Metropolisation in Warsaw  
Economic Change and Urban Growth*

Lise Bourdeau-Lepage and Jean-Marie Huriot  
LATEC  
Université de Bourgogne  
Pôle d’Economie et Gestion  
B.P. 26611  
21066 Dijon Cedex (France)

Metropolisation is affecting a number of major cities throughout the developed world. This process results from the changes occurring in the emergent post-industrial economy. We refer mainly to the rapid rise of high-order services, to the reign of information, and to the resulting transformations in production processes. Metropolisation is transforming the economic structure and the spatial organisation of the cities involved. These cities are becoming increasingly specialised in high-order economic activities, which are intensive in skilled labour and information. These typical “metropolitan functions” relate essentially to creation, decision, and control. They include research and development, high-order producer services, financial activities, large companies’ headquarters, and educational and cultural activities. Along with this economic restructuring, metropolisation is reshaping urban space, principally through the emergence of multicentric structures, especially in Europe, and through the specialisation of city-cores in specific metropolitan functions. These new economic and spatial structures involve intensive proximity interactions.

In close relation with these internal changes, metropolisation involves an increasingly prominent external role for metropolises in their national hinterland and above all in the global economy. Metropolises are the inescapable nodes of global interaction networks. Thus, metropolises result from an innovative combination of proximity and global interactions which are mutually

*We would like to thank Claude Lacour and the referees for their comments and suggestions.
reinforcing.

Consequently, we propose to define metropolisation as the process whereby certain cities adapt to the emerging post-industrial economy by concentrating locally interacting high-order, information-using activities that both enable and structure global interactions.

This tentative definition is a first response to the confusion frequently generated by the polysemy or even the vagueness of the term (Lacour and Puissant 1999).

It means that metropolisation can be reasonably understood through the concentration of metropolitan functions, their spatial organisation within the city, and the intensity and range of the city’s external interactions.

Economic and spatial restructuring impelled by the metropolisation process are familiar features in western industrialised countries (Anas et al 1998; Lacour and Puissant 1999). In these countries, even if governments play an important incentive role, individual decisions in a market economy remain the main necessary condition for change. Therefore, the changeover from a planned economy to a market economy in Central and Eastern European Countries (CEE) might give rise to comparable trends.

Mindful of the specific context of the advent of the market economy, we aim to determine whether Warsaw is following the pattern widely observed in Western Europe and whether this places Warsaw in a significant position in the world network of metropolises.

The response could provide important arguments in the debate about the universality of the forms of metropolisation. Warsaw is a particularly interesting case. It heads the city system of one of the most developed CEECs and it is undergoing rapid and intense change. Like most CEEC cities, Warsaw has inherited distinctive production and spatial structures from the days of central planning. In that era, priority was given to industrial development and location decisions were not dominated by land price considerations. These past choices have influenced present-day urban structures and their pattern of change. The return to the market economy, and the opening-up to international relations are all leading to economic and spatial restructuring. Warsaw is profoundly marked by its industrial past, but at the same time it is being drawn increasingly into the services and information economy. Consequently, we wish to reflect on the changes resulting from these two factors.

There are few economic studies of urban restructuring in CEEC, even in Poland. An earlier study showed how the rapid rise of new tertiary activities brought about new needs for proximity. This entailed the reorganisation of the city, ushering in a standard western pattern of urban development (Bourdeau-Lepage 2002). These changes may now redefine the economic role of the city. To show this, this paper examines the development and the location of metropolitan functions in Warsaw and the scope of its external role.

Before conducting any empirical investigation of Warsaw, we must set out a theoretical framework within which we can apprehend and characterise the general process of metropolisation. With this aim in view, we present our
conception of metropolises and metropolisation. This view leads us to break down the analysis of metropolisation schematically into three interacting levels which are successively applied to the case of Warsaw: the evaluation of the capacity for metropolisation, the study of the rise and the location of metropolitan functions, and the determination of the city’s attractiveness and influence in the global economy.

**Metropolises and Metropolisation**

Identifying a metropolis or a metropolisation process presupposes assigning terms a clear meaning within a simple theoretical framework. Because of the diversity of the phenomena evoked, descriptive criteria for identifying metropolises are too numerous and not always sufficiently discriminating. Like Lacour (1999), we may wonder whether this diversity is evidence of just how rich or just how poor the concept is. The terms evoke the regional equilibrium metropolises launched in the 1960s by the DATAR (the Délégation à l’Aménagement du Territoire et à l’Action Régionale) as well as the large world financial centres analysed by Sassen (1991). The meaning of the words depends on the period concerned and even on who is using them. The confusion is compounded when we observe that in the United States the term “metropolisation” is virtually unknown (Bailly 1999) and that the term “metropolis” does not necessarily involve international influence as it does in the European literature.

Faced with such difficulties, we propose an analytical approach in relation to the economic theory of agglomeration (Fujita and Thisse 2000). We relate the metropolis to the main transformations of the post-industrial economy and to the related agglomeration processes. We focus on the economic dimension and the major present-day features of metropolisation. Although partial and provisory, this conception still provides a key for selecting and classifying empirical indicators of metropolisation and for applying them to Warsaw.

