overrepresented

(C+D): GDP and FDI in sector do not match, leading to diversification

Source: Investment Canada / Conference Board of Canada.

## Spain

This analysis focuses on the geographic distribution of the recent inward flow of Spanish investment (from 1989 to October 1991) in relation to the overall pattern of employment. The analysis is limited since for each of the 17 regions only 5 broad economic sectors could be taken into account. The available distribution of employment by regions shows the total annual employment of the regions according to the activities agriculture (sector 0 of the CNAE classification), industry (sectors 1+2+3+4), construction (sector 5), and services (sector 6+7+8+9). For more details concerning the data used, see Annex 1. The classification of pairs of location quotients has been carried out on the basis of Annex 3.6b. For the conclusions that can be drawn from this analysis, see the pertinent sections in Chapter 3.3.

Table 5

**Comparison of foreign investment and total employment  
by sector for the Spanish regions, based on location quotients,  
in per cents of valid cases, 1990.**

**Percentage of regions where situation applies**

Industry	Number of regions	(A)	(B)	(A+B)	(C)	(D)	(C+D)	Total
Agriculture	17	52.9	11.8	64.7	5.9	29.4	35.3	100
Manufacturing	17	35.3	23.5	58.8	5.9	35.3	41.2	100
Construction	15	13.3	33.3	46.7	33.3	20.0	53.3	100
Services	17	11.8	64.7	76.5	11.8	11.8	23.5	100
Total	66	28.8	33.3	62.1	13.6	24.2	37.9	100

(A): Total employment and FDI in sector both overrepresented

(B): Total employment and FDI in sector both underrepresented

(A+B): Total employment and FDI in sector match, specialisation

(C): Total employment in sector overrepresented, FDI underrepresented

(D): Total employment in sector underrepresented, FDI overrepresented

(C+D): Total employment and FDI in sector do not match, diversification

Source: Ministerio de Economía y Hacienda

Annex 3.1a: Employment in foreign and domestic firms in US states by selected industries, in per cents (1987/1988). 1) 2)

Annex 3.1a: Employment in foreign and domestic firms in US states by selected industries, in per cents (1987/1988). (continued)

Annex 3.1b: Employment in foreign and domestic firms in US states by selected industries, in location quotients (1987/1988). 1) 2)

Annex 3.2: Accumulated inward foreign direct investment flows (1981 -- mid 1991) in German Länder, and GDP per employee.

Annex 3.3a: Employment in foreign and domestic manufacturing firms in French regions for selected industries, in per cents (1989). \*)

Annex 3.3b: Employment in foreign and domestic manufacturing firms in French regions for selected industries, in location quotients (1989). \*)

Annex 3.4: Employment in foreign and domestic manufacturing firms in U.K. regions (1989).

Annex 3.5: Foreign direct investment stock and GDP in Canadian provinces by sector for 1990, in per cents and in location quotients.

Annex 3.6a: Accumulated foreign investment (1989 to Oct. 1991) and total employment in Spanish regions by sector, in per cents.

Annex 3.6b: Accumulated foreign investment (1989 to Oct. 1991) and total employment in Spanish regions by sector, in location quotients.

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42. It should be recalled that data bases, data collection methods, and coverage vary from country to country, making direct comparisons somewhat perilous.
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48. A recent ruling by the Commission of the European Communities is exemplary for such a corrective policy. The Commission determined that a local council in Derbyshire set too low a price on land it sold to Toyota, which aimed to build cars there. At last, the local council increased the price, and Toyota agreed to pay it (see ~~Wall Street Journal~~, February 17, 1992).
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