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## ► To cite this version:

Denise Pumain, Céline Rozenblat. Multinational Firms and the restructuring of the European Urban System. 38th North American meeting of the Regional Science Association, Nov 1991, New Orleans, United States. halshs-01565227

**HAL Id: halshs-01565227**

**<https://shs.hal.science/halshs-01565227>**

Submitted on 19 Jul 2017

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## MULTINATIONAL FIRMS AND THE RESTRUCTURING OF THE EUROPEAN URBAN SYSTEM

Paper presented at the 38th North American Meeting of the Regional Science Association, New Orleans, November 7-10, 1991

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### 1. Introduction

With the growing economic integration in the framework of the European Economic Community and because of the multiplication of connections between all European countries, the urban systems are restructuring. For a long time they have been evolving under constraints which were mainly acting inside the national boundaries, but nowadays cities are becoming more and more interdependent. A more integrated and widely defined European urban system is emerging. Questions about its future configuration are many : which cities have the best situations in the interurban competition for attracting resources, activities, and population ? Will the largest cities take benefit from this restructuring at the expense of small and medium-sized ones ? Which geographical situations and policy options will be more in favor of urban development ?

Several processes are to be considered when trying to make predictions about the future of the European urban system, in relation with the expanding internationalization of exchanges. One is the development of more efficient communication systems, including high speed trains, international airports and specialized networks for telecommunications. Many studies have already shown that such processes have contributed at first to reinforce the hierarchy in the European urban system, since the largest cities with the widest markets benefited from the initial advantage of location for this type of infrastructure (Auphan, 1991; Biéber, 1990 ; Cauvin et al., 1989; Cattán, 1990).

Another process of importance for connecting and restructuring the European urban system is the growing internationalization of firms and the organization of economic networks all over Europe. Following the classical theory of hierarchical

innovation diffusion for such a type of entrepreneurial innovations, one would also expect a reinforcement of existing urban hierarchies through that process. However, detailed studies of the evolution of the spatial organizations of firms have shown that the hierarchical pattern of diffusion was not always the most probable and that cities could also be connected according to other types of networks (Pred, 1977).

There are several possible ways for testing such hypothesis. Surveys have been conducted among firms in order to know their locational preferences (IFO, 1990, EEC, 1990). Other surveys have investigated the urban factors which are correlated with the degree of internationalization of urban activities by sending questionnaires to the cities (MOCI, 1989, Bonnafous, 1991, Rozenblat, 1991). A third method will be presented here, which consists in revealing the location factors through a study of the actual presence of economic branches of foreign origin into cities.

The existence of subsidiary companies of foreign firms in a city, or the fact for a city to host firms which have subsidiary companies in foreign countries are considered as two different measures of the level of integration of a city to supra-national networks, via the internationalization of the economic activities. Those various integration levels are then correlated to indicators of urban size and situations.

In order to test the possible effects of the multiplication of foreign firms on the restructuring of the urban system, we made a survey on a sample of the 300 largest European firms, providing information on about 3 000 of their implantations located abroad throughout Europe. The collection of comparable crossnational informations at a relevant urban level is still a difficult exercise for whole Europe. As a consequence, only the most obvious location factors are analysed here, and the effect of possible others is suggested from more partial studies.

## **2. Problems of European-wide data collection and comparison**

Despite of the existence of a specialized institution, EUROSTAT, which provides satisfying sets of data at various regional levels for all EEC countries, there is no official source of comparable data at the urban level. The definition of what can be considered as an urban entity vary from one country to another. For a few countries the concept is restricted to the "local unit" or "municipality", not including the possible suburban extensions over the neighbouring administrative units. Several countries have defined urban agglomerations (or "urban areas" according to morphological criteria,

only a few use concepts analogous to SMSA (Pumain, Saint Julien, Cattan, Rozenblat, 1990).

The pioneer work of P. Hall (Haal, Hay, 1980) tried to solve this problem in designing Functional Urban Regions for many European countries, upon criteria which were adapted of the ones being used for US SMSA. However, the absence of statistics about commuting in several countries renders very difficult an homogeneous application of such criteria. That is why the data base which is used here considers cities in the geographical framework of "urban agglomerations". This data base called "GEOPOLIS" was prepared by F. Moriconi (1991) using all available statistical, cartographic and air-photograph material, in order to provide the most comparable delimitations. They are regularly updated for each decade between 1950 and 1990.

The concept of urban agglomeration would not be broad enough to study the more recent forms of urban extensions in low density areas. However, due to the urbanization pattern of most European cities, it does capture the essential part of their population and economic weights, which is what is needed for our study, and it does it in the most possible rigorous way for a European-wide comparison. Data about population and economic activity have been collected and aggregated in this spatial framework by N. Cattan and C. Rozenblat (1991) for the 169 urban agglomerations with 200 000 inhabitants and more, in the 12 EEC countries plus Austria and Switzerland (figure 1).

In order to locate foreign firms in those large agglomerations, a questionnaire was sent to the 300 largest European enterprises quoted by Duns and Bradstreet (1990) asking for a list of their subsidiary companies in foreign countries, indicating their location, size and activity. 94 firms answered, without any noticeable bias in size neither in repartition according to countries or to type of industry. They provided a sample of 2798 foreign branches having a European location.

It was impossible from this source to know the exact date when the firms were first installed in their actual location. It is then not the process of internationalization which can be studied, but only the state of diffusion that it has reached now throughout the European urban system.