**Metropolises and the Post-Industrial Economy**

Metropolisation generally evokes new forms of urban growth, along with the more recent and dramatic changes in the form and the role of leading cities in developed countries. In the definition proposed above (see Introduction), we consider that the term singles out large cities which react more rapidly and intensely to current technical and economic changes, through transformations of their economic and spatial structures and the development of their global economic role.

It will be observed that this approach is adapted and therefore restricted to the most recent aspects of metropolisation. The phenomenon is not new. But we focus on its new forms resulting from the new technological and economic
conditions that have emerged over the last 30 years or so, in what may be called the post-industrial economy. In a future paper, we intend to extend the analysis of metropolisation to the pre-industrial and industrial periods.

To make it clear what a metropolis really is, let us return to the different parts of the initial definition

Metropolisation is “the process whereby certain cities adapt to the emerging post-industrial economy...”

We must first recall the major changes occurring in this post-industrial economy. These changes can be accounted for by two sets of stylised facts relating first, to transport and communication technologies and costs, and second, to production and market structures.

First, even if the direct costs of transporting goods continue to decline slightly, this does not significantly alter the conditions of business location. However, transaction costs, which are higher than transport costs, decline where there is regional integration. Direct or opportunity commuting costs show no significant decline. On the contrary, the modalities and costs of exchanging and processing information change dramatically. While standardised (codified) information can be diffused at ever lower marginal costs because of advances in communication technologies, the costs of exchanging complex and personalised (tacit) information remain high because face-to-face contacts are still required. This widening gap determines a number of important characteristics of metropolises.

Second, production structures and processes are changing. Production is more and more intangible, meaning that services become the main activity. But the really new fact is the massive development of high-order specialised services, intensive in high-skilled labour and information. Even in manufacturing activities, information exchange and processing become increasingly significant compared with the direct processing of goods. Production becomes more personalised not just in manufacturing with the increasing diversification of products, but even more so in services. The increasing complexity of high-order services favours their externalisation and their extreme diversification requires co-production. Finally, production is more and more global, due to the expansion of markets, to the opening-up of borders, and to deregulation. These trends reinforce the development and the strategic role of creation, decision, and control activities. Informational interactions become the main means of coordination in the post-industrial economy.

In this context, metropolitan functions, i.e. intangible, personalised, global, and information consuming activities, play a key role in the formation and characteristics of present-day metropolises.

Metropolisation is “the process whereby certain cities adapt to the emerging
Thus, the first aspect of adaptation of the metropolis is the concentration of metropolitan functions. Indeed, metropolitan functions, are much more concentrated in metropolises than other functions, so that metropolises contain the major part of the high-order economic functions of the whole country. Moreover, the metropolises become or remain places concentrating artistic and cultural activities. Thus the metropolisation process finds expression in a selective concentration of functions using information and skilled labour, in favour of certain large cities (Cattan et al 1994).

Whenever it concentrates these specific functions, the metropolis renews its spatial pattern. Even if this restructuring is variable throughout the world, leading cities in developed countries display a number of common trends (Anas et al 1998). Multipolarisation and specialisation of centres are near-universal features. The metropolitan functions have a key role in this restructuring. They are concentrated mostly in cities, and they are also concentrated mostly in privileged districts within those cities. Generally, the city-core (the historical centre in Europe, the central business district – CBD – in North America) contains most of the metropolitan functions of the city. When these functions decentralise, it is frequently only toward the very near periphery as in the Paris Region (Boiteux-Orain and Huriot 2001). The decentralisation of high-order activities is more significant in the United States and in a number of Canadian cities. Nevertheless, the CBD generally remains the most important centre, at least in relative terms, for these activities.

Such concentrations can be understood in terms of proximity externalities. Metropolitan activities use increasingly complex and personalised information. This gives informal face-to-face contacts a primary role in metropolisation process. Contrary to conventional wisdom, advances in communication technologies do not result in the dispersion of information-dependent activities, but generate a new process of urban concentration (Sassen 1991; Guillain and Huriot 2001). It is generally admitted that in information exchange, new communication technologies and face-to-face contacts are complementary rather than substitutable. The new communication technologies do not dispense with face-to-face contacts, but on the contrary induce new ones.

It is well known that face-to-face contacts generate strong proximity externalities, which are non-market externalities with a short spatial range. They are an incentive to specialised high-order services, which are closely interdependent and rely on face-to-face interactions, to concentrate so as to gain in efficiency. We could add that high-order services also need centrality for reasons of accessibility or prestige. Their ability to pay allows them to locate in the more central and the more expensive locations.

Thus the metropolisation process depends essentially on specific agglomeration processes. But it appears only above a minimum level of agglomeration
forces. Now the intensity of these forces depends on the size and composition of the city.

Even if it is not the only determinant of metropolisation, the city’s size favours the concentration of metropolitan functions. More specifically, the concentration of economic activities promotes the rise and the externalisation of high-level activities because they find a large market there. As a consequence, a large city is able to generate new rare activities which in turn favours diversity and thus new Jacobs-type agglomeration economies. Furthermore, a minimum size is required for the appearance of specialised public services involving high fixed costs, which generate new agglomeration economies.

