

# GROWTH AND PRODUCTIVE DYNAMISM OF BUSINESS SERVICES: EU-15, SPAIN AND THE REGION OF MADRID.

*Antonio García Tabuenca  
Fernando Coral Polanco*

**SERIE**

**WORKING  
PAPERS**

**03/2005**



Institute of Economic and Social  
Analysis

Plaza de la Victoria, 1. 28802. Alcalá de Henares. Madrid - Telf. (34)918895703 Fax (34)91889 8646  
Correos electrónicos de contacto: [servilab@uah.es](mailto:servilab@uah.es)



## WORKING PAPERS

The Institute of Social and Economic Análisis (Servilab) edits **Working Papers**, where are included advances and results of some research projects done as part of the research done by the Institute's staff and other researchers in collaboration with the Institute.

Those Working papers are available in :  
[http://www.servilab.org/iaes\\_sp/publicaciones.htm](http://www.servilab.org/iaes_sp/publicaciones.htm)

**ISSN: 1139-6148**

## LATEST WORKING PAPERS

[DT-1/04 MODELO DE EVALUACIÓN Y SELECCIÓN DE PROYECTOS.](#)  
Justo de Jorge Moreno, Antonio García Tabuenca y Carolina Perondi

[DT-2/04 PAUTAS CÍCLICAS EN EL DESEMPLEO EUROPEO.](#)  
Raquel Llorente Heras

[DT-3/04 BURBUJAS E INESTABILIDAD: EL ESTADO DE LA CUESTIÓN.](#)  
Antonio Torrero Mañas

[DT-4/04 EL FENÓMENO DE LA INCUBACIÓN DE EMPRESAS Y LOS CEEIS.](#)  
Andrés Maroto Sánchez y Antonio García Tabuenca

[DT-5/04 ¿ES EL FENÓMENO DEL TRABAJO FEMENINO POR CUENTA PROPIA UN BUEN INSTRUMENTO DE POLÍTICA LABORAL?. ANÁLISIS DE ALGUNOS INDICIOS.](#)  
Carlos Iglesias Fernández y Raquel Llorente Heras

[DT-6/04 TITULARIDAD Y EFICIENCIA: EL CASO DE SEAT.](#)  
Nuria Fernández Conejero

[DT-1/05 LA RELEVANCIA CRECIENTE DE LAS BOLSAS EN EL MUNDO. UN NUEVO ESCENARIO.](#)  
Antonio Torrero Mañas



Institute of Social and  
Economic Analysis

Plaza de la Victoria, 1. 28802. Alcalá de Henares. Madrid - Telf. (34)918895703 Fax (34)91889 8646

Correos electrónicos de contacto: [servilab@uah.es](mailto:servilab@uah.es)

Website: [www.servilab.org](http://www.servilab.org)



## **CRECIMIENTO Y DINAMISMO DE LOS SERVICIOS A EMPRESAS : EU-15, ESPAÑA Y LA COMUNIDAD DE MADRID**

### **RESUMEN:**

La dinámica del sector servicios a empresas en el conjunto de la Unión Europea (UE-15) está ligada a la extendida práctica actual de externalización de servicios y actividades integrados en los procesos productivos. Con altas de tasas de crecimiento en los últimos años, se ha convertido en uno de los más importantes y dinámicos de la economía de la UE, con una aportación superior al 10% del valor añadido y el empleo.

El trabajo se centra en el análisis de la productividad del sector y de sus principales ramas a partir del estudio específico de la Comunidad de Madrid y bajo el telón de fondo de España y la UE-15. Para profundizar en el comportamiento de la productividad, se examinan algunas variables fundamentales como la estructura de costes por ramas y los costes laborales por ocupado, así como la contribución de cada rama y país a la productividad global del sector.

Desde la perspectiva de la localización, se observa el fenómeno de la concentración del sector en la capital madrileña frente al resto de la región, pese a que entre 1991 y 2001 aparece una tendencia, todavía débil, hacia la desconcentración regional. Además, el número de establecimientos crece más rápidamente que el de empleados.

**PALABRAS CLAVE:** Servicios a empresas, productividad, localización.

## **GROWTH AND PRODUCTIVE DYNAMISM OF BUSINESS SERVICES: EU-15, SPAIN AND THE REGION OF MADRID**

### **ABSTRACT:**

The aim of this study is to evaluate the structure and dynamism of Business Services in the Autonomous Region of Madrid together with the Spanish and the European cases. In particular, it focuses on the comparative analysis of productivity and its components, as well as a specific geographical and location study of these services in the Region of Madrid.

The sector productivity structure of countries and regions is similar. From this, it may be deduced that productivity units of the different countries, within the same branch, use fairly similar productivity methods and technologies. Maybe the distinguishing factor is the labour cost in terms of added value per employee.

The relative size of the different branches rendering Business Services differs among the regions compared. This not only implies differences among the three cases in question, but also more general economic discrepancies, mainly related to the processes of economic organisation.

Regarding the location of the services, the city of Madrid takes almost three quarters of Business Services of the whole region. In spite of this spatial concentration, the comparative evaluation of 1991 and 2001 data proves the existence of a trend, still weak, towards the de-concentration of areas, or geographical growth, of Business Services. Also the dynamic analysis has permitted the discovery of another interesting asset: in the majority of the areas, the establishments have increased faster than the number of employees. This indicates that, on average, the size of new establishments has tended to be reduced.

**KEY-WORDS:** Business Services, productivity, localization

### **AUTORES:**

ANTONIO GARCÍA TABUENCA, Profesor Titular de Economía Aplicada. Universidad de Alcalá. Investigador de Servilab (antonio.gtabuenca@uah.es).

FERNANDO CORAL POLANCO, Profesor Asociado de Economía Aplicada. Universidad de Alcalá. Colaborador e Investigador de Servilab (fernando.coral@uah.es).

INDEX

1. Introduction, previous matters and aim of the research.....	5
2. Profile of the business services sector in the EU .....	8
3. A comparative analysis on Business Services productivity: Region of Madrid, Spain and European Union.....	11
4. Location of Business Services in the Region of Madrid. ....	21
5. Conclusions .....	25
6. Bibliographical references .....	26

## 1. INTRODUCTION, PREVIOUS MATTERS AND AIM OF THE RESEARCH

The expansion and relative weight of specific activities related to business services have continued growing all along the 90s and the beginning of the 21<sup>st</sup> century, not only regarding economy as a whole, but also the total of services sector in the UE and in each of its member States<sup>1</sup>. Consequently, this sector has established a position among the most important and dynamic ones of the European economy, with a contribution higher than 10% of added value and employment. In general terms, business services allow to improve the efficiency of business activity by means of the contribution of 'intermediate inputs', which simplify internal resources, outsourcing them, and facilitate that the company concentrate on its most productive activity (Turner, 2002). The theoretical purpose of such inputs is the introduction of improvements regarding quality, time spent, design, innovation or promotion of the final goods or services, promoting at the same time the increase of productivity and gaining competitiveness in terms of business costs (Rubalcaba, 1999).