### 3. The location of headquarters

The distribution of the headquarters of the 300 largest European firms in 1988 provides an image of the actual state of concentration of the economic decision power among European cities (figure 2). Despite the rather small size of the sample, the results are similar when other sources are used, like Eurobusiness, or the 500 largest firms published by the magazine Fortune. They are also comparable to the ones of a previous study mapping the 700 largest European firms (Reynaud, 1977).

The spatial distribution of the headquarters is highly concentrated, with very large quantities of firms in London (83 headquarters, 28 % of the European total) and Paris (67, 22 %). Those two capitals regroup together half of the European headquarters, and the proportion is roughly the same when the importance of the firms is measured by their turnover.

Other clusters of headquarters of less importance are located mainly in several cities of North-West Europe (Brussels, Amsterdam, Essen, Düsseldorf, Frankfurt, Hamburg, München) and very small numbers only are to be found in cities of Southern Europe, with the exceptions of Madrid, Roma, Milano and Torino.

On the whole European territory, there is a high concentration of the headquarters in the largest cities. Only a few are located in cities with less than 200 000 inhabitants : Wolfsburg, Salzgitter, Ingolstadt in Germany, Caen in France, Milton Keynes in England, Glarus in Switzerland, Ravenna in Italy, Genk in Belgium and Groningen in the Netherlands. Glarus excepted, all those cities are larger than 100 000 inhabitants.

### 4. Location of foreign subsidiaries

The number of foreign subsidiaries reveals the importance of foreign investment in a city. It also refers to a part of the economy of a city which is necessarily connected to external networks. The spatial repartition of foreign subsidiaries in the European countries reflects the actual state of the diffusion of the process of internationalization of the firms.

More than 3/4 of foreign firms are located in agglomerations larger than 200,000 inhabitants, 17 % in smaller towns and 5 % only in countryside (table 1 and

figure 3). Their location is mainly limited to the top of the urban hierarchy, and this fact possibly results from a filtering-down process of the internationalization of the urban economies. The distribution of the branches is however not so strongly concentrated in a few leading cities as the distribution of headquarters is. This is a first and well-known indication about the locational preferences of the economic firms, which maintain their main decision centers close to the places where the political and financial powers are located too.

The highest concentration of foreign subsidiaries is in Paris (193) followed by Milano (116), Brussels (115), Barcelona (114) and London (110). For those countries obviously, one or two main cities have a role of bridgehead for foreign investments. On the contrary, in the case of Germany, which is the country receiving the largest number of foreign firms, the implantations are shared by six main cities: Essen, Düsseldorf, Köln-Bonn, Frankfurt, München and Hamburg, with about 40 foreign firms each. Those cities are at the same level than Manchester, Lyon or Roma, which have the second rank in their respective countries. Metropolitan locations are more frequent in Greece and Spain, and in Luxemburg of course. The largest diffusion in countryside is to be found in the Netherlands and in Switzerland, France and Denmark.

The propensity to diffuse in countryside is largely dependent upon the oldness of the habit of exporting activities : old practitioners like Belgian, Swiss and Dutch firms chose countryside implantations much more often than Spanish ones which started later their internationalization.

A few economic activities tend to concentrate more in largest cities ; civil engeneering, financial services and also at a lower level transportation and telecommunications, services to the resident population and energy. On the contrary, industries for consumable products choose more often the small towns and of course they are more likely to be found on the countryside.

The location of foreign firms reveals a selectivity of economic investment according to its origin: French investments choose more often Madrid, Geneva, Saarbrücken and Stuttgart, British investment are more directed towards Dublin, Köln-Bonn and Hamburg, whereas German funds prefer Antwerpen, Rotterdam and The Hague. Belgian firms invest more in Luxemburg, Essen and Hannover and Austria choose almost exclusively Zurich and München.

Those geographical preferences do not always correspond to very strict economic specialization. Financial activities tend to choose more often Amsterdam as a



location, whereas intermediate products industries are more likely to be found in large cities like Paris, Barcelona, Milano, Copenhagen, Essen, Dusseldorf, München and Saarbrücken. A slight specialization in food industry appears for Madrid, Lisboa, Roma, Lyon, Zurich, Vienna, Frankfurt, Köln-Bonn, Luxemburg, Rotterdam and Manchester. For those last two groups of cities the specializations are always very slight in a rather diversified profile of foreign activities.

A stronger specialization according to the size of cities appears if, instead of considering the sector of activities, one observes the functions of the firms inside the main firm (table 2). Headquarters and financial services are mainly found in large metropolises whereas production and multifunctional establishments are more decentralized and diffused outside the largest cities. The metropolization process due to the internationalization of firms is then highly selective, according to the desired proximity to the main decision centers. It follows the general rule of the "new spatial division of labour" as quoted by P. Aydalot.

## **5. Interdependences and domination**

The links created between cities by the control of foreign branches from a headquarter located in one of them can be enumerated in a squared matrix. Those "exchanges" of foreign branches are used to measure the intensity of flows of internationalization between cities on the one hand, and to define, after the more or less symmetrical character of those relations, links of "domination" between cities during this process on the other hand.

The ten largest relations concern five cities only. London controls 49 subsidiaries in Paris, Paris has 48 in Madrid, 37 in Brussels (which has 22 in Paris), 34 in Milano, and 32 in London, whereas London has only 24 in Milano, 23 in Brussels and 21 in Madrid (figure 4). In such a small system, London has more control on Paris than the reverse, but the control of Paris on the other cities is largest. Paris also receive more branches from those cities than London does. Another system can be seen around Wien, which has 19 subsidiaries in München and 15 in Zurich. Wien is also connected to the other subsystem since it controls 13 branches in Paris and 7 in London, and receives 13 from Paris and 16 from London. Zurich is also integrated, but München is rather less connected to the urban system defined by the main links.

