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**The Relation Systems
of Metropolitan Areas**

Comparative Analyses of Capital City Regions by the Example of Budapest,
Székesfehérvár, Tatabánya in Hungary and of Paris and Sens in France

by
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Gábor LUX

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This paper is a shortened version of the PhD thesis of the author that has been finished in 2008. The paper summarises the main theoretical and empirical results of the related research activities. These investigations could not have been undertaken without the valuable help of my two professors, Prof. Viktória Szirmai DSc and Prof. Françoise Plet HDR.

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1 Introduction

1.1 The issue of the study¹

Our study analyses changes undergoing in the relation system of metropolitan areas² and the issues of social and economic relations arising from the restructuring of spatial and regional disparity systems.

Global-scale economic, social and political integration, the processes of global urbanisation, globalising urban networks and the transformation of their sub-systems are increasing the importance of large cities and their metropolitan areas. They are squeezing out the earlier systems of spatial relations having shaped up behind nation-state boundaries in the past. All these trends are also manifested by the vigorously increasing importance of cities (*Barta, 1998; Cséfalvay, 1999; Enyedi, 2001, 2003, 2006; Knox, 2002*).

The spatial structuring force of cities and metropolitan areas is leaving its marks on the relation system of cities and their urban areas as well. The earlier hierarchical, mono-centric and core-periphery³ based spatial disparity model of urban areas is now in transition (*Ascher, 1995; Baron et al., 2005; Barta – Beluszky, 1999; Enyedi, 2003; Merlin, 2003; Mirloup, 2002; Szirmai et al. 2007*).

The social, economic and environmental impacts of the newly structured and urbanised regions (*Enyedi, 2001, 2003*) will reconfigure the system of earlier spatial disparities (*Beckouche et al. 1997; Marcuse, 1989; Szirmai, 2004*). Besides (and partly instead of) monocentric and hierarchical schemed relations, horizontal cooperation models based on the functional division of labour and networked

¹ This study summarises the results of the author's PhD dissertation titled 'The Relation Systems of Metropolitan Areas – Comparative Analyses in Capital City Regions by the Examples of Budapest, Székesfehérvár, Tatabánya in Hungary and of Paris and Sens in France'. The dissertation was written under a double supervised doctoral programme at the University of Pécs Faculty of Business and Economics Doctoral School of Regional Policy and Economics and at the University of Paris, Doctoral School of Social Sciences. The consultants were Prof. Dr. Viktória Szirmai and Prof. Dr. Françoise Plet. The present study, beyond drafting the major theoretical findings, focuses on presenting the results of empirical research.

² The study defines urban areas as territories with functional social and economic relations, while urban areas being in key positions by their population number and functions and linked to European and global urban networks, are described by the terms of metropolitan area, urban area and metropolitan space.

³ The core-periphery model is used in the analysis on the basis of *Szirmai (2007, 741)* from a socio-geographical and sociological perspective. In the socio-geographical sense, core means a spatial centre of a certain geographical unit while periphery means the outskirts of the given geographical unit. Between core and outer peripheries there may be variation by historical perspective as well as economic, infrastructural, functional and social differences or disparities. In the sociological sense, core and periphery are expressing the social status of the population living within the same geographical space. In the 'traditional' core-periphery model the highest position in the social ranking hierarchy is taken in the core area.

organisational systems will operate as the driving engines of spatial organisation (Fujita – Thisse, 1997; Mirloup, 2002).

The restructuring of the internal relation system of metropolitan areas (Berger, 2004; Béhar – Estèbe, 1998; Burdack – Dövényi – Kovács, 2004), the discontinuation of the traditional hierarchical model of settlement relations, the past inherited and new dependencies and autonomies, the co-operation and spatial integration systems built on the functional division of labour, the reorganised and restructuring disparities are all integrating metropolitan spaces into complex territories bound together by several ties. This process creates dynamic territories and settlements of urban areas as well as backward settlements lagging behind dynamically developing regions.

Changes in relation systems have various concrete social and economic outcomes (for example the emergence of Foreign Direct Investment, the restructuring of the economy, the restructuring of jobs, changes in labour migration trends, and the reshaping of social structure) which make their impacts in *settlements of different social and economic development level; therefore, in settlements with varying skills of accommodation.*

The concrete background of social and economic development, the position in urban hierarchy, the administrative, social, economic and institutional functions, the historically formed roles are all determining a settlement's receptivity attitude, as well as its integrative and accommodation skills. From several aspects they may influence both the processes of urban development and the autonomous and special features of the individual components. Local socio-spatial and economic context also specifies what impacts can be triggered and to what extent. The relationship between impacts and receptivity attitude influences economic and social outcomes of these relations as well.

Thus, the changing relations of metropolitan areas and the reconfiguration of spatial disparities are ruled by complex interactions. Their research is very important as it highlights the necessity of creating a different strategy from the present and emphasises the importance of thinking in regional dimensions and of cooperation.

1.2 The major objectives of the study

The primary objective of our study is investigating the relations of two metropolises situated in a diverse social and economic environment as well as analysing the interrelations of central cities and their urban environment which depend on the impact forces mediated by the central city. The changing relation systems of metropolitan areas, the reconfiguration of regional spatial disparities and their major outcomes are analysed by the examples of Budapest, the capital city of

Hungary, and Paris, a Western European capital. In the case of Budapest, we have investigated the city's relation system with Székesfehérvár and Tatabánya, while in the case of Paris, the city's relations established with the city of Sens were the objects of our research. Our research provided an opportunity for comparing a Western capital city with an East Central European one; a global with a globalising metropolitan area; and for a scientific research of the relation system of cities in capital regions selected by predefined criteria.

The major objectives of the study:

1. One of the major objectives of the study was to assess the economic and social relation system of central capital cities and selected cities in their region and to analyse the elements of these relations.

When examining economic relations, the site selection policy of the economic actors of our investigated cities with special regard to the immigration of global economy was investigated. The characteristic features of the spatial location of company centres and sub-centres were also identified, which served as an indicator of the existence of various corporate functions with the quality of local and urban facilities necessary for their provision. The system of inter-firm supplier relations was also mapped with the indicators of relations and labour migration defined by the spatial structure of the consumption of economic actors and of the utilisation of services. The analysis of social relations is in strong correlation with the economic relations to be revealed, comprising the spatial restructuring of population and the investigation of residential migrations.

2. The other main objective of our study was assessing the impacts arising from the relation systems established between central capital cities and the cities selected for our research.

When examining economic relations, the structural features of urban economies changed by the impact of the economy of capital cities, as well as the roles of economic sectors (industrial and tertiary), the relationship of global and local economies, and the autonomous and large city centre-dependent development elements of urban economies, were investigated.

The analysis of social impacts encompasses changes in the relationship between the residential area and place of work of citizens living in our area of research (or in its neighbour cities) as well as the outmigration of labour force, the changes of employment structure and the relationship between cities and their inhabitants. The analysis of social impacts implies the problems of dependencies and autonomies.

3. The third major objective of our study was investigating the impacts of new spatial formations on economy and urban development.

Under this research objective we studied how the transformation of urban area networks, modernisation, social and economic integration, the different new demands of urban development create inner socio-spatial disparities in urban areas and whether they are encouraging spatial equalisation or generating new types of disparities.

Our study interprets social and economic outcomes as processes having been generated by the reconfigured spatial formations. Within this context the formation of social and economic cooperation systems, the re-creation of socio-spatial disparities, the increase of social conflicts and the emerging demands of urban development are examined.

4. Our last research objective is uncovering the different reasons standing behind the relationship between capital cities and the selected cities; historical determinations, the identification of global economic and social processes, the recognition of similarities and differences arising from Western and Eastern Central European location.

1.3 Hypotheses

- 1) In the context of capital city and the selected cities, the analyzed factors vary by *country and urban settlement type (traditional city, new city) intensity.*
- 2) Developing into a metropolitan area makes up new territorial structures which expand the earlier hierarchical core-periphery relation system by introducing a new scheme of inter-settlement relations based on horizontal cooperation and the functional division of labour. *These new spatial processes are emerging in the context of our investigated capital cities and the cities in their regions as well.*
- 3) Thus, in the urban areas of our research the new spatial relations create a new system of disparities and they are changing core-periphery relations as well. This process creates new urban area sub-centres within the metropolitan area. Their most important feature is that they are bound by several ties to the urban centre and they are capable for performing certain functions; they have the ability to increase their role in spatial organisation and give a greater dynamic force to the development of their environment. *The cities involved in our research are presumably such kind of metropolitan area sub-centres.*
- 4) The emergence of multidirectional cooperation-based relation systems, the functional division of labour among settlements and their outcomes such as territorial specialisation and spatial integration – according to our hypothesis – *reconfigures the earlier hierarchical inter-settlement relation dominated scheme of spatial disparities.*

- 5) Our study investigates the relation system of metropolitan areas which have some dependant and some autonomous elements. Our paper is built on the hypothesis that *the economic and social relation system of central capital cities and (selected) cities in their region affect the autonomous and dependant elements of urban development on a varying scale.*
- 6) The new spatial relations resulting from the growth into a metropolitan area scaled size are organised rather on functional than administrative basis. For this reason it can be assumed that *the relation systems of capital city regions and their impacts are surpassing the administrative boundaries of capital city agglomeration zones.*
- 7) Another of our hypotheses is that the space-forming and urban development impacts of capital cities are not primarily dependant on the population number based size of the selected cities.

1.4 Sample areas

The research areas were selected on the basis of two major groups of criteria. On the one hand, by taking all quantifiable parameters into account, and on the other hand, on the basis of non-quantifiable but urban function related factors.

The selection criteria were as follows:

- One of the starting hypotheses of our research was that the relation systems of capital city regions and their impacts are surpassing the administrative boundaries of capital city agglomeration zones. For verifying this hypothesis we considered very important to select sample cities *from outside of the agglomeration zone of Budapest and Paris.*
- The findings in the professional literature also pointed out that the investigation of the relation systems of metropolitan areas and of their impacts can hardly be carried out on the basis of a wide-scale factor group analysis.⁴ In case of all investigated cities the access time of the capital city from each selected city was a common key element and parameter (*Aguilera – Mignot, 2003; Belliot, 2006; Giband, 2003; Gilli, 2002; Hardi, 2002; Mirloup, 2002; Mokos, 2004; Potentials for..., 2005*). For this reason, when selecting the

⁴ 1. Changes in population number, migration processes, suburbanisation; 2. Housing, changes in housing conditions; 3. The development of the basic infrastructure of settlements; 4. The development of residential infrastructural supply; 5. Transport connections; 6. Labour migration; 7. Commuting (place of work-school); 8. The relations of economic organisations in general; 9. Site selection; 10. Supplier relations; 11. The relations of company headquarters and sub-centres; 12. The consumption of economic actors, the utilisation of services; 13. The outsourcing of different functions, residential consumption; 14. Changes in social structure; 15. Relations of research institutes.

sample cities, *an equal travel time* to each city from the capital was a very important selection criterion into the sample. The access time of 60 minutes was specified also by following the guidelines of the relevant scientific literature (Grandvaux, 1991; Potentials for..., 2005).⁵

- Another limitation criterion of the sample areas was the role of the so-called ‘satellite’ (Hungarian) or ‘sentry’ (French) cities had *in functional urban areas* at the time of an earlier investigation (Gilli, 2003a; Közép... 2006). By applying this filter the number of potential cities in the French capital city region could fairly precisely be reduced.⁶
- *Labour migration towards capital cities* was another quantifiable selection criterion of the research area. Scientific literature pointed out that the attraction of labour force is one of the key elements in analysing the relation systems of metropolitan areas.⁷ On the basis of the relevant parameter values in Hungary, three cities (Székesfehérvár, Tatabánya and Gyöngyös with a 7–10% labour migration ratio to the capital city among local labourers), while in France, five cities (Chartres, Évreux, Compiègne, Montargis and Sens: 7–10%) were eligible for investigation.
- For a further limitation of the number of potential sample cities we examined the differences in their role. *Cities of differing type* i.e. traditional and so-called new cities are presumably accommodating the impacts of capital cities in a different way. In the capital city region of Budapest the two different city types best represented by Székesfehérvár and Tatabánya, two cities with different historical and urbanisation background but pursuing a similar strategy of urban development since the regime change of the 1990s (Keune, 2001).
- In France, only one city could be involved into the research project, selected on the basis of the assumption that the spatial formation and the urban development impacts of capital cities are not primarily dependant on the size (population number) of the selected cities and their urban areas. To verify this of all the potential French sample areas (due to its largely differing

⁵ On the basis of the above indicators there were five cities which were eligible for investigation in the capital city region of Budapest (Tatabánya, Székesfehérvár, Gyöngyös, Kecskemét and Dunaújváros), while in the French capital city region there were far more suitable cities with favourable geographical location (motorways, good public road and railway connections) with 60 minutes of travel time from the capital city (Gilli, 2003a; Grandvaux, 1991).