In these agglomeration processes, human capital externalities play a key role. As metropolitan functions develop, the need for skilled labour increases and human capital externalities appear. City size, the level of human capital, and information exchanges are mutually reinforcing. Because it facilitates the diffusion of information, the agglomeration of agents favours the formation of human capital. In return, human capital is a factor of agglomeration, insofar as a high level of education attracts migrants and especially those who possess a high level of human capital. Thus human capital attracts human capital. Moreover, the size of the agglomeration, the diversity of activities, and the human capital externalities combine to generate “technological infrastructures” (Feldman 1994; Guillain and Huriot 2001) which favour innovation, and consequently the concentration of new metropolitan functions.

Metropolisation is the process whereby certain cities adapt to the emerging post-industrial economy... by concentrating locally interacting high-order, information-using activities... which both enable and structure global interactions.

A global interaction network interconnects metropolises. These connections are formal and are based on material exchanges, or immaterial exchanges using communication technologies. Through this network, cities interact more with one another than they do with their respective hinterlands. Global interactions also promote the agglomeration of metropolitan functions, because metropolises are the best points of entry into the networks of long range interactions.

Thus, far from pulling in opposite directions, proximity and global interactions are both powerful factors of agglomeration and metropolisation.

The coexistence of these two types of interactions is an original feature of metropolises. The metropolis stands at the interface between proximity and the global economy.

Moreover, these interactions are closely complementary and mutually reinforcing. The development of long-distance interactions makes production and exchange more complex. Specific problems arising particularly from the intensive use of transport and communication, and from adaptation to different
local economic practices, laws, and consumer practices of remote areas require the aid of specialised high-order services in order to insure specific and complex coordination functions. These functions tend to locate in close proximity in the city-core so as to take advantage of proximity externalities. They attract skilled workers and information infrastructures, which in turn attract other high-order activities. This cumulative process favours urban growth and metropolisation and facilitates the development of long-distance interactions. In other words, metropolises organise proximity and concentrate face-to-face interactions thereby providing greater efficiency in long-distance interactions. Consequently, metropolisation is a complex, cumulative process where intra-urban structure and external influence are mutually reinforcing, so that we could say that metropolisation implies metropolisation. This “idealised” pattern of metropolisation is a working hypothesis founded on the main principles of the theory of agglomeration. It corresponds to a number of commonly accepted facts such as the continued growth and the relative long-term stability of the metropolitan system in the most developed countries, especially in Europe. Below, this hypothesis is tested for the case of Warsaw and any divergence from the idealised pattern is evaluated and interpreted.

From the preceding statements, it follows that the metropolisation process can be analysed according to the following three stages:

- The metropolisation process operates only if initial conditions are satisfied, giving a city the capacity to become a metropolis, i.e. to generate and reinforce the economies of proximity and the global interactions favouring metropolisation;
- When these conditions are fulfilled, a restructuring of the city takes place and affects its functional, social, cultural, and spatial composition. This restructuring represents the internal dimension of metropolisation. It is reflected by a marked specialisation in metropolitan functions and an intra-urban polarisation of these functions;
- This internal restructuring can be associated with a greater attractiveness and with more economic power, at the national and world level. This is the external or global dimension of metropolisation.

These three stages are only a mode of exposition. The phenomenon is more complex. It is not only sequential but also circular and cumulative: each stage reinforces the others. The restructuring of the city changes the initial conditions, and the rise of international power affects the internal organisation and the initial conditions.

The following empirical analysis of metropolisation in Warsaw is based on a mass of data. Although it only uses some of them, this paper nonetheless uses many detailed data, for two reasons. First, metropolisation is a complex phenomenon. Metropolitan functions are diverse and must be understood from diverse perspectives. Moreover, we must associate a series of indicators with each of these stages. Second, we are subjected to the constraints of Polish data.
Urban data are difficult to obtain, and when they are available, they are often non-homogenous and not very reliable. Many different sources have been combined, from statistical yearbooks to online databases. Our sources are listed in the Appendix. Thus the imperfect nature of the data has led us to accumulate partial indicators so as to provide a clearer understanding of metropolisation.

Because of a series of statistical constraints, we have conducted this study at the administrative scale of the City of Warsaw. We are aware of the limitations of this choice. Contrary to the metropolitan area, this scale does not include the remote periphery of Warsaw. However, it allows most phenomena related to employment suburbanisation to be observed (Bourdeau-Lepage 2002). The City of Warsaw covers a large area and is divided into 17 administrative units, 10 of which are peripheral areas ("gminas" in Polish) and 7 are central districts forming the central area which we call "city-centre" (see Figures 1 and 2). In the course of our analysis, we maintain this administrative division distinguishing the peripheral areas and the central districts including the city-core.

The Capacity for Metropolisation

Every agglomeration depends closely on initial conditions, which may be comparative advantages or historical accidents: in spatial processes, history matters, as Krugman (1991) asserts. These conditions are necessary but not sufficient. An agglomeration process must follow. At a later stage of agglomeration, the metropolisation process also depends on necessary conditions. It takes place only if the agglomeration is able to generate or strengthen the concentration of metropolitan functions.

In this application, the criteria selected are the size of the city and its position in the Polish and European city system, its productive potential approximated by the GDP per head, which favours the rise of the metropolitan functions, and the educational and cultural structures, which are at the source of human capital externalities and enhance the development of metropolitan functions.