So the geographical situation of cities seems as important as their size to explain the intensity of relationships through the exchange of subsidiaries. However, an

adjustment by a simple gravity model explain only 48% of the inequalities of the flows of foreign branch control.

The imbalances in the numbers of firms controlled in each other by each couple of cities can be measured by an index which divides the net number of "exported" firms (minus the number of "imported" ones) by the sum of all imported and exported (figure 4). After this index, there is no relationship of "dominance" between London, Paris and Brussels. But those three cities dominate strongly Madrid and Milano. On the whole, western german cities dominate the cities of the Benelux, whereas the southern german cities are controlled by Wien, with many connections depending also from Paris, London and Brussels.

Of course the interpretation of non-symmetrical relationships in terms of dominance and dependence has to be cautious. If it recognizes advantages to the city where headquarters are located and which has divided economic risks into many foreign investments, it does not mean necessarily that the "depending" cities which receive more from foreign firms than they invest are in a threatening situation. They may also gain advantages from a better integration to the European urban system.

The system of connections through the exchange of foreign subsidiaries is also rather complicated to interpret since all the links of dependence between cities are not direct. As examples, the spatial organigrams of three firms are shown on figure 5. They show that in some cases, a foreign branch may on its turn control other subsidiaries in cities, either in the same country or in others. On the whole, 8% of the total number of foreign subsidiaries are controlled in such an indirect way. It is then possible to identify "intermediate cities", where such controlled-controlling foreign firms are located.

Those intermediate cities are of three types: the first is of the type "bridgehead", most of them are large cities (like London, Paris, Milano, Wien, Barcelona, Stuttgart, Brussels and Amsterdam) through which firms invest in foreign countries. These cities do not diffuse in the same way the foreign investment on their national territory: for instance in Barcelona, all the indirectly controlled branches are located inside the city itself, whereas Madrid redistributes more in the rest of Spain. Half of the branches indirectly controlled by London remain in that city, whereas Milano, Paris, Wien and Amsterdam send them in a larger proportion towards other cities in their country. The second type of intermediate cities on the contrary "export" abroad branches for firms whose headquarters are located in their own country. Cities of Austria, United Kingdom and Germany are such relays for firms located in other cities. A third type of cities owns subsidiaries which are controlled from abroad but which in their turn control branches



outside: the best example of such "turntables" is without contest Amsterdam, possibly due to taxation advantages.

The conclusion of this rapid investigation could be that the links which connect European cities through the internationalization of their firms are already very complex and do not allow to derive a simple pattern of economic control within the urban system, but on the contrary exemplify a rather large complexity of interactions among European cities. If an hierarchy exists between cities, it is tied to the mass effect of the number of international links rather than to a large asymmetry of these links.

## **6 The location factors of foreign firms**

The preferences of firms in terms of location for their foreign implantations can be revealed by the characteristic of the cities that they choose more often. In order to identify such location factors, a preliminary study was made for French cities (MOCI, 1989, Rozenblat, 1991). Its results will be mentioned here, as among them, those for which data could also be collected at the European level, were confirmed by this larger investigation.

As we have seen, the main location factor of foreign firms in European cities is their size (figure 6). Several other urban properties, which are correlated to the size of cities, are also strongly linked with the number of foreign subsidiaries. For some of them, this relationship is mainly an effect of size, since the correlation disappears when one considers the number of firms per inhabitant. For instance the number of congresses hosted by cities, the number of institutions specialized in international relationships, or the number of research institutions having international links; the number of foreign firms is also correlated with other characteristics like the number of diplomas, and the prices of the land for building offices, which reveal the level of pressure on the extension of cities for economic activities.

When it is not the absolute number of firms which is considered, but when it is measured per number of inhabitants, a correlation with population size remains, not for the whole set of branches, but only for headquarters. There is then a strong locational preference for the largest cities for this type of implantation. Other correlations remain, which express other location factors than the pure city size: the accessibility is the most important, as measured for instance by the number of airlines with foreign destinations; this is confirmed by a positive correlation with the availability of high level accommodation in international hotels. Another important factor is the main orientation of the economic activity: tertiary cities are more attractive to foreign investment than the

industrial ones. The geographical situation is also of importance, since the number of foreign firms per inhabitant is higher in cities located not too far from a foreign boundary. Finally, there is a (probably circular) relationship between the attractiveness of cities for foreign firms and their own dynamism as measured by the growth rate of their population.