⁶ Chartre, Dreux, Evreux, Vernon, Compiègne, Château-Thierry, Sens and Montargis.

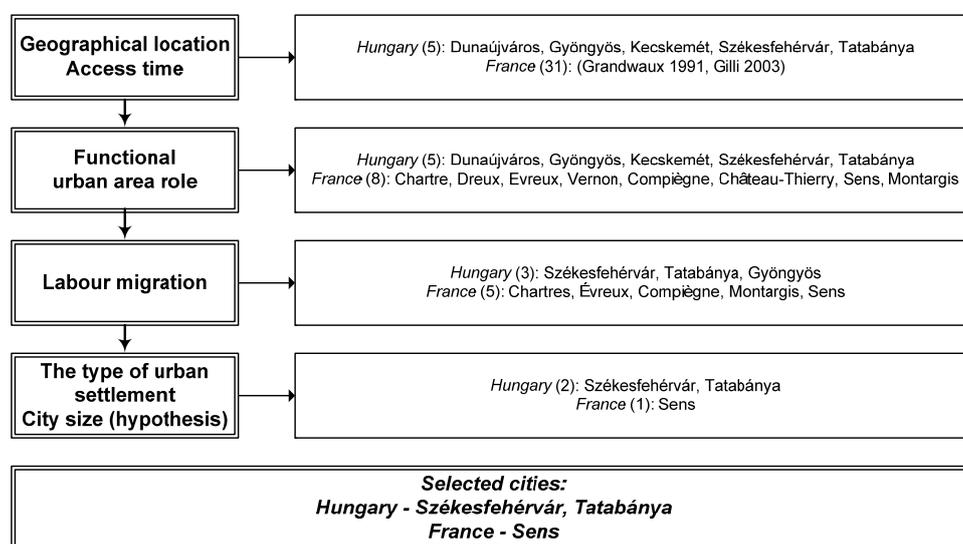
⁷ The investigation of labour migration to capital cities in both countries was carried out on the basis of census data. In Hungary (2001) we analysed the ratio of commuters working in other county than their residential place out of the total employees of the cities involved in our research which by extending with the census data of cities of county rank was sufficient for evaluating labour migration to the capital city. In France (1999) analysing the ratio of labour out-migrants into another region out of the total number of employees served as a basis for comparisons.

population number from Hungarian sample cities), the city of Sens proved to be the most suitable one for our investigation.

The selection criteria (similar geographical location, accessibility, functional urban area roles, an identical ratio of labour migration to the capital city, same type of urban settlement with different population number) were fully met by the cities of Székesfehérvár and Tatabánya in Hungary and by the city of Sens in France (Figure 1).

Figure 1

The steps of selecting the sample areas



Note: The figure indicated in the bracket shows the number of eligible areas for the specified requirements.

Source: Author's construction.

1.5 Methods

The preparatory investigations of our study involved using a wide scale of instruments applied in social science research such as methods applied in social geography, sociology, regional science and regional statistics.

Of all these, the first thing we did was the collection, processing and analysis of the relevant international and Hungarian literature, planning and development

documents. Our research in France had a big role in finding the literature cited here.⁸

Besides the theoretical foundation of the research concept the analysis of processes in the French research sites (site selection factors, company centre – sub-centre relations, labour migration, and social inequalities) was also partly built on the processing of French literature.

The methods of empirical investigations can be summarised as follows:

- Statistical data analysis.⁹ Statistical data analyses are linked to the empirical chapters such as site selection factors, company centre – sub-centre relations, other relations of economic actors, labour migration and the exploration of social inequalities.
- The author's own empirical research¹⁰ concerning the urban development impact of the global economy, the relation system of suppliers, the consumption of economic actors and the structure of the labour force.
- Other empirical researches were carried out on the basis of a thematic questionnaire survey within the framework of a PhD research project by Central Transdanubian Research Group West Hungarian Research Institute CRS HAS. These research projects¹¹ gave us access for investigating Hungarian and French research fields and for preparing in-depth and auxiliary interviews linked to our own studies.

⁸ The research project in France between 2004 and 2007 was funded by a bilateral cooperation programme between HAS-CNRS (CRS HAS WHRI CTRG, HAS Sociological Research Institute – UMR 7533 LADYSS, Université de Paris8; consultants: Prof. Dr. Viktória Szirmai, Prof. Dr. Françoise Plet). The research projects implemented under the cooperation programme are as follows: *Metropolitan Inequalities and Social Conflicts* and *Living Manners, Lifestyle- and Types of Space Utilisation in Our Contemporary Urban Areas* The co-funder of research programme was a research grant coordinated by the French Institute of Budapest and sponsored by the French Government.

⁹ The investigation of the Hungarian and French research sites in all cases was carried out by analysing the latest statistical data which enabled us for making comparisons. The majority of statistical resources originated mostly from the 1999 census in France and from the 2001 census in Hungary.

¹⁰ 1. The research titled '*The Socio-spatial Impacts of the Global Economy*' under the Social Science Research Programme of National Importance. 2004–2005. 2. *Questionnaire Survey of Firms employing a staff of more than 50 in Tatabánya and Székesfehérvár*, Spring 2007.

¹¹ 1. Research titled '*Metropolitan Inequalities and Social Conflicts*' funded by a bilateral cooperation programme between HAS-CNRS 2004–2005; 2. Research titled '*Living Manners, Lifestyle- and Types of Space Utilisation in Our Contemporary Urban Areas*' funded by a HAS-CNRS bilateral cooperation programme 2006–2007. 3. Research titled '*Urban Areas. Socio-spatial Inequalities and Conflicts. The Socio-spatial Factors of European Competitiveness*'. National Research and Development Programme 2004–2007. (Consortium lead organisation: HAS Sociological Research Institute. Project leader: Prof. Dr. Viktória Szirmai; CRS HAS WHRI CTRG consortium member).

- Re-analysing some partial results of the research projects of the Central Transdanubian Research Group West Hungarian Research Institute CRS HAS¹² was also a significant data source contributing to our research encompassing the local, regional and regional roles of Székesfehérvár and Tatabánya, the policies of site selection, other relations of economic actors, the issues of labour migration and the trends of social inequalities.

At the overall level, the study is based on 8 research projects carried out between 2000 and 2008. The number of single interviews prepared under this task is 70 (30% of the interviews prepared were conducted in the French research area). Beyond this, our study utilises the results of two questionnaire surveys as well.

2 Theoretical foundations

2.1 Globalisation and urban development

Globalisation affects urban development in several ways. It has such impacts as the increasing number of population, its regional differences, social inequalities, increasing social conflicts and the changing role of urban settlements. The formation of global urban networks and their sub-systems, the changing territorial structure and internal relation system of urban areas, and the increasing demand for the governance of urban areas also belong to this category. These impacts are felt in the different parts of the world (on different continents, in advanced and developing regions) with different intensity.

Regarding the impacts of globalisation on European urban development, our study analyses three factors within the scope of its own problem areas.

The first issue is the change of population which is regarded the most decisive factor of urban development. Its analysis is quite well reflective of the geographical differences of urban development. Besides the increasing population of urban settlements, the changing functions of cities are an important factor which also marks the place of cities and their urban areas in the global urban hierarchy and in global urban networks. The historical presentation of metropolitan theories is a good opportunity for tracing the major changes. This is a good way to understand how these cities, and through them, functions could and can join global urban networks. Of the European cities, our study considers defining and analysing the

¹² 1. Research titled '*The Socio-economic Relation systems of Tatabánya and Its Environment (Tata and Oroszlány)*' sponsored by PICS international comparative research programme. 2000–2001. 2. Research titled '*The Site Selection Strategies of Multinational Firms in Székesfehérvár and Fejér County-Aspects of Increasing Competitiveness*'. 2001–2002; 3. Research titled '*Spatial-Regional Relation Systems of Székesfehérvár*'. 2004.

position and role of Paris and Budapest within the global urban hierarchy as an issue of high importance.

And finally the impact analyses of the transformation of the territorial structure and relation system of urban areas are basing and marking up the future lines of empirical researches.

The theoretical foundations of our empirical research can be summarised as follows:

- 1) The analysis of the geographical differences has pointed out that in the European metropolitan areas facing the problems discussed in our study (including the metropolitan space of Budapest and Paris) a significant increase of population cannot be expected (*Table 1*). The territorial restructuring of population within these urban areas is expected to be the largest change in this aspect, which is in close correlation with the processes of suburbanisation and peri-urbanisation.
- 2) On the basis of the historical overview of urban theories it can be stated that besides the categorisation of cities by the number of inhabitants, the awareness of the other social and economic factors of urban development and the complex evaluation of metropolitan functions are also necessary for understanding the development processes of cities. The scientific literature emphasised among economic factors the primary importance of company centres, global capital and commodity markets, global management functions, advanced level business services high, the presence of international media organisations and the role of telecommunication and air traffic hubs. The overview of urban theories also highlighted that the economic processes determining global urban hierarchy have several social impacts, factors (increasing social inequalities, social polarisation social conflicts, the restructuring of employment structure) missing from the earlier theses of the overviewed theories.
- 3) The global territorial, social and economic processes influencing metropolitan development are also present in the European metropolitan system, and they are expressing the new elements of the development of urban areas and of the spatial processes of metropolitan development in a differentiated intensity and way.
- 4) Differences in the social and economic development of cities in their linkages to urban networks, in the integration or shaping of global processes, local factors, the special historical and social backgrounds and differences originating from them also play an important role.
- 5) The increasing population of metropolises, their changing functions and global networks change their internal relation scheme as well. The earlier hierarchical core-periphery modelled relation system is turning into or ex-

tended by an inter-settlement system based on horizontal co-operation and the functional division of labour.

- 6) The transformation of the internal relation system of metropolitan settlements also means that the earlier mono-directional, no feedback relations increasing the dependence from the centre are replaced by multi-directional, networked relation schemes. The functional division of labour among settlements in metropolitan areas may increase the degree of the territorial integration of settlements.
- 7) The key factors correlating with the physical expansion and the changing territorial structure of urban areas and determining the development of the relation systems of urban areas and spatial disparities are as follows: the decentralisation of population and the economy, the integration of urban economies into the global economy, the spatial division of labour of firms, producer-supplier relations and labour migration as their outcome.

Table 1

The number of cities with over 500 thousand inhabitants grouped by city size and continents (1975, 2000, 2015)

Urban size category (number of inhabitants)	Continents	1975	2000	2015
10 million and more	Asia	2	10	12
	Latin-America and the Caribbean Region	1	4	4
	North-America	1	2	2
	Africa	–	1	2
	Europe	–	1	2
5–10 million	Asia	6	13	23
	Europe	5	5	4
	Latin-America and the Caribbean Region	3	3	4
	North-America	2	2	6
	Africa	1	1	2
1–5 million	Asia	78	171	253
	Europe	42	56	54
	Latin-America and the Caribbean Region	17	42	65
	North-America	28	37	43
	Africa	7	33	59
	Oceania	2	6	6
500 thousand–1 million	Asia	112	216	269
	Europe	64	69	72
	Latin-America ad the Caribbean Region	25	53	56
	Africa	19	42	67
	North-America	28	39	44
	Oceania	4	–	2

Source: World Urbanization Prospects: The 2003 Revision, 89.

Table 2 summarises the key factors of the relation systems of urban areas which are serving as a guideline for pointing out the directions of empirical research. The factors summarised in the table can be categorised into three major groups. These are economic factors, social factors and other factors.

