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The Formation of a European Urban System

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Abstract:

With the construction of the European Community, the European urban system appears more and more integrated. Even if this level of organisation seems to be emerging, looking at the history of the european cities, one can recognize different signs of the long existence of interactions between them. Today one can observe the international processes, even if national level is always relevant. The paper underline this historical and contemporaneous processes, using large databases, constructed with the preoccupation of homogeneity.

Keywords:
Europe, Urban Systems, dynamic

Introduction:

Since world war II, national borders of West Europe countries have progressively become widely open. At first limited to a few products like coal or steel and to a subset of six countries only, the construction of a socio-economic European entity has expanded in space as well as in the variety of concerned functions. In this process, the importance of exchanges between countries has been multiplied. Such an increase in the number and size of long range flows is also a result of a more general trend of internationalization of the economies. Among the consequences of this higher connectivity level upon the national urban systems, is the emergence of a few cities which happen to be in position of centres within those networks acting at an upper geographical level. There is an increasing influence of such cities beyond the boundaries of the country where they are located and the weight of their international relationships is increasing when compared to their communications with their regional or national environment.

The question of interest for this paper is about the possible substitution of an integrated (west) European Urban System to the former juxtaposition of less interconnected national urban systems. Is such an integrated supra-national urban system already perceptible? Wich type of emerging structural characteristics are recognizable, or previsible, from the actual observation of west European cities today?

In order to answer such questions, we shall first recall the main historical meaningful "events" (or structural bifurcations) which shaped the specific features of the European set of towns and cities. Second, we will identify the main properties which characterize the European settlement system respective to those of other continents, especially to the north-American one. Third, by using both recent observations of large European cities and a theorical knowledge about the dynamics of urban systems, we shall try to predict a few possible emerging properties of what could be considered in the future as a relevant observation as a "European urban system".

1 Historical path dependance of the system

While recalling briefly a few steps of the progressive building of the European national settlement systems over a long time period, it will be shown how the long distance exchanges between towns and cities already had strong effects in shaping variety of structures of urban systems.

1.1 A very old connected network

Since several centuries, the urban network which nowadays appears on European maps has been shaped by trade relationships. The resulting flows of goods, population, and information created linkages of interdependancies and competition between towns and cities (i.e. between the individual actors and corporate institutions or various types of power organizations, who lived in them).

Everywhere in Europe, the genesis of urban systems came after a "basic urbanization" made of networks of a small agricultural markets serving rural population (figure 1). By oversimplifying a complicated history, two main bifurcations can be identified since the middle-age (Braudel, 1979 , Duby, 1985): a first wave of urbanization occured at the time of the crusades, due to a weakening of feodals and to a strengthening of an urban bourgeoisie linked with the reopening of commercial routes (Pirenne, 1939); after an instable period of war, a second stage of urban development in the XVIth century lead to a more selective process of growth of a few large cities which concentrated the economic boom of the time. The most rapidly growing cities were either political capitals, either nodes of the long distance and maritim trade. The set of cities become more hierarchised, and monocentric, since the old mediterranean pole (Napoli, Venice, Milano, Genova), lost of its relative importance whereas the north sea urban network around Bruges, Gand and Flander towns, and then London was reinforced.

The development of small and medium size towns was sustained by the demographic growth and by the industrial Revolution. The urban hierarchy was meanwhile completed and its contrast were lowered without changing much its spatial pattern (de Vries, 1984).

The individual histories of those European towns and cities exhibit, at several moments during that long period, general similarities in trends which prove that already in those ancient times, they did not evolve in an isolated manner, but already in interaction. To that extent is it possible to use for this past period also the expression "European urban system" without anachronism, even if the urban development of that time was not the same everywhere at the same moment.

1.2 Partial and progressive restructurings

During the various stages of urbanization, inequalities in development occured between the various parts of the continent. The three important phases in the formation of the European urban system may be analysed in connection with the successive valuation of main communication roads. The situation of cities relative to the principal trade axes was decisive in establishing the upper level of the urban hierarchy (Hohemberg, Lees, 1985). The center of the so-called "world-economy" after F.Braudel shifted from Venice at the beginning of XVIth century toward Antwerpen and Amsterdam as soon as the beginning of the XVIIth century on. The geographical position of the towns and cities within the communication networks is well described by a measure of their population potential. That index is a synthetic measure of the accessibility of one town to all others according to their size, so it may also be interpreted as a number of possible interactions with other urban citizens for individuals living in one particular city. Between 1500 and 1800, the maximum values of the European urban potential (as measured after the population of all towns and cities over 10.000 inhabitants) shifted

from nothern Italy to the Rhine lower valley and finally to London (de Vries, 1984). The famous main axis of European urbanization which appears nowadays as a real megalopolis was meanwhile built and reinforced over a duration of several centuries, as it is shown by such a geographical move of the largest potential values.

The main nodes of the former long distance maritime trade and the cities which were at that time the capital accumulation centers have generated most of the largest cities of today's Europe. The few exceptions like Paris correspond to the rare processes of extreme political centralisation of large territories. Not only the differences in city sizes, but sometimes also in the nature of their economic basis, are still deeply rooted in that ancient period. The industrial revolution did not alter too much the main feature of the structure of the urban system established by the shift of the place with highest centrality from south to north-west Europe. It merely amplified it due to the powerful impulse given to the urbanization by the industrial development of the XIXth century. Moreover, the industrial Revolution deeply modified the structures of the cities which were developed at that time, since those cities still appear today with the highest specialisation level within the European urban system.