## 7 Conclusion

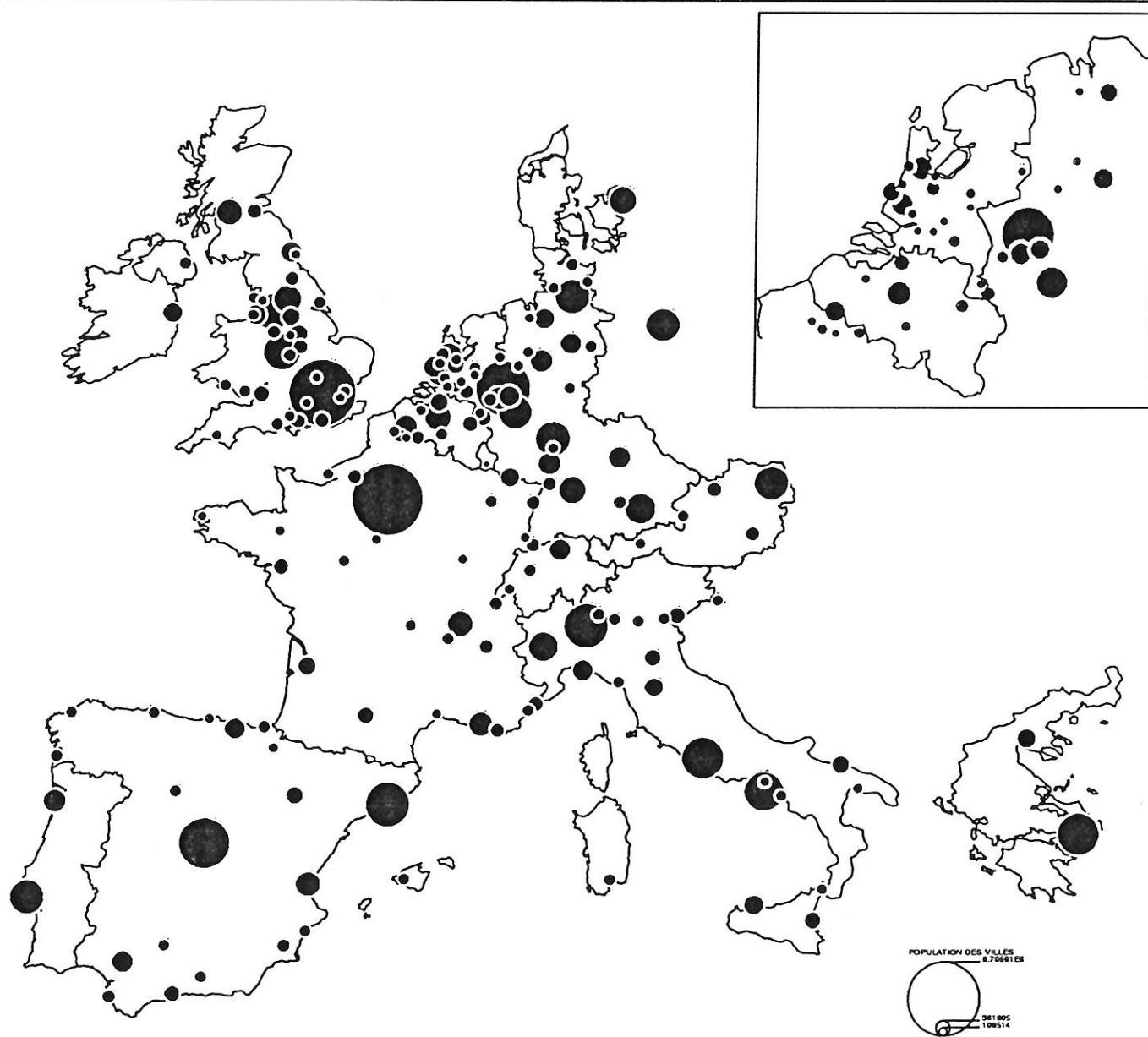
More research of comparable indices throughout Europe is of course needed before concluding about the factors leading the strategies of foreign firms when they choose a European city for a new implantation. However, the main trend is clear: for their internationalization, the firms tend to privilege the largest cities. This effect is strongest for the location of headquarters and for financial branches. It accompanies the process of metropolization in the urban system, which reinforces the top of the urban hierarchy through the internationalization of all kind of exchanges and communications.

Without any intervention, it is highly probable that the European urban system enters a period of concentration of population, skill and activities in its largest centres. The trend to "counterurbanization" was not so important in Europe as in the US, it was mainly a process of local deconcentration of the population in the most densely populated areas, without any strong revitalization of smaller towns, neither strong decline of the largest urban centers, excepted perhaps in the United Kingdom. The end of the 1980s and the first results of the 1990 censuses show on the contrary, together with a continuing local deconcentration of the densely populated areas, a new trend of concentration of population in the largest cities (Pumain, Faur, 1991). This will increase territorial imbalances, since almost 50% of the population already lives in the about 400 cities largest than 100 000 inhabitants, on less than 5% of the surface.

However, the role of multinational firms in the process of internationalization of the European urban system may not be limited to the metropolization process. The firms which have the longest story in the internationalization process locate themselves in smaller centers than the new ones. Some specialised activities, like research in the case of "technopoles", or tourism, already show slight preferences for small or medium-sized cities. Counterbalancing policies could trade upon those differential propensities to aggregating in the metropolises. They also could compensate the main advantage of the largest cities, which is the universality of their image outside of their country, by diffusing knowledge about the real comparative advantages of other cities. Especially, a better information should be given about the diversity of urban economic profiles, and about their social and physical environment, recognizing the indispensable variety of an