When dealing with a research related to this sector, it is worth considering at least three previous matters. Firstly, the heterogeneity of its classification; these activities –due to their relative newness and emergency– still lack an homogeneous and universally-accepted classification. Several authors have suggested their own classifications or supported previous ones with certain reservations. Among the most famous ones, we can mention Browning and Singelmann (1978), Nusbaumer (1984), and Ochel and Werger (1987). For the Spanish case, we can refer to Rubalcaba et al. (1998). However, normally for practical reasons, the classifications of international specialised organisations become established. This is the case of the European Union classification, called NACE, which has become the one used by mostly Statistics Institutes and the majority of researchers. Even so, the frontiers between the activities are vague in many occasions and the criteria suggested by the NACE are not respected exactly in all the community countries. Below, we will see that, in particular, there are

---

<sup>1</sup> The European Commission (2004) highlighted this important role of business services in its Communication to the Council in 1998, where a framework for the strengthening of competitiveness of EU industry was suggested.

some differences in the composition of activities in the cases of Spain and Madrid, which generate certain problems when making a comparative analysis. Table 1 includes the NACE classification.

Secondly, there is an information problem: Despite the improvements undertaken in the last years and the dynamism of the sector, it is still badly covered in terms of statistics. It is often necessary to use approximations, specially when some specific branches are wanted to be analysed or when comparing any countries. The two main sources used within the European framework are the *National Accountancy* and the information provided by professional private associations to the European Commission, included in the annual publication *Panorama of European Union Trade* (more recently, *Panorama of the European Union*). For the first source, Eurostat has started to facilitate recently some disaggregated statistical data, within the statistical data known as *Structural Business Statistics*, although without the sufficient regularity and common criteria. Also the OECD contributes specific breakdowns for the business services sector in its compilation of National Accountancies. Due to this lack of information, some regional governments are sometimes getting ahead with particularised statistical studies, so that they offer disaggregated and quality data. This is the case of the Region of Madrid, which tackled the creation of specific directories for the registration and analysis of business services activities as from the late 80s.

Finally, it is worth mentioning that neither all the activities nor the productive units of this sector show the general behaviour linearly about dynamism and expressed efficiency. Furthermore, there is a trend within this sector, even within the most emerging activities, towards a growing relative importance of their production in nominal terms, while they maintain such production in real values. This would show the increase in prices of such activities, and therefore, the transfer of cost increase to the final prices (Martínez Serrano and Picazo, 2003).

**Table 1**  
**Business services in the NACE (European Classification of Economic Activities)**

Business services include those technical, professional and operational services generally rendered to companies and administrations –to the family sector to a lower extent– as supporting their productive or organisational processes. Among them, the most important ones are renting and leasing; research and development; legal, tax and business and management consultancy or advise; advertising and market research; engineering services; human resources, cleaning and security services. The group of these activities are included into NACE Divisions 71, 73 and 74. NACE Section K also includes real estate services (Division 70) and computer activities (Division 72).

The NACE Sections are the following ones:

Section A: Agriculture, hunting and forestry,

Section B: Fishing,

Section C: Mining and quarrying,

Section D: Manufacturing,

Section E: Electricity, gas and water supply,

Section F: Construction,

Section G: Distributive trades,

Section H: Hotels and restaurants,

Section I: Transport, storage and communication,

Section J: Financial intermediation,

**Section K: Real Estate, renting and business activities,**

**Codes 70: Real estate activities,**

**71: Renting,**

**72: Computer-related activities,**

**73: Research and development,**

**74: Other business activities,**

**74.1: Legal, accounting, book-keeping and auditing activities, tax consultancy, market research, business and management consultancy,**

**74.2: Architectural and engineering activities,**

**74.3: Technical testing and analysis,**

**74.4: Advertising,**

**74.5: Labour recruitment and provision of personnel,**

**74.6: Investigation and security activities,**

**74.7: Industrial cleaning,**

**74.8: Other business activities n.e.c.,**

Section L: Public administration and defence. Compulsory social security,

Section M: Education,

Section N: Health and social work,

Section O: Other community, social and personal service activities

The aim of this working papers is to evaluate the behaviour of the business services sector in the Region of Madrid (one of the most dynamic metropolitan regions within Europe), together with the Spanish and the European Union cases. In particular, the study focuses on the analysis of productivity, as well as on the aspects having an influence on it, with the purpose of examining the level of efficiency of the economy of Madrid. For this reason, the process to be used will be as follows: After this introduction, data and profile of the sector within the EU will be presented in the second section; in the third section, a comparative

analysis of the sector productivity in the EU, Spain and the Region of Madrid is carried out; and finally, conclusions are set out.

## 2. PROFILE OF THE BUSINESS SERVICES SECTOR IN THE EU

Grece not being taken into account (there are no data for this Country), in the year 2000, the four activities of the business services sector in the EU-15, i.e., those corresponding to the NACE Divisions 71, 72, 73 and 74 ('computer activities' are also included in this section regardless that the EC does not consider them for this purpose), counted on 2,593,915 companies, 15,578,000 employees, generated 658,954 million euros of added value and obtained an apparent average productivity of work that amounted to 42,300 euros per employee. The remuneration of the work factor meant 59.6% of the added value generated and the one corresponding to the gross operating excess (or benefit), to 40.4%. Tables 1 and 2 show this general data.

Obviously, these aggregated figures only imply an approach to microeconomic data of the sector. However, differences are substantial among the branches and countries. Firstly, we can observe that the 'other business activities'—a wide-range branch— registers the highest level of company creation, and in particular, 'legal, accounting, book-keeping and auditing activities, tax consultancy, market research, business and management consultancy' (NACE 74.1) is the most prolific one in business terms, with nearly 900,000 companies and more than 3.3 million employees; it is followed by 'Architectural and engineering activities; technical testing and analysis' (NACE 74.2 and 74.3), with more than 560,000 companies and 1.87 million employees; and 'Computer-related activities' (NACE 72), with almost 350,000 companies, but with more than two million people employed. On the contrary, R&D activities (NACE 73) only have a few more than 25,000 production units within the group of countries comprising the European Union, and give rise to 270,000 jobs. Leasing and renting activities hold a modest position with a few more than 100,000 companies providing jobs for more than half a million people.

However, in terms of productivity, the branch corresponding to renting is the one with the best performance, with 94,700 euros per employee, far from R&D activities (41,400 euros per employee) and mainly from 'other business activities' (37,900 euros per employee).



From the point of view of countries regarding all these four divisions, Italy excels with the highest number of companies, 670,000, followed by the United Kingdom with more than 450,000. The following one is France (about 370,000 companies), then Spain (a few more than 345,000 companies) and Germany (nearly 275,000 companies). In terms of added value, the United Kingdom stands out categorically, providing more than 204,000 million euros, which means almost a third (31%) of the total added value of the sector in the EU; second place is held by Germany, with a contribution of 21.5% over the aggregated total, and France reaches 15.7%. Spanish contribution is reduced to 5.8%. And, in terms of work productivity, the outstanding country is again the United Kingdom, with 52,900 euros per employee in the sector in question, followed very closely by Luxembourg (51,600 euros per employee) and Germany (50,600 euros per employee). Spain and Portugal are down in the list, with 23,300 and 21,400 euros per employee respectively.