1.3 A global translation

There is actually a surprising inertia of the hierarchical dimension within the structure of the European urban system. Towns and cities wich already had over 10.000 inhabitants at year 1500 still accounted for 2/5th of the 364 European towns and cities over 10.000 inhabitants at year 1800 (de Vries, 1984). They concentrated 2/3 of the number of urban citizens at that time. Even if Industrial Revolution "created" several very large cities as in Ruhr region, or in northern England, or in the north of France and Spain, there was a broader general stability in the urban pattern of southern Europe (Schmall, 1981). Cities with a glorious past like Venice have been relatively weakened, but for instance Napoli is still today the third Italian city.

By definition, the function of cities is related to trade and exchanges. It creates between them a multiplicity of links of interdependencies and competition. Those connections ensure the persistency of the mesh of the urban system. Because it is an incentive to a quick diffusion of innovations, competition is the main cause of the duration of the possible former inequalities. Competition is the regulation force wich widely contributes to maintain the structure of the urban systems (Pumain, 1992). Other factors lead to the same result, as the administrative or political mode of organisation of the territories; when they function for long periods of time on the same way, federal systems tend to favour urban systems where inequalities between cities are less important, whereas centralised systems lead to more pronounced hierarchical contrasts (Moriconi-Ebrard, 1993). The existence of the communication infrastructures, as they most of the times adapt to the pre-existing urban hierarchy, is also a condition of the stability of the urban systems (Pred, 1977).

2. Main structural characteristics

The European urban system of today is the result of the accumulation of the affects of several successive organisation of power, which have modelled it (figure 2).

2.1 An old urbanization

As its settlement system is very old, Europe has a very high density of towns and cities when compared to others continents. Another linked character is the large share of small and medium-sized towns in the urban system. There is inversely a relative lack of very large metropolises: if one considers cities over 200.000 inhabitants, their average size is

about 800.000 in Europe against 1.300.000 in the United States and in Japon (Moriconi-Ebrard, 1993).
Those main features are revealed by a simple comparison of the distributions of the number of towns and cities according to their size in USA and in Europe (figure 3). The inequalities in size are much higher in the USA as indicated by the higher slope value of the adjustment line. On the other hand, there is no example in Europe of the huge megalopolis like the one around New-York or even of a very large urban area like Los Angeles.

2.2 The inherent spatial organisation

The European urban system is without any contest dominated by two large agglomerations, London and Paris, which are by far the largest since more than one century. Whatever the criteria, they stand well over the other cities, mainly when measures of economic power and weight are considered, like for instance the number of headquarters of large companies (figure 4). Those two cities only concentrate more than half of the headquarters of the 300 largest European firms in 1990. The explanation of such a concentration is a matter of historical accumulation réinforced by a factor of proximity to political power, more than of population size and density: the comparison with the lower number of headquarters located in the large urban area of over 10 millions inhabitants concentrated in the Ruhr region (Essen, Dusseldorf, Duisbourg) demonstrates it. Generally, international functions are highly concentrated in the largest cities, which offer favourable conditions for their development: their number and variety is correlated with the presence of international airports and important trafic connections, with the importance of high-level business services and luxury accomodation capacities (Rozenblat, Pumain, 1993). However, a specific aspect of such functions like the attraction of international congresses may give a broader, not only economic, view of the international dimension of cities (figure 5) (Palomaki, 1991). The main European cities for congresses are still Paris and London, but Geneva, Brussels, and Wien appear in good positions. The main large cities of eastern Europe are still lagging behind those of western Europe, even for such an international cultural function which is much less concentrated than the purely economic ones.

The European regions with highest densities do not concentrate much international functions but have developped a high intensiy of international links. It is in those cities which are close to several countries border that the branches of multinational firms, looking for an access to large potential markets, have their highest density of linkages (figure 6). Such a relative preference is explained by the existence of very well connected networks of cities which is characteristic of the rhenanian type of cities network (Juilliard, Nonn, 1976).

3. Previsible developments

According to the large inertia of urban systems, and to the slow demographic and economic growth rates of the period in the whole European area, one cannot expect strong upheaval of the structural features of the European urban system in the next future. However, a few trends can be identified which may slighly alter the pattern as described above.

3.1 Shifts in urban growth

During the last four decades, a double shift occured in the demographic and urban growth pattern of Europe (Cattan and al, 1994, Kunzmann, Wegener, 1991): a first one from the north to the south, and a second one from the west to the east may both be explained by a diffusion process (figure 7). Such a process includes the last stages of demographic transition, rural exodus, and suburbanization (Hall, 1993, Champion,

1989). The decrease in fertility rates has been surprisingly rapid in several countries, except in some part like Sweden and France. So the main growth differential in the future is to be expected from international migrations, whose intensity depends on political decisions and may be higher in the vicinity of the former border between the two blocks. High urban growth rates may also be expected in most of eastern countries where the growth of the largest cities had been contained by deliberate policis of housing shortage or migration regulations. The opening of trade and the development of communication means will also in a first stage favour those main economic and political centers of eastern Europe.

3.2 Weight of national organisation

Despite the growing internationalisation , the development of urban system still for its main part is occuring within the particular framework of each country. National borders are still strong barriers in the geographical pattern of exchanges of all types. The presence of such borders still divides by a factor six or seven the importance of flows of migration or of goods, by train as well as by air (Cattan, 1993).