The Size of a Metropolis

The metropolitan functions will develop only if externalities exceed a minimum level. Even if it is not absolutely decisive, the size of the city is a relevant criterion. The relative city size may also be significant. Given the absolute size, a city will more probably emerge as a metropolis if it is well placed within the national hierarchy of cities. This is so if the city is a capital or if
FIGURE 1: Communes (Gminas) of Warsaw

FIGURE 2: The City Core and Secondary Districts in 1999
there is a high primacy rate\(^1\) (Cattan et al 1994).

In 1999, the population of Warsaw was more than 1.6 million, that is to say 4.2% of the Polish population, and twice the population of the second city, Lodz (800,000 inhabitants). This is a common situation since the primacy rate is more than two in most countries of the world (Moriconi-Ebrard 1993). The third city, Krakow, has 740,000 inhabitants. The next seven cities have between 350,000 and 600,000 inhabitants. Thus, the second rank cities form a large and relatively homogenous lattice clearly dominated by the capital.

Warsaw ranks far behind the large European cities. However, it has improved its position. In 1950 it was Europe’s 32nd city with one tenth of the population of London (Hohenberg and Lees 1985). By 1996, the city had risen to 11th place among European cities,\(^2\) well behind Paris and London, but on a par with Hamburg and Vienna, and ahead of Prague. The migration balance is slightly positive while it is negative in other CEEC cities such as Budapest, Bratislava, or Prague.

**Productive Advantages for Metropolisation**

In 1999, the GDP per head (48 217 zlotys)\(^3\) in Warsaw was three times the national level (15,914 zlotys). Other Polish cities have a lower GDP (Table 1). The unemployment rate was very low in Warsaw: 3.2%, versus 15.1% for the whole of Poland. It was lower than in all the large Polish cities. In the same year, the unemployment rate was 10.1% in Paris and 4.6% in Dublin. We can say very guardedly that this could be an indication that the city is adapting well and could be a sign of good matching of supply and demand on the labour market.

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1. Ratio of the population of the capital to the population of the second city.
3. One zloty is approximately 0.30 Euro.
TABLE 1 The Capacity for Metropolisation: Warsaw and the Large Polish Cities in 1999

<table>
<thead>
<tr>
<th>Population (in thousands)</th>
<th>GDP/inhab. (zl/inhab.)</th>
<th># of higher education institutions</th>
<th>Students per 1000 pop.</th>
<th>Public libraries</th>
<th>Seating in cinemas per 1000 pop.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krakow</td>
<td>738.2</td>
<td>26 330</td>
<td>15</td>
<td>89.8</td>
<td>69</td>
</tr>
<tr>
<td>Bydgoszcz</td>
<td>386.3</td>
<td>--</td>
<td>--</td>
<td>36.2</td>
<td>37</td>
</tr>
<tr>
<td>Gdansk</td>
<td>457.9</td>
<td>24 376</td>
<td>--</td>
<td>69.7</td>
<td>40</td>
</tr>
<tr>
<td>Katowice</td>
<td>343.2</td>
<td>--</td>
<td>9</td>
<td>65.9</td>
<td>38</td>
</tr>
<tr>
<td>Lublin</td>
<td>356</td>
<td>--</td>
<td>--</td>
<td>111.0</td>
<td>31</td>
</tr>
<tr>
<td>Lodz</td>
<td>800.1</td>
<td>20 645</td>
<td>--</td>
<td>88.0</td>
<td>84</td>
</tr>
<tr>
<td>Poznan</td>
<td>576.9</td>
<td>32 796</td>
<td>--</td>
<td>89.6</td>
<td>65</td>
</tr>
<tr>
<td>Szczecin</td>
<td>416.6</td>
<td>--</td>
<td>--</td>
<td>65.3</td>
<td>46</td>
</tr>
<tr>
<td>Warsaw</td>
<td>161.54</td>
<td>48 217</td>
<td>53</td>
<td>62.3</td>
<td>177</td>
</tr>
<tr>
<td>Wroclaw</td>
<td>636.8</td>
<td>25 285</td>
<td>--</td>
<td>85.7</td>
<td>67</td>
</tr>
<tr>
<td>POLAND</td>
<td>38654</td>
<td>15 914</td>
<td>287</td>
<td>37.0</td>
<td>9100</td>
</tr>
</tbody>
</table>

Notes: 1. In higher education institutions for 1999/2000. 2. Gdansk, Gdynia, Sopot.
Sources: Calculated from GUS (2002a), Table 85; GUS (2002b); USK (2001), Tables 18 & 27 and US Kr (2000), Table III.

The Sources of Educational and Cultural Externalities

Warsaw dominates the Polish educational structure. With 4.2% of the population, Warsaw accounts for 8.5% of the secondary schools and 18.5% of higher education institutions. Warsaw is the leading Polish city in terms of student numbers, ahead of Krakow. It has the largest concentration of students in Poland. However, the number of students per 1 000 inhabitants puts Warsaw behind Lublin, Wroclaw, and Krakow (Table 1). Warsaw is in a better position for the highest education levels, since in 1998 it awarded 29% of Polish masters degrees (five years of higher education) for day studies and 20% of the doctorate diplomas (15% were awarded in Krakow).

