Target groups in the creative knowledge sector of Budapest Metropolitan Region

A preparatory analysis for surveying the creative and knowledge economy

ISBN 978-90-78862-01-7

Printed in the Netherlands by Xerox Service Center, Amsterdam
Edition: 2007
Cartography lay-out and cover: Puikang Chan, AMIDSt, University of Amsterdam

All publications in this series are published on the ACRE-website
http://www2.fmg.uva.nl/acre

and most are available on paper at:

Dr. Olga Gritsai, ACRE project manager
University of Amsterdam
Amsterdam institute for Metropolitan and International Development Studies (AMIDSt)
Department of Geography, Planning and International Development Studies
Nieuwe Prinsengracht 130
NL-1018 VZ Amsterdam
The Netherlands
Tel. +31 20 525 4044
+31 23 528 2955
Fax +31 20 525 4051
E-mail: O.Gritsai@uva.nl

Target groups in the creative knowledge sector of Budapest Metropolitan Region

A preparatory analysis for surveying the creative and knowledge economy

ACRE report [*4.4*]

Tamás Egedy

ACRE

ACRE is the acronym for the international research project Accommodating Creative Knowledge – Competitiveness of European Metropolitan Regions within the enlarged Union.

The project is funded under the priority 7 'Citizens and Governance in a knowledge-based society within the Sixth Framework Programme of the EU (contract no. 028270).

Coordination:

Prof. Sako Musterd
University of Amsterdam
Amsterdam institute for Metropolitan and International Development Studies (AMIDSt)
Department of Geography, Planning and International Development Studies
Nieuwe Prinsengracht 130
NL-1018 VZ Amsterdam
The Netherlands

Participants:

- **Amsterdam** (Amsterdam institute for Metropolitan and International Development Studies, University of Amsterdam, the Netherlands)
  Marco Bontje ~ Olga Gritsai ~ Heike Pethe ~ Bart Sleutjes ~ Wim Ostendorf ~ Puikang Chan
- **Barcelona** (Centre de Recerca en Economia del Benestar – Centre for Research in Welfare Economics, University of Barcelona, Spain)
  Montserrat Pareja Eastaway ~ Joaquin Turmo Garuz ~ Montserrat Simó Solsona ~ Lidia Garcia Ferrando ~ Marc Pradel i Miquel
- **Birmingham** (Centre for Urban and Regional Studies, University of Birmingham, UK)
  Alan Murie ~ Caroline Chapain ~ John Gibney ~ Austin Barber ~ Jane Lutz ~ Julie Brown
- **Budapest** (Institute of Geography, Hungarian Academy of Sciences, Hungary)
  Zoltán Kovács ~ Zoltán Dövényi ~ Tamas Egedy ~ Attila Csaba Kondor ~ Balázs Szabó
- **Helsinki** (Department of Geography, University of Helsinki, Finland)
  Mari Vaattovaara ~ Tommi Inkinen ~ Kaisa Kepsu
- **Leipzig** (Leibniz Institute of Regional Geography, Germany)
  Joachim Burdack ~ Günter Herfert ~ Bastian Lange
- **Munich** (Department of Geography, Ludwig-Maximilian University, Germany)
  Günter Heinritz ~ Sabine Hafner ~ Manfred Miosga ~ Anne von Streit
- **Poznan** (Institute of Socio-Economic Geography and Spatial Management, Adam Mickiewicz University, Poland)
  Tadeusz Stryjakiewicz ~ Jerzy J. Parysek ~ Tomasz Kaczmarek ~ Michal Meczynski
- **Riga** (Stockholm School of Economics in Riga, Latvia)
  Anders Paalzow ~ Diana Pauna ~ Vjacheslav Dombrovsky ~ Roberts Kilis ~ Arnis Sauka

- **Sofia** (Centre for Social Practices, New Bulgarian University, Bulgaria)
  Evgenii Dainov ~ Vassil Garnizov ~ Maria Pancheva ~ Ivan Nachev ~ Lilia Kolova
- **Toulouse** (Interdisciplinary Centre for Urban and Sociological Studies, University of Toulouse-II Le Mirail, Toulouse, France)
  Denis Eckert ~ Christiane Thouzellier ~ Elisabeth Peyroux ~ Michel Grossetti ~ Mariette Sibertin-Blanc ~ Frédéric Leriche ~ Florence Laumière ~ Jean-Marc Zuliani ~ Corinne Siino ~ Martine Azam
- **Milan** (Department of Sociology and Social research, University degli Studi di Milan Bicocca, Italy)
  Enzo Mingione ~ Francesca Zajczyk ~ Elena dell'Agnese ~ Silvia Mugnano
- **Dublin** (School of Geography, Planning and Environmental Policy, University College Dublin, Ireland)
  Declan Redmond ~ Brendan Williams ~ Niamh Moore ~ Veronica Crossa ~ Martin Sokol

Table of contents

1 INTRODUCTION

1.1 Rationale

In the first phase of ACRE research project comprehensive analyses were prepared on social-economic development of the distinct metropolitan regions and on the current situation of creative knowledge sector. Investigations to lay the foundations of the research (overview of literature, statistical database processing and analysis) presented an opportunity to obtain a general view about the similarities and differences of creative knowledge sector in the individual regions, but these studies of descriptive character could not be used for more detailed comparative analyses. From these summaries, however, a statement could be made that – from the aspect of path dependency – creative and knowledge intensive industries within the metropolitan regions involved in the project have had and actually have different characteristics and endowments, they have followed different paths of evolution, therefore considerable disparities can be traced between creative drawing sectors in the various cities. Nevertheless, a circle of those sectors can be outlined which are typical and play a decisive part in the economy of each metropolitan region. From the viewpoint of the objectives of ACRE project this circumstance is highly important, for the similarities and disparities of processes taking place in the metropolitan regions as creative knowledge-based regions can really be studied if the same branches are analyzed and compared within the creative knowledge sector.

In the second phase of ACRE project a detailed analysis of the statistical databases for each region – including Budapest Metropolitan Region (BMR) – was performed in order to select common branches of creative and knowledge-based industries, investigations of whose it might be possible to point out factors having played a decisive part in the development of creative knowledge and their characteristics in the different metropolitan regions.

Based on the local statistical databases, ACRE research project focuses on the following branches:

Of creative industries:

1) Computer games, software, electronic publishing; software consultancy and supply. (NACE code: 722)
2) Motion pictures and video activities and radio and TV activities (NACE codes 921 and 922)
3) Advertising (NACE code: 744)

Of the knowledge intensive industries:

1) Law and business - Law; legal, accounting, book keeping, auditing and market research (NACE: 741);
2) Finance - Financial intermediation (NACE: 65) have to be investigated.
3) R&D and higher education (NACE: 73, 803)

The following contribution is aimed to present the course and methodology of selection of the target groups and the current situation of creative and knowledge intensive branches selested for comparative research and their development trends in BMR, with a special reference to the position of employees, university students and graduates, managers and transnational migrants.

1.2 General trends in the Budapest Metropolitan Region

BMR as the only genuine metropolitan region of Hungary has always had a considerable share in creative knowledge sector at a national scale. At the end of 2004 there were 264 thousand active economic organisations in Hungary operating in the field of *creative industries* and *knowledge intensive industries* (together the 'creative knowledge sector'), which made up 36.4 percent of the active economic organisations registered in the country. 42.3 percent of them (ca. 112,000 companies and sole proprietors) acted in BMR employing 427,000 (Table 1.1). In 2004 creative knowledge sector produced 28 billion HUF (112 million EUR) revenues as a total. Compared with the data of 1999 several remarkable changes took place during this five year period. The number of companies involved in creative knowledge sector had increased by 30 percent, especially dynamically in R&D, higher education (67%) and finances (61%). At the same time the number of enterprises in creative industries had grown somewhat below the average (22.5%) even though it had brought the largest number of new enterprises (with the new 12,000 ones established since 1999 the number of active firms exceeded 65,000 in 2004).