Moreover, the impregnation of national patterns is such that the actual position of a city within the emerging European urban system depends more of its relative weight within the national urban system it belongs to, rather than to its relative position in the European urban hierarchy. It is very likely that such a ranking which raise the level of a few relatively small but first-rank cities of small countries compared to the larger but second-rank cities of larger states, will continue to affect the reorganisation of the European urban system.

As a conclusion, one may assess that the future position that cities will occupy in the emerging European urban system will depend first on:
- their level in the general European hierarchy of city sizes;
- the role they have in their own country, as political or economic main centers;
- their specialization in various international functions like financial services, or transportation, as well as culture and tourism;
- their geographical situation, giving an advantage to cities which are already more open to international connections because of their situation close to the several borders of a small country or at main nodes of wide-range transportation networks (Cattan and al., 1994).

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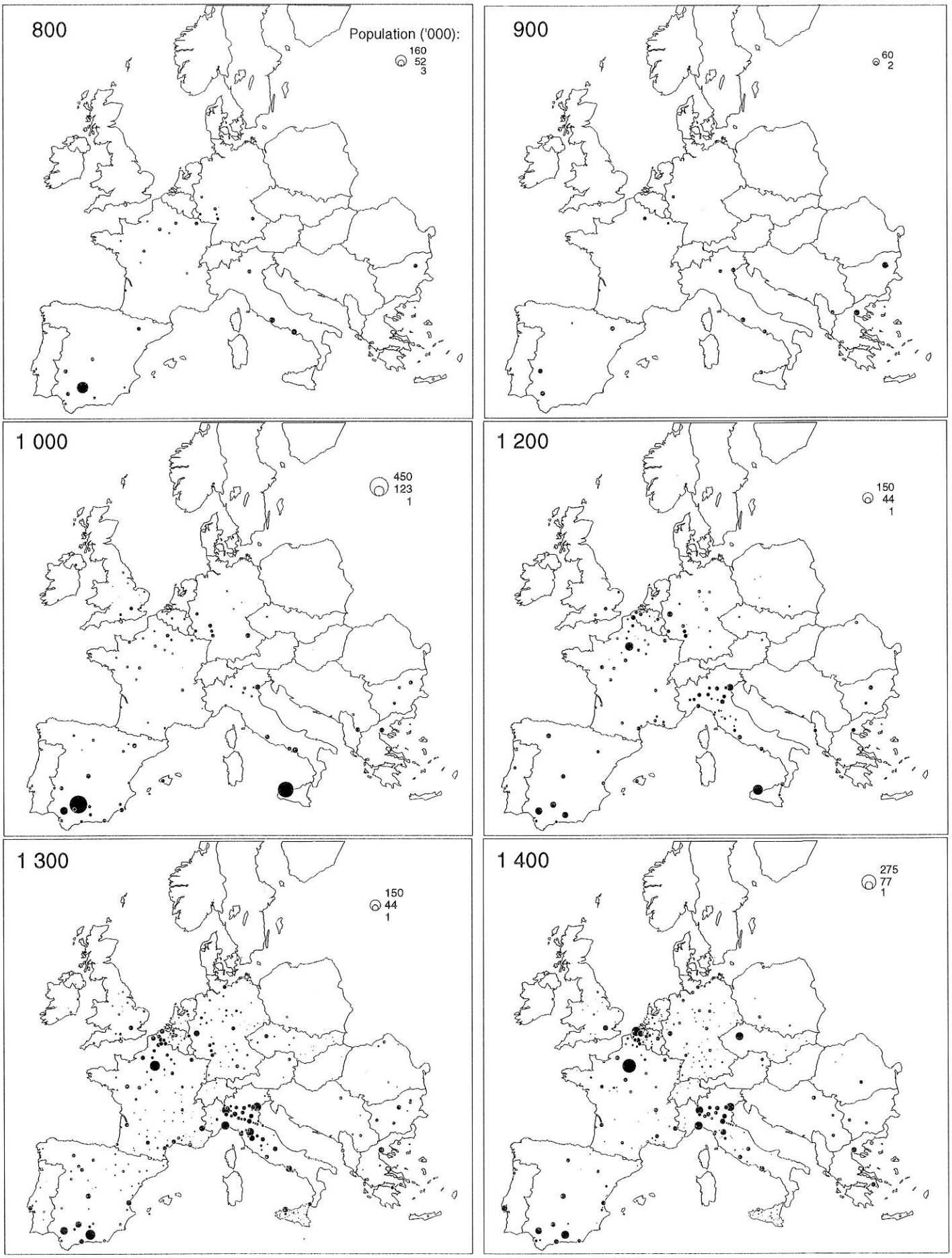
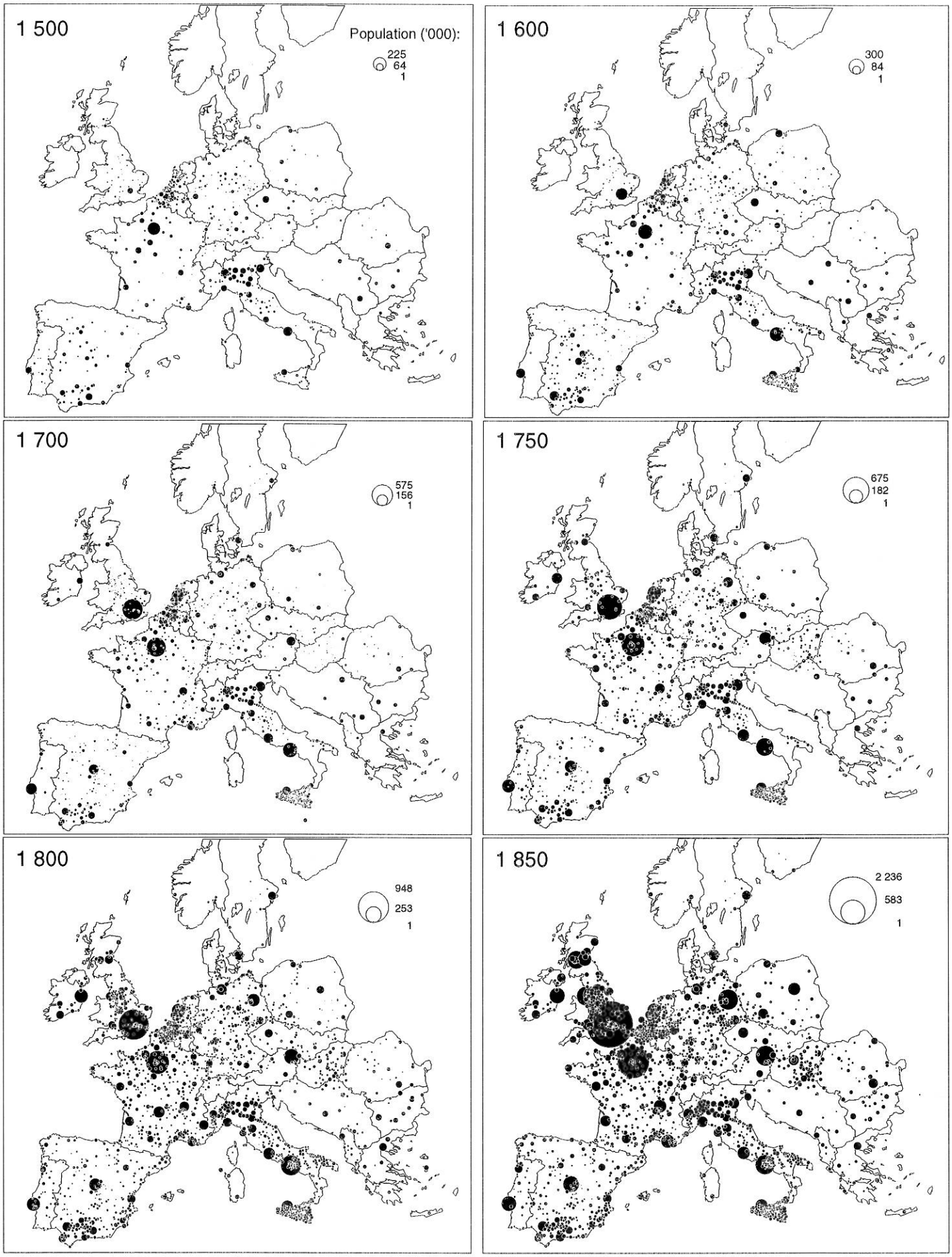
Figure 1: EUROPEAN CITIES FROM 800 TO 1850