**TABLE NO.1**  
**Volume of business activities (NACE 71, 72, 73 and 74), EU-15\* total, year 2000**

Indicators	Companies (no.)	Sales (mill. €)	Employees (mil.)	V.A. (mill. €)	Purchases G&S (mill. €)	Personal cost (mill. €)	Investment tangible assets (mill. €)	Productivity (mil. €/empl.)
Renting activities (NACE 71)	100,744.0	98,060.0	514.0	48,681.0	49,098.0	11,724.0	50,659.0	94.7
Computer-related activities (NACE 72)	348,268.0	231,184.0	2,005.0	114,509.0	116,861.0	81,074.0	11,793.0	57.1
R&D activities (NACE 73)	25,141.0	25,464.0	270.0	11,184.0	16,668.0	11,483.0	3,333.0	41.4
Other business activities (NACE 74)	2,119,762.0	934,243.0	12,789.0	484,580.0	461,193.0	288,152.0	43,229.0	37.9
<b>Total</b>	<b>2,593,915.0</b>	<b>1,288,951.0</b>	<b>15,578.0</b>	<b>658,954.0</b>	<b>643,820.0</b>	<b>392,433.0</b>	<b>109,014.0</b>	<b>42.3</b>
<b>Average</b>	<b>648,478.8</b>	<b>322,237.8</b>	<b>3,894.5</b>	<b>164,738.5</b>	<b>160,955.0</b>	<b>98,108.3</b>	<b>27,253.5</b>	<b>57.8</b>
<b>Median</b>	<b>224,506.0</b>	<b>164,622.0</b>	<b>1,259.5</b>	<b>81,595.0</b>	<b>82,979.5</b>	<b>46,399.0</b>	<b>27,511.0</b>	<b>49.3</b>
<b>Standard deviation</b>	<b>990,515.7</b>	<b>416,801.9</b>	<b>5,979.1</b>	<b>217,462.6</b>	<b>204,465.0</b>	<b>130,859.9</b>	<b>23,196.6</b>	<b>26.0</b>

\*No data available for Greece.

Source: Eurostat, *Structural Business Statistics*

TABLE NO.2  
**Volume of business activities (NACE 71, 72, 73 and 74), total per EU-15\* countries, year 2000**

Indicators	Companies (no.)	Sales (mill. €)	Employees (mil.)	V. A. (mill. €)	Purchases G&S (mill. €)	Personal cost (mill. €)	Investment tangible assets (mill. €)	Productivity (mil. €/ empl.)
Belgium	74,697.0	44,434.0	432.0	17,717.0	26,952.0	11,747.0	5,705.0	41.0
Denmark	39,993.0	22,278.0	256.0	11,049.0	11,894.0	7,971.0	1,462.0	43.2
Germany	274,121.0	239,505.0	2,802.0	141,891.0	104,671.0	72,218.0	22,497.0	50.6
Spain	345,518.0	78,758.0	1,631.0	38,069.0	40,642.0	22,957.0	7,001.0	23.3
France	369,655.0	244,143.0	2,343.0	103,390.0	146,032.0	84,127.0	21,632.0	44.1
Ireland (1)	14,979.0	7,392.0	101.0	3,610.0	2,802.0	1,826.0	467.0	35.7
Italy	670,737.0	124,474.0	1,790.0	59,399.0	66,363.0	25,275.0	6,980.0	33.2
Luxembourg	5,055.0	2,949.0	30.0	1,548.0	1,395.0	359.0	0.0	51.6
Holland	109,550.0	78,480.0	1,226.0	36,735.0	42,188.0	24,674.0	5,746.0	30.0
Austria	39,505.0	23,734.0	249.0	11,130.0	11,981.0	6,862.0	2,893.0	44.7
Portugal	41,040.0	12,216.0	255.0	5,449.0	6,866.0	3,052.0	2,996.0	21.4
Finland	32,937.0	13,179.0	166.0	6,081.0	7,448.0	4,492.0	722.0	36.6
Sweden	125,506.0	43,411.0	430.0	18,246.0	26,776.0	15,288.0	3,150.0	42.4
United Kingdom	450,622.0	353,998.0	3,867.0	204,640.0	147,810.0	111,585.0	27,763.0	52.9
Total	2,593,915	1,288,951.0	15,578.0	658,954.0	643,820.0	392,433.0	109,014.0	42.3
Average	185,279.6	92,067.9	1,112.7	47,068.1	45,987.1	28,030.9	7,786.7	42.3
Median	92,123.5	43,922.5	431.0	17,981.5	26,864.0	13,517.5	4,427.5	41.7
Standard deviation	204,380.9	109,815.4	1,206.7	61,385.4	51,289.6	35,119.2	9,154.3	9.9

(1) 1998

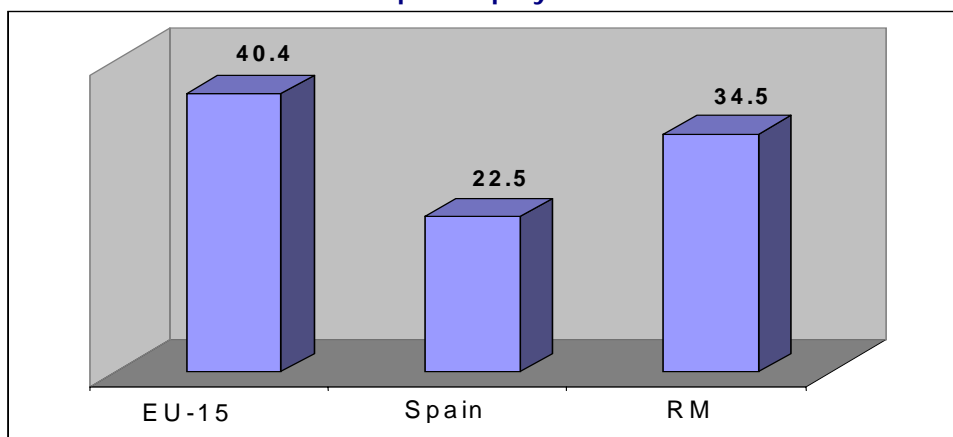
\*No data available for Greece.

Source: Eurostat, *Structural Business Statistics*

### 3. A COMPARATIVE ANALYSIS ON BUSINESS SERVICES PRODUCTIVITY: REGION OF MADRID, SPAIN AND EUROPEAN UNION.

The Region of Madrid shows remarkable economic dynamism and leadership –and this is especially noticeable within the context of Spanish economy. This feature becomes evident when we compare the apparent productivity standards registered by its Business Services (BS) sector with the rest of Spain. In order to compare BS productivity levels in the Region of Madrid (RM), the European Union and Spain, this study focuses on data from eight activity branches <sup>2</sup> –from which we could obtain the required information for the three geographical areas (EU-15, Spain and RM). This procedure enables an homogeneous comparison.

GRAPH NO.1  
**Business Services productivity. Year 2000.  
Added Value per employee. Thousand euros.**



*SOURCE: Eurostat, Structural Business Statistics and Statistics Institute of the Region of Madrid.*

NOTES:

- (1) The Business Services sector in this graph includes the following activities: advertising, computer related activities, R&D, economic and legal studies and consultancy, architecture and engineering, labour recruitment and provision of personnel, security and investigation, and industrial cleaning services.
- (2) The information on 'economic and legal studies and consultancy' for EU-15 refers to activity 74.1 of NACE classification shown in table 1.1. As for the RM, it refers to legal consultancy, economic consultancy, and statistics and market studies, which belong to the classification applied by the Statistics Institute of the Region of Madrid.
- (3) The data shown for the Region of Madrid refer to the year 2001.
- (4) The EU-15 group does not include Greece, due to the non-availability of data.