Warsaw does not exhibit a marked concentration of cultural infrastructures. It accounts for only 4.8% of movies (which are uniformly distributed throughout Poland) and 7.5% of Polish museums, but the city is home to 19% of Poland’s theaters. The concentration is clearer in terms of cultural activity since Warsaw takes the first place for the number of seats in movies and it stages 23% of the total number of film shows, i.e. three times more than in Wroclaw and five times more than in Krakow. Warsaw receives one eighth of the total number of Poland’s museum visitors, with 2.3 million visitors to its 50 museums in 1998. This figure puts Warsaw ahead of Prague.
(2 million visitors), but behind Vienna (7 million), and far behind Berlin (13 million) and St Petersburg (22 million; 1992 data).

The performance in terms of libraries is also disappointing. Despite its 177 public libraries (markedly more than in Prague, Budapest, or even in Vienna), the rate of lending per head was 4.2 in 1999, below the average of 4.6 for the 58 largest European cities (for 1996, EUROSTAT data excluding Paris and London).

Finally, these elements give Warsaw a relative advantage derived essentially from its role as capital in a regular hierarchy of cities. However, Warsaw is in competition with a series of secondary cities. Its superiority derives more from its position in the Polish production structure than from the educational or cultural infrastructures which are evenly distributed throughout Poland. Moreover, Warsaw suffers from intense rivalry with Krakow in terms of image and historical prestige. Warsaw can thus rely more on its comparative advantages in terms of production concentration and productivity. Its economic size and performances may push Warsaw to take off as a metropolis.

We shall now examine how Warsaw has been able to adapt its structure to the new economic situation.

**Proximity and the Organisation of Metropolitan Functions**

The analysis is conducted in three phases, corresponding respectively to three spatial geographical scales. First, we show that Warsaw as a whole specialises significantly in metropolitan functions. Second, we examine the centre-periphery structure of the city and show how metropolitan functions concentrate mainly in the city-centre. Third, we observe in detail the structure of this city-centre and the concentration of metropolitan functions in three central districts, principally in the city-core, Srodmiescie.

The new urban patterns of Warsaw are captured by data on employment and on economic units by sector, as well as in terms of the importance of a number of selected metropolitan functions, which are very sensitive to proximity externalities, such as specialised producer services or decision functions represented by corporate headquarters.

**The Rise of Services in Warsaw**

The city is adapting rapidly to the new requirements of the market economy. Its economic structure is becoming more diversified. The de-industrialisation process engaged at the beginning of the 1970s is continuing and service activities are
expanding as part of a catching-up process.

The rise of services is much more marked in Warsaw than on average in Poland. At the end of 1999, 73.4% of the workforce were employed in services in Warsaw compared with only 46.1% in Poland as a whole, which corresponds to a location quotient (LQ) of services of 1.64 in Warsaw (Bourdeau-Lepage 2002). In Paris, London, and Brussels, the rate of service employment is close to 80%. The Warsaw structure is similar to that of Dublin whose corresponding rate is 73.8% (IAURIF 2001b).

The tertiary structure of Warsaw results from a relative decrease in non-market services and a large increase in market services. From 1994 to 1999, employment in market services increased by 27.3% with extreme growth rates of 83% for financial activities and 44.4% for business services. At the same time, the location quotient in Warsaw rose from 1.67 to 1.81 for market services and fell from 1.56 to 1.38 for non-market services (Bourdeau-Lepage 2002).

This evolution is the consequence of the opening to the market and is a sign of the metropolisation of the city. Market services like financial activities or producer services were virtually absent before 1989 and have developed very rapidly since. The specialisation of Warsaw in market services results from the operation of intensive agglomeration processes. These services are closely related to one another and their development can determine the development of other service activities through cumulative processes.

The capital has adapted more rapidly than the other large Polish cities. De-industrialisation has occurred on a larger scale and Warsaw was the only Polish city of more than 300,000 inhabitants to be specialised in market services in 1999, with a location quotient of 1.24 (Table 2).

The opening-up to the market economy and tertiarisation have led to a dramatic expansion in high-order services which were virtually absent during

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**Table 2: The Specialisation of Polish Cities with over 300,000 Inhabitants in 1999 (LQ)**

<table>
<thead>
<tr>
<th>City</th>
<th>Industry &amp; construction</th>
<th>Market services</th>
<th>Non-market services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warsaw</td>
<td>0.81</td>
<td>1.24</td>
<td>0.85</td>
</tr>
<tr>
<td>Krakow</td>
<td>1.12</td>
<td>0.86</td>
<td>1.08</td>
</tr>
<tr>
<td>Bydgoszcz</td>
<td>1.29</td>
<td>0.80</td>
<td>0.97</td>
</tr>
<tr>
<td>Gdansk</td>
<td>1.02</td>
<td>0.92</td>
<td>1.09</td>
</tr>
<tr>
<td>Katowice</td>
<td>1.18</td>
<td>0.98</td>
<td>0.83</td>
</tr>
<tr>
<td>Lublin</td>
<td>0.96</td>
<td>0.78</td>
<td>1.39</td>
</tr>
<tr>
<td>Lodz</td>
<td>1.14</td>
<td>0.79</td>
<td>1.17</td>
</tr>
<tr>
<td>Poznan</td>
<td>1.03</td>
<td>0.98</td>
<td>1.01</td>
</tr>
<tr>
<td>Szczecin</td>
<td>1.07</td>
<td>0.93</td>
<td>0.99</td>
</tr>
<tr>
<td>Wroclaw</td>
<td>1.03</td>
<td>0.91</td>
<td>1.13</td>
</tr>
<tr>
<td>All ten cities</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Source: Calculated from USK e (2000), Table III.
the central planning era. For example, in 1989, 9 consulting companies were established in Warsaw. There were 317 in 1996 and 432 in 1999 (Wilk 2001). Law firms, notary firms, and banks have followed the same pattern. In 2000, more than one third of the headquarters of Poland’s 500 largest firms were located in Warsaw.