The increase of the number of employees lagged behind the growth of businesses over the time period in concern. The former had risen from 389,000 to 427,000 which represented a 9.9 percent increase (Table 1.2). The number of employees in law and business showed a considerable rise both in absolute and relative terms. Between 1999 and 2004 it expanded by 24,400 workers i.e. by 37.4 percent. With regard to the number of employees the ICT sector also expanded dynamically. Since the turn of the millennium – chiefly due to the reform processes – the employment rate in higher education has shrunk considerably (a nearly 17 percent drop between 1999 and 2004).

In relation with the revenues the creative knowledge sector succeeded to nearly double the revenues: the economic ventures received 15 billion HUF in 1999 and it had risen to 28 billion HUF (112 million EUR) by 2004. Finances and ICT produced more than 120 percent growth over the time period in concern (Table 1.3).

Table 1.1 Number of enterprises in the BMR (1999-2004)

	1999	2004	Change	Change %
Creative industries	53109	65071	11962	22.5
ICT	6177	8717	2540	41.1
Finances	3858	6223	2365	61.3
Law and business	21305	29396	8091	38.0
R&D, higher education	1306	2181	875	67.0
Creative knowledge sector	85755	111588	25833	30.1
Total	206109	253498	47389	23.0

Source: CSO Hungary; 1999, 2004

Table 1.2 Number of employees in the BMR (1999-2004)

	1999	2004	Change	Change %
Creative industries	179232	194009	14777	8.2
ICT	48651	56767	8116	16.7
Finances	56319	53930	-2389	-4.2
Law and business	65286	89702	24416	37.4
R&D, higher education	39266	32649	-6617	-16.9
Creative knowledge sector	388754	427057	38303	9.9
Total	1347878	1482829	134951	10.0

Source: CSO Hungary; 1999, 2004

Table 1.3 Revenues in the BMR (1000 EUR, 1999-2004)

	1999	2004	Change	Change %
Creative industries	6328507	10887508	4559001	72.0
ICT	3809130	8468869	4659739	122.3
Finances	2359168	5331167	2971999	126.0
Law and business	2252733	3140085	887353	39.4
R&D, higher education	146510	171428	24918	17.0
Creative knowledge sector	*14896048*	*27999057*	13103009	88.0
Total	59459215	113657043	54197828	91.2

Source: CSO Hungary; 1999, 2004

Trends within the territory of the BMR can be traces with studies on its weight shared and part played within the creative knowledge sector, on the national level. As far as both the total number of active economic organisations and those operating in the BMR are concerned, the weight of the region had somewhat grown between 1999 and 2004. The same is valid for the number of employees and the revenues. The comparison between creative and knowledge-intensive industries, however, reveals considerable disparities. Creative industries enjoyed positive trends in the number of enterprises and employees and in the volume of revenues. This is the only branch within cretive knowledge sector, where the share of the BMR within the national had grown with regard to all the three parameters. In spite of an upward trend of enterprises and employees in ICT, the BMR had lost from its weight after the turn of the millennium. Judging from their revenues, capital-intensive, innovative and dynamically developing economic organisations are concentrated in the capital and surrounding settlements. The same is typical of firms in the financial sector. In the field of law and business, in spite of a 37-39 percent growth of the three main parameter values in the BMR, its revenues dropped considerably in comparison with those in the countryside. A conclusion might be drawn that the sophisticated legal and business services had been upgraded and come to the fore in provincial cities.

There should also be mentioned that – along with an overall growth of organisations in R&D and higher education – the weight of the BMR in this branch lessened in a national comparison. There has been a change of the structure and concept in higher education with a rising number of institutions in research and training. Their efficiency and rentability have recently increased as they produced growing revenues with a concurrent decreasing number of staff (Table 1.4).

Table 1.4 The importance of BMR in the creative knowledge sector in Hungary (%)

	Enterprises			Employees			Revenues		
	1999	*2004*	*Change*	*1999*	*2004*	*Change*	*1999*	*2004*	*Change*
Creative industries	42.0	43.3	**1.2**	40.5	44.8	**4.3**	58.3	62.3	**4.1**
ICT	55.8	53.6	**-2.2**	49.8	46.7	**-3.2**	42.4	43.1	**0.7**
Finances	28.2	27.4	**-0.8**	75.5	66.5	**-9.0**	89.7	91.2	**1.5**
Law and business	42.3	41.9	**-0.4**	52.7	53.0	**0.3**	80.4	66.6	**-13.7**
R&D. higher education	65.6	52.4	**-13.2**	48.1	48.7	**0.7**	77.5	77.5	**0.0**
Creative knowledge sector	42.1	42.3	**0.2**	*47.4*	*49.0*	**1.6**	*58.5*	*58.4*	**0.0**
Total	34.5	35.0	**0.5**	37.8	39.1	**1.3**	51.3	53.2	**1.9**

Source: CSO Hungary; 1999, 2004

2 EMPLOYEES IN THE CREATIVE AND KNOWLEDGE INTENSIVE INDUSTRIES

2.1 Database, methodology and selection of target groups

For the identification of creative knowledge sectors the international NACE codes were used, which are identical with the TEAOR'03 codes applied by the Central Statistical Office (CSO) of Hungary. Data about the number of enterprises (divided by companies, sole proprietors, government institutions), their number of employees and annual revenues (in 1000 EUR) were supplied by Central Statistical Office (CSO) Hungary. This set of data was available in a cleaned and structured form for 1999 and 2004.

For the analysis of regional variations of creative knowledge sector within Hungary we used data aggregated for the entire country, for regions and counties, and for the Budapest Metropolitan Region, respectively. Afterwards the position of branches incorporated into creative knowledge sector was studied within the BMR. In selection of the target groups the database was rearranged accordingly (data filtering), and the individual branches were ranked by the conditions of filtering. When choosing target groups the following aspects were taken into account:

Indices of absolute volume:
- Number of enterprises operating in creative and knowledge intensive industries in 1999 and 2004;
- Number of employees engaged in economic organisations and enterprises in 1999 and 2004;
- Revenues of economic organisations and enterprises in 1999 and 2004.

Indices of the dynamics of changes and importance of the BMR:
- Change in the number of employees and volume of revenues between 1999 and 2004;
- Weight of the BMR in the individual creative and knowledge intensive industries in 1999 and 2004 (to what an extent was the sector concentrated in the area of the BMR?);
- Change in the weight of the BMR in the individual creative and knowledge intensive industries between 1999 and 2004.

Using the above indices a rank was established among the individual branches and the frequency of occurrences and ranks was studied (see Annex I). As a result creative and knowledge intensive industries behaving as drawing branches in the BMR were grouped into five categories:

a) Significant branch (based on data on enterprises and/or employment and/or revenues)
b) Significant, dynamic branch with an outstanding weight of the BMR
c) Dynamically developing branch with an outstanding weight of the BMR
d) Extremely dynamically developing, still is not significant branch

e) The weight of the BMR is outstanding on a national level

2.2 Determining of creative and knowledge intensive industries

Defining creative industry can be approached both from the input and output aspects. In the former case creativity as the main trigger and quality is focal. In this respect creative industries include advertising, architecture, crafts, design, designer fashion, video, film, music and photography as well as publishing, computer games and software design and radio and television.