<sup>2</sup> See notes (1) and (2) of graph 1.

Graph 1 reveals two aspects. Firstly, BS sector productivity is remarkably higher in the RM than in the whole of Spain. Secondly, the average level of added value generated by Business Services employees for the whole of Spain accounts for nearly half of the European Union (EU-15) average. This emphasizes the different behaviours existing not only among the European regions, but also within the Spanish territory itself. Here we will point out some elements to explain these differences.

On the one hand, it is advisable to study the productivity levels registered by the eight Business Services branches considered in the different countries and in the Region of Madrid. This information is given in Table 3.

**TABLE NO. 3**  
**Productivity by business services branches and countries.**  
**Added value per employee per year. Thousand €. Year 2000.**

	Advertising	Computer related activities	Research and development	Economic and legal studies and cons.	Architecture and engineering <sup>(1)</sup>	Labour recruitment and provision of personnel	Investigation and security activities	Industrial and building cleaning	Total of business services
UK	98.5	67.7	32.1	68.3	64.6	32.4	27.9	11.1	50.3
Germany	32.8	73.0	45.1	81.2	61.3	25.2	18.2	12.2	48.3
Luxembourg	33.8	51.2	80.7	66.6	50.2	13.3	31.4	16.0	43.7
Denmark	33.7	54.2	45.1	58.8	54.4	14.8	30.5	23.0	42.7
Sweden <sup>(2)</sup>	39.5	51.6	42.1	42.1	41.9	34.7	28.5	27.2	42.6
France	55.7	54.9	53.7	63.2	53.4	28.5	21.2	19.1	41.4
Austria	56.2	53.6	51.2	50.4	35.0	28.4	22.8	18.0	39.3
Belgium	41.6	58.4	77.6	62.0	43.0	18.6	33.7	21.0	38.2
Ireland <sup>(3)</sup>	52.9	46.1	47.5	42.9	36.1	25.4	19.7	9.3	36.6
Finland	50.6	46.8	29.2	52.4	47.6	9.2	24.1	18.2	35.8
Italy	52.4	39.6	44.1	42.4	31.3	22.6	30.4	16.2	33.4
Holland	35.6	54.1	41.9	33.2	42.5	14.7	29.1	16.7	28.9
Spain	30.5	36.5	32.9	29.5	31.5	11.0	17.5	10.6	22.5
Portugal	27.7	32.7	19.0	28.1	27.1	9.4	13.0	6.2	17.8
EU-15	48.9	57.1	41.4	57.6	49.5	24.5	22.6	14.0	40.4
RM	53.3	47.0	30.6	38.3	45.5	15.2	21.1	13.0	34.5

*SOURCE: Eurostat, Structural Business Statistics and Statistics Institute, Treasury Department of the Region of Madrid.*

NOTES: (1) Includes 'technical testing and analysis', except for the RM; (2) The data on advertising, labour recruitment and provision of personnel, private investigation and security and industrial cleaning refer to 1999; (3) The data refer to 1998.

The countries shown in table 3 are arranged according to their total business services sector productivity level (last column). The United Kingdom heads the list with just over €50,000 of added value per employee. Other countries, such as Germany, Luxembourg, Denmark or

Sweden also stand out by their high productivity. In the lower positions, and significantly far from the rest of countries, we find Holland, Spain and Portugal. The productivity of Spanish BS, for instance, represents barely 45% of United Kingdom productivity. However, this does not apply to the Region of Madrid. Its productivity, although lower than the EU-15, can be compared to that of countries like Ireland, Finland or Italy.

As it can be seen in table 3, productivity varies considerably among the different branches in each country. Generally speaking, there are four activities showing the highest production of added value per employee: advertising, computer related activities, economic and legal studies and consultancy, and architecture and engineering. As a whole, this group of branches offers a wide range of business services, but these can be considered as relatively specialised products. Therefore, their workers have a relatively higher level of qualification. On the other hand, three activities show the lowest productivity indicators in almost all countries and regions studied: labour recruitment and provision of personnel, private investigation and security, and industrial building cleaning. The last three branches offer the simplest operative business services, and also recruitment services –in many cases carried out with elementary procedures or very simple routines. For this reason, we shall not expect high qualification levels among their personnel. At least two featuring aspects can be derived from this diversity in productivity observed within the Business Services sector. First, the wide range of productivity levels which can be found within the companies in the sector<sup>3</sup> brings to light the diversity of services –at least regarding the degree of productive specialisation they require. Therefore, business services cannot be approached, by any means, in the same way as an industry – in a more or less strict sense. This makes it particularly hard to set up policies aimed at the sector as a whole. Secondly, the BS sector productivity structures in the countries and regions analysed are similar –in the sense that there is a group of activities which are systematically the most productive ones, and another group which always gathers the less productive ones. Hence, it may be deduced that productivity units located in different countries, and belonging to the same BS branch, apply relatively similar production methods and technologies. Perhaps, the differential factor –referring to added value, in euros, per employee– is the cost of personnel. A way of illustrating the technology

---

<sup>3</sup> From the average €26,000 difference existing among computing services companies and those of industrial building cleaning in Spain, to the €87,000 among the units working in advertising and industrial building cleaning in England.

used by a company, or industry, can be obtained through their production costs structure. This information is provided in table 4.

As it can be seen in table 4, the proportions represented by the intermediate consumptions and the added value with regard to production (at basic prices) vary in relatively small magnitudes when we look at figures referring to the same branch of business services in the different countries. This would indicate that the BS production generated by the different economies and regions of the European Union follows very similar technological guidelines. For instance, in the EU-15 group, the intermediate consumption and the added value of computer-related activities within the most productive branches represent 51 and 49 per cent of total production, respectively. The same exact proportions apply to the Region of Madrid, whereas production in Spain is equally divided between its two components. The coefficient of variation, shown in the last row of table 4, is an indicator of data variability. The figures of this coefficient for the different branches and components of production can be considered as reasonably reduced: on average, the added value has a variation coefficient of 17.9%, while the intermediate consumptions, excluding the unusual figure of labour recruitment and provision of personnel, reach 18.4%.

Table 4 shows another interesting feature of business services. The cost structures of less productive branches –i.e., labour recruitment and provision of personnel, private investigation and security, and industrial and building cleaning– have a common characteristic: the added value is considerably higher than the intermediate consumptions: about three times higher, considering individual data from each country. Whereas in the rest of activities, excluding advertising, the distribution between intermediate consumptions and added value is much more balanced. This feature is coherent to a large extent. Somehow it can be expected that the most productive branches will require not only more qualified labour, but also intermediate inputs –both goods and services– adding a greater degree of technological development. In the case of less productive branches, their production would depend on the reduction of intermediate consumption requirements and a greater exploitation of the low-qualified labour factor. Nevertheless, these production guidelines can only be properly explained by exploring the companies operating within each of the branches. Advertising, a highly productive industry, with a certainly unusual structure, where intermediate consumptions are significantly high, is a good example.