Table 2

Factors of agglomeration, the elements of relation systems in urban areas as specified by the cited scientific literature

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Aguilera–Mignot (2003)						X			X				X		
Ascher (1998)	X		X												
Barta (2002)									X	X	X				
Beckouche et al (1997)						X						X	X		
Barta-Beluszky (1999)	X				X	X		X						X	
Belliot (dir) (2006)					X	X	X		X		X				X
Burdack (2005)	X							X	X						
Dany et al (1996)						X									
Enyedi (2000)									X						
Potentials for... (2005)						X									
Giban (2003)	X	X				X			X				X	X	
Gilli (2003a)						X					X				
Hardi–Nárai (2005)	X				X	X							X		
Kőszegfalvi (1997)	X	X	X	X											
Lengyel (2003)										X					
Les franges franciliennes (1997)	X	X				X		X			X			X	
Mirloup (2002)						X	X		X			X	X		X
Mokos (2004)					X	X									
Szirmai et al (2003a)	X							X	X	X		X		X	
Urban sprawl... (2006)	X	X	X					X							
Total	9	4	3	1	4	12	2	5	8	3	4	3	5	4	2

Legend: 1. Changes in population number, migrations, suburbanisation; 2. Housing, housing conditions; 3. The development of basic settlement infrastructure; 4. The development of residential infrastructural supply; 5. Transport connections; 6. Labour migration; 7. Commuting (pace of residence–school); 8. The relations of economic organisations in general; 9. Site selection; 10. Supplier relations; 11. Relations between company centres – company sub-centres; 12. The consumption of economic actors, the utilisation of services; 13. The relocation of different functions, residential consumption; 14. Changes in social structure; 15. The relations of research institutes.

Source: Author's construction based on the cited scientific literature.

In our study, the group of economic factors comprises such factors as the relations of economic organisations including the factors of site selection, supplier relations, and the relations between company centres and company sub-centres. The factors associated with the consumption and utilisation of services and the relocation of certain associated, relevant service functions into suburban areas may also belong to this category.

Site selection and herein the immigration of Foreign Direct Investment into urban areas is an element of cardinal importance for the economy of all the three Hungarian cities; therefore, their research is by all means necessary. Within this context – surveying company centre – company sub-centre locations as well as investigating the system of supplier contacts and the relation systems having been formulated as an impact of the consumption of economic actors would provide further interesting results. The simultaneous survey of the above-mentioned four factors would be suitable for identifying urban development factors that have been generated by the out-radiating impacts of the capital city and for clearing the roles of local settings.

Changes in labour migration are an important factor of both economic and social relations, and it is also an integral part of the above-mentioned economic relations. The majority of scientific literature marks this factor as a key indicator of agglomeration processes and the development of urban area relations. *Our preliminary results suggest that this factor has a key role in the development of all three Hungarian cities investigated in the capital city region; therefore, its analysis in the context of economic factors is by all means necessary.*

Social factors is the second group to be analysed, encompassing such elements as changes in population number, suburbanisation, changes in housing and housing conditions, changes in social structure and changes in the structure of residential consumption. Each of these elements has a high representation among the factors analysed in scientific literature. *Of all these factors, our study is concentrating on those strongly relevant to labour migration, i.e. changes in population number, migration processes, suburbanisation and the spatial structure of residential consumption.*

Our third group is the group of the so-called *other factors*, encompassing the parameters of the development of transport and residential infrastructure as well as school-oriented commuting and the relations of research institutes. The investigation of this latter component (although they are not closely connected to the subject of our research) due to their sector-specific features should be surveyed on urban area level but R&D sector on an even wider scale.

The economic and social relation system of the two capital city regions (with their relevant economic and social impacts and outcomes can be revealed by a simultaneous analysis of the factors listed in Table 3.

Table 3

The elements of the relation systems investigated by our research

Economic relations	Site selection The geographical location of company-sub-centres Supplier relations Consumption of economic actors Labour migration
Social relations	Migration processes Residential consumption

Source: Author's construction.

3 A brief introduction of the research sites

3.1 Székesfehérvár

Székesfehérvár is one of Hungary's oldest settlements. Its favourable geographical location and central position can be verified by its short 56 km distance from Budapest and its lying in a 15 minutes' access time from international and domestic highways which is a significantly better value than the average access time (40 minutes [KSH]) (*Figure 2*).

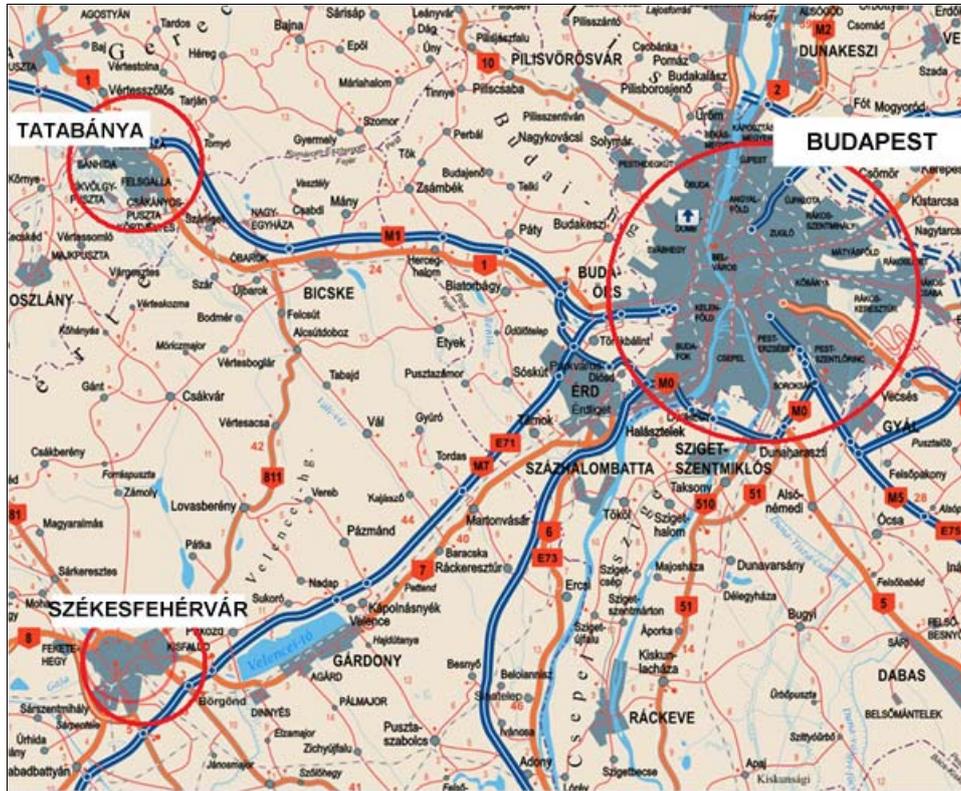
Székesfehérvár as the county seat of Fejér County before World War 2 was a traditionally developing historical settlement without any major industrial traditions. However, the late 1940s brought a quickly prospering economy for the city. It was in the 1960s when the city's economy changed fundamentally. A giant industrial development programme was launched here by the state, resulting in convergence to the country's other industrial centres. This was the period when the city's fundamental industrial plants, such as Videoton (electronics industry), Ikarus and KÖFÉM (aluminium industry), were founded or expanded.

As a result of this process, Székesfehérvár turned into an industrial city by the 1970s and 80s, with all of the typical disadvantages of this situation: the city and its environment had to face the overwhelming dominance of large industrial plants and increasing regional development differences.

The changes in the early 1990s – following the national trends – hit the local large industrial plants as well as turning Székesfehérvár into a crisis region between 1989 and 1993. The ratio of unemployment was at its maximum in the year 1993 with a value of 30%.

Figure 2

The geographical location of our research sample areas in Hungary



Source: <http://maps.google.com>.

By the mid 1990s, the city could successfully mobilise its economic development potential (public lands with advanced infrastructure, enterprise-friendly regional and development policy, well-trained and experienced labour force, company references) and investment promotion policies (local business tax credit, governmental grants), which generated a large-scale inflow of Foreign Direct Investment, turning the city and its urban area into the third largest foreign investment zone of Hungary after Budapest and Győr.

The transformation of the economy of Székesfehérvár, the restructuring of businesses primarily in the processing sector, their increasing weight in the local economy are primarily resulting from Foreign Direct Investment into the city to a value of 2.5 billion USD (until 2007).

The dominance of processing industry and herein of electronics and engineering industry has transformed the structure of production and employment, and generated a rapid development in production technology. The traditions of the earlier processing industry and settlement's favourable geographic location (beyond the above-mentioned factors, I mean factors such as favourable transport geographical position, effective city and regional marketing, advanced telecommunication services) attracted several multinational firms applying world standard high technology (Szirmai et al. 2003b).

3.2 Tatabánya

Tatabánya is situated in the central part of Komárom-Esztergom County. The city is also within a 15 minute access zone from the international and domestic motorway system. The benefits of its favourable geographical location are further increased by the proximity of international border stations (Slovakia), of Budapest, and of the capital cities of two neighbour countries (Bratislava and Vienna). The city's distance from Budapest is 60 kilometres.

The early industrialisation of the area, which was based on the abundance of mineral resources, started in the late 19th century by opening a series of coal mines (1896) which was followed by power station units (1898 and 1934) fuelled by local coal fields. With the discovery of local bauxite fields, the area's heavy industrial character had been set by the middle of the 20th century. In Tatabánya this meant coal mining, fuel-cake production, energy and heat generation, cement production, building material industry, precision engineering, aluminium production, and electronics industry.

The concentration of industrial jobs increased the area's socio-economic development level. However, since the 1960s, due to the intensive industrial development programme, an increasing degree of industrial and residential environmental strain had occurred which turned into a source of social conflicts.

The gradually expanding socio-economic development progress, whose pace was always changing in some periods, but was intensive all the time, continued until the mid-1980s. The short-term economic stagnation right after the cessation of the Eocene Programme¹³ was followed by a socio-economic transformation crisis and recession. Mining and its associated energy industry kept their positions until the late 1980s. Their downsizing and partial transformation had started and had been completed by the mid-1990s only as a result of rationalisations of the termination of expensive production processes and of the involvement of Foreign Direct Investment.

¹³ Eocene Programme: a programme in the 1980s targeted at the utilisation of the brown coal and karst bauxite underneath the Eocene layer in the Transdanubian Mountains.

In Tatabánya, the economic crisis lasted until the mid-1990s. The city's economic restructuring could be implemented due to the investment promotional character of the local policy based on immigrating multinational firms and the involvement of their direct investments into the local economy. The number of foreign capital ventures in the region is approximately 400, and the total value of their registered capital is over 100 million euro of which 80% is concentrated in Tatabánya. The value of newly invested foreign direct capital, resulting in building new production plants, bringing in machinery, assembling production lines for example, was nearly 0.5 billion Euro in the city (until 2002). The manufacturing of vehicle parts, electronics and equipment – principally in chemical and environmental industry – became the main profile of the economy. There are nearly 40 enterprises operating in the city's industrial estate, providing jobs for more than 6000 people. Meanwhile, the other key factors of development also underwent a spectacular growth: social activity increased, and the city and its services significantly improved.

3.3 Sens

The city of Sens is located in Bourgogne region next to the central Île-de-France region. The city has a very favourable geographical location. Three motorways (A5, A6, A19) crossing the region have a key role in the city's road connections. The city's distance from Paris is 115 kilometres (*Figure 3*).