Definition from the output side is based on copyright and its application. There can be distinguished *core, partial, interdependent and non-dedicated copyright industries. Core copyright industries* encompass the cultural sphere and software industry which perform the creation, production, broadcasting, exhibition, distribution, communication of works protected under copyright law to the public (e.g. literature, publishing, press, fine arts, applied arts, architecture, performing arts, music, photo, theatrical productions, motion pictures, radio and TV, advertising, software and data-base production etc.). *Partial copyright industries* include activities performing the creation, production and distribution of equipment which enable or support the production of works protected under copyright law (e.g. furniture, architecture, antiquities, TV-, radio-sets, CD, DVD players, personal computers etc.). The *interdependent (background) copyright industries* comprise for example the manufacture of TV sets, radios, DVD players and computers. *Non-dedicated support industries* support the broadcasting, communication, distribution and marketing of works protected under copyright law (general trade, transportation and telecommunication), but these activities can not be classified among the core copyright industries.

In knowledge intensive industries high-level professionalism, invention and innovation are decisive. In order to define the circles of knowledge based and knowledge intensive industries was a topic for the debate between experts within ACRE project. As an outcome knowledge intensive industries encompass information and communication technology which comprises ICT manufacturing and ICT services including telecommunication, finances, law and other business services, and R&D and higher education. At the same time a problem has arisen because in principle the above branches (e.g. law, finances) include activities which has nothing to do with creativity or cannot be labelled as innovative. It should be emphasized that (for the sake of the success of the project) in the course of the questionnaire survey and professional interviewing only the employees and managers of companies are to be asked those involved in really creative activities.

2.3 Creative workers

Of the creative industries the following ones have been selected by the ACRE research team:

1) Computer games, software, electronic publishing; software consultancy and supply. (NACE code: 722)
2) Motion pictures and video activities and radio and TV activities (NACE codes 921 and 922)
3) Advertising (NACE code: 744)

2.3.1 Software consultancy and supply

In 1999 the number of enterprises belonging to the software consultancy and supply branch approached to 4,000. Until 2004 this number had risen to over 6,500 producing an increase by 67.1 percent (Table 2.1). The branch however displayed considerable spatial disparities within the BMR: though the companies were concentrated overwhelmingly in Budapest, the progress was significantly more dynamic in the settlements of the agglomeration (a nearly 120% increase) rising from 16 to 21 percent during the five years in concern. The same can be said about the change in the number of employees with the difference that only 14 percent of them, i.e. 18,000 persons worked in the settlements of the agglomeration in 2004. The change in the revenues within the agglomeration was slightly more spectacular: during the studied time interval there had been a 142 percent increase in this zone even though this makes up just more than a mere 10 percent of the 1.1 billion HUF (4,4 million EUR) total in the BMR. With regard to the dynamics of the branch and the weight of the BMR: in 1999 60 percent of the country's active enterprises operated in the BMR with 72 percent of the total number of employees. The BMR had retained its leading position according to both indices. With regard to the revenues the region's weight somewhat reduced, still they accounted for 83 percent of the national total in 2004. To sum up: the software consultancy and supply branch has been some of the fields dynamically developing, with a considerable ratio of the BMR, its choice was substantiated and the forthcoming surveys promise to produce relevant figures.

Table 2.1 Enterprises, employees and revenues in the selected creative branches

	Enterprises		Employees		Revenues (1000 EUR)	
	1999	**2004**	**1999**	**2004**	**1999**	**2004**
Software consultancy and supply (722)	3943	6590	12210	18073	642737	1126538
Motion picture, video etc. (921, 922)	2364	3056	10147	9093	344956	926892
Advertising (744)	2170	2740	5491	6977	611317	1 219 289

Source: CSO Hungary; 2004

2.3.2 Motion pictures and video activities, radio and TV activities

These branches cannot be mentioned among the important ones in the BMR either by the number of enterprises and that of the employees or by the revenues generated. Between 1999 and 2004 the number of firms had risen from 2,364 to 3,056 making up a 30 percent increase. Although a large portion of them is to be found in Budapest, the expansion in their number is clearly more dynamic in the settlements of the agglomeration. The number of persons employed in both of the branches had been reduced nearly by 1,000 which can be mainly attributed to those working in radio and TV activities. So there had been a restructuring of this industry between 1999 and 2004 to the benefit of more efficient companies operating with fewer workers. The change in revenues is a proper illustration of this revival: *motion pictures and video activities* reached a 240 percent growth of its returns, whereas radio and TV activities doubled their income. Enterprises in Budapest were especially successful in the dynamics of revenues.

In spite of the fact that with regard to the absolute figures motion pictures, video, radio and TV activities cannot be listed among the most important branches, an overwhelming part of enterprises, employees and revenues are concentrated in the BMR. These two branches

have divergent proportions and trends of development. Motion pictures and video activities are more relevant: 78 percent of the enterprises and 82 percent of the employees of the national total operated in the BMR in 1999 and both indices showed 3-4 percent growth during the following five years. At the same time only ca. half of the enterprises in radio and TV activities are in Budapest and its agglomeration, though the share of the BMR in employees was 82 percent in 1999. Both indices tended to decrease until 2004. Data testify to an increasing role of local radio broadcast, TV studios and regional channels in the settlements of the countryside, especially in the major cities, but the size of enterprises and employment is much higher in Budapest and its environs. The revenues show an extreme concentration with the share of the capital with revenues in both branches exceeding 90 percent of the national total and in motion pictures and video activities reaching 97 percent by 2004. Summing up: motion pictures, video, radio and TV activities belong to branches not being among the most important creative industries but displaying a highly dynamic development of revenues and profit and a clear-cut dominance of the BMR. Choosing of motion pictures, video, radio and TV activities is reasonable and can be supported by statistical data.

2.3.3 Advertising

Part of creative industries, advertising has not gained prominence by the number of enterprises and employees. Of them 2,170 active firms were registered in the BMR in 1999 and 2,740 ones five years later indicating a growth of 26 percent. This branch also displayed a high concentration of the enterprises in the core city within the BMR. The difference is that the number of firms with their headquarters in the agglomeration zone had risen at a higher rate during the studied period (by 83% vs. 18% in the capital) and the ratio of enterprises located here had grown from 12 to 18 percent within the BMR between 1999 and 2004. The number of employees displayed very similar changes having increased nearly to 7,000 in the BMR by 2004. The advertising branch has been able to get onto the top list of the important industries but it by no means figure among the leaders. The revenues however had shown an upward trend having been doubled between 1999 and 2004 reaching 1.2 billion HUF (4,8 million EUR). The growth of returns was particularly impressing in the agglomeration zone: 440 percent! From this a conclusion can be drawn that among the creative industries chosen it is the companies in the advertising branch that possess the highest efficiency and profitability in terms of revenues per enterprise and per capita.

Advertising is represented in the number of enterprises and employees correlating to the general weight of BMR. Both in 1999 and 2004 half of the former and two thirds of the latter operated on the territory of BMR and these proportions have been stable since then. The region has an absolute dominance with respect to the revenues as nine tens of the latter have been originating of it for the last years. On the whole it can be stated that advertising cannot be mentioned among the most relevant creative industries but its development has been extremely rapid in the settlements of the agglomeration zone and on national level it is to be characterised by an absolute dominance of the BMR in the field of revenues.

2.3.4 Other alternative creative branches for selection

On the territory of BMR two further creative branches can be appointed that have played important part in the economy of the metropolitan region and their choice might be reasonable: *Architectural engineering activity* (in Hungary: engineering activity; NACE: 742) and *Other retail sale of new goods in specialized stores* (NACE: 524).

A creative industry called Other retail sale of new goods in specialized stores is one of the most important branches of its kind with respect to the number of enterprises and employees and to the revenues. Although the number of the firms decreased by 4 percent between 1999 and 2004, it is still over 12,000. During the same period the number of workforce engaged had increased by 12 percent, and exceeded 45,000 in 2004. The increase of revenues were the most dynamic: revenues had risen by 150 percent during the studied period and exceeded 2.8 billion HUF (11 million EUR) in 2004. Enterprises to be found in the agglomeration zone were especially successful in raising their revenues over the years since the turn of the millennium. Spatial concentration of this industry on the territory of the BMR has been lagging behind that of the other industries mentioned and the weight of the region in the national economy (29% of the enterprises, 35% of the employed, 46% of the total revenues). Other retail sale of new goods in specialized stores is a branch playing a determinant role of the BMR but its development is not dynamic and the weight of the region in the branch is not outstanding.