TABLE NO. 4  
**Costs structure by BS branches and countries.**  
**IC and AV as production percentages. Year 2000.**

	Advertising		Computer related activities		Research and development		Economic and legal studies and consultancy		Architecture and engineering <sup>(1)</sup>		Labour recruitment and provision of personnel		Security and private investigation		Industrial cleaning		Total of business services	
	AV	IC	AV	IC	AV	IC	AV	IC	AV	IC	AV	IC	AV	IC	AV	IC	AV	IC
Belgium	15	85	40	60	54	46	37	63	37	63	90	10	77	23	60	40	41	59
Denmark	25	75	43	57	48	52	60	40	48	52	78	22	58	42	68	32	49	51
Germany	34	66	50	50	51	49	69	31	69	31	83	17	69	31	78	22	63	37
Spain	20	80	50	50	47	53	62	38	48	52	88	12	78	22	82	18	50	50
France	27	73	46	54	34	66	30	70	36	64	93	7	67	33	73	27	42	58
Ireland <sup>(1)</sup>	23	77	68	32	46	54	70	30	49	51	53	47	78	22	77	23	60	40
Italy	20	80	41	59	50	50	61	39	57	43	64	36	74	26	71	29	51	49
Luxembourg	21	79	43	57	55	45	55	45	60	40	91	9	85	15	71	29	55	45
Holland	28	72	52	48	42	58	62	38	48	52	42	58	75	25	69	31	50	50
Austria	29	71	42	58	39	61	58	42	36	64	84	16	75	25	76	24	47	53
Portugal	13	87	38	62	36	64	48	52	39	61	73	27	83	17	73	27	41	59
Finland	26	74	43	57	9	91	49	51	51	49	80	20	74	26	72	28	45	55
Sweden <sup>(1)</sup>	26	74	41	59	29	71	37	63	46	54	61	39	72	28	69	31	40	60
UK	32	68	58	42	35	65	69	31	57	43	67	33	78	22	77	23	60	40
EU-15	27	73	49	51	40	60	56	44	53	47	73	27	74	26	74	26	53	47
RM	15	85	49	51	44	56	54	46	37	63	80	20	80	20	82	18	42	58
V.C. (%)	25.1	7.8	16.6	14.7	27.8	19.6	21.7	26.4	19.9	18.2	19.3	57.9	8.5	25.4	7.7	21.0	14.8	14.2

*SOURCE: Ibidem.*

- NOTES:
- (1) The same restrictions as in table 3 are applied.
  - (2) V.C. = Variation coefficient. Calculation: (standard deviation)/(arithmetic mean). This coefficient has been obtained with data from the 14 EU countries and the RM.

The differences in productivity must be compensated with labour costs. We shall expect that this will be shown in a reasonably clear way when comparing the indicators relating to the different activities. However, as it has been already said, there are also substantial differences in productivity at regional level –especially when comparing the EU-15 group and the Region of Madrid to the whole of Spain (graph 1)–. Presumably, the latter differences would be explained by the discrepancies in labour costs, rather than as a consequence of technological differences.

TABLE NO. 5  
**Costs per employee by activities and regions (€).**  
**Year 2000.**

	Spain	EU-15 <sup>(1)</sup>	RM <sup>(2)</sup>
Advertising	16,963	25,564	31,530
Computer related activities	26,925	40,436	35,998
Research and development	22,733	42,530	34,083
Economic and legal studies and consultancy	14,531	28,596	23,556
Architecture and engineering	15,411	28,833	31,895
Labour recruitment and provision of personnel	10,095	20,567	14,651
Private investigation and security	15,845	19,899	19,146
Industrial and building cleaning	9,612	11,508	12,366
<b>Total of Business Services</b>	<b>14,335</b>	<b>25,653</b>	<b>25,350</b>

*SOURCE: Ibidem*

NOTES: (1) Greece is not included.  
(2) The data refer to the year 2001.

Table 5 compares the costs per employee in the three main areas studied. As expected, there are considerable differences in labour costs between the European Union and the Region of Madrid, and Spain. Besides, the structures of labour costs and productivity at activity level are very similar. Bearing in mind the whole of BS branches, we must stress the similarity of costs per employee in the EU-15 and the Region of Madrid –we could even state that they are equivalent–. If, as we have speculated here, the main differential factor of productivity is the nominal cost of labour, future studies should focus on explaining the factors determining this cost.

Another useful approach for the current study is the analysis of the contribution of each branch of business services towards the total sector productivity. This contribution can be explained by two factors: the size of each branch and its individual productivity. So, a highly productive activity with a reduced size, can significantly lose its potential to determine the global productivity of the sector. This kind of analysis allows us to make out which branches have an essential role from the point of view of added value generation –per employee. In order to understand the mechanism of such contribution, we must consider that global productivity can be presented as the weighted sum of the different BS branches productivity. The weighting is given by the relative size of each branch –i.e., depending on the part they take within global employment. As a result, the BS sector productivity can be calculated,



as it has been mentioned, as the effect of individual productivity rates of the different activities and their own relative sizes.<sup>4</sup>:

$$\frac{P}{L} = \frac{P_1}{L_1} \cdot \left( \frac{L_1}{L_1 + L_2 + \Lambda + L_n} \right) + \frac{P_2}{L_2} \cdot \left( \frac{L_2}{L_1 + L_2 + \Lambda + L_n} \right) + \Lambda + \frac{P_n}{L_n} \cdot \left( \frac{L_n}{L_1 + L_2 + \Lambda + L_n} \right)$$

where:

- P = global BS production (VAB)
- L = number of employees in the whole BS sector
- P/L = global productivity in the BS sector
- P<sub>i</sub>/L<sub>i</sub> = productivity in the branch *i* of BS
- i* = 1, 2... n

The results for this exercise are presented in table 6. Only two branches, computer-related activities and economic and legal studies and consultancy, account for about 55% of total sector productivity –both among EU countries and the Region of Madrid. In both cases it is due to the fact that we are dealing with highly productive and relatively big sized activities –in fact, the economic and legal studies and consultancy take 24.3% of BS employment in the EU and 21.2% in the RM, representing the biggest branch of the sector.

<sup>4</sup> This expression is obtained considering that total productivity results from dividing the sum of individual productivity by the sum of individual employment figures:

$$\frac{P}{L} = \frac{P_1 + P_2 + \Lambda + P_n}{L_1 + L_2 + \Lambda + L_n}$$

So:

$$\frac{P}{L} = \frac{P_1}{L_1 + L_2 + \Lambda + L_n} + \frac{P_2}{L_1 + L_2 + \Lambda + L_n} + \Lambda + \frac{P_n}{L_1 + L_2 + \Lambda + L_n}$$

Now, we multiply and divide each of the addends in the right member of the previous expression by the corresponding individual labour figure (L<sub>i</sub>):

$$\frac{P}{L} = \frac{P_1}{L_1} \cdot \left( \frac{L_1}{L_1 + L_2 + \Lambda + L_n} \right) + \frac{P_2}{L_2} \cdot \left( \frac{L_2}{L_1 + L_2 + \Lambda + L_n} \right) + \Lambda + \frac{P_n}{L_n} \cdot \left( \frac{L_n}{L_1 + L_2 + \Lambda + L_n} \right)$$

TABLE NO. 6  
**Contribution of each branch to productivity per BS sector employee.**  
**Contribution in euros and percentages. Year 2000.**