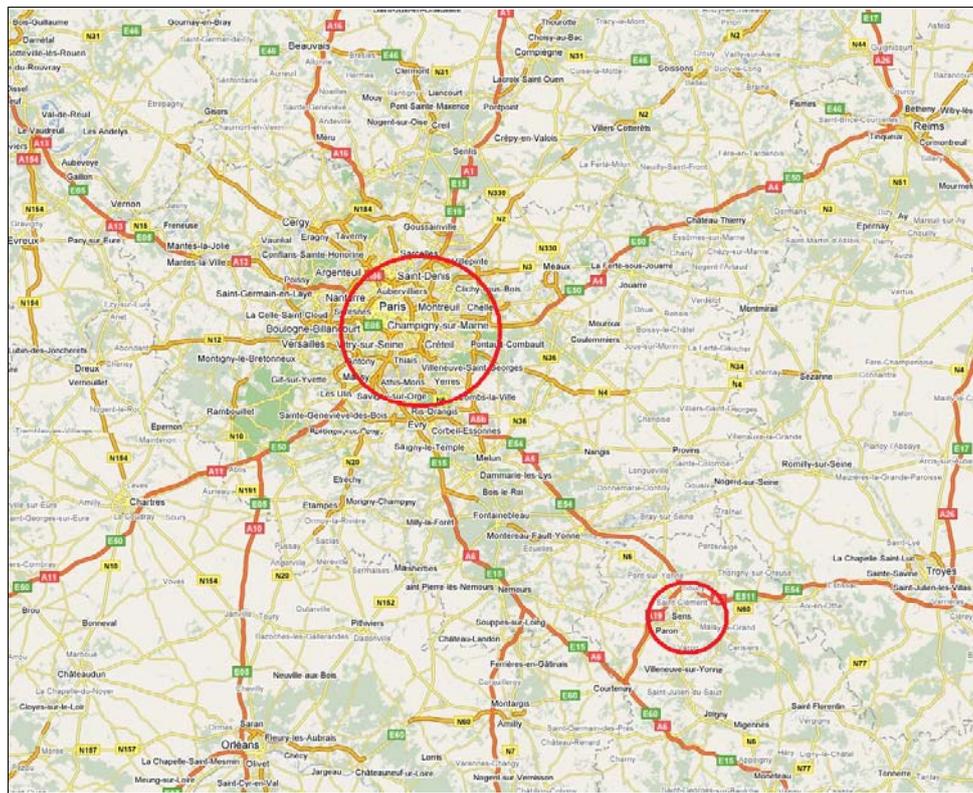
The city's major railway connections are encompassing the railway lines connecting the city with its wider area and Paris providing a quick access (Sens-Paris [55 minutes with more than 20 trains daily], Sens-Dijon [1 hour 45 minutes, 7 trains daily] and Sens-Lyon [2 hours by TGV]).

The city of Sens has very long historic traditions: it was already an important city in the Middle Ages. The city's industrial development started in the second half of the 19th century mostly as a result of the construction of the Paris-Lyon-Marseille railway line. However, the dynamic economic prosperity of city started only after World War 2. This was the period when small-scale industrial manufacturing and handicraft industries linked to textile and food industries were dominating the city's and its urban area's economy. The first major industrial plant (SEIMA – Saint Clément) was built in the region in 1965, followed by a quick immigration of several other firms (FMC, WELLA, BAYER – Sens). A significant ratio of mostly manufacturing firms which settled down here between 1965 and 1973, came from the Paris region, and regarding its economic development level, Sens region very soon closed up to the greater Paris region (Paris Basin). As it is seen, foreign capital ventures emerged in the city's and its urban area's economy at quite an early time. By the end of the 70s, as a result of eco-

conomic modernisation, the immigrating firms concentrated on inter-firm cooperation and on creating of supplier networks to increase their efficiency. At the end of the 80s, as a result of the settlement of further new firms, the following firms grew into the area's biggest industrial employers: Senoble (food industry), Cibié (car industry), Filergie (cable manufacturing), Bayer-Pharma (pharmaceutical industry). In the 90s, the city's economic development lost its balanced nature for a certain time, which was felt by the rise of the unemployment rate (1990 – 8,1%, 1994 – 12%, 2004 – 9,8%, and these figures are matching with the national average), by the disequilibrium of labour demand and supply, and by the increasing out-migration of labour (chiefly to the capital city region (*Plan d'occupation des sols...*, 1995).

Figure 3

The geographical location of the research sample areas in France



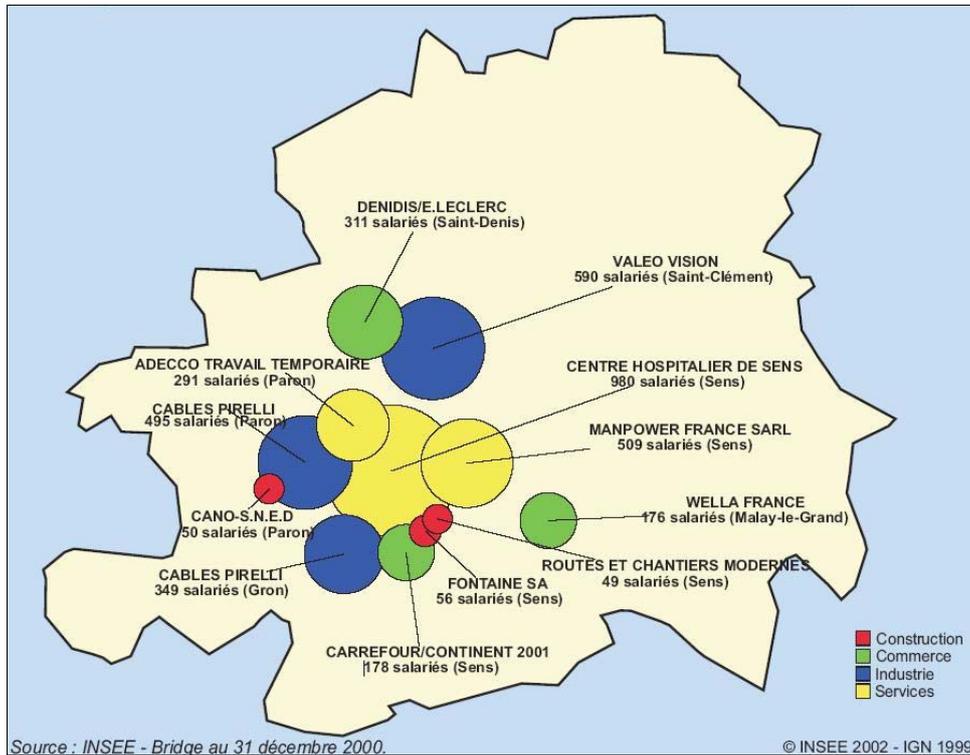
Source: <http://maps.google.com>.

In the early years of our decade, nearly 3000 commercial and processing industry firms were registered in the city of Sens and its urban area according to the data of the Chamber of Commerce and Industry of Sens (CCI de Sens). The area's biggest employers are shown in the figure below (Figure 4).

The city's industry focuses on three major branches: electronics industry, food industry and mechanical engineering. Foreign Direct Investment has a larger role in the city's economy now than in the earlier decades. Pirelli – cable manufacturing (Italian), OTM – metal processing (American), Sonoco – packing (American), Plastikpack – packing (German), Möllertech – plastic industry (German), Chemetall – chemical industry (German), TEVA – pharmaceutical industry (Israeli).

Figure 4

The distribution of major employers by different economic sectors



Source: Auzet, L. (2002): Des liens avec l'Ile-de-France. In: 8 aires urbaines en Bourgogne – INSEE Bourgogne 2002.

4 The results of empirical research

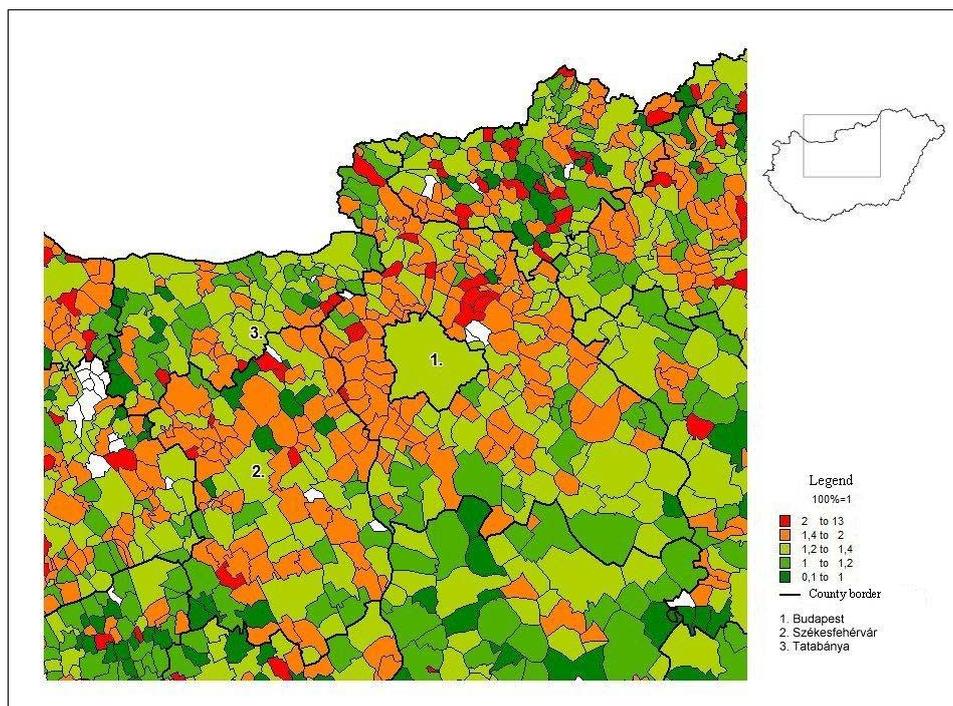
4.1 Economic relations

4.1.1 Site selection – with special regard to the immigration of foreign capital ventures

All of the cities of our research sample area in the capital city region are parts of a dynamic spatial network. When analysing *the metropolitan area of Budapest*, this is well illustrated by changes in the number of operating businesses within a certain period. It is primarily the capital city and its wider environment (including the urban areas of Székesfehérvár and Tatabánya) where a dynamically prospering economic zone seems to shape out. This dynamism strongly correlates with the decentralisation process of the economy.

Figure 5

*Changes in the number of operating businesses between 1996 and 2003 (%)**



*National average = 1.39

Source: Central Statistical Office.

Similar decentralisation processes can be observed *in the metropolitan area of Paris*. By taking a glance at the share of firms immigrating and out-migrating from Paris between 2000 and 2005, we can observe that the balance is negative in every year, the number of out-migrating firms always surpasses the number of immigrants (*Table 4*).

Table 4

The number of firms immigrating and out-migrating from Paris between 2000 and 2005

Year	Immigrants	Out-migrants	Balance
2000	3,246	3,492	-246
2001	3,092	3,823	-731
2002	2,958	3,550	-592
2003	3,142	3,563	-421
2004	3,142	3,877	-735
2005	3,123	4,487	-1,364
Total	18,703	22,792	-4,089

Source: Localisations et délocalisations... 2006, 6.

The relocation of enterprises' site initiated by the dynamic growth of the economy and by the restructuring of the spatial structure of labour can be considered an important factor of dynamic spatial development (*Gilli, 2003a*). The majority of enterprises are out-migrating from the Île-de-France region and their greatest share is relocating their site into its neighbour counties.