Architectural engineering activity is practiced by a high number of enterprises occupying abundant labour force and producing substantial revenues so it has a relevant part in the economy of the BMR. There have been registered 7,000 active firms in this branch in 1999 and their number had risen to 9,600 by 2004 (an increase by 37%). Similar to the preceding branch a rapid growth of the number of enterprises in the settlement of the agglomeration zone is typical (80%). The revenues also showed an upward trend with an 80 percent in the BMR between 1999 and 2004 and the returns had trebled in the agglomeration zone. Half of the enterprises in (architectural) engineering activities and of the employed workforce is to be found in the BMR and 70 percent of the revenues is produced here. Over the past years the share of the BMR has not changed in this industry, which is an important branch showing some dynamism but with a minor weight of the BMR.

2.4 Knowledge workers

Of the knowledge intensive industries the following ones have been selected by the ACRE research team:

- *Law and business*
  Within law and business especial emphasis should be given to law; legal, accounting, book keeping, auditing and market research (NACE: 741);
- *Finance*
  Within this creative knowledge industry financial intermediation (NACE: 65) have to be investigated.
- *R & D, and higher education* (NACE: 73, 803)

Such R&D and higher education institutes should be selected which give the opportunity to search for links between knowledge institutions and creative and knowledge intensive sectors involved in the research works.

2.4.1 Law; legal, accounting, book keeping, auditing and market research

Based on the number of enterprises and employees Law and business is the most significant knowledge intensive sector, and it is also one of the leading branches in terms of the revenues. Between 1999 and 2004 the number of firms increased from 21,300 to 29,400 (a 38% growth), and this dynamic expansion had been mainly due to enterprises launched in the settlements of the agglomeration. A similar growth was registered among the labour force, but in this case the capital was the leader. The latter is to indicate a prevalence of larger firms with more employees operating in Budapest. A higher profitability of them is shown by the fact that whereas the enterprises of the capital city doubled their revenues between 1999 and 2004, those in the agglomeration had suffered substantial loss in returns. The weight of this industry has been lately in close correlation with the importance of the BMR and did not change considerably, which means that 40 percent of the enterprises and slightly more than half of the employees are to be found in the BMR. It was only the revenues generated by this branch which displayed a drop in the share of the BMR, from 80 percent down to 67 percent between 1999 and 2004. This is to indicate that firms of the countryside in law and business are closing the gap with those of the BMR in terms of the number and quality of enterprises and, as a result in their efficiency and profitability.

No doubt *legal, accounting, book keeping, auditing and market research* branch plays the most prominent part within law and business sector. Already in 1999 78 percent of the enterprises registered in law and business sector belonged to this branch. In the following years the expansion – especially in the agglomeration zone – continued and 84 percent was reached by 2004 (25,000 active enterprises). The number of employees did not show such a dynamic growth (22%), there had even been a drop in the agglomeration. 49,500 persons occupied in the BMR comprise 55 percent of those of national total in the law and business sector (Table 2.2). The branch is outstanding within the sector: 85 percent of the revenues was produced by *legal, accounting, book keeping, auditing and market research* in 1999, but it is true that this proportion dropped to 68 percent by 2004. This process can be explained by a rearrangement going on within the sector: *Labour recruitment and provision of personnel* is gradually coming to the fore at the expense of *legal, accounting, book keeping, auditing and market research.*

Table 2.2 Enterprises, employees and revenues in the selected knowledge intensive branches

	Enterprises		Employees		Revenues (1000 EUR)	
	1999	**2004**	**1999**	**2004**	**1999**	**2004**
Accounting, auditing etc. (741)	16670	24931	40521	49520	1933439	2 211 206
Financial intermediation (65)	267	325	34147	33707	910452	3 121 745
R&D, higher education (73, 803)	1306	2181	39266	32649	146510	171 428

Source: CSO Hungary; 2004

To sum up: law and business sector is prominent, and as its part *legal, accounting, book keeping, auditing and market research* are very important industries, however, their

development is not enough dynamic and the weight of the BMR is not outstanding on a national level.

2.4.2 Financial intermediation

Financial sector as a rule is represented by large economic organisations, consequently it is not the number of enterprises but rather the high number of the employees (especially in Budapest) and the large volume of the revenues are its dominant characteristic features (Table 2.3).

Table 2.3 Average number of employees in the of creative knowledge enterprises

	Budapest	**Agglomeration**	**BMR**	**Country**
Creative industries	*3,2*	*2,1*	*3,0*	*2,9*
ICT	6,3	7,3	6,5	7,5
Finances	11,3	1,6	8,7	3,6
Law & other	3,3	2,0	3,1	2,4
R&D	16,1	8,7	15,0	16,1
Knowledge intensive industries	*5,5*	*3,2*	*5,0*	*3,9*
Creative knowledge sector	***4,2***	***2,5***	***3,8***	***3,3***

Source: CSO Hungary; 2004

Between 1999 and 2004 there had been a 61 percent expansion of the number of firms, rising from 3,800 up to 6,200. The settlements of the agglomeration zone had experienced a striking growth, where the number of enterprises almost doubled during these five years. In this field finances are to be considered a dynamically expanding sector. The same cannot be said of the changes in the number of the employees, which displayed a drop by ca. 3,000 (primarily in Budapest). In spite of that, finances with its 54,000 workers belong to the largest employers among knowledge intensive industries. Following creative industries and ICT it produces the third highest revenues (5,3 billion EUR), and the expansion of the revenues had also been dynamic between 1999 and 2004. In the BMR there was a 130 percent growth of returns during this period.

Structural characteristics of finances sector are inevitably reflected by the share of the BMR within. Whereas a mere 28 percent of the enterprises classified into the sector are to be found in Budapest and its agglomeration, already two thirds of the employees work here and nine tens of the revenues are generated here. In terms of the number of enterprises and volume of revenues the weight of the BMR has not changed during the past years, however its importance dropped somewhat taking into account a diminishing number of the employees.

Large size of the firms is also typical of the financial intermediation branch. Consequently a relatively few enterprises (a mere 325 in 2004) of this branch employ a large number of people. A high level of concentration of the enterprises is indicated by the fact that representing slightly more than 5 percent within the sector, the financial intermediation branch gave 60 percent of all employees. The growth of the revenues in this branch was highly pronounced, rising from 38 percent in 1999 up to 58 percent by 2004 within the sector. This increase from 910 million EUR to 3.1 billion EUR equalled to 240 percent expansion. Enterprises in the agglomeration realized a remarkable amount of revenues: during the five years they had grown from 6,4 million EUR to 42 million EUR (a nearly 560% increase). These figures made financial intermediation one of the industries producing the most dynamic change in revenues. It is not by accident that in the branch there is a high share of the BMR in

terms of the revenues: nine tens of them are produced here. 80 percent of the persons employed in financial intermediation works on the territory of the BMR and nearly half of the enterprises are to be found here.