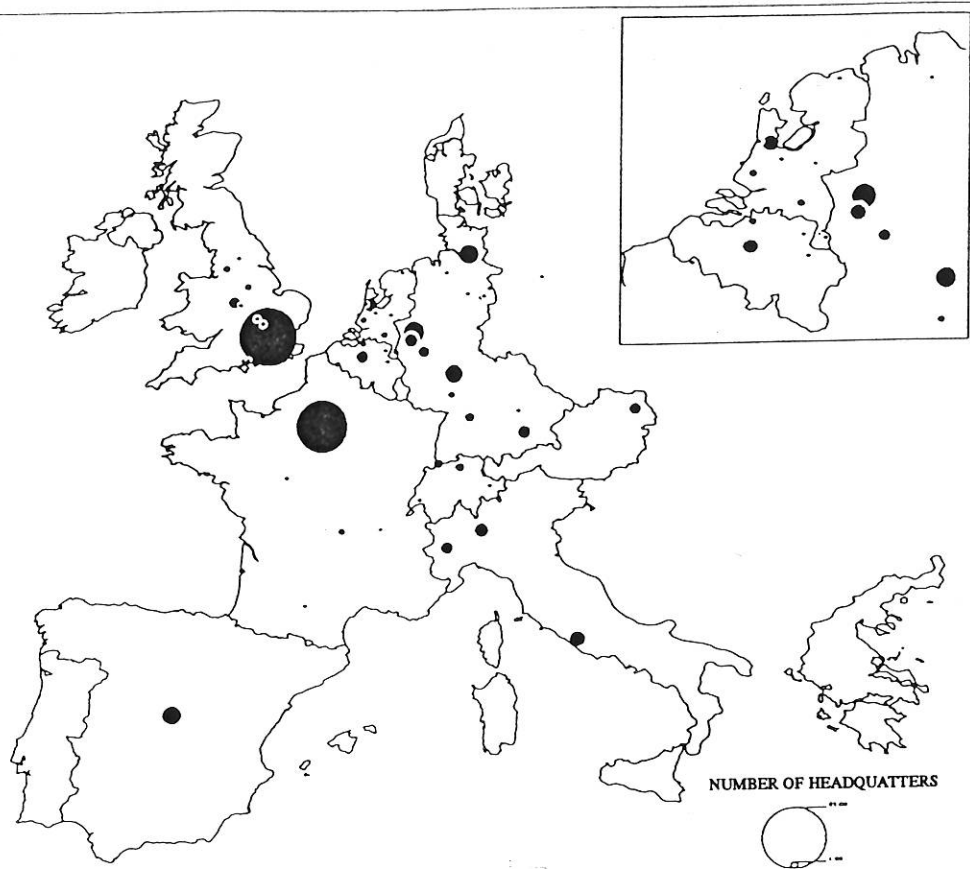
urban system in complex societies. Policies also may act by redistributing the infrastructures for communication and transportation, which are the second location factor by importance. Due to the costs of such infrastructures, this is however not the actual trend.

Fig.1:  
**THE EUROPEAN URBAN SYSTEM**  
(Cities with more than 200.000 inhabitants (1981))



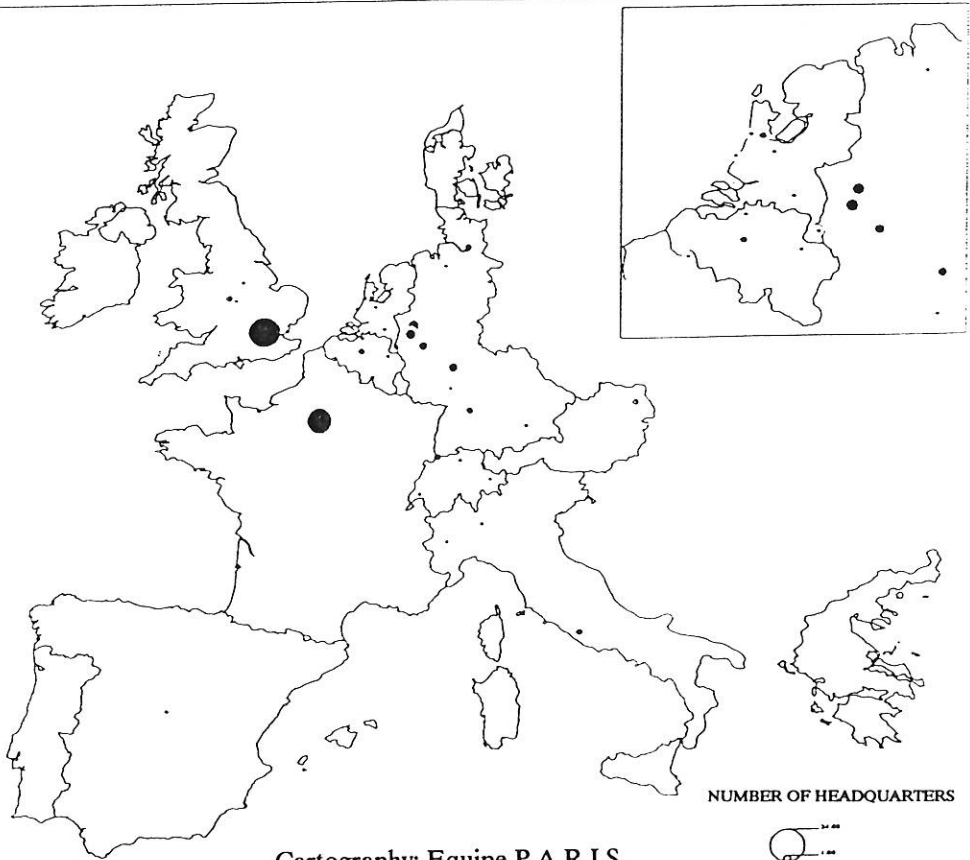
Cartography: Equipe P.A.R.I.S.  
Source: Equipe P.A.R.I.S. 1990

Fig.2: HEADQUARTERS OF THE FIRST 300 EUROPEAN FIRMS (1988)