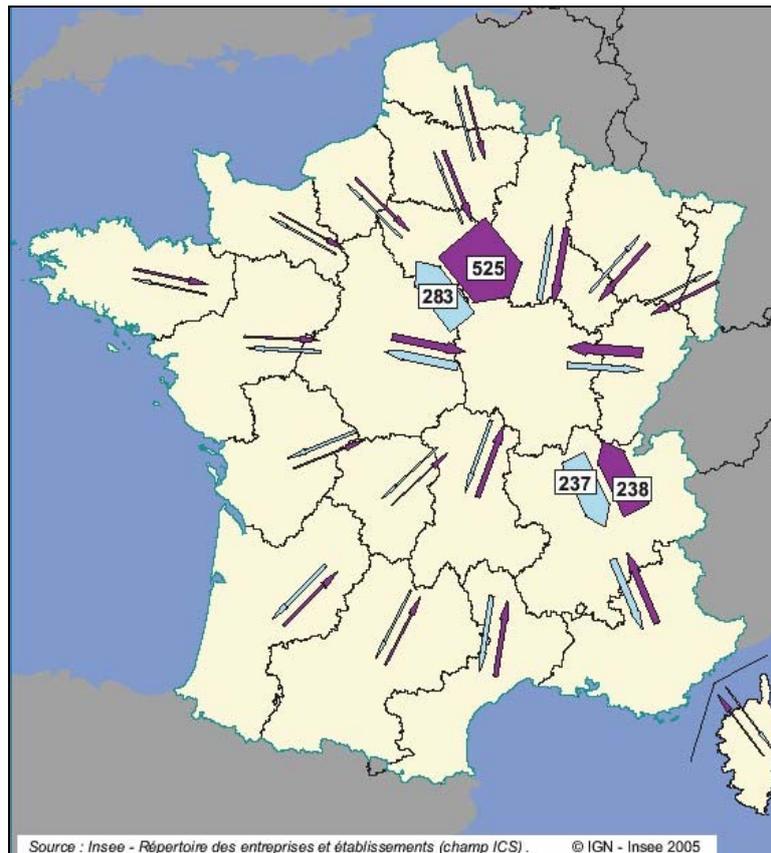
Between 1996 and 2001, 1270 firms immigrated into Bourgogne region, including Yonne County and the city of Sens; and 1030 firms out-migrated from there. More than 40% of the immigrating enterprises came from Île-de-France region (*Bonsacquet – Loones, 2005*) (*Figure 6*). One-fourth of the firms out-migrating from Île-de-France region to Bourgogne settled down in the urban area of Sens (*Hilal, 2006*).

Among the enterprises immigrating into our investigated regions foreign capital ventures are very important economic structure shaping and mobilising factors (*Baráth, 2005b; Gilli, 2003a; Plet 1994; Szirmai et al. 2003a*).

The cities of our research have almost entirely built their crisis management strategies on the attraction of foreign capital ventures. Moreover, in the city of Sens, foreign capital ventures played a vital role in both the modernisation of the economy and in creating new jobs. Among the largest employees there are such firms as Valeo Vision (600 employees) and Cable Pirelli (850 employees).

Figure 6

The number of firms immigrating into Bourgogne region from, Île-de-France and Rhône-Alpes regions and the number of firms out-migrating to these regions (between 1996 and 2001)



Source: Bonsacquet – Loones, 2005. 2.

The interviews prepared in Sens made clear that several disadvantages may arise from the factors of site selection which may principally occur in the context of an economic dependence on the capital city. It is a common phenomenon that in the majority of cases, these businesses locate only their manufacturing plants in settlements lying on the periphery of the Budapest Agglomeration Zone, but financial and commercial branches still remain in Budapest

However, in the case of Székesfehérvár and Tatabánya, foreign capital ventures are partially following a different strategy. In their case, it is also a usual

practice that their manufacturing plants are located in Hungary and the proximity of Budapest plays a vital role in their site selection policy (because of their managers' residential place, consumption and the proximity of an international airport) (Szirmai et al. 2003b). But on the other hand, their local (Hungarian) headquarters or branches are built in these cities, namely in Székesfehérvár and Tatabánya as their economic relations and the consumption of firms are bound to our investigated cities to an increasing degree.

Another common phenomenon in both countries is that due to Foreign Direct Investment in Székesfehérvár, Tatabánya and Sens alike, the role of services and logistic functions is increasing and there is a growing demand for skilled labour as well. Nevertheless, local development is slowed down by the out-migration of qualified professionals. The emergence of the global economy and decreasing unemployment reduces the autonomy of the local economy; therefore, the preservation of autonomy may imply the loss of economic balance (Béhar – Estèbe 1998, 114).

The spatial structure of Foreign Direct Investment shows significant difference between our investigated Hungarian and French cities and their urban areas: in Hungarian urban areas, nearly all investments are targeted at the industrial estates, or in the case of brownfield, to industrial zones within the administrative boundaries of cities. In Sens region, a high ratio of big firms are settling down in the city's urban area (neighbour settlements) (e.g. Valeo–Saint Clément, Cables Pirelli–Gron, Paron, Wella–Malay–le–Grand). The reasons go back to the prices of available land and real estate. It is remarkable that jobs created in the cities' urban area significantly increase cooperation between the city and its neighbour settlements, and by now, the majority of these collaboration programmes in the urban area of Sens (communauté de commune) have been organised to operate in institutional framework.

Another similarity between the research sites is that the global economy has an impact on the urban development chances of cities in an indirect way through the taxes of economic actors. Our studies revealed a significant ratio of business taxes in the local taxation revenues, and herein the high ratio of foreign capital ventures as taxpayers in all the three cities. The analysis of the municipal budget of our investigated cities shows that local business taxes paid by global economic actors contribute very highly to the local public funds of cities: in Sens, they amount up nearly to 50% of the total local tax revenues (Brion, 2002, 19), while in Székesfehérvár and Tatabánya, more than 70% of local tax revenues originates from business tax. Regarding the total sum of budgetary revenues, these taxes amount up to 20% and in Tatabánya to 10% of their total sum. Local taxes paid by global economic actors contribute very highly to the local development funds of cities.

4.1.2 Company centre – sub-centre relations

Our analysis on company centre – sub-centre relations have revealed that all three investigated cities have a high ratio (and similar at about 30% each) enterprises with company headquarters in the capital city. In Hungarian cities, economic organisations are mostly engaged in the service sector whose tendency is also true for the city of Sens.

There is a big difference among the three cities in the role of business services operating independently of the manufacturing plants located into them by these firms. Of the three cities, the role of advanced business services is highest in Székesfehérvár. The reason for this goes back to the special features of the three cities' urban economies, as Székesfehérvár has the most advanced industrial technology employing skilled labour in adequate numbers. For this reason, the degree of embedment of global economic actors into urban economies, selecting Hungarian cities (preferably Székesfehérvár) as their site location, is higher than in France.

Locating company headquarters into the peripheral cities of the urban area instead of manufacturing plants only with all the advanced services relevant with their activities may reduce the economic dependency of urban areas on their core metropolis. The economic functions located into such cities may act as multipliers by stimulating development in further sectors and by generating new labour demands in the urban area and in the region.

4.1.3 The territorial structure of the consumption of economic actors

Another of our research areas was exploring the spatial structure of the consumption of economic actors. Our investigations in this field revealed those services of which the utilisation is the most likely to be bound to Budapest, and which firms are utilising them.

The results of the questionnaire survey conducted at the Hungarian enterprises in the spring of year 2007 are indicating that regarding the utilisation of services, they are principally bound to the hosting site of their headquarters (*Figure 7*). In Székesfehérvár and Tatabánya, the ratio of warehouse, leasing, security, cleaning book-keeping, accounting and data processing services was in case of each component as high as 75–80 percent.

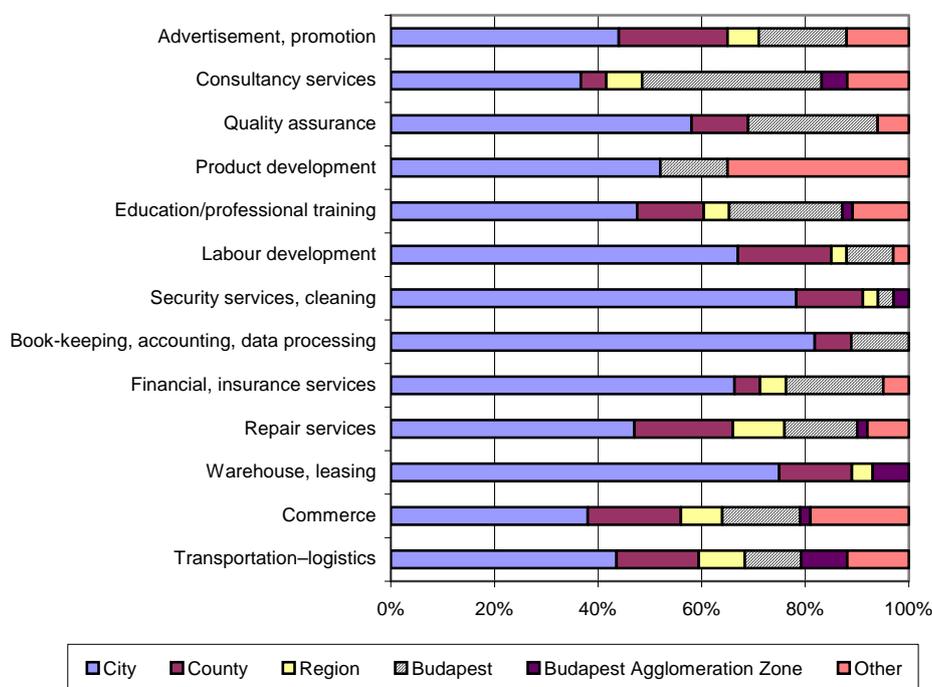
The analyses of the French research site are based on the data provided by the Chamber of Commerce and Industry of Yonne County. In the whole county, about one third of the total enterprises uses various services in the Paris region (Paris and its neighbourhood) and this value in the city of Sens and its urban area is presumably higher. *Figure 8* shows where the services used by the enterprises of Yonne County are located geographically. As it can be noticed, an outstanding

ratio of services is used in Paris and its metropolitan area¹⁴ (32%), which is by far higher than the ratio of services used in the neighbour counties of Yonne County. The data of the interviews made in Sens also suggest that the city's relevant figures of service utilisation in Paris must be rather high as well.

Thus, the comparison of the two research sites may be based on the service sectors used in the capital cities. *Table 5* indicates that the enterprises of Yonne County (as well as firms in Sens) use financial services, R&D, IT and telecommunication, human resource and marketing and communication in the largest share in Paris. These service groups represent an outstanding high rate not only among services used in Paris, but also among services used in other counties.

Figure 7

*The consumption of economic actors in Hungarian cities**



*A question asked by the questionnaire: Please indicate where your company typically uses the following services.

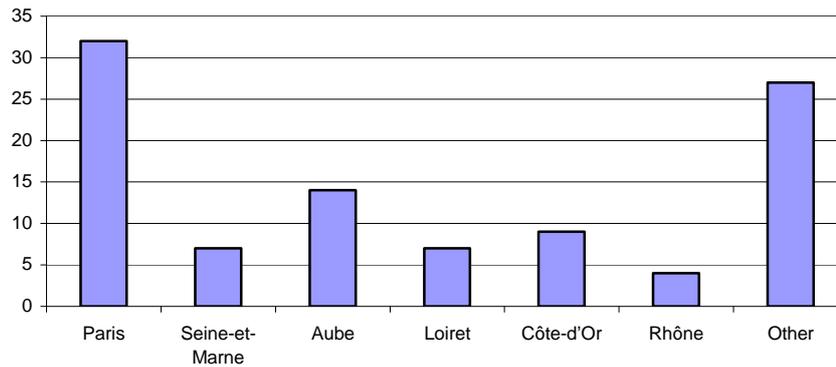
Legend: City – Székesfehérvár, Tatabánya; County – Komárom-Esztergom, Fejér County; Region – Central Transdanubia.

Source: Results of questionnaire survey conducted at enterprises in Székesfehérvár and Tatabánya.

¹⁴ As it is indicated by data it is the administrative unit marked by Figure 7 and Table 5.

Figure 8

The distribution of services used by the enterprises of Yonne County in other counties by county (%)



Source: Chamber of Commerce and Industry of Yonne County (Summer 2007).

Table 5

The distribution of services used by the enterprises of Yonne County outside Yonne County by county and service sector (%)

Service sector	Paris	Loiret	Aube	Rhône	Côte-d'Or	Seine-et-Marne	Other	Total
Environmental	7	4	2	1	1	20	15	50
Financial	28	4	12	2	6	3	18	73
Real estate	0	0	0	1	0	0	0	1
IT and telecommunication	23	2	5	2	4	1	14	51
Logistics	13	11	21	0	6	9	13	73
Transportation-logistics	12	8	13	1	2	1	19	56
Marketing and communication	18	0	4	0	1	2	3	28
R&D	24	6	6	1	7	4	14	62
Human resource	19	2	4	2	6	1	5	39
Travel, accommodation, catering	2	1	0	0	1	0	0	4
Total	146	38	67	10	34	41	101	437

Source: Chamber of Commerce and Industry of Yonne County (Summer 2007).