@Equipe P.A.R.I.S., 1994

Source: Bairoch and al., 1988

Figure 1: EUROPEAN CITIES FROM 800 TO 1850 (continued)



@ Equipe P.A.R.I.S., 1994

Source: Bairoch and al., 1988

Figure 2: THE EUROPEAN CITIES IN 1990

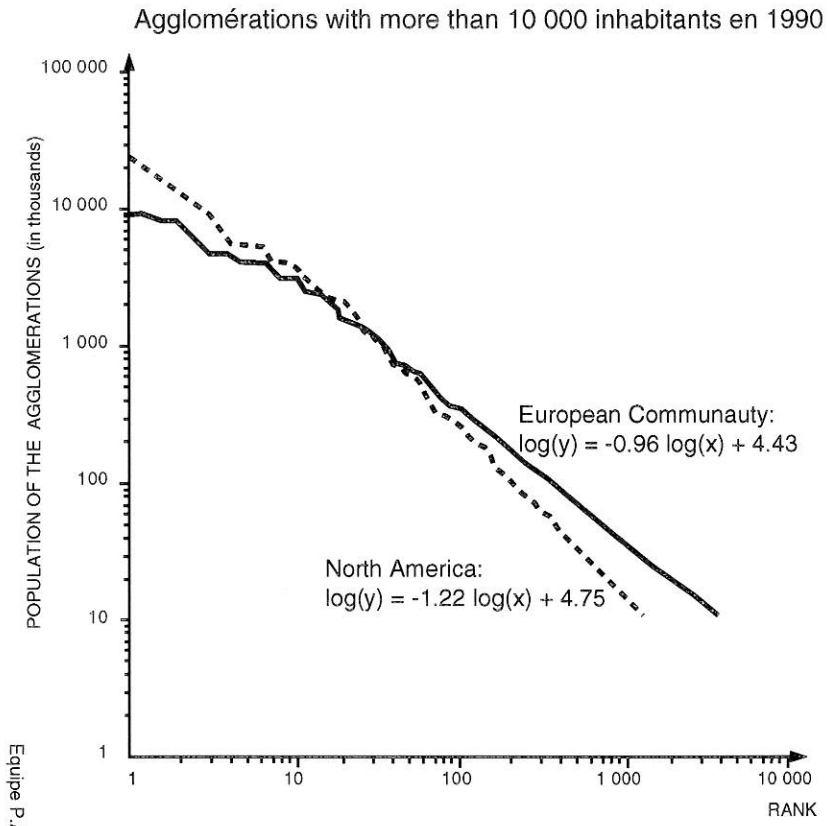
Population of urban agglomerations 1990 ('000):