It seems that Warsaw has adapted rapidly to the new situation, mainly through a large increase in market services and especially in high-order services. This adaptation has gone hand in hand with a spatial restructuring of the city.

**Metropolitan Functions: “the City-Centre versus the Periphery”**

The emerging metropolitan functions seek to be located centrally. They modify the spatial organisation of the city where they develop, by their own location and by their effects on the location of related activities. This spatial reshaping is both the result of and a necessary condition for sector restructuring, through the operation of agglomeration economies and cumulative processes.

The diversification of economic activity implies a tendency toward a new specialisation of the peripheral communes and of the city-centre, in terms of employment as well as of economic units. Retailing is more and more suburbanised and the city-centre accommodates the activities which are the most sensitive to agglomeration economies (Bourdeau-Lepage 2002).

As usual, the peripheral communes specialise in activities demanding space such as manufacturing, and in those which follow population such as retailing and education. An important zone specialised in retailing and high-order services is emerging. It is made up of the contiguous communes of Ursynow and Wilanow (Figure 1), which differ from the other peripheral communes by the large proportion of their economic units in real estate, renting, and business services (this proportion is 25% more than the city’s average, i.e. the location quotient is 1.25). This is evidence that agglomeration economies play a significant role, alongside transport costs, in the suburbanisation of economic activities (Bourdeau-Lepage 2002).

The city-centre is clearly dominant in terms of both employment (Bourdeau-Lepage 2002) and number of economic units. In 2000, 62% of economic units in Warsaw were located in the city-centre and mainly in the central districts of Srodmiescie (15%), Mokotow (14%), Praga-Południe (11%) and Wola (9%). This concentration is still more marked for the 5% of Warsaw’s economic units which have more than 9 employees. These units employ 760,000 people 77% of whom are based in the city-centre (28% in Srodmiescie, 16% in Mokotow, 7% in Praga-Południe, and 12% in Wola).

This concentration in the city-centre is differentiated by sector. The

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6. The city-centre corresponds to the “Centrum” commune (gmina) of Warsaw.
central districts are clearly specialised in tertiary activities, mainly in metropolitan func-

### TABLE 3 The Location of Metropolitan Functions in Warsaw

<table>
<thead>
<tr>
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</tr>
</thead>
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<td>CENTRUM</td>
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<td>91.9</td>
<td>91.5</td>
<td>84.5</td>
<td>90.7</td>
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<td>8.5</td>
<td>6.4</td>
<td>13.6</td>
<td>13.4</td>
</tr>
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<td>Srodmiescie</td>
<td>44.9</td>
<td>63.3</td>
<td>67</td>
<td>41.7</td>
<td>46.4</td>
</tr>
<tr>
<td>Wola</td>
<td>9.3</td>
<td>7.7</td>
<td>7.4</td>
<td>13.6</td>
<td>17.5</td>
</tr>
<tr>
<td>Rest of Warsaw</td>
<td>31.7</td>
<td>20.4</td>
<td>19.1</td>
<td>31.1</td>
<td>22.7</td>
</tr>
<tr>
<td>WARSAW</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Number of units**

|                      | 432                     | 714               | 94                   | 206                                 | 97          | 165         |

**Note:** 1. On June 30, 2000.
**Sources:** Calculated from Wilk (2001) and Rzeczpospolita (2002).

In 1996, 86% of the 432 consulting firms were in the city-centre (Wilk 2001). More than 90% of law firms, notary firms, and banks were located in the city-centre (Table 3). The city-centre is also the privileged place for the firms’ decision functions. In 2000, more than three-quarters of the 165 Warsaw headquarters were located in the city-centre (Table 3). These new activities are very sensitive to information externalities and therefore to proximity. The central district also concentrates activities associated with metropolitan functions, such as printing or reprography.

### Metropolitan Functions: the Leading Central Districts

Within the city-centre, the concentration of metropolitan functions is even more apparent. Metropolitan functions are concentrated in only three of the seven central districts, essentially in the city-core Srodmiescie, and to a lesser extent in Wola and Mokotow. Srodmiescie is by far the most attractive district and is emerging as a true business centre like those of western metropolises (Bourdeau-Lepage 2002). Externalities, and mainly information externalities, are doubtless high enough to generate a pronounced concentration of high-order services and of associated activities. Srodmiescie and Mokotow together group 67% of economic units in a set including metropolitan functions and associated activities.7

The specialisation of Srodmiescie is marked in high-order services which

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7. This group includes real estate, computing, science, research and development, printing, reprography, and hotel business.
require close proximity: public administration (LQ: 3.5), real estate (LQ: 1.3), science, and research and development (LQ: 1.2), as well as in associated activities: the district features the main concentration of restaurants and hotels in the city.