	Advertising	Computer related activities	Research and development	Studies and consultancy	Architecture and engineering <sup>(1)</sup>	Labour recruitment and provision of personnel	Private investigation and security	Industrial and building cleaning	Total of Business Services
Contribution in €									
Belgium	1,672	6,603	975	14,487	4,322	6,730	931	2,322	38,042
Denmark	2,615	10,279	972	13,940	8,676	1,659	263	4,461	42,864
Germany	2,119	8,159	1,001	20,823	10,205	2,137	793	3,051	48,289
Spain	2,358	3,501	353	6,757	4,171	1,906	1,052	2,345	22,443
France	2,781	7,854	748	1,681	5,666	9,167	1,221	2,347	41,465
Ireland <sup>(1)</sup>	1,867	9,220	0	16,151	5,521	1,793	1,391	875	36,818
Italy	1,555	7,325	613	12,474	5,829	1,284	998	3,263	33,340
Luxembourg	1,090	6,606	5,206	17,187	6,477	2,574	1,013	2,581	42,735
Holland	1,641	6,139	1,337	8,241	4,333	4,379	619	2,324	29,014
Austria	3,528	8,413	689	12,430	6,749	3,821	716	2,906	39,251
Portugal	1,378	2,440	0	6,291	2,697	1,684	1,682	1,511	17,683
Finland	2,346	9,918	387	8,328	8,511	1,462	958	3,495	35,405
Sweden <sup>(1)</sup>	3,121	14,763	1,262	10,783	8,563	284	1,165	2,594	42,534
United Kingdom	3,154	11,830	822	17,122	7,368	7,421	1,200	1,452	50,370
EU-15	2,420	8,368	817	14,002	6,762	4,616	999	2,407	40,391
RM <sup>(2)</sup>	4,057	11,398	846	8,104	4,939	1,586	1,452	2,089	34,471
Contribution in %									
Belgium	4.4	17.3	2.6	37.9	11.3	17.6	2.4	6.1	100
Denmark	6.1	24.1	2.3	32.7	20.3	3.9	0.6	10.5	100
Germany	4.4	16.9	2.1	43.1	21.1	4.4	1.6	6.3	100
Spain	10.5	15.6	1.6	30.1	18.6	8.5	4.7	10.4	100
France	6.7	19.0	1.8	28.2	13.7	22.1	2.9	5.7	100
Ireland <sup>(1)</sup>	5.1	25.2	0.0	44.1	15.1	4.9	3.8	2.4	100
Italy	4.7	22.0	1.8	37.4	17.5	3.9	3.0	9.8	100
Luxembourg	2.5	15.1	11.9	39.3	14.8	5.9	2.3	5.9	100
Holland	5.7	21.3	4.6	28.5	15.0	15.2	2.1	8.1	100
Austria	9.0	21.4	1.8	31.7	17.2	9.7	1.8	7.4	100
Portugal	7.7	13.7	0.0	35.3	15.1	9.5	9.4	8.5	100
Finland	6.6	27.7	1.1	23.3	23.8	4.1	2.7	9.8	100
Sweden <sup>(1)</sup>	7.3	34.7	3.0	25.3	20.1	0.7	2.7	6.1	100
United Kingdom	6.3	23.5	1.6	34.0	14.6	14.7	2.4	2.9	100
UE-15	6.0	20.7	2.0	34.7	16.7	11.4	2.5	6.0	100
RM <sup>(2)</sup>	11.8	33.1	2.5	23.5	14.3	4.6	4.2	6.1	100

SOURCE: *Ibidem*.

NOTES: (1) The same restrictions as in table 3 are applied.

(2) The data refer to the year 2001.

However, the way in which the contribution to global productivity from computer-related activities and economic and legal studies and consultancy is distributed, varies between the EU and the RM. In the first one, the corresponding contributions are of 20.7 and 34.7% respectively, whereas in the latter, they amount to 33.1 and 23.5%. To a large extent, this is the result of the different guidelines used for the distribution of employees. Another important aspect in table 6 is that just over 8 out of 10 euros of added value generated by BS employees

per year come from only four of the eight branches: economic and legal studies and consultancy (3.5 euros), computer-related activities (2.1), architecture and engineering (1.7) and labour recruitment and provision of personnel (1.1). The same four activities contribute 7.6 out of 10 euros in the Region of Madrid. Labour recruitment and provision of personnel is one of the four branches with the highest contribution in the EU, despite being located within the low productivity group. Nevertheless, it does not take an important position in the RM in this sense. This activity experienced a fast growth during the 90s in the Region of Madrid, but it lost dynamism in the years 2000 and 2001. In general, we can state that there are important differences between the models of contribution to global productivity of BS between the Region of Madrid and the EU. As it has been mentioned, one of the explaining factors is the distribution of employment among the different branches. Table 7 provides this information regarding the EU, the RM and Spain.

TABLE NO. 7  
**Distribution of employees by branches of activity. Percentages. Year 2000.**

	Advertising	Computing activities	Research and development	Studies and consultancy	Architecture and engineering	Labour recruitment and provision of personnel	Private investigation and security	Industrial and building cleaning
Spain	7.7	9.6	1.1	22.9	13.2	17.3	6.0	22.1
EU-15 <sup>(1)</sup>	4.9	14.7	2.0	24.3	13.7	18.8	4.4	17.2
RM <sup>(2)</sup>	7.6	24.3	2.8	21.2	10.9	10.5	6.9	16.0

SOURCE: *Ibidem*.

NOTES: (1) Greece is not included.  
(2) The data refer to the year 2001.

Table 7 presents an overview of the relative size of each activity in the three geographical areas. Practically, there is only a common criterion between the European Union and the RM: the prominence of economic and legal studies and consultancy activities. Another interesting aspect of the analysis of contributions is the study of country contribution to the BS sector in the whole of the European Union. Table 8 shows the necessary information.

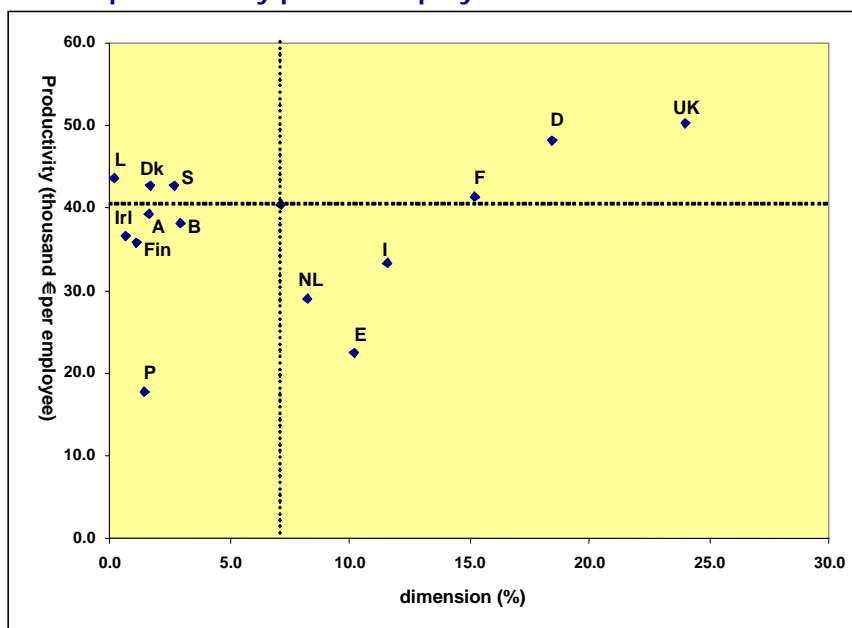
TABLE NO. 8  
**Contribution of each country to the EU total productivity.  
Added value per employee. Contribution in euros and percentages. Year  
2000.**