Source: Duns & Bradstreet 1990

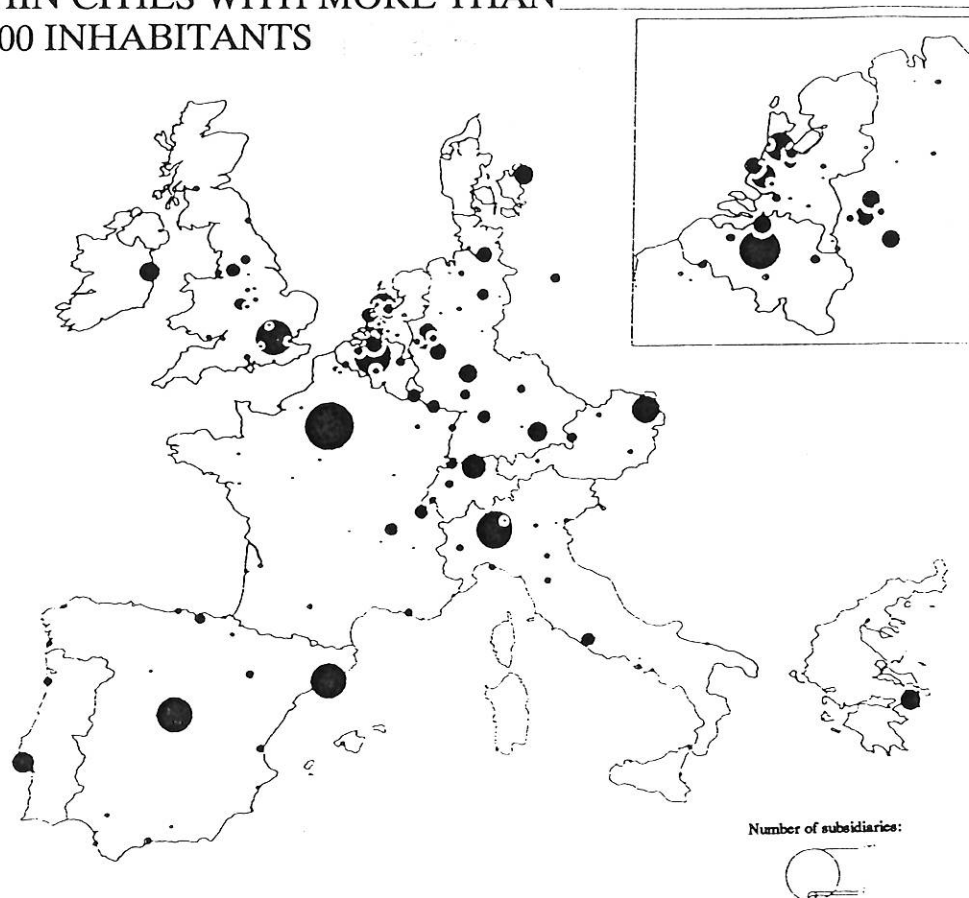
HEADQUARTERS OF THE 94 SURVEYED FIRMS



Cartography: Equipe P.A.R.I.S.  
Source: Equipe P.A.R.I.S. 1990

Fig.3: LOCATION OF FOREIGN SUBSIDIARIES

WITHIN CITIES WITH MORE THAN  
200.000 INHABITANTS



OUTSIDE CITIES WITH MORE THAN  
200.000 INHABITANTS

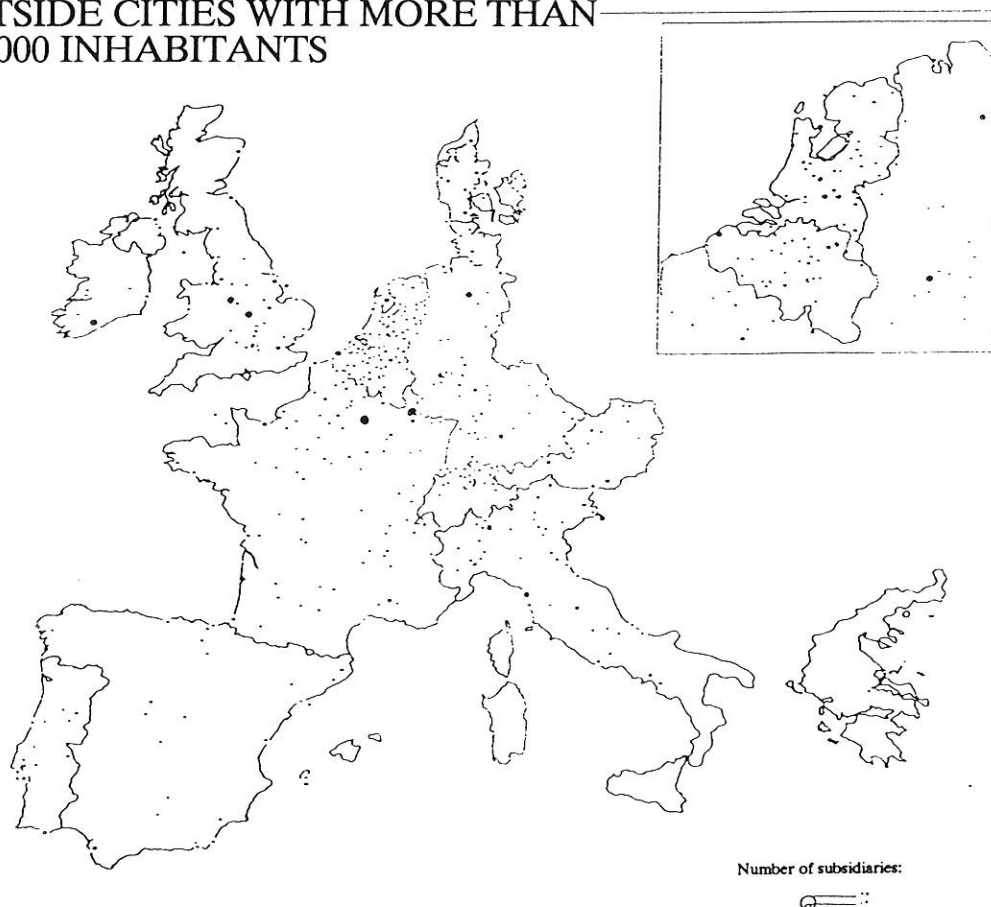