In the domain of our selected metropolitan functions, Srodmiescie is clearly predominant, since it concentrates more than 40% of the consulting companies, banks, and commercial banking agencies, and more than 63% of the law firms and notarial offices. The district is also home to 26% of Warsaw’s corporate head offices, that is to say 9% of the headquarters of Poland’s 500 largest firms. Most of them are in financial activities: the business centre concentrates half of the financial headquarters of Warsaw. It also concentrates all the hotel headquarters and one-third of the real estate and business services headquarters in Warsaw (Table 4).

Wola and Mokotow are both distinguished by the presence of consulting companies, banks, and finance company headquarters. Wola attracts headquarters, mainly in transport and communication and is more specialised in finance than Mokotow. Mokotow is specialised in science and research and development (LQ: 1.2), real estate, renting and business services (LQ: 1.15) and computing (LQ: 1.1). It also has a significant share of commercial headquarters. This district displays an original structure. It is a rich residential area with few economic activities, but it accommodates a significant proportion of Warsaw’s high-order functions. This district did not appear as

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8. This quotient and the following ones are based on the number of economic units; quotients based on employment data lead to similar results (Bourdeau-Lepage 2002b).
an “employment zone” in the analysis of Warsaw’s suburbanisation (Bourdeau-Lepage 2002), and its hidden strategic role is revealed only by examining the metropolitan functions in detail. Notice that the district of Ochota is specialised in real estate (LQ: 1.6).

In conclusion, Warsaw concentrates a large portion of the metropolitan functions in Poland, and most of them are located in the city-centre, and mainly in the city-core. This gives Warsaw’s centre a dominant economic role, which is consolidated by its cultural potential. It is the primary location for museums, cinemas, and theatres (Bourdeau-Lepage 2002).

**Warsaw in the Global Economy**

As we argued in the second section, the metropolisation process is both internal and external, these two facets being logically interdependent. The metropolitan functions concentrated in Warsaw endow it with a power for creating, deciding, and controlling. The high concentration of these functions in the city-core facilitates external contacts at the national and international levels. In other words, its internal structure gives Warsaw a number of winning cards. Thus, we could expect Warsaw to play a leading role in the global economy and to fit into the network of European or world metropolises. In order to determine whether Warsaw is effectively able to fulfill the external role of a metropolis, we propose to examine how the city fits into international transport networks and try to evaluate its rank in the hierarchy of world cities based on economic and cultural attractiveness.

**A Second-Rate Position for International Accessibility**

Airline activity can be used as an initial indicator of integration in the global network. But the data are somewhat deceptive. Warsaw airport accounted for 75% of Poland’s passenger traffic in 2000 with more than 4.3 million passengers. Nearly 90% of them took international flights. This traffic corresponds to two passengers per inhabitant, which is less than the average rate of 9.7 calculated for the 58 largest European cities excluding Paris and London. Warsaw’s traffic is therefore relatively low. The traffic in Paris, for both Orly and Roissy airports, totals nearly 70 million passengers (IAURIF 2001a). Warsaw’s traffic in 2000 was equivalent to that of Paris in 1960. In 1998, total traffic was 34.4 million passengers in Amsterdam, 18.5 in Brussels, 17.4 in Manchester, 11.6 in Dublin, and 10.6 in Vienna.

The insertion of Warsaw in the air network can be assessed in terms of accessibility. For example, an evaluation of the potential accessibility was
conducted for 55 European cities in terms of time (Delvin 1993). Cities in the CEEC have generally low accessibility. Other evaluations confirm this pessimistic result, and even show a worsening of the situation (from 1977 to 1997, Timberlake et al 2001).

The attraction of Warsaw relies also on perceptions of its accessibility by the transport networks. Interviews of senior executives of European firms (Healey and Baker 2001) show that this image is rather poor. Of 30 cities surveyed, Warsaw ranks last with Prague.

**Expected Economic Attractiveness**

Economic decisions preparing Warsaw’s future rely on the city’s image and its appeal for business and investment. The same report by the consulting firm Healey and Baker shows Warsaw in 27th position among the 30 cities with significant appeal in 2001. This survey gives detailed results about the rank of each city for many criteria.

One fifth of the firms surveyed planned to have offices, manufacturing, distribution, or sales outlets in Warsaw (ranked 12th in Europe). On current expectations, more than one quarter of the firms will be in that situation in 2006, putting Warsaw in 9th position. However, only one fifth of the executives surveyed knew Warsaw well and many of them would like more information about the city and thought that Warsaw did not promote itself well enough. Detailed results by attractiveness criteria reveal that Warsaw is not very attractive in terms of the availability of skilled labour, the quality of telecommunications, the quality of life, the ease of intra-urban transport, the quality of the environment (pollution), and the language. Conversely, it is clearly attractive for labour costs (despite the fact that the average wage is higher than in most CEEC: see DREE 2002), the price and availability of office floor space, and less so for government incentives and market access.

Consequently, Warsaw is attractive in terms of low costs of factors of production and access to markets rather than in terms of the quality of its living and working environment, and of its infrastructures. Its attractiveness is more prospective than actual.