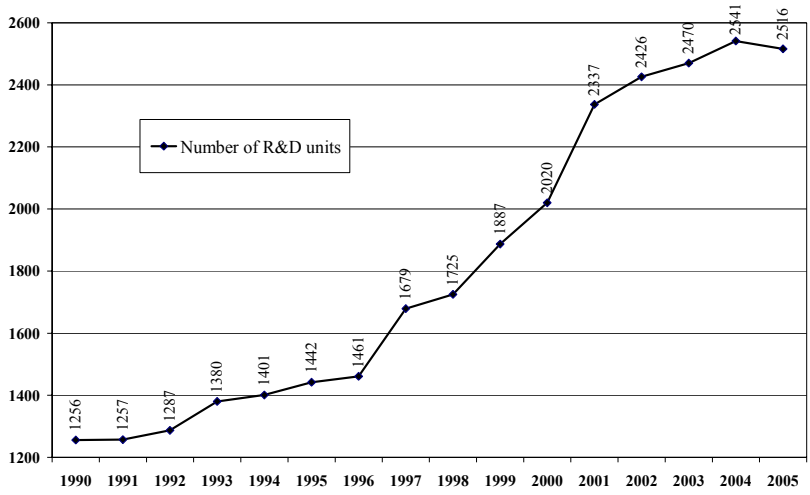
Summing up it can be stated that finances with financial intermediation branch are large employers and revenue generators. Revenues have shown a clear-cut dynamic upward trend and the weight of the BMR is sizeable in employment and efficiency within the knowledge intensive sector.

2.4.3 R&D and higher education

The state of R&D in Hungary and Budapest[1]

In 2005 the growth of research and development activities became faster. The share of R&D expenditure in the GDP in 2005 was 0.95 percent compared to the previous year's 0.89 percent. The total expenditure was 828 million EUR, 14.5 percent more than in the previous year. 39.4 percent of the total expenditure was financed by enterprises, while the ratio of state budget supply made up 49.4 percent. Capital expenditure was 32,2 billion HUF (130 million EUR) of which 23 billion HUF (92 million EUR) was spent on instruments. In 2005 altogether 2516 R&D units were taken account of in R&D statistics, of which 1566 were institutes of higher education and 749 units were located in the business sector (Figure 2.1). The total number of R&D personnel was 49723 in 2005. This is equivalent to 23329 full time earner (0.6% of all active earners) of whom 15878 (68%) of were scientists and engineers (Figure 2.2). 37 percent of the scientists has a PhD degree and 69.5 percent of the total number of persons employed in R&D graduated from universities or colleges.

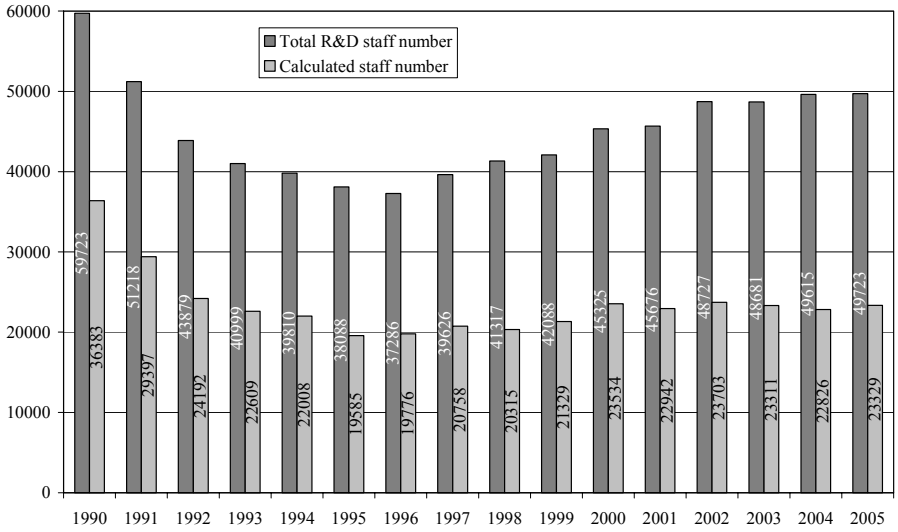
Figure 2.1 Number of R&D units in Hungary



Source: CSO Hungary; 2005

[1] For detailed information on higher education see chapet 3.1.

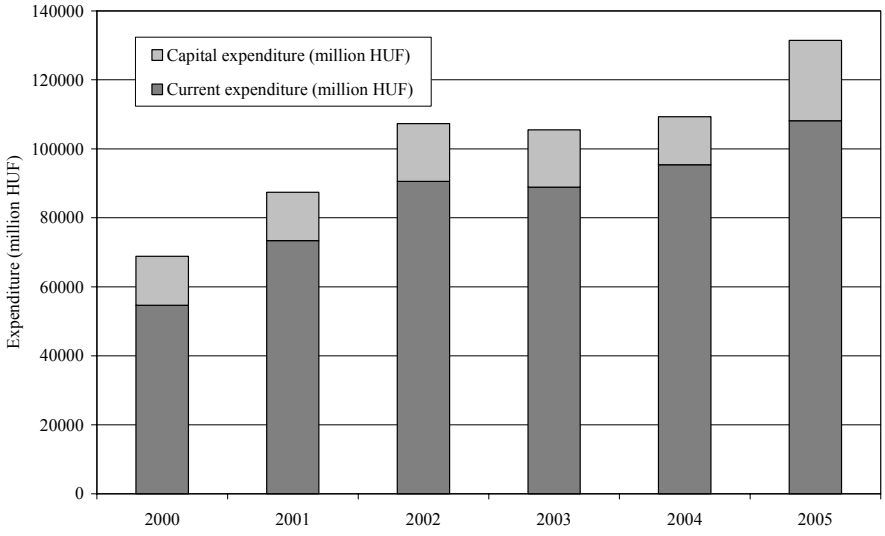
Figure 2.2 R&D personnel data in Hungary



Source: CSO Hungary; 2005

R+D – just like higher education – are over-represented in the Budapest Metropolitan Region. The number of people working in R+D was 25,536 in 2005, which 51.3 percent of the national total. In 2005 63 percent of the R+D expenditure was concentrated in Budapest and only in Budapest the R+D spending was 525 million EUR (Figure 2.3). 42 percent (1,066 units) of the Hungarian research institutions were based in the capital city (Table 2.4). The research institutes on average spent 388 thousand EUR on research and development, which was double of the similar places elsewhere in the country. In Budapest 87 percent of the R+D spending was going into the actual research and development activity, while the rest into R+D-related material investments. This rate of these investments reduced considerably from 2000 to 2004 from 21 percent to 13 percent. 51 percent of the total research topics and development projects are concentrated in Budapest of which 36 percent is basic 38 percent is applied research and the rest falls in the category of experimental development.

Figure 2.3 Expenditure of R&D units in Budapest



Source: CSO Hungary; 2005

Table 2.4 Principal data of scientific research and development in Budapest

	2000	2001	2002	2003	2004	2005
R&D unit	840	1033	1041	1089	1127	1066
Total number of staff	24865	24175	25639	25527	25480	25536
Scientist, engineers	15564	15616	16346	16736	16524	17005
Calculated number of staff	13958	13646	14064	13986	13740	13719
Current expenditure (million HUF)	54647	73394	90592	88923	95411	108138
Capital expenditure (million HUF)	14211	14016	16716	16556	13933	23321
Expenditure total (million HUF)	68858	87410	107308	105479	109344	131459

Source: CSO Hungary; 2005

Analysis of statistical dataset compiled for ACRE research

R&D and higher education sector does not play a decisive role among the knowledge intensive industries either in terms of the number of enterprises or the revenues gained, but due to institutions of higher education and research institutes financed from the state budget it is an important employer.

Between 1999 and 2004 the number of enterprises operating in the sector grew from 1300 to 2200. This 67 percent increase was mainly due to new R&D enterprises launched in Budapest. Though during the same period institutions and organisations in higher education changed much more dynamically, their absolute number lagged far behind that of the R&D firms. The weight of the BMR within R&D has shown a downward trend in the new millennium: following a 13 percent drop the ratio of enterprises registered in the BMR was 52.4 percent in 2004. The share of the BMR both within R&D and higher education enterprises diminished by 10 percent: in the former from 70 percent down to 60 percent, in the latter from 45 percent to 35 percent.