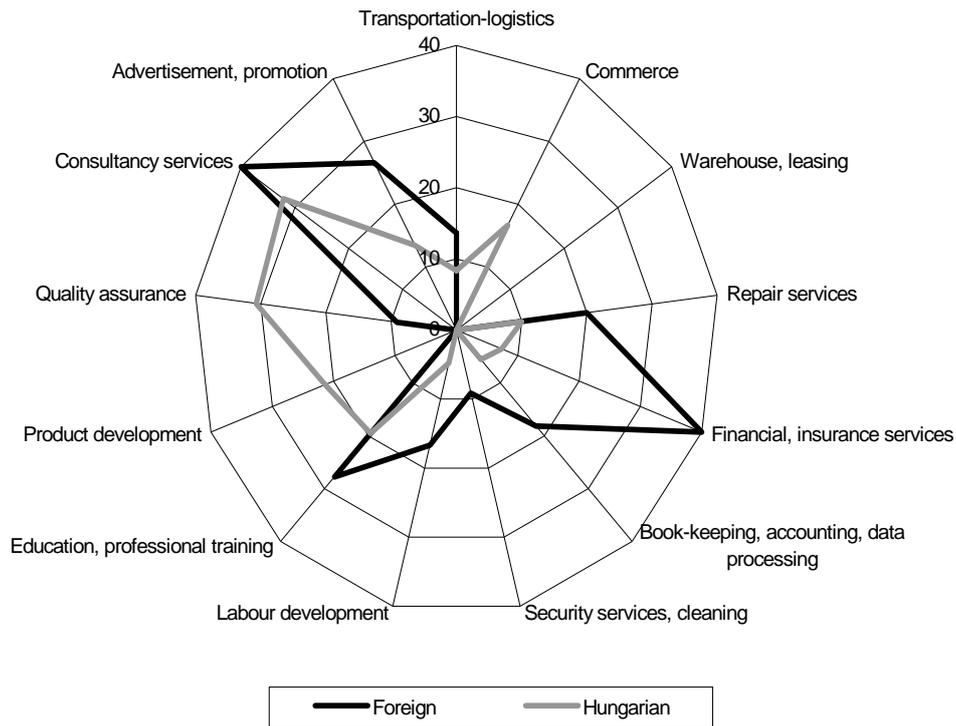
Our investigations have verified that just like domestic (both Hungarian and French) firms, immigrating foreign capital ventures prefer using local services, which indicates these cities' high economic autonomy.

In our case, the geographical structure of the service utilisation of foreign capital firms follows a simpler and less differentiated pattern. However, in some types of services (education, training, professional training, R&D, advanced business services) the central role of the capital city still been preserved (Figure 9).

There are also rather great differences in the firm utilisation ratio of different services both in Tatabánya and Székesfehérvár (Figure 10). The differences are the biggest in the utilisation ratio of product development, book-keeping, accounting, data processing, financial, insurance and commercial services (regarding each component, the utilisation ratio values of the firms in Székesfehérvár are higher, meaning a higher degree of demand–supply balance in Tatabánya).

Figure 9

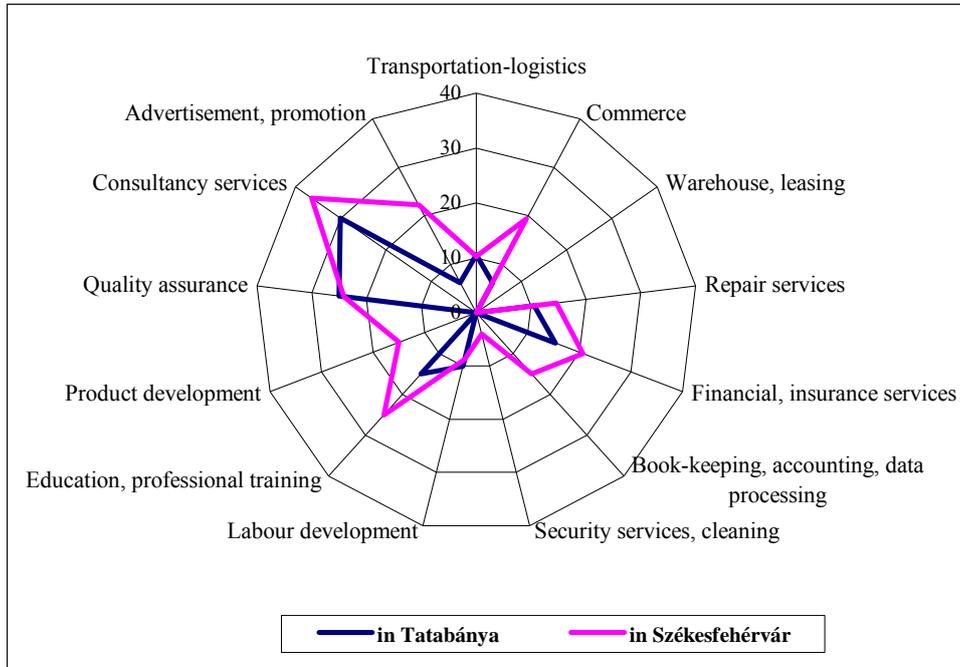
The share of services used by foreign and Hungarian firms in Budapest (%)



Source: Results of questionnaire survey conducted at enterprises in Székesfehérvár and Tatabánya.

Figure 10

The share of services used in Budapest between the firms of Tatabánya and Székesfehérvár (%)



Source: Results of questionnaire survey conducted at enterprises in Székesfehérvár and Tatabánya.

In case of Székesfehérvár, we had an opportunity to compare our present data on the utilisation of services with the results of an earlier research project (2002) which showed a greater integration of global economic actors into the local economy as well as the possibility of reducing economic dependence on economically more advanced centres (in our case on the capital city). Our analyzed factors showed similar economic trends both in Tatabánya and Sens.

4.1.4 Supplier relations

The investigation and quantitative analysis of supplier relations could be carried out on Hungarian research sites.¹⁵ The supplier relations with economic organisations in Paris and in the Paris region were also emphasised in the interviews made in Sens in the years 2004–2005.

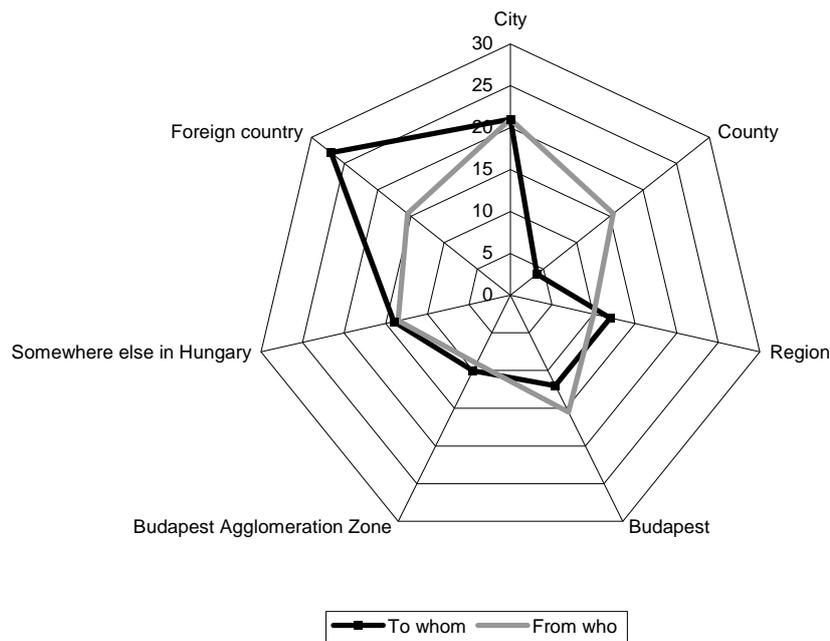
¹⁵ It is based on a questionnaire survey carried out at enterprises in Székesfehérvár and Tatabánya.

Supplier relations, both in case of Hungarian and foreign businesses, are increasing the economic autonomy of our investigated cities, which is shown by the geographical distribution of the firms' supplier activity. Supplier firms provide their supplier services for foreign and local (urban and urban area) firms; their orientation towards the central capital city has no outstanding significance (*Figure 11*).

However, firms having their own supplier networks are more strongly bound to Budapest. The evaluation of supplier relations is highlighting a rather controversial situation: on the one hand it may indicate a high degree of local economic autonomy, but on the other hand it may also show that these firms provide supplier services for less advanced (rather manufacturing) firms 'being on the periphery', which is limiting its chances to join the relation systems of urban areas.

Figure 11

The geographical dimensions of supplier activities



* Questions asked by the questionnaire: Where are those businesses typically located you are providing supplier services for? Where your suppliers are typically located?
 Source: Results of questionnaire survey conducted at enterprises in Székesfehérvár and Tatabánya

4.1.5 Labour migration

An important aspect of labour migration is that the investigated cities themselves also have a significant labour attraction force. Workers with low education from the neighbourhood of cities are employed mainly in industrial sectors.

Our investigations have revealed that the majority of labour migrants coming from Budapest and from the cities in the greater urban area of our investigated cities have university degrees (being in managerial position or doing white-collar jobs)¹⁶, are employed in the service sector and this is a sign of the unbalanced state of labour demand and supply.

The disequilibrium of labour demand and supply is further indicated by the parameters of labour migration to Budapest. The ratio of labour migrants to Budapest and its metropolitan zone out of the working local population is 7% in Székesfehérvár and 10% in Tatabánya (*Figures 12–13*). From all the three cities the majority of labour migrants to the capital city and its metropolitan area are employed, predominantly in the service sector.

Regarding educational background, there are large differences between the labour migrants of the two cities. 61% of the daily commuters from Székesfehérvár to Budapest have university degrees. This value for the labour migrants from Tatabánya is 33% (but here, the ratio of employees with secondary education is the highest: 57%) (Hungarian Central Statistical Office Census Data 2001). This value for the city of Sens is lower, about 20% similar to that of Tatabánya (INSEE Census Data 1999). From the differing values we can conclude for a higher degree of labour demand-supply in the cities of Tatabánya and Sens, which implies a lesser dependence from the labour demand of their capital cities.

4.2 Social relations

4.2.1 Migration processes

Between 1990 and 2001 there was an increase in the *metropolitan area of Budapest*. The exceptions of this tendency were some territories of Komárom-Esztergom and Nógrád counties and some medium-sized and large cities in the peripheral zones of the metropolitan region including the cities of Tatabánya and Székesfehérvár as well (*Figure 14*).

Analysing the demographic indicators of the research period, we can notice that the increasing population number is clearly the result of the intensification of

¹⁶ 66% of labour migrants from Budapest to Székesfehérvár and 65% of labour migrants from Budapest to Székesfehérvár have university degrees.

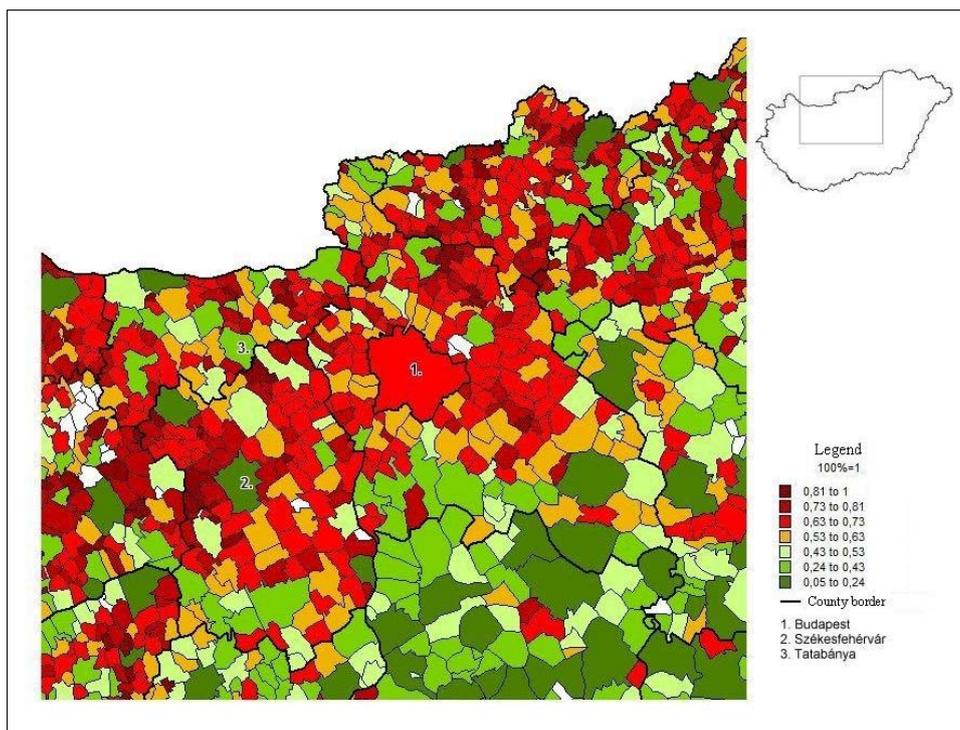
suburbanisation processes as a natural decrease of population can be observed in the whole area.