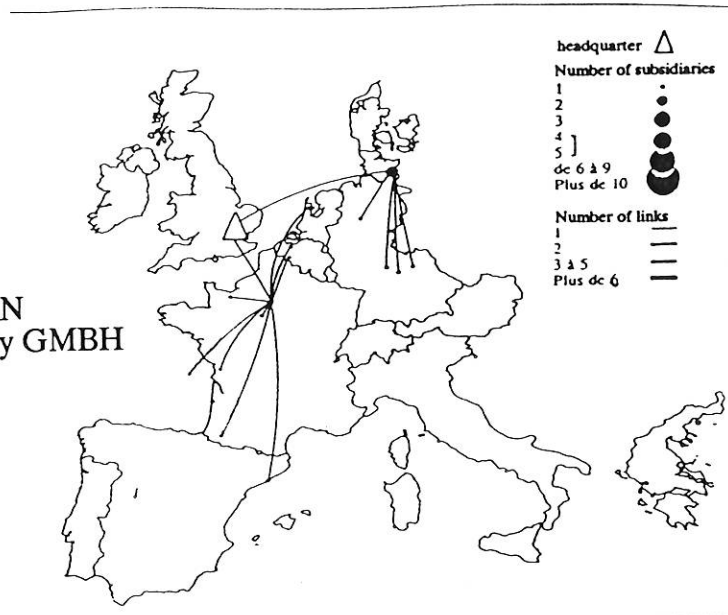




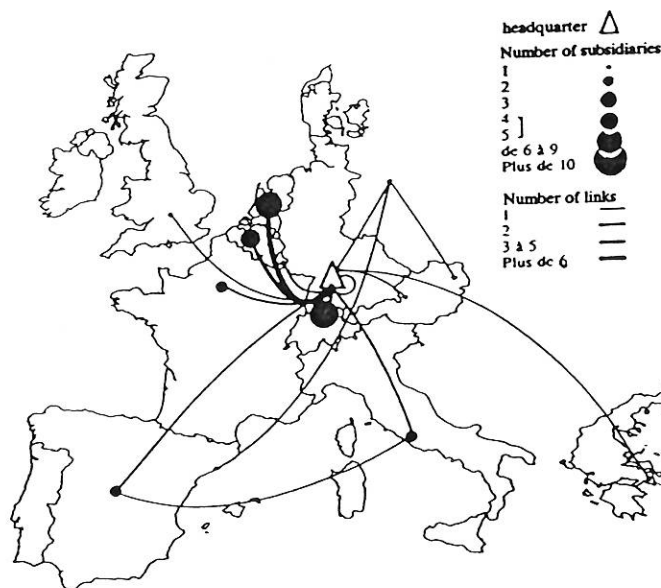
Fig.4:

# DIRECT AND INDIRECT CONTROL OF FOREIGN SUBSIDIARIES (examples: the spatial organisations of three firms)

GRAND METROPOLITAN  
(only German part: Pillsbury GMBH  
and French part: Pistrat)



VEBA



DAIMLER-BENZ

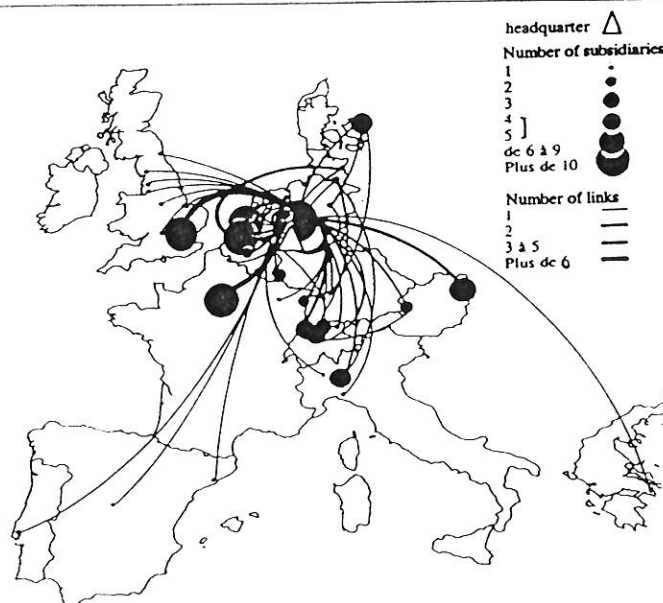




Fig.6:

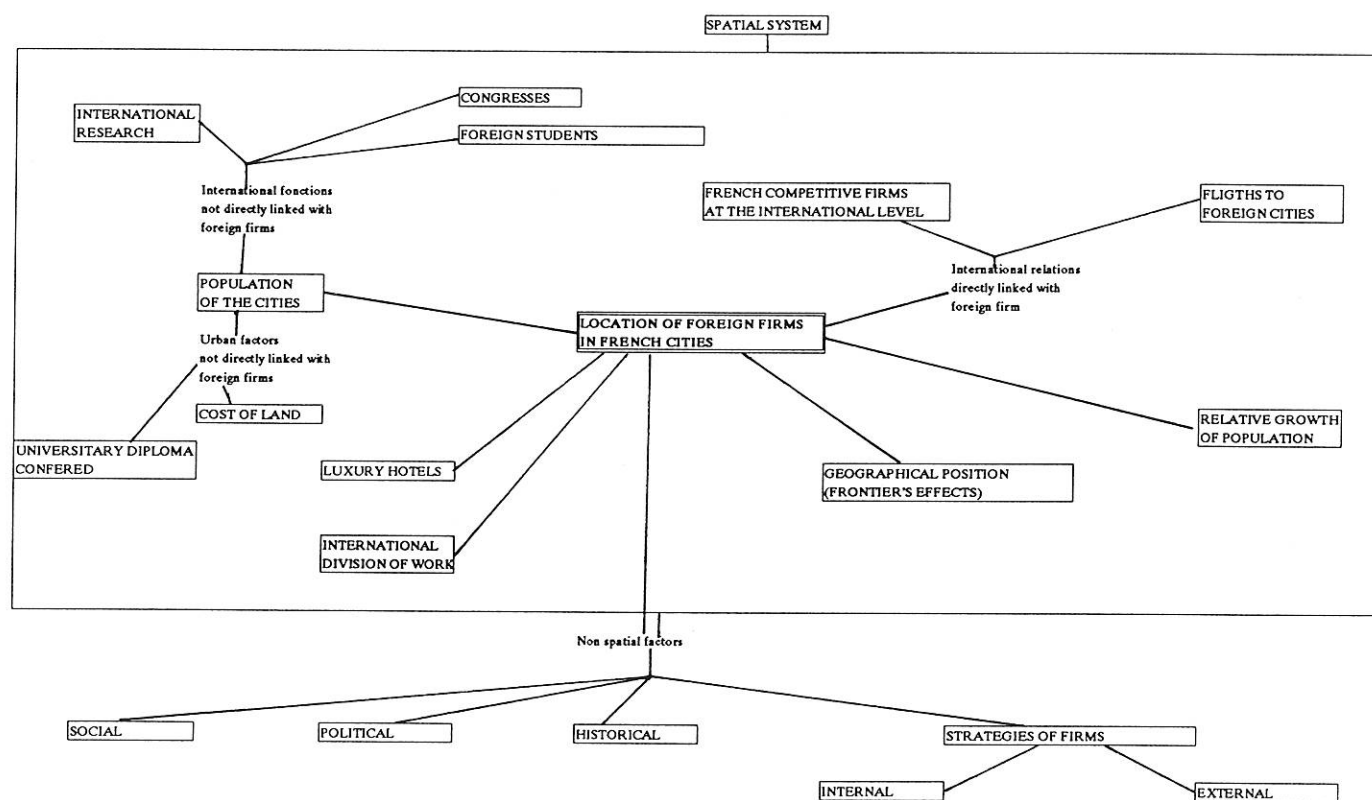


TABLE 1 LOCATION OF FOREIGN SUBSIDIARIES IN EUROPEAN COUNTRIES ACCORDING TO THE LEVEL OF URBANIZATION

PAYS D'IMPLANTATION	Villes de plus de 200.000 habitants		Villes de moins de 200.000 habitants		Campagne		TOTAL	Part de chaque pays
	nombre	%	nombre	%	nombre	%		
Autriche	99	81	15	12	8	7	122	4.4
Belgique	171	76	38	17	15	7	224	8.0
Danemark	43	69	10	16	9	15	62	2.2
Espagne	318	91	26	7	6	2	350	12.5
France	290	70	94	23	31	7	415	14.8
Grèce	50	94	3	6	0	0	53	1.9
Grande-Bretagne	219	76	64	22	4	1	287	10.3
Irlande	41	75	10	18	4	7	55	2.0
Italie	220	80	47	17	9	3	276	9.9
Luxembourg	22	100	0	0	0	0	22	0.8
Portugal	58	78	9	12	7	9	74	2.6
Pays-Bas	189	72	57	22	18	7	264	9.4
République Féd. d'Allemagne	350	80	64	15	24	5	438	15.7
Suisse	117	75	29	19	10	6	156	5.6
TOTAL	2187	78	466	17	145	5	2798	100

TABLE 2 LOCATION OF FOREIGN SUBSIDIARIES ACCORDING TO THE LEVEL OF URBANIZATION AND ACCORDING TO THE FUNCTION OF THE PLANT

FONCTION	Villes de plus de 200.000 habitants		Villes de moins de 200.000 habitants		Campagne		TOTAL	Part de chaque fonction
	nombre	%	nombre	%	nombre	%		
Production	817	71	252	22	74	6	1143	40.9
Recherche, production, distribution	38	63	14	23	8	13	60	2.1
Finances	69	92	6	8	0	0	75	2.7
Siège social	193	93	13	6	2	1	208	7.4
Distribution	467	84	73	13	19	3	559	20.0
Production, distribution	189	83	28	12	11	5	228	8.1
Recherche	22	81	5	19	0	0	27	1.0
Inconnu	392	79	74	15	31	6	497	17.8
TOTAL	2187	78	466	17	145	5	2798	100

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