As it has already been mentioned the sector is an active employer with 39,300 persons in 1999 and nearly 32,600 in 2004 (a shrinkage by 17%). In the settlements of the agglomeration zone the number of the employees was reduced by 2000 between 1999 and 2004, making up a 40 percent fall owing to dismissals from higher education.

The share of the BMR is eminent among those occupied in R&D with 75 percent of the employees of the branch. The region has a similar share (77.5%) within the revenues generated by R&D sector and R&D branch (NACE: 73). 97 percent of the 170 million EUR revenue realized in R&D sector on the territory of the BMR is produced in Budapest.

2.5 Selection of interviewees from the creative knowledge sector

The ACRE research team determined the number of quantitative questionnaires to be completed in the creative and knowledge-intensive sectors. The survey will include altogether 150 questionnaires, 75 in the selected creative industrial sectors, while the rest 75 in the knowledge-intensive sectors (Table 2.5). Based on the analyses of the statistical data and on the evaluation of the outcomes and taking into consideration the sectoral differences between the capital city and the agglomeration settlements within the BMR, the distribution of questionnaires among sectors were determined in the way presented below:

Table 2.5 Selection of interviewees

	Number of enterprises	Number of employees	Revenues (1000 EUR)	Interviewees	
				Budapest	***Agglomeration***
Software consultancy (722)	6590	18073	1126538	28	7
Motion picture etc. (921, 922)	3056	9093	926892	17	3
Advertising (744)	2740	6977	1219289	15	5
Creative industries				***60***	***15***
Law and business (741)	24931	49520	2 211 206	25	5
Finance (65)	325	33707	3 121 745	23	2
R&D (73,803)	2181	32649	171 428	17	3
Knowledge intensive ind.				***65***	***10***
Total				**125**	**25**

Source of information for surveying: CSO Hungary, Registry of Firms, LOP members.

3 UNIVERSITY STUDENTS AND GRADUATES

3.1 General trends in the Hungarian higher education

After 1990 the higher educational institutions grew in number as well as the number of majors and students. Economics, law, informatics grew in popularity mainly with the hope of students to find well-payed jobs. Meanwhile courses for teachers, science and arts lost popularity. The balance between the demand of economy and the supply of workforce by universities and collages was not harmonised systematically. On some of the majors like law there have been overproductions of labour for years, while by others such as engineering there have been a serious shortage.

Recently there have been taken major steps in reorganisation of higher education in Hungary. In conjunction with the integration starting with the 2000/2001 academic year the composition of students by faculties has also been modified. Along with the daily courses remote education and correspondence courses gained growing popularity. Beside university and college education specialised post-gradual courses and higher professional training in accredited system of schooling, doctoral and master degrees can be granted.

The new law on higher education passed in 2005 enacted multi-cycle higher education making general basic higher education (baccalaureus, bachelor) and vocational graduation, master degree (magister, master) and vocational graduation, and in doctoral courses academic titles of „Doctor of Philosophy" (PhD) in the field of sciences and „Doctor of Liberal Arts" (DLA) in the field of arts can be achieved.

During the last years the higher education produced a hitherto unprecedented expansion with an ever growing number of students. In the year of 2005, 58 percent of the applicants were accepted in higher education institutions. Economics, law and psychology continued to be the most attractive faculties at the universities, and tourism and catering, management and communication proved to be the most popular at the colleges. Applications were in excess to police and military academies, art, design, physical education and law specialisations. To the daily courses of 71 higher educational institutions 231 thousand young people matriculated for the 2005/2006 academic year (Table 3.1). There are 11 thousand persons receiving basic higher education (BSc) and further 207 thousand students study at universities and colleges. 8,300 students received higher level vocational training and further 5,900 studied in PhD and DLA courses. Of the scientific branches social sciences and humanities, a law, and technological sciences, whereas at the colleges business and administration and technological sciences play the leading role (Table 3.2).

Table 3.1 Tertiary education in Hungary*

	1990/1991	1995/1996	2004/2005	2005/2006
Institutions	77	90	69	71
Students	108376	195512	421520	424161
Students in full-time education	76601	132923	225512	231482
Teachers	17302	18098	23787	23188

Source: CSO Hungary; 2005

** Detailed data see in Annex II*

Table 3.2 University and college students* by ISCED fields of training, 2005/2006

	University level	In full-time edu.	College level	In full-time edu.
Teacher training and education science	9 457	5763	43931	19924
Arts	3 732	3531	1730	1327
Humanities	22 821	19308	4082	1581
Social sciences	26 921	19322	17791	10659
Business and administration	8 868	7003	78463	25326
Law	18 474	9680	–	–
Science	6 939	6936	278	123
Computing	7 576	7020	5215	2647
Engineering, manufacturing and construction	14 164	12984	36810	23546
Agriculture	4 824	4398	7010	2328
Health and welfare	11 428	10913	20323	8514
Services	3 790	3077	26005	11335
Total	138994	109935	241638	107310

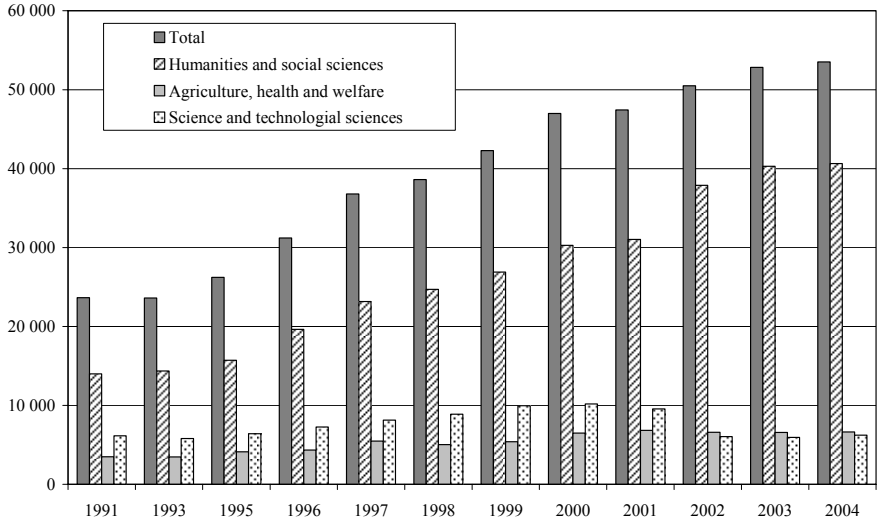
**Including students in BSc training.*

Source: CSO Hungary; 2005

In 2004 53,500 students graduated in various fields of science in Hungary. The representation of social sciences, with 24,500 (46%) graduates, markedly stands out. The number and share of graduates in humanities were also high, 16,200 and 30 percent respectively (Table 3.1). The representation of graduates in these two fields of science altogether exceeded 75 percent. The rest 25 percent was shared among natural, technological, agricultural, and health sciences. The government pays especial attention to the issue of the unacceptable composition of graduates in its recently elaborated educational policy. In order to launch transformation, the government provides state subsidies for only fewer places in social sciences and humanities, meanwhile intends to extend the number of students and graduates in technological and natural sciences.

Currently, the ratio of people having completed higher education is 17 percent in Hungary in the 26–64 age-groups.

Figure 3.1 Graduates in different fields of training in Hungary



Source: CSO Hungary; 2004

3.2 Higher education in the Budapest Metropolitan Region

Budapest Metropolitan Region has always had the largest concentration of higher education institutions in the country. This central role remained and even strengthened in the past 15 years. From 2001 the total number of students in higher educational institutions increased by 19 percent in Budapest, it was 166,000 in 2006 (Table 3.3). However, the ratio of students studying in Budapest is much lower than in the 1980s. Almost half of the students attended collages (equalling BSc and BA) further 37 percent attended universities (equalling MSc and MA) and 10 percent participated in post-gradual specific education and training. In the higher educational institutions of Budapest 25 percent of the students participated in courses of economics and management, 18 percent studied technical sciences and 12 percent studied arts. Relatively low share participated in courses of information science (5.6 percent), similar was the representation in law studies.