Migration surplus is the highest in the settlements located in the close neighbourhood of Budapest within the area of the Budapest Agglomeration Zone. Migration surplus areas are encompassing a territory up to the Tatabánya, Székesfehérvár, Dunaújváros, Kecskemét, Szolnok „border-line”, as well as the western area of Heves and the southern part of Nógrád counties, forming an almost entirely contiguous zone.

Suburbanisation is a typical phenomenon even in the outskirts of the peripheral medium-size and large cities of the metropolitan region, so the urban areas of the above-mentioned cities also have a significant migration surplus.

Figure 12

*The ratio of labour migrants out of the total employees living in same locality (2001) (%)**

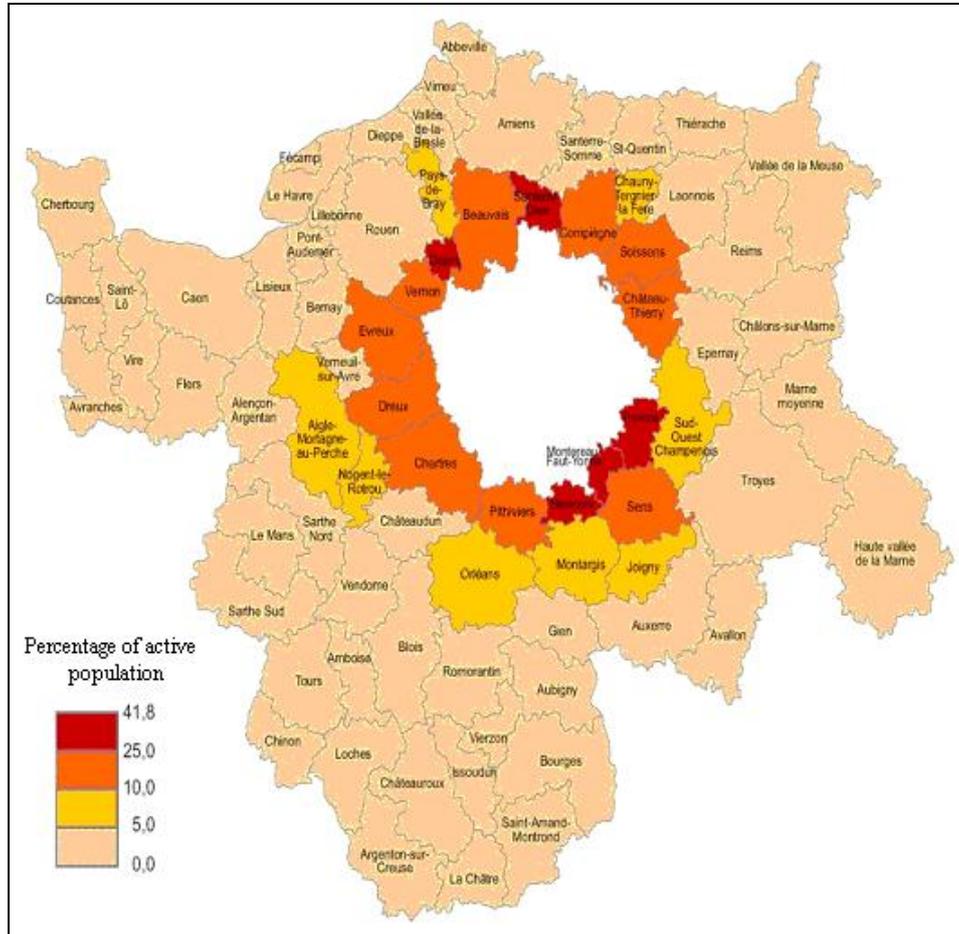


*National average = 0.59

Source: Hungarian Central Statistical Office [KSH] census data (2001).

Figure 13

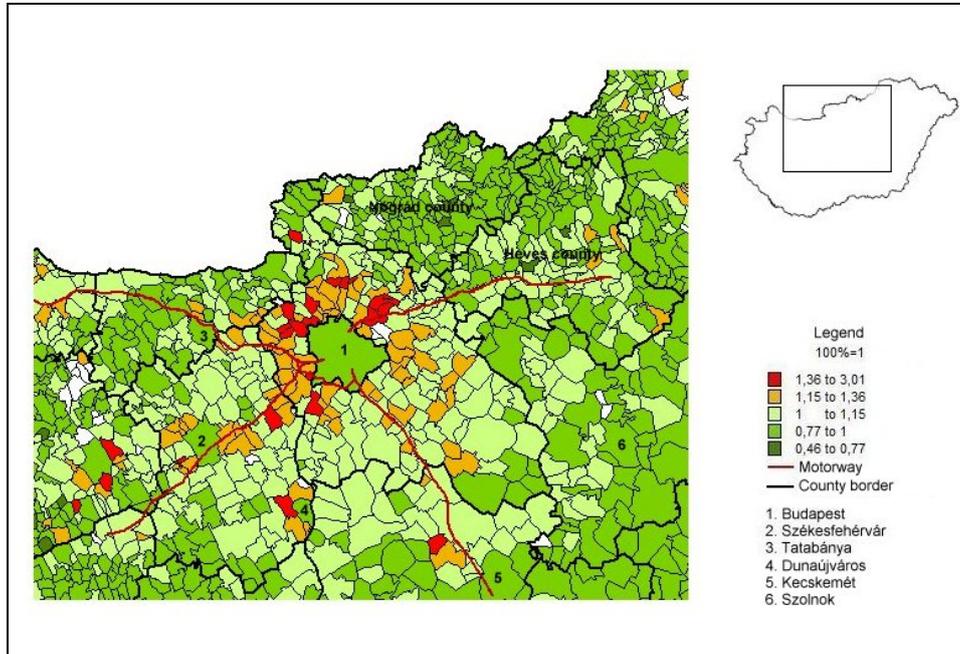
The ratio of economically active population working in the Paris region



Source: Gilli, 2003b, 6, based on IGN INSEE 2000.

Figure 14

*Changes in the population number between 1990 and 2001 (%)**



*National average = 0.99

Source: Hungarian Central Statistical Office [KSH].

Out-migration from Székesfehérvár and Tatabánya, the cities located in the proximity of motorways M1 and M7, has strongly accelerated. This shows that out-migration (change in population) closely correlates with the location of road networks (motorways, highways).

The population of Yonne County as indicated by the 1999 census data was 333,250, a figure which is higher by 10 thousand than it was in 1990. According to the statistical data and previous analyses (Gilli, 2003b; *Les franges...*, 2003; Maury, 2003; Brion, 1999) in the north part of the county (as well as in the city of Sens and its urban area) the increase of population is due to the proximity of the capital city (regarding the counties of Bourgogne region [Côte-d'Or, Nièvre, Saône-et-Loire, Yonne], Yonne County is the only place with a positive migration difference. In the 1990s, on an annual average 1300 more people immigrated here than migrated out of here).

Table 6 shows changes in the population of Sens and its urban area. Besides the significant increase of population it is also noticeable that the majority of im-

migrants do not move into the city centre to settle down there but they preferably select villages in the city's neighbourhood. This tendency is also verified by the interviews made in Sens. 46% percent of the interviewed economic and municipal actors highlighted this impact of the capital city of France.

Table 6

Changes in the population of the city of Sens and its urban area between 1990 and 1999

	1990	1999	90/99	%
1.	42,756	43,926	1,170	2.7
2.	27,082	26,904	-178	-0.6
3.	15,674	17,022	1,348	8.6
4.	97,161	103,860	6,699	6.9

Legend: 1. The city of Sens with its urban area. 2. Sens. 3. The urban area of Sens. 4. District of Sens. The analysis includes the 11 neighbour settlements of Sens in the category of urban area. The French public administration system defines district (arrondissement) as a part of county (département). The District of Sens is located at the northern part of Yonne County, it is adjacent to Île-de-France region.

Source: On the basis of NSEE RP 1999 „Présentation...” 2004.

Table 6 makes it clear that the urban area's population growth is significantly surpassing the city's population decrease. This has resulted not from the out-migration of the city but rather from immigrations from outside the urban area. This migration surplus largely originates from the Île-de-France region (*Hilal, 2006*).

Comparing the situation in the urban area of Sens with the processes ongoing in the urban area of Székesfehérvár and Tatabánya, it seems that in case of Hungarian urban areas, we can speak of a stagnation or very small increase of population. It goes back to population decrease in Székesfehérvár and Tatabánya, which is more substantial than in the city of Sens (*Table 7*).

The changes in the number of population due to the spatial restructuring of population may be interpreted as an effect of urban area formation i.e. the decreasing population of cities (the smallest population decrease was observed in Sens), and is counterbalanced by the increasing population of their urban areas (the increase in the number of population was much smaller in Hungarian cities and their urban areas).

In the French sample areas, the immigrating population arrives principally from Paris and its metropolitan area, while the migration surplus of the Hungarian urban areas is rather more due to local suburbanisation than immigration from external territories.

Table 7

Changes in the population of our investigated cities and their urban area between 1990 and 1999

	1990	1999/2001	90/99.01	%
Sens with its urban area	42,756	43,926	1,170	2.7
Sens	27,082	26,904	-178	-0.6
The urban area of Sens (11 settlements)	15,674	17,022	1,348	8.6
Székesfehérvár with its urban area	138,690	140,010	1,320	0.9
Székesfehérvár	108,958	106,346	-2,612	-2.4
The urban area of Székesfehérvár (18 settlements, statistical micro-regions)	29,732	33,664	3,932	13
Tatabánya with its urban area	90,001	89,826	-175	-0.2
Tatabánya	74,277	72,470	-1,807	-2.5
The urban area of Tatabánya (9 settlements)	15,724	17,356	1,632	10.0

Source: INSEE, KSH.

Our results have shown that in Székesfehérvár and Tatabánya as well as in their urban areas, the immigration of citizens from Budapest and its close neighbourhood can also be regarded as a typical phenomenon.

There is a substantial difference between the reasons of population change and of the residential origin of immigrants into urban areas in the two country's research sample areas. The reason of this lies in the two capital city region's different phase in urban development. While in Budapest and its metropolitan area suburbanisation started in the early 1990s, such suburbanisation processes had already started in the metropolitan area of Paris in the 1960s.

In both research sites, immigrants settling down from capital cities and their metropolitan areas by their age and motives of relocation can be arranged into two major social groups. The first one consists of people aged over 60 out-migrating from the city centre for spending their old-age pensioner period in peace and quiet. They are not going to live too far from the capital city, their social contacts and certain consumption habits are still linking them to the capital city. (This is well illustrated by the fact that the majority of theatre goers from Székesfehérvár to Budapest are aged over 60.)

The other group of the out-migrants from capital cities consists of young, well-trained families preserving their jobs in the capital city who are generally married with children. They also want to live at a quieter and cleaner place and can afford to buy a house and land only at a greater distance from the capital.

Out-migrants from the capital cities to our investigated cities and their environment (including well-trained labour) may be the potential labour force of the

cities they live in. A greater degree of balance between labour demand and supply, the interconnection of residential and working place functions would significantly reduce the city's dependency on the capital. Today, the increase of population does not automatically create new jobs as a great number of immigrants preserve their current job which increases central dependence.