	Employees	Productivity	Size	Contribution	
	(thousand)	(thousand€/emp.)	%	thousand €	%
UK	3,279	50,3	24.0	12,1	29.9
Germany	2,523	48,3	18.4	8,9	22.0
France	2,083	41,4	15.2	6,3	15.6
Italy	1,584	33,4	11.6	3,9	9.6
Holland	1,128	28,9	8.2	2,4	5.9
Spain	1,397	22,5	10.2	2,3	5.7
Sweden	367	42,6	2.7	1,1	2.8
Belgium	398	38,2	2.9	1,1	2.7
Denmark	232	42,7	1.7	0,7	1.8
Austria	223	39,3	1.6	0,6	1.6
Finland	151	35,7	1.1	0,4	1.0
Portugal	201	17,8	1.5	0,3	0.6
Ireland	85	36,6	0.6	0,2	0.6
Luxembourg	31	43,7	0.2	0,1	0.2
EU-15	13,682	40,4	100.0	40,4	100.0

*SOURCE: Eurostat, Structural Business Statistics.*

In table 8, countries have been arranged according to their contribution. The case of the United Kingdom is certainly remarkable: 3 out of 10 euros of added value per employee generated by the BS sector in the EU come from this country. What is interesting in the previous table is that it allows us to specify the causes of this significant contribution. The United Kingdom is not only the country with highest productivity; it also has the highest relative size (24% of BS employees in the whole of the European Union). Germany and France also present very important contributions to global productivity. Spain comes sixth. It is the penultimate country from the point of view of productivity, but it has a big relative size due to the volume of employees. Graph 2 offers a visual representation of the two factors defining the contribution of each country to global productivity.

GRAPH NO. 2  
**Factors explaining the contribution of each country to global productivity per BS employee in the EU. Year 2000.**



SOURCE: *Ibidem*.

The horizontal line in graph 2 points at the level of productivity per employee for the whole of the EU (40.4 thousand € per employee). The vertical line, however, represents the average participation in employment of the 14 countries (7.1%). Top-right and bottom-left sections represent the areas of higher and lower contribution, respectively. In the other two sections we have located those countries with an intermediate contribution.

#### 4. LOCATION OF BUSINESS SERVICES IN THE REGION OF MADRID.

Table 9 shows a first approach of the concentration of business activities in the RM. The three variables considered in the table present a similar distribution model. The city of Madrid absorbs almost two thirds of business activities in the whole of the region. However, within this city, the central and western zones stand out: nearly two thirds of the establishments, employees and gross added value (GAV) correspond to this area. Data included in the table also

show that the distance to the City of Madrid is a determining factor for the location of business services: for example, while 20% of the regional establishments are located in the four areas surrounding the city – metropolitan north, south, east and west– the rest of areas, i.e. the furthest ones from the metropolitan centre, include only 2%. Distribution of employees and added value present a similar behaviour.

TABLE NO. 9  
**RM: Percentage distribution of the number of establishments, employees and VAB. Year 2001.**

Cod.	Area	Establishments	Employees	GAV
1	City of Madrid	78.0	72.8	75.9
	Central and western Madrid	53.7	48.5	51.0
	South Madrid	5.4	5.7	5.0
	Northern and eastern Madrid	10.0	15.3	16.8
2	Metropolitan north	3.4	5.5	6.0
3	Metropolitan east	4.0	3.2	2.5
4	Metropolitan south	6.3	5.3	3.2
5	Metropolitan west	5.8	2.3	2.6
6	Sierra norte	0.2	0.0	0.0
7	North-eastern region	0.2	0.1	0.1
8	South-eastern region	0.4	0.1	0.1
9	South-western region	0.4	0.2	0.1
10	Sierra sur	0.1	0.0	0.0
11	Sierra central	1.0	0.2	0.2

*SOURCE: Statistics Institute of the Region of Madrid.*

NOTE: Neither the sum of percentages of the 11 zones equals 100, nor the sum of the 3 zones of Madrid is equivalent to the total of the City due to the fact that there are some data not assigned to any of the zones.

In order to go into the study of concentration into more depth, we will use the *location coefficient*. This index, with values higher than 0.25, indicates a very high area concentration (Pardos et al, 2004). This measure will be applied to the 13 areas into which the RM has been divided: the 3 areas within the City of Madrid, plus the remaining 10. For its calculation, we will use the variables 'number of establishments' and 'employees' with the data corresponding to the 13 business services activities. Therefore, it is a spatial-sectorial measure that allows to make a comparative analysis of the concentration level presented by the different branches of Business Services<sup>5</sup>.

<sup>5</sup> The formula of the location coefficient is as follows:

TABLE No.10  
**RM: Coefficient of business services activities location. Year 2001.**

Activities	Number of Establishments	Activities	Employees
Industrial cleaning	0.37	Legal consultancy	0.21
Photography labs and studios	0.20	Labour recruitment and provision of personnel	0.19
Legal consultancy	0.15	Photography labs and studios	0.18
Research and development	0.15	Industrial cleaning	0.17
Computer activities	0.12	Statistics and market research	0.16
Statistics and market research	0.10	Research and development	0.16
Investigation and security activities	0.09	Other technical services	0.15
Labour recruitment and provision of personnel	0.08	Investigation and security activities	0.14
Architecture and engineering	0.08	Economic consultancy	0.13
Other technical services	0.07	Other professional services	0.12
Other professional services	0.05	Computer activities	0.11
Advertising	0.05	Architecture and engineering	0.11
Economic consultancy	0.02	Advertising	0.07

SOURCE: Statistics Institute of the Region of Madrid and own elaboration

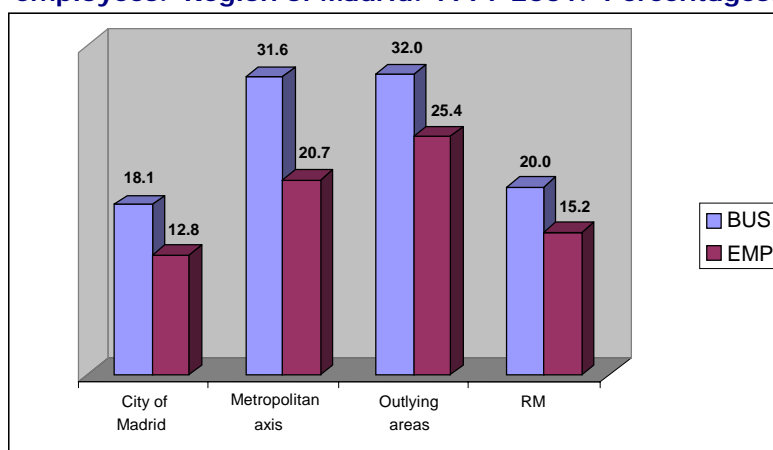
Table 10 shows the activities ordered according to their level of spatial concentration. The location index reflects a great dispersal in the two variables. As regards to the number of establishments, the area concentration is substantial within the activities related to industrial cleaning (0.37) –as they surpass the rate of 0.25 with a wide margin. Also standing out due to their area concentration are the branches ‘photography labs and studios’ (0.20), ‘legal consultancy’ (0.15), and ‘research and development’ (0.15). On the other hand, the less concentrated activities are those in connection with ‘economic consultancy’ (0.02), ‘advertising’ (0.05) and ‘other professional services’ (0.05). In terms of the number of employees, general data reflect higher levels of area concentration of the activities. However, the level of dispersal is lower than in the case of establishments. The branches registering the highest figures of concentration as for the number of employees and establishments are ‘legal consultancy’, ‘photography labs and studios’ and ‘industrial cleaning’ (table 10).

$$L_s = \frac{1}{2} \sum_{j=1}^k |(x_{sj} / x_s) - (x_j / x)|$$

Where  $x_{sj}$  is the variable on which the index in the activity  $s$  is applied. Following this logic,  $x_j$  equals the total of activities of the variable considered in the area  $j$  and  $x$  equals the regional total amount (i.e., the RM) of such variable (Pardos et al, 2004).