Table 3.3 Total number of students at tertiary institutions and faculties in Budapest

	2005/2006
BSc training	7,212
Higher vocational training	3,894
University level education	61,408
College level education	76,334
Professional further training	13,466
PhD and DLA training	3,944
Total	166,258

Source: CSO Hungary; 2005

In 2005 there were 145,000 students registered in the BSc and MSc courses of higher education in the Budapest Metropolitan Region, 9.3 percent (15,000 students) attended institutions located in the agglomeration zone. In the agglomeration zone the eastern sector – with its centre in Gödöllő – leads with 8,900 students, the second is the north-western sector

with Piliscsaba as a centre and 3,500 students, while the third most important area is the northern sector with the centre of Vác and with 2500 students (Table 3.4).

Table 3.4 Students of university and college level education in the BMR (2006)

Budapest	144,954
Agglomeration belt total	14,890
Northern sector	2,461
Eastern sector	8,868
North-Western sector	3,561
BMR total	**159,844**

Source: CSO Hungary; 2005

After 2000 the number of students graduated in the higher educational institutions based in Budapest increased significantly. Between 2001 and 2005 the number of graduated regular students increased from 11,600 to 14,500 in Budapest, which accounts for a 25 percent growth.

Among the employed the general level of education has also improved since the turn of the new millennium: in the BMR the share of employed with higher educational diploma increased from 29.8 percent to 34.6 percent from 2001 to 2005 – this was 13.8 percent greater than the national average. Regarding the creative knowledge sector the proportion of employees with university and college degree is extremely high (above 75%) in the fields of 'R&D and higher education', 'finances' (accounting, book-keeping and auditing activities) and 'law' (legal services). The ratio of people with higher education is also relatively high in occupations of the IT sector (software consultancy, analysts etc.). It can be stated that in occupations within the 'knowledge intensive industries' (ICT, Finances, Law, R&D and higher education) the share of highly educated employees tend to be generally high. Within the 'creative industries' the proportion of employees with higher education is somewhat lower, highest ratios can be found in the field of 'architecture', 'electronic media' (Radio and TV), and 'performing art'.

3.3 Selection of university students and graduates

50 questionnaires are to be completed involving university students: 25 respondents will be enquired from different university and politics institutions, respective of the internal distribution of students, faculties and majors,. Further 25 quantitative questionnaires are to be completed in higher educational institutions specialised in arts and media. As in the BMR most of the students study in institutions based in Budapest, the students and the graduates will be selected from the capital city exclusively. Table 3.5 summarises the number and distribution of the to-be-completed questionnaires among students and graduates.

Table 3.5 Selection of interviewees from students and graduates

Field of training	Interviewees
Social sciences and humanities	7
Law	5
Science and computer science	5
Engineering, manufacturing and construction	5
Business and administration	3
Total	*25*
Arts	10
Media	15
Total	*25*
Total	50

Source of information for surveying: CSO Hungary, Ministry of Education, LOP members

4 MANAGERS

4.1 Managers in leading positions

Enumeration of the people in leading position – managers – last happened in 2001 as part of the Census. Therefore, the last official data regarding the occupation and working position of people dates back to this year[2].

In 2001 the number of managers was nearly 200,000 in Hungary, a little more than one-third of which (70,000 people) worked in the area of the Budapest Metropolitan Region (Table 4.1). The mangers in the leadership of corporations and state organisations nationally exceeded 56,000, 41 percent of these people were active in the area of BMR. 46 percent of the managers of corporations was concentrated in the BMR, which is indicative of the economic weight of the area as well as the orientation of corporation headquarters towards Budapest, however in the case of the state organisations only every fourth of the managers are based in the Metropolitan Region. The spatial distribution of managers at smaller companies and at divisions further varies the picture: Nearly 70 percent of the managers in advertising and communication work in the BMR, similarly high share applies to the managers of companies, organisations and divisions in R&D activities.

This situation generates good conditions for surveying the managers in the knowledge intensive economic sectors, which makes the area an ideal context for the ACRE project. Surveying the managers in creative industries is assisted by the high number of SME-s active in IT in the BMR. Two-thirds of the managers in the sector work and live in Budapest and the agglomeration.

Table 4.1 Number and ratio (%) of managers in Hungary and in the BMR (2001)

	Country	Budapest	Aggl.	BMR	Budapest	Aggl.	BMR
Managers total	***197780***	***59266***	***10429***	***69695***	***30.0***	***5.3***	***35.2***
Economic institutions	43180	17004	2901	19905	39.4	6.7	46.1
Budgetary institutions	13257	2740	656	3396	20.7	4.9	25.6
Economic and budgetary institutions total	***56437***	***19744***	***3557***	***23301***	***35.0***	***6.3***	***41.3***
Telecommunication and post	3833	856	163	1019	22.3	4.3	26.6
Education	4597	1326	241	1567	28.8	5.2	34.1
Cultural services	1887	806	90	896	42.7	4.8	47.5
Marketing	3313	1467	223	1690	44.3	6.7	51.0
Advertising and communication	448	286	20	306	63.8	4.5	68.3
Computer technique	1986	1128	76	1204	56.8	3.8	60.6
R&D	1319	742	79	821	56.3	6.0	62.2

[2] The Census methodology differentiated between places of working and living. For the minimal deviance of the two data types, in the present examination it was enough to consider only the division of managers by the place of working.

Other	123960	32911	5980	38891	26.5	4.8	31.4
Units and small organisations total	***141343***	***39522***	***6872***	***46394***	***28.0***	***4.9***	***32.8***

Source: CSO Hungary; Census 2001

The spatial distribution of the workplaces of managers between Budapest and the settlements of the agglomeration follows the spatial characteristics of the companies and organisations. As the majority of the premises are located in Budapest within the Metropolitan Region, it is of no surprise that 85 percent of the managers work in Budapest and the rest in the agglomeration zone. The sectors that attract the highest share (93%) of managers to Budapest to work and live are advertising, communication and computer technology, which indicates a firm concentration of these sectors in the capital city.

In the past few years the number and share of top and middle managers further increased in the BMR. In 2005 the representation of the employed in manager and other higher rank white-collar jobs was 61.9 percent in Budapest, which was almost 20 percent higher than the national average (43.4 percent). Concerning the age structure the ratio of young age group is above 25 percent in the IT sector. This age group is especially dominant among IT professionals, software managers and computer network managers.

4.2 Selection of managers

Among the managers living and working in BMR there are 20 qualitative interviews scheduled. When determining the distribution of the in-depth interviews the fact that 85 percent of the managers live and work in Budapest as well as the spatial characteristics of the sectors under scrutiny were considered. Table 4.2. summarises the number and sectoral distribution of in-depth interviews:

Table 4.2 Selection of managers in the BMR

	Interviewees	
	Budapest	**Agglomeration**
Software consultancy (722)	3	1
Motion picture etc. (921, 922)	2	1
Advertising (744)	2	1
Creative industries	***10***	
Law and business (741)	3	1
Finance (65)	2	1
R&D (73,803)	2	1
Knowledge intensive industries	***10***	
Total	**20**	

Source of information for surveying: Chamber of Commerce and Industry, Registry of Firms, LOP members.