9 300
3 000
100

@Equipe P.A.R.I.S

Source: GEOPOLIS, 1993

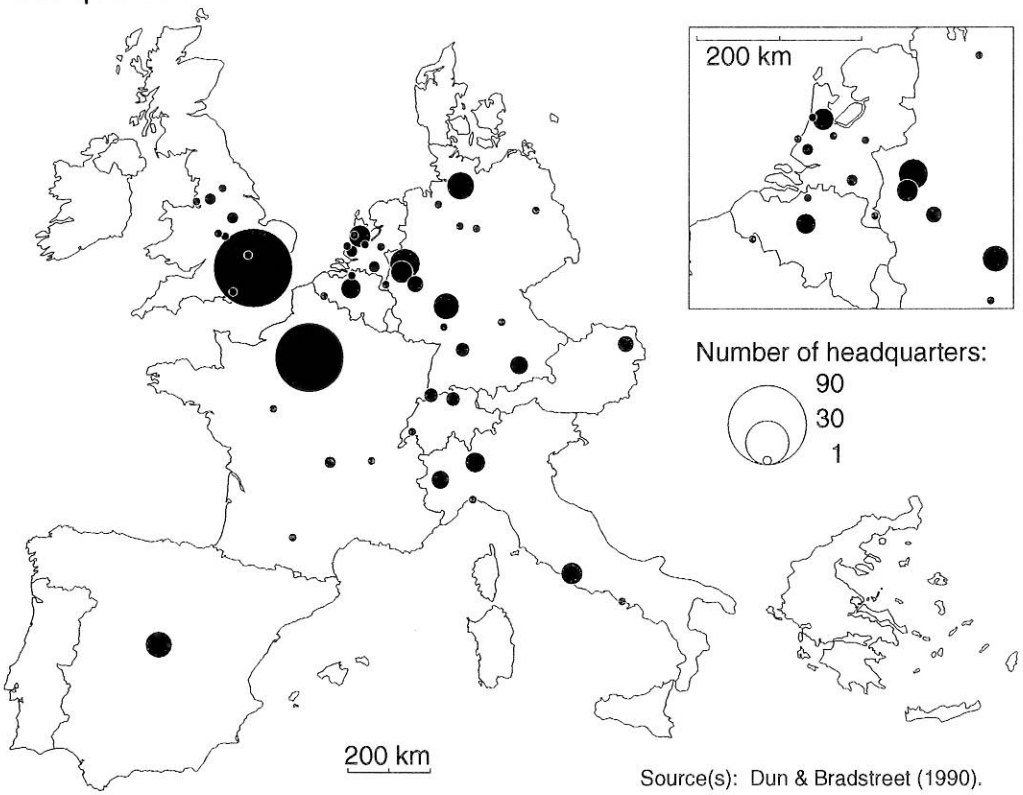
Figure 3: RANK SIZE DISTRIBUTION OF THE CITIES IN EUROPE AND NORTH AMERICA



source: F.Moriconi, GEOPOLIS,1993

FIGURE 4: THE 300 LARGEST EUROPEAN FIRMS

Headquarters



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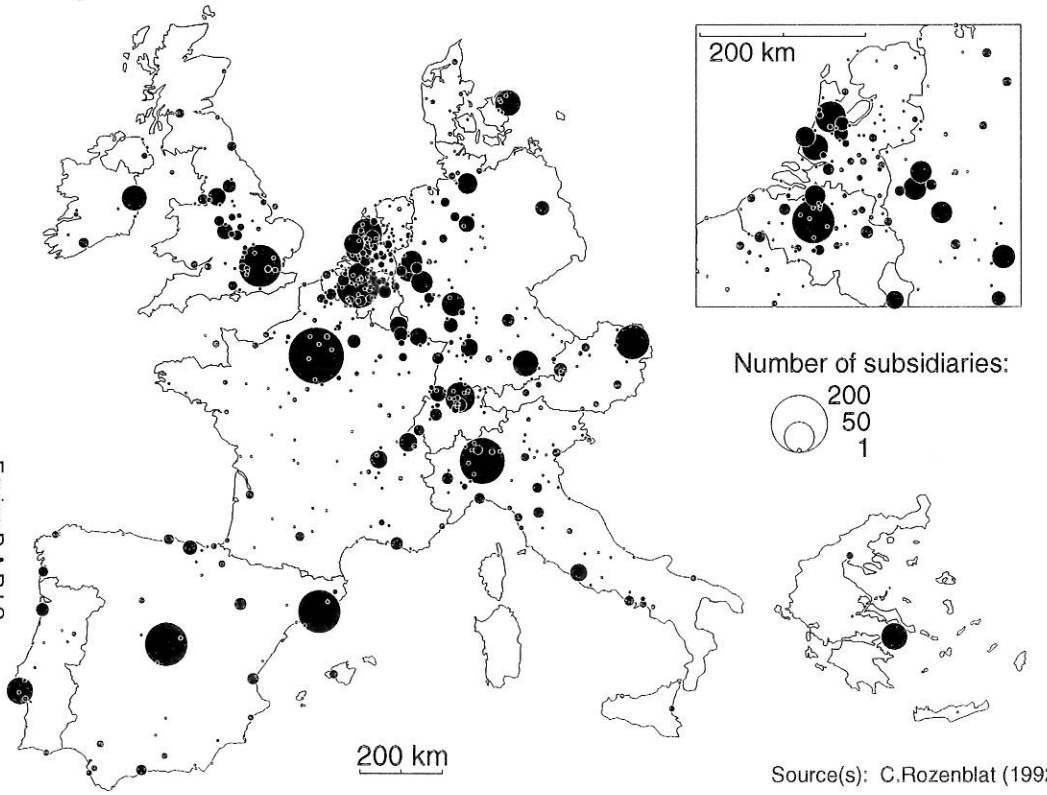
Source(s): Dun & Bradstreet (1990).