More objective evaluations of attractiveness tend to confirm these results. Based on the criterion of the presence of high-order producer services, an inventory of European cities has been drawn up by the research network “Globalisation and World Cities” (GaWC; Beaverstock et al 1999). Services
surveyed include accounting, advertising, law, and banking services. For each type of service, cities are classified and weighted in three groups: centres (3 points), major centres (2 points), and minor centres (1 point), depending on the degree of presence of the largest international firms in this activity. The four classifications are combined by giving each city a grade from 1 to 12, equal to the sum of the points obtained. This evaluation puts Warsaw in the third class of world cities (gamma world cities), with a grade of 5, immediately behind Amsterdam, Dusseldorf, Geneva, and Prague and on the same footing as Rome and Stockholm in Europe. Only 21 cities obtained 5 points or more. Warsaw scores well (major centre) for legal and banking services.

Increasing Cultural Attractiveness

Despite wartime destruction, Warsaw still has a potentially attractive cultural heritage. The city ranks 16th in Europe after Prague and Budapest but curiously ahead of Krakow, Athens, and Amsterdam (Vandermotten 2000). This potential is probably related to the increasing role played by Warsaw as a venue for international congresses. The International Associations Union records congresses of at least 300 people, 40% foreigners, and five nationalities, and lasting at least three days. Of 9,400 congresses recorded in 1999 around the world, 57% were held in Europe. Poland’s share was barely more than 1%, just behind Korea, India, Portugal, Hungary, and Greece (which have very similar shares). Poland comes far behind the two leading countries, the United States (13%) and France (7%). However, Warsaw has a significant position in the hierarchy of cities participating in international congresses. It features in the second group, which follows that of the world’s 25 leading cities such as Paris, Brussels, and Berlin. This second group contains cities like Lisbon, Munich, Montreal, Lyon, Chicago, and Warsaw, ahead of Toronto, Atlanta, Dublin, and Florence. Warsaw has made more progress during recent years than most other cities in Europe and indeed the world. In the same group, Warsaw is behind Paris, Brussels, Vienna, London, Strasbourg, Rome, or Barcelona and Lyon, but is ahead of Dublin, Birmingham, Florence, Moscow, Milan, Cambridge, Bonn, and Bordeaux.

Warsaw is changing rapidly and the rise of metropolitan functions in its city-core has created a business city that is looking increasingly like western metropolises. However, despite the partial character of the criteria examined above, it seems that the external role of Warsaw is still not at the level we might expect from its internal economic restructuring.

11. This classification of European cities is derived from a quantitative analysis of the contents of the Michelin Guide to Europe.
Conclusion

Is Warsaw a city in the process of metropolisation? The answer cannot be clear-cut, but we can propose a reasonable interpretation of the results.

The answer cannot be clear-cut, for a series of reasons, related to the concepts, to the data, and to the results.

Despite our search for an analytic definition of metropolis and metropolisation, this concept remains multidimensional and qualitative. Lacour and Puissant (1999) emphasize both the agreements and the disagreements between experts in urban economics or geography. Consequently, even the best quantitative indicators would reflect the phenomenon only partially and subjectively.

We have tried to push back these limits by gathering a wide variety of information at the scale of the City of Warsaw, with its central districts and its peripheral communes. We have compared diverse sources, combined data on employment and economic units, included educational and cultural aspects, and added the results of opinion interviews to more objective measures. The points presented in this paper are mutually reinforcing and converge toward the same interpretation.

We have argued that the metropolisation process can be characterised by the conjunction and the interplay between two levels of urban organisation, the internal level governed by close proximity externalities and the external level depending on global and long-distance interactions between cities. The results show significant and rapid growth of metropolitan functions in Warsaw, and an efficient organisation of these functions in the main business centre (the city-core) and in two minor centres. In its internal composition and structure, it seems that Warsaw is well placed to join the circle of European metropolises. However, the external situation of Warsaw is not so good and its role in the world is still a minor one. This reveals a gap between internal and external metropolisation in Warsaw.

This gap may be explained by history and by the specific case of Poland. The opening up to the market economy has led to a rapid change in the production structure. In Poland, Warsaw is clearly the leading city for the adaptation to the new economic situation, essentially through the marked specialisation in high-order services. However, like other CEEC cities, Warsaw suffers from the inheritance of long years of at least partial closure to interaction with the West, which has still not been offset by the expectations of future membership of the European Union. The inertia of practices and of perceptions may explain this gap.

However, we think that this gap could be closed. The first reason stems from the interdependence of the internal and external characters of a metropolis. If this logical link holds, the success of the former should, in the near future, go with the success of the latter. Moreover, the internal and external phenomena can react with one another and generate a cumulative
process of metropolisation. The second reason is based on evidence which seems to herald metropolisation, such as the presence in Warsaw of foreign capital\footnote{Warsaw receives proportionally more foreign capital than other Polish cities. Almost one quarter of the commercial companies with foreign capital are located in Warsaw. Only 4.6\% are in Wroclaw, 4.5\% in Poznan, and 3.3\% in Krakow (Calculated from GUS, 2001a and USW, 2001a).}, the rise of the city as a place for international congresses, and the positive expectations of European executives about the attractiveness of Warsaw for business and investment. Finally, the leading role of Warsaw within Poland may give it a role as an interface between the European Union and Poland and maybe between the European Union and Russia.

**Bibliography**


**Appendix**

**List of Data Sources**


stat.gov.pl.