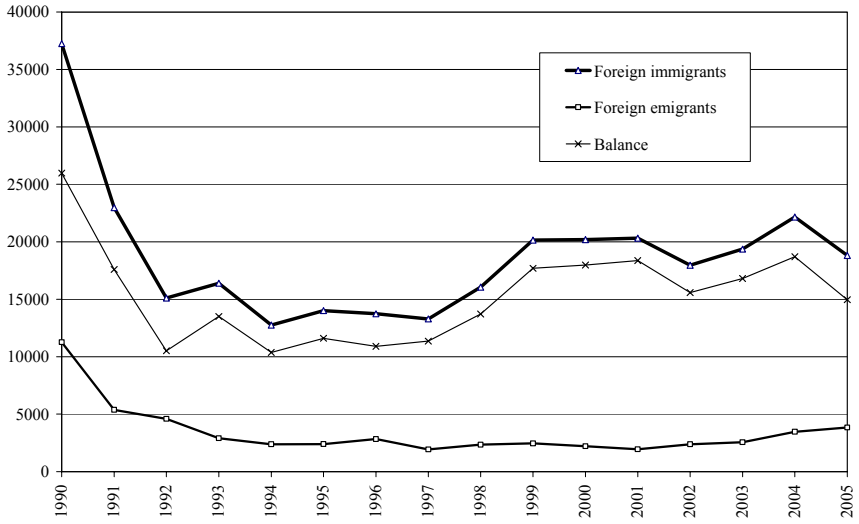
5 FOREIGNERS AND TRANSNATIONAL MIGRANTS

5.1 Foreign citizens in Hungary and Budapest

In the 1990s the country was the destination of mainly people from the neighbouring countries (Former Yugoslavia, Romania). People came for various reasons but mainly for economic purposes. With the stabilisation of the economy in these countries by the end of the 1990s their representation among foreigners also reduced from 78 percent in 1990 to 44 percent in 2000. Another relatively small but very influential group of immigrants was the Chinese. By 2000, the number of Chinese in Hungary with a residence permit dropped to a little under 10,000, of whom over 80 percent was concentrated in Budapest; already at the end of the 1990s there were also thousands more undocumented Chinese. Other Oriental or African immigrants may not have reached a critical number, their culture may not be so much based on community values, or their economic activity may not be commerce. At any rate, they are not so much on the scene (Figure 5.1).

The 'immigrants' from America and Western Europe mostly came to Hungary to represent multinational companies, often sent out by the management, but there were also some fortune hunters among them. These mostly high status expatriates from the advanced capitalist countries did not segregate themselves but integrated into the local higher status society.

Figure 5.1 Foreign citizens immigrating in and emigrating from Hungary (1990-2005)



Source: CSO Hungary; 2005

There are no official data available about the number of transnational migrants working and living in Hungary and in the BMR. The number of and the role played in economy by these highly qualified foreign employees and managers can only be derived indirectly from the statistical data available.

In 2005 there were altogether 142,000 foreign people staying in Hungary (mostly from the 25-39 age group), which in 2006 further increased by 12,000. 2006-ban 85 percent of the foreign people staying Hungary were of European origin, however only 14 percent (18,400) of them were coming from the old member states of the European Union. There were altogether 3000 migrants coming from America in the same year (Table 5.1).

The destination of the expatriates staying in Hungary is Budapest, where in 2005 a total of 66,000 people were living as citizens of other countries. Nearly 50 percent of the people migrating in the country generally settles in the capital city. As long as we consider that qualified transnational migrants decisively arrive from Western Europe and the US, it may be assumed that the number of highly qualified migrants active in creative and knowledge-intensive industries would not exceed 2000 people.

Table 5.1 Foreigners in Hungary and Budapest

	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Foreigners in Hungary	153125	110028	116429	115888	130109	142153	154430
Of which from EU15	17907	11723	12181	11629	12143	9714	18357
from America	3302	1784	1837	1735	2535	2667	2989
from Asia	20701	13307	15121	14179	14715	15121	18543
Foreigners immigrating to Hungary	20184	20308	17972	19365	22164	18809	n.a.
Foreigners in Budapest	39200	43857	43216	48682	54251	66025	n.a.
Foreigners immigrating to Budapest	7827	8870	9487	11399	11688	8643	n.a.

Source: CSO Hungary; 2006

5.2 Selection of foreign graduates and professionals

10 qualitative in-depth interviews are scheduled among the foreign professionals working and staying in Hungary and further 50 quantitative questionnaires are planned to be completed among university students. When determining the number of in-depth interviews the known parameters of sectors were regarded, as well as the fact that the working place of foreign people living and working in the BMR are mainly in Budapest (Table 5.2). In the case of the questionnaires it was bore in mind that higher number of foreign students can be discovered primarily in faculties of technology and natural sciences as well as medical sciences (Table 5.3).

Table 5.2 Selection of foreign professional

	Interviewees	
	Budapest	Agglomeration
Software consultancy (722)	2	0
Motion picture etc. (921, 922)	2	0
Advertising (744)	1	1
Creative industries	***6***	
Law and business (741)	2	0
Finance (65)	1	1
R&D (73,803)	2	0
Knowledge intensive industries	***6***	
Total	**12**	

Table 5.3 Selection of foreign graduates

Field of training	Interviewees
Engineering, manufacturing and construction	15
Science and computer science	10
Health and welfare	5
Social sciences and humanities	5
Arts	5
Media	5
Law	5
Total	50

Source of information for surveying: Ministry of Education, LOP members

ANNEXES

Annex I.

Rank of creative and knowledge intensive branches by different indicators

	Highest value 1999	Highest value 2004	Dynamics 1999-2004	Weight of BMR 1999	Weight of BMR 2004	Weight of BMR 1999-2004 (increase)
	Number of enterprises					
1.	Law, business	Law, business	924	921	921	66
2.	741	741	803	221	221	525
3.	524	748	333	223	223	921
4.	748	524	722	73	722	65
5.	742	742	R&D	R&D	73	924
6.	ICT	ICT	323	300	66	741
7.	72	722	67	722	300	Creative industries
8.	722	72	Finances	745	322	744
9.	Finances	Finances	745	322	924	742
10.	923	67	72	332	72	18

	Number of employees					
1.	Law, business	Law, business	745	642	66	300
2.	Finances	ICT	323	922	642	745
3.	ICT	Finances	300	921	921	17
4.	741	741	924	65	65	18
5.	524	524	67	73	922	Creative industries
6.	R&D	748	743	Finances	73	743
7.	65	65	722	221	722	921
8.	748	R&D	72	322	221	321
9.	742	803	748	722	744	524
10.	642	742	Law, business	924	72	744

	Revenues					
1.	ICT	ICT	300	322	66	300
2.	Finances	Finances	745	921	921	321
3.	Law, business	642	321	642	642	745
4.	642	Law, business	323	744	744	642
5.	741	65	333	922	922	746
6.	524	524	65	Finances	Finances	Creative industriesries
7.	65	741	921	65	65	923
8.	742	66	746	722	722	742
9.	722	742	924	741	72	921
10.	744	744	Finances	221	73	66

Annex II

Principal data of tertiary education in Hungary

	1990/1991	1995/1996	2004/2005	2005/2006
Institutions	77	90	69	71
Students	108376	195512	421520	424161
BSc training	-	-	-	15072
higher vocational programme	-	-	9122	10498
university level education	47498	70153	138169	138994
college level education	54889	109412	240297	226566
professional further training	5989	12565	25991	25066
PhD and DLA training	-	-	7941	7965
graduating	17158	23406	46295	48636
foreign students	*3310*	*6300*	*9302*	*10072*
students graduated	24103	26237	53514	57162
Students in full-time education	76601	132923	225512	231482
BSc training	-	-	-	10559
vocational programme	-	-	7452	8331
university level education	39510	61169	109912	109935
college level education	37091	68372	102380	96751
professional further training	-	-	450	792
graduated in full-time education	15963	20024	31633	32732
PhD and DLA training	-	3382	5318	5114
Teachers	17302	18098	23787	23188
Professors	1878	2901	3131	3224
Assistant professors	3466	5377	5792	5870
Lecturer	6398	5412	5667	5506
Assistant lecturer	3941	3789	4031	3756
Other teacher	1619	5184	5166	4832

Source: CSO Hungary; 2005