Foreign subsidiaries[1]

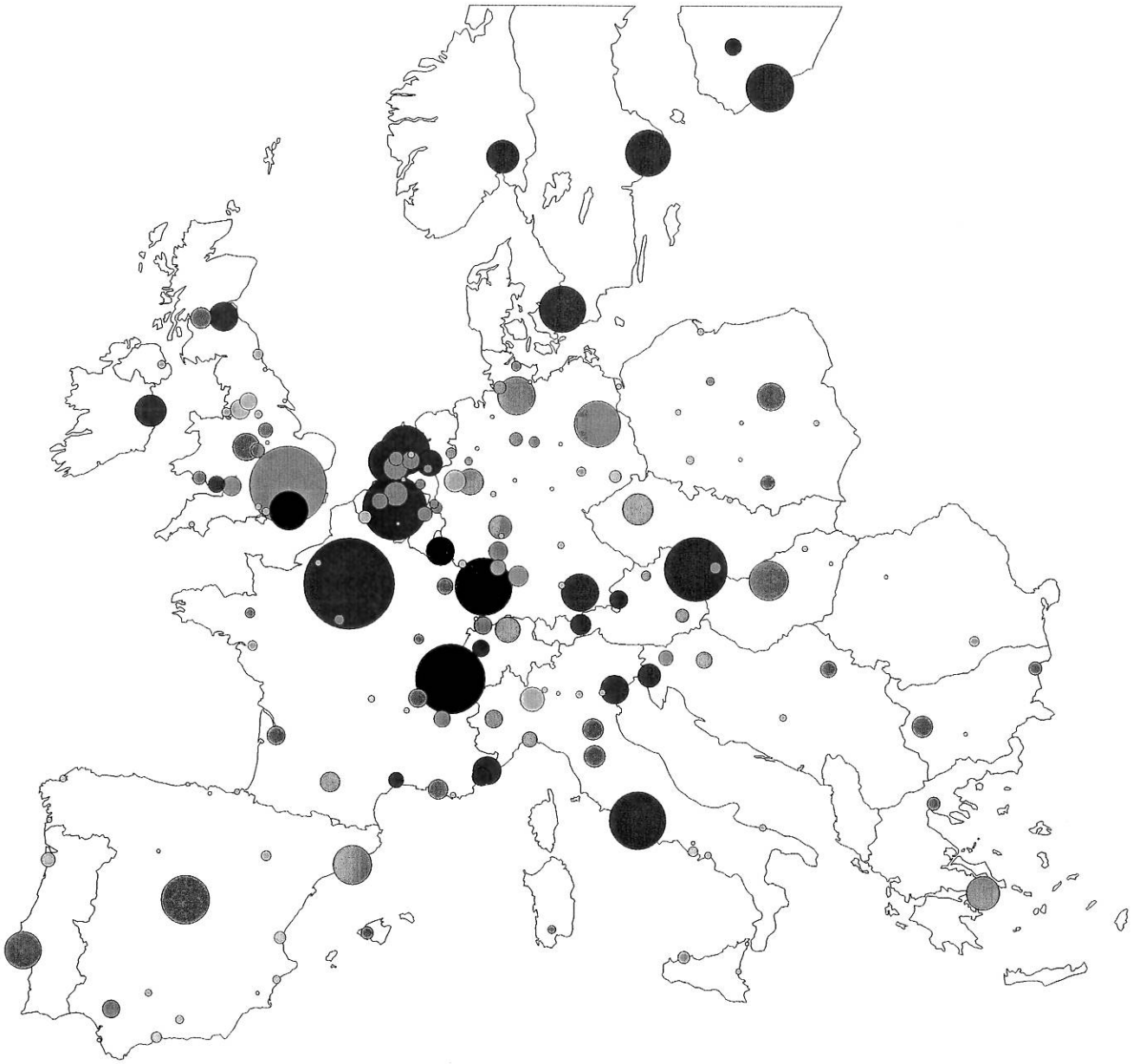


Equipe P.A.R.I.S.

Source(s): C.Rozenblat (1992).

Note(s): 1 From a sample of 94 of the largest European companies. The subsidiaries are located according to the address of their registered office.