As regards to dynamism observed between 1991 and 2001, it is worth mentioning that the lowest absolute increase of the variables 'number of establishments' and 'employees' corresponds to the City of Madrid, which indicates the existence of a trend, still weak, towards the geographical de-concentration of business services. This favours the location of the activity in the most outlying areas. Figure 3 illustrates the aggregated data of this tendency.

FIGURE NO.3  
**Annual average growth rates of the number of establishments and employees. Region of Madrid: 1991-2001. Percentages.**



*SOURCE: Statistics Institute of the Region of Madrid.*

NOTE:

*Metropolitan axis:* the four areas surrounding the City of Madrid: metropolitan north, south, east and west.

*Outlying areas:* Sierra Norte, North-eastern Region, South-eastern Region, South-western Region, Sierra Sur and Sierra Central.

Figure 3 shows that the establishments have grown faster than the number of employees. Therefore, spatial de-concentration of business services seems to be produced with a particular nuance: the new establishments created would have a more reduced dimension, that is to say, a lower number of employees per each productive unit.



## 5. CONCLUSIONS

**T**his research is about business services, one of the most emerging sectors in advanced economies, particularly in European countries. The study analyses productivity, and compares its behaviour for the year 2000 in three areas: European Union, Spain and the Region of Madrid. The interest aroused by the latter is due to the well-known lead of this metropolitan region within Spain and Europe.

The productivity of the sector in Spain represents nearly half of the European average. The indicators reached by the region of Madrid, not reaching the European average, are much higher than the Spanish ones. The sector productivity structure of countries and regions is similar. From this, it may be deduced that productivity units of the different countries, within the same branch, use fairly similar productivity methods and technologies. Maybe the distinguishing factor is the labour cost –in terms of added value per employee.

The most productive branches require more qualified work, which give rise to higher costs per employee. On the other hand, those with a lower productivity are based on low requirements of intermediate inputs and a mass exploitation of the workforce.

Three countries are in the lead for their contribution to the global productivity of the EU: United Kingdom, Germany and France. Spain, regardless of its reduced productivity –with a record only above Portugal– is in the sixth position as for this contribution.

After analysing the dynamics registered by the business services in the RM between 1991 and 2001, we can confirm a tendency towards the spatial de-concentration of business services production. This implies a transfer –still weak– of the activity towards the most outlying areas of the region. It is also proven that the number of establishments has increased faster than the number of employees. This indicates that the size of establishments has tended to be reduced.

## 6. BIBLIOGRAPHICAL REFERENCES

- CUADRADO ROURA (J.R.) & RAYMOND (J. L.), 1991, «Consideraciones en torno al crecimiento de los servicios», *Economistas*, 47, 298-302.
- CUADRADO ROURA, (J.R.) & RUBALCABA (L.), 2000, «Sector Servicios: Desarrollos Recientes y Futuros Desafíos - Los servicios a empresas como actividad estratégica de la economía española», *Revista de información comercial española*, 747, 53- 68.
- ELLGER (C.), BRYSON (J.R.) & MONNOYER (M.C.), 1998, *Annual Report on the Progress of Research into Service Activities in Europe: Reser Survey*, 48-77.
- EUROPEAN COMMISSION, DG III-INDUSTRY, 1999, *The Contribution of Business Services to Industrial Performance, A common Policy Framework*, Brussels.
- EUROPEAN COMMISSION, 2003, *European Business. Facts and figures, Panorama of the European Union 2003 Edition*, Part 6: Business services, Luxembourg.
- MARTÍNEZ SERRANO (J. A.) & PICAZO (A. J.), 2003, «Sector servicios», *Lecciones de economía española*, Madrid, sexta edición, Civitas.
- MCCONNELL CAMPBELL (R.) & STANLEY (B.), 1995, *Contemporary Labor Economics*, McGraw-Hill, Fourth Edition.
- MUÑOZ CIDAD (C.), 2000, *Las cuentas de la nación: introducción a la economía aplicada*, Madrid, 2ª. Ed., Civitas.
- PARDOS (E.), RUBIERA MOROLLÓN (F.) & GÓMEZ LOSCOS (A.), 2004, «Localización regional de los servicios empresariales. El caso de Aragón», Universidad de Zaragoza, Mimeo.
- RUBALCABA (L.) ET AL., 1998, *Crecimiento y geografía de los Servicios a Empresas en el contexto de la nueva sociedad servindustrial: el caso de la Comunidad de Madrid*, Instituto de Estadística de la Comunidad de Madrid.
- RUBALCABA (L.), 1999, *Business Services in European Industry, Growth, Employment and Competitiveness*, European Commission, DG III, Brussels, Luxembourg.
- SOLOW (R.), 1956, «A Contribution to the Theory of Economic Growth», *Quarterly Journal of Economics*, February, Vol. 70, 65-94.
- TURNER (A.), 2002, *Just Capital. The Liberal Economy*, London, Pan Books.

## THE AUTHORS

### Antonio García Tabuenca

PhD in Economics by the University of Alcalá and B.A. in Law by the University of Deusto. Nowadays is señor lecturer in Applied Economics in the University of Alcalá and subdirector and proyect coordinator in Servilab.

Between 1988 and 1996, he was general Subdirector of the Instituto Madrileño de Desarrollo (institute of Development of Madrid), Director of Instituto de la Pequeña y Mediana Empresa Industrial -IMPI- (Institute of Industrial SMEs) , President of the Sociedad Estatal para el Desarrollo del Diseño Industrial (Nacional Society for the Development of Industrial Design) and Vicepresident of the European Association of Economic Development Agencies (EURADA).

His main research interests have been financiación and business innovation, focus on SMEs, evaluation of public policies and business development services, entrepreneurship and creation of enterprises.

### Fernando Coral Polanco

PhD in Economics by the University of Alcalá and Asóciate Lecturer in the same University. He has colaborated in several projects with Servilab, mainly in *Lecciones aprendidas en la promoción de mercados de servicios de desarrollo empresarial, un análisis de la experiencia del Banco Interamericano de Desarrollo en el periodo 1995-2002* (Learned lessons in the market propmotion of business development services, An analysis of the Interamerican Development Bank 's experiences for the period 1995-2002) for the Interamerican Development Bank.

His main research interest are financiación, economic activity growth and evaluation of public policies.