The separation of social classes (by age, education level, living habits) is a typical phenomenon in both of our Hungarian and French research sites. The traditional core-periphery relation between cities and their urban areas is in change now. High social classes are emerging in urban areas – the peripheries by this model – as well. The past socio-spatial inequalities are partially restructured and reproduced in this way.

4.2.2 The spatial structure of residential consumption

Labour and residential migrations have strong impacts on the *spatial structure of residential consumption* as well.

The daily labouring out-migrants of our investigated cities (a part of them the new immigrants) do not use various services, such as public health services, education, training, cultural services at their place of residence. This is a remarkable phenomenon because the consumer habits of daily out-migrants from cities who in the majority of cases are young, high-qualified workers have a low impact on the quality of local services, which on long-term may slow down or hinder the development and location of different services (e.g. advanced business services) into these locations.

Our investigations have shown that in Székesfehérvár and Tatabánya the managers of foreign capital firms (including foreign and Hungarian managers) in the highest ratio (approximately 70%) live in cities or their close neighbourhood. The linkage to residential area has a strong impact on the involved social groups' spatial structure of consumption, which means that the majority of services are utilised locally i.e. in Székesfehérvár and Tatabánya, increasing local demand and extending the palette of local services.

Our analyses have also highlighted that irregardless of the processes of labour migration, in the field of some services (education–courses, higher education, cultural services–theatre, concert, cinema), the capital city targeted orientation of residential consumption may work against the expansion and quality improvement of local services. What is much more important here is that it also brings about a functional division of urban areas. The service types associated with the central capital city (such as educational and cultural functions or advanced business services) are separated to an increasing degree from those used in local or urban area context which by their further improvement (commercial and banking

services, restaurants, amusement, health services) would further extend the central functions of our investigated cities.

4.2.3 Cities and their inhabitants: integration, satisfaction, participation

The third aspect of investigating social relations was analysing factors indicating the relationship of our investigated cities with their inhabitants.¹⁷ As a part of this task, our analysis of labour migration examined whether there is a difference between the opinion of local labourers and labour out-migrants on the city's local development and their own residential environment. The analysis also investigated the question whether the affected residential groups (local labourers and labour out-migrants) are somehow participating in the activities of local civil organisations.

The local labourers' higher personal involvement in local civil organisations shows their higher degree of local activity and social integration.

There is also a great difference in residential satisfaction between local labourers and labour out-migrants. Our results in Székesfehérvár show that labour out-migrants are more satisfied with the built and natural environment, public sanitation, noise level and green areas of their residential area. This is partly because they are living in residential districts providing a top quality living environment (mostly in villa suburbs or elite family house dwelling zones) and partly – as it is seen from the use of other services – they are less affected by these problems. Their manners of residential area utilisation are completely different from local labourers.

Local labourers' satisfaction seems to be higher with services rendered by different institutions, institutes of education, sports and entertainment facilities. Their higher satisfaction with building council flats should also be highlighted, which can also be explained by their higher involvement and possibly higher need for support.

The factors of future local development perspectives (economic factors, the development of institutions, local policy, social factors and the elements of the quality of life) were also evaluated in a different way by the two analysed residential groups. In these matters labour out-migrants were also less concerned, which may weaken the long-term development opportunities of these settlements.

However in Székesfehérvár, Tatabánya and Sens alike, urban development policies are targeted at the greater satisfaction of citizens. The major result of the last two decades in this field is the change of urban development trends. In Székesfehérvár and Tatabánya, the development and urban policies set up in the

¹⁷ The results are based on interviews made in Székesfehérvár, Tatabánya and Sens as well as on the questionnaire database of NKFP research project cited in the 'Methods' chapter.

years following the change of regime can be divided into clearly distinct periods. Strictly defined crisis management, new job creation period concentrating on the urban economy only, has gradually turned into urban development objectives and policies comprising qualitative elements, e.g. public health, public security, development of public education, relieving the seriousness of environmental problems, the management of social problems, improving housing policy (Baráth, 2005a). Our research results in Sens also emphasise the city's development progress along the way as it has precisely been set up by strategic objectives and programmes (Baráth, 2005b).

5 New scientific results

Our empirical research – which followed the specified objectives of our research project – has investigated the relations of two metropolises situated in a different social and economic environment (Budapest and Paris) – as well as the impact forces mediated by the central city. The major findings of our study as solutions for our hypotheses can be summed up as follows (*Figure 15*).

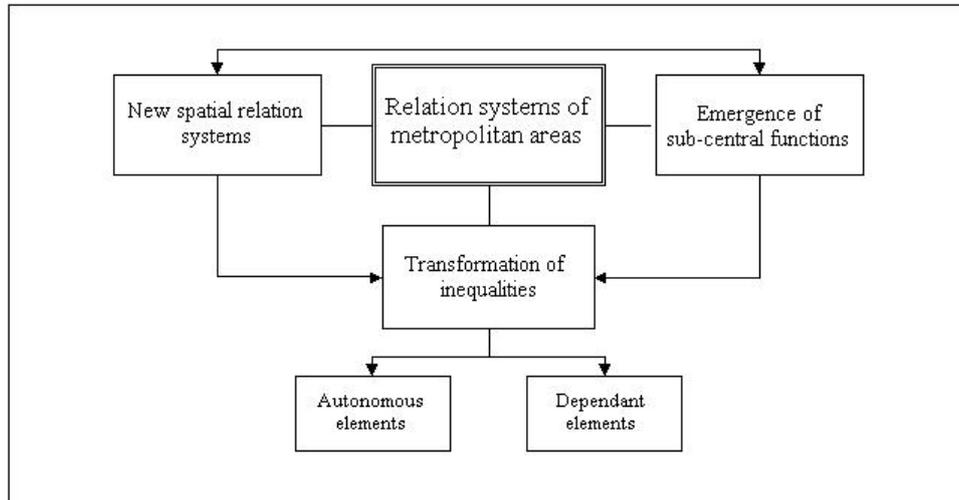
1. Our results of socio-economic factor analysis have verified the differences in the socio-economic development processes between Hungary and France in several aspects.

In the field of economic factors, *the first major difference is between the integration of immigrated foreign capital firms into the local economic environment in Székesfehérvár, Tatabánya and Sens.* According to our investigations in Székesfehérvár and Tatabánya, their embeddedness into the local urban economy is higher, which is noticeable by the location of the non-manufacturing plant related company centres (e.g. financial centres) in Székesfehérvár and Tatabánya, and by the spatial structure of the consumption of firms. In the city of Sens, the first international firms had already emerged in the 1970s, while in Székesfehérvár and Tatabánya, only in the first half of the decade following the change of regime: there is therefore a great difference in the speed of the integration process of foreign capital firms into the local economy of these two cities.

Our results indicate that *it is not the type of urban settlement (traditional city, new city) but rather urban development strategies applied in the context of their own urban areas that are the primary differentiating factors of the central capital cities' impacts on local urban development.* Székesfehérvár and Sens, the cities following the traditional way of urban development, and Tatabánya, categorised as new city by the nomenclature of Hungarian urban typology all alike accomplished economic restructuring mostly on the basis of Foreign Direct Investment, which also demonstrates the role of global impacts on urban development.

Figure 15

New results



Source: Author's construction.

The major differences between research sites are arising from the historical differences between their economic and social background.

The analysis of economic forces revealed that the restructuring impacts of global economic processes are stronger in Hungary than in France. This is due to the delayed emergence and development of the market economy starting from the early 1990s only, while in France, it could look back to a long history.

The spatial structure of Foreign Direct Investment is another difference between the two research areas. In Székesfehérvár and Tatabánya, nearly all investments are targeted at industrial estates or industrial zones within the administrative boundaries of cities. In Sens region, due to differences in available land and real estate, different prices and a different historical and social background, a high ratio of foreign investment is targeted at the city's urban area (neighbour settlements). The new jobs created in this way in the city's urban area significantly increase *cooperation between the city of Sens and its neighbour settlements* and a greater part of these collaboration programmes have been organised to operate in an institutional framework than in the urban areas of Székesfehérvár and Tatabánya.

The geographical origin of residents immigrating into the urban areas of Székesfehérvár, Tatabánya and Sens was a key component of difference in the analysed social factors. The majority of citizens immigrating into the urban area of Sens arrive from Paris and the Paris region, but the migration surplus of the

urban areas of Székesfehérvár and Tatabánya is mostly the outcome of local suburbanisation processes. The reason of this lies in the two capital city region's differing historical periods in the process of global spatial organisation.

Our results show that the increase of residential functions does not automatically create new jobs as a great number of immigrants preserve their current job – the majority of Sens immigrants in the central capital city, and the majority of Hungarian immigrant citizens in Székesfehérvár and Tatabánya, which in case of Sens and its urban area increases the intensity of their relations with the central capital city.

2. The new elements of spatial relation system expanding the traditional core-periphery model with horizontal co-operation can be identified on both research sites. The horizontal relations inside companies and between companies (such as supplier relations) should by all means be highlighted as their analysis clearly demonstrated the spatial economic integration of enterprises involved into our research. The analysis of the spatial relation system based on the consumption of companies, the utilisation of services and labour migration provided similar results. Our study has also revealed that the spatial structure of residential consumption is strongly correlated with labour migration and this interaction is further enhanced by the fact that the utilisation of certain services (education-courses, higher education and cultural services) is also bound to Budapest in the historical perspective.

Thus, these relation systems are characterised by both the stabilisation of hierarchical relations and by the emergence of horizontal relations. Horizontal relation schemes are formulated only in case they yield greater advantages for stakeholders. For economic actors, these advantages materialise in higher profits, better market prospects, clustering, improving thematic networks or increasing chances of participating in tenders. For individuals, advantages will be tangible in easier access to services, simpler administration of affairs, the maintenance of linkages to local services, and the preservation of local identity. Nevertheless certain activities (advanced business services, certain cultural services, some educational activities) require a critical mass that still maintains their hierarchical character.

3. In the sample areas, the metropolitan areas' relation system – the emergence of sub-centre functions – serving as a ground for horizontal relations and the functional division of labour – can also be identified. They depend on three factors. The first is the local existence of services utilised by economic actors, the second is the territorial structure of residential consumption and the third is the place's labour attraction force.

The urban sub-centre functions are dominant in company services demanding less trained (but a large number of) labour force, in economic services of local importance (business promotion, consultancy, promotion of local cooperation,

business administration services) and in social services (commerce, sport, professional training, social care). The awareness of all these factors is a great step towards the formulation of future urban development strategies.

4. Changes in the social and economic relations of the traditional core-periphery model will also reconfigure the system of inequalities.

Of the economic factors, our research results concerning company relation systems and the spatial structure of the consumption of economic actors indicate a spatial equalisation process. This is resulting from the increasing integration of economic actors into urban economic systems.

However, labour migration and the balance of labour demand and supply are still dependant on the metropolitan centre.

Of the investigated socio-spatial factors, migrations are clear indicators of the transforming metropolitan core-periphery model. These changes are signalled by the emergence of high social classes outside of the urban centre, by residential segregation and the growth of social polarisation.

5. In the context of inequalities, the development of economic relation systems is progressing towards networks, regional processes, individual roles, all in one towards the elements of autonomous economic development. The social impacts and outcomes of the above-described processes are increasing the number of elements subordinated to the metropolitan centre.

6. New spatial relations arising from growth into a metropolitan area scaled size are organised on functional rather than administrative basis. This statement is verified by migration processes, the labour attraction force of metropolitan centres, by the decentralisation of economy, and by the urban area level functional relations of economic actors. Each of these factors is independent from administrative borders (county, capital city agglomeration, settlement group). The formation of spatial relations is motivated mostly by thrift and accessibility reasons.

7. Our investigations have also verified that the spatial configuration and urban development impacts of capital cities are not primarily dependant on the population number based size of the selected cities. In spite of the differing city size and of the resulting different functions performed in their urban area network the impacts of the capital city on the urban development factors of Székesfehérvár and Tatabánya are very similar in several aspects (Foreign Direct Investment, its role in economic restructuring, the spatial structure of the consumption of economic actors, labour migration, the spatial structure of residential consumption). This result suggests that our statements may be true not only for the selected cities, but can also be relevant on a general level.

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