Figure 5: THE CONGRESSES IN EUROPEAN CITIES



Number of congresses (1987-1989):

529

144

1

Number of congresses for 100.000 inhab.:

20-85

5,5-20

1.3-5.5

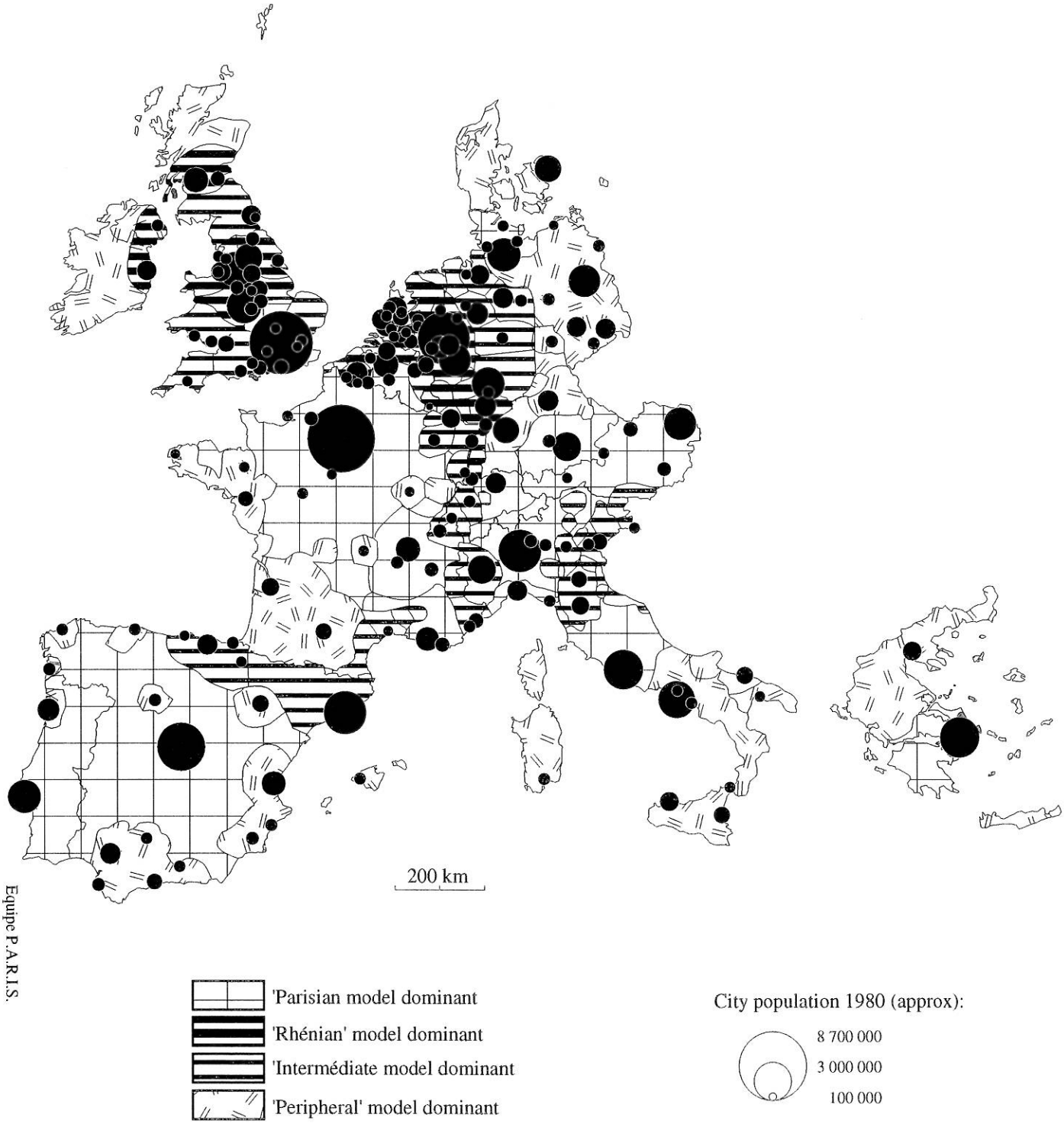
0.12-1.3

0-0.12

C.Rozenblat, 1993

Source: International Congress Calendar (1987-1990)

FIGURE 6: REGIONAL MODELS IN WESTERN EUROPE

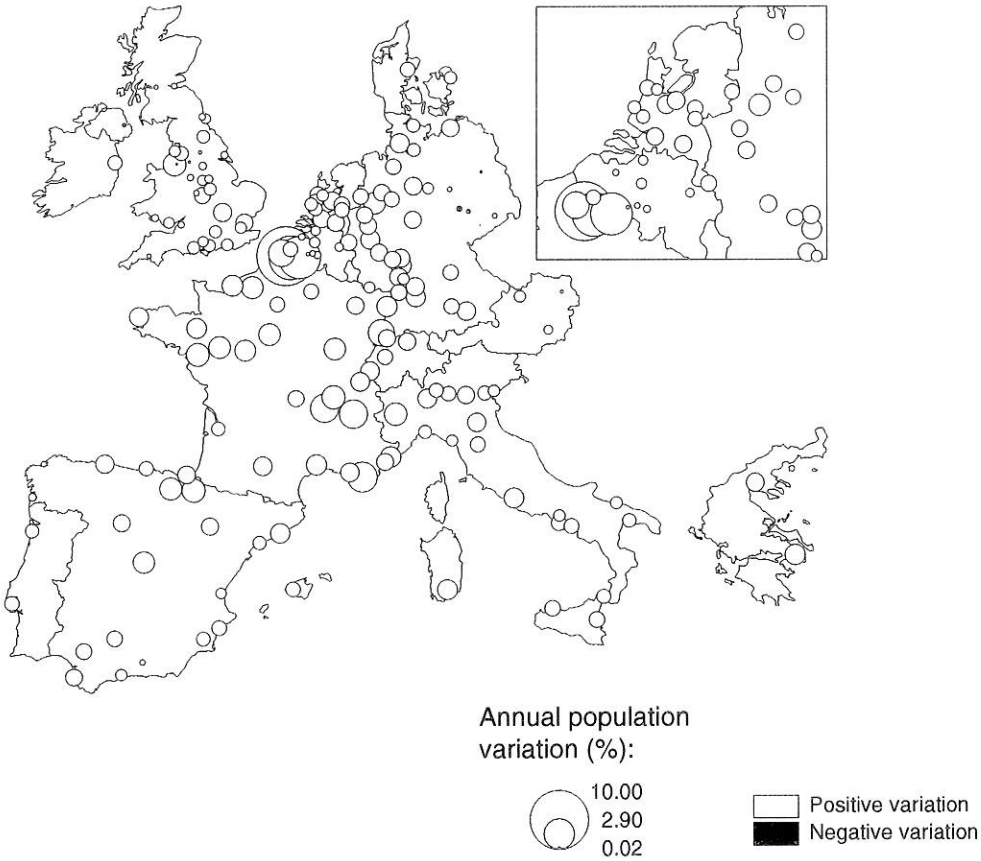


Equipe P.A.R.I.S.

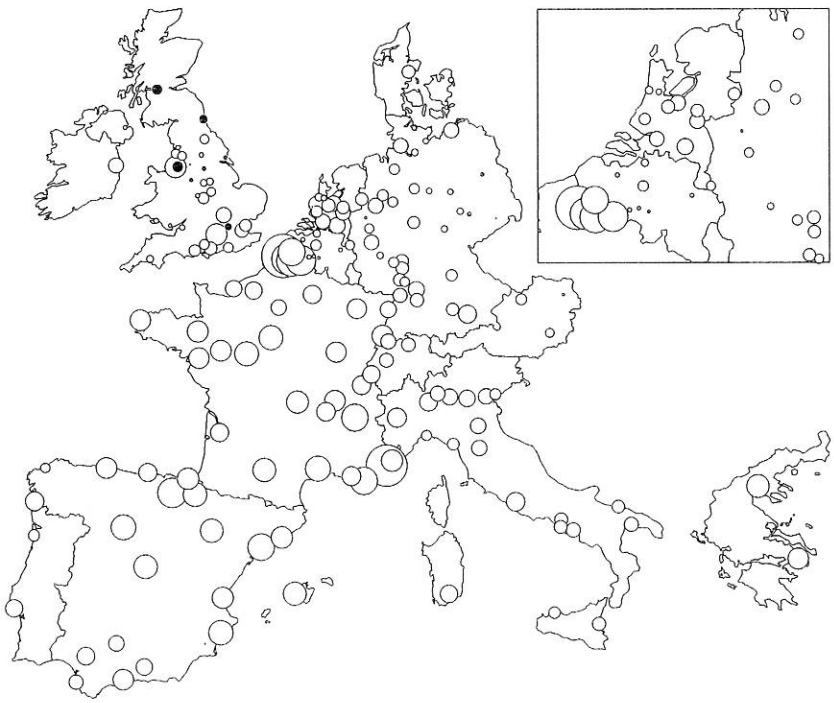
Source(s): D'après E.Juillard and H.Nonn, 1976, Cattan and al. 1994.

Figure 7: EUROPEAN URBAN POPULATION CHANGE (1950-1990)

1950-1960



1960-1970

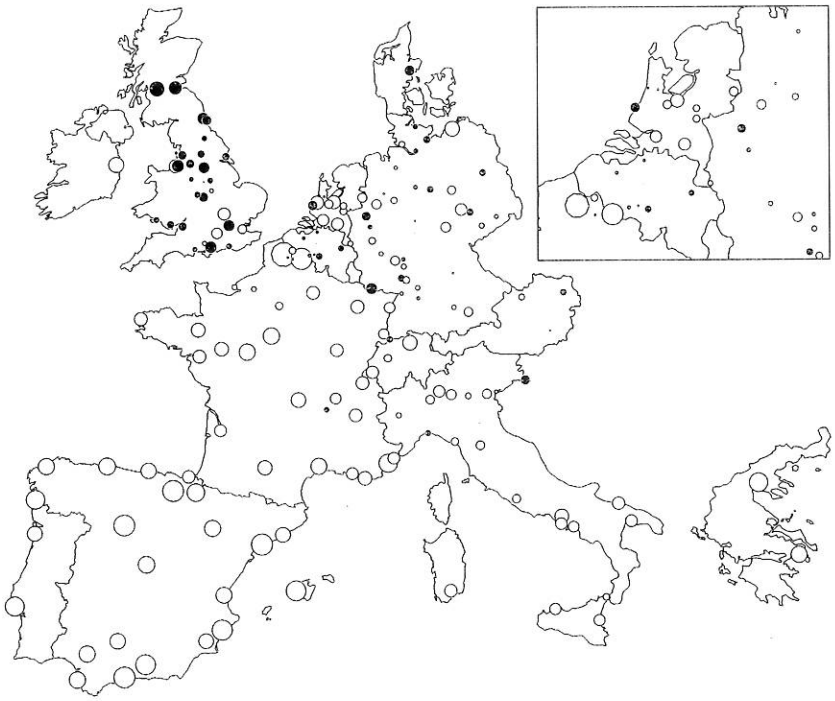


@ Equipe P.A.R.I.S., 1994

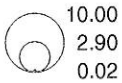
Source: Moriconi-Ebrard, 1993

Figure 7: EUROPEAN URBAN POPULATION CHANGE (1950-1990) (continued)

1970-1980



Annual population variation (%):



Positive variation
Negative variation

1980-1990

@Equipe P.A.R.I.S., 1994

Source: Moriconi-Ebrard, 1993