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**REGIONAL SCIENCE IN EUROPE: A REVIEW**

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**Abstract**

Although it is generally acknowledged that Regional Science was born forty years ago in the United States, pioneer efforts to introduce space in economic theory were developed in Europe, much earlier. Moreover, some fields in regional science, such as regional policy and related subjects, are mainly the result of research agendas put forward by European regional scientists. In addition to that, the 90s mark a hypothetical loss of hegemony of USA in Regional Science. The closure of important regional science departments and an observable lack of interest of policy makers in the contribution of regional scientists put our class under stress. Comparing the trajectory of research in USA with Europe, several authors conclude that regional science literature in USA need to become more policy-oriented. According to these views it seems that regional science in Europe has distinctive features when compared with regional science in USA. Is there a European Regional Science? In this paper we intend to present empirical evidence on this issue. We constructed a data set with articles published in seven leading journals during the 1990-98 period, in order to determine if there is such a different orientation of research among European and North-American authors.

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## 1. Introduction

It is generally accepted that studies considering space in their analysis were first published in Europe. Although European contributions can be traced back to the seventeen<sup>1</sup> and eighteen<sup>2</sup> centuries, the majority of authors tend to consider the work by Von Thunen<sup>3</sup> (1826) as the first study to account for space. The importance of Von Thunen's study "The Isolated State" was recently stressed by Samuelson (1983) which not only considers that author as having produced pioneer contributions in the field of spatial economics but also in core areas of economics. The dominance of German contributions for regional science in the nineteenth century and in the first half of the twenty-century has been considered a puzzle by researchers in the field of History of Economic Thought. Mark Blaug (1979) explains this puzzle with the linguistic barrier. According to his view German contributions did not spread enough to other foreign scholars, and that is why almost all major contributions, prior to the fifties, such as Launhardt<sup>4</sup> (1882, 1885), Alfred Weber<sup>5</sup> (1909), Christaller<sup>6</sup> (1933) and Losch<sup>7</sup> (1940), remain of German origin<sup>8</sup>.

If the early German hegemony in location theory constitutes a puzzle, the ignorance of space by mainstream economics is another one. The need to keep methodology of economics simple and the belief that the property of insightfulness of the models would allow one to extend derived conclusions to consider space, are two major reasons for economists to have developed models that did not account for space. In fact, space was left aside and attention was paid to time, asymmetry of information, uncertainty, etc.

If we detect, till the end of the second half of the twenty century, a significant role of European literature in the field of regional science, the second half of this century is dominated by North-American contributions<sup>9</sup>. The research became more diversified and new areas of research emerged. Regional Science as we know it today, emerged in the middle 50s<sup>10</sup> thanks to pioneer works of authors such as W. Isard (1954<sup>11</sup>, 1956<sup>12</sup>). At the same time, there are also important European contributions such as Perroux<sup>13</sup> (1950) and C. Ponsard<sup>14</sup> (1955).

The 90s mark a hypothetical loss of hegemony of USA in Regional Science. At the same time there seems to occur a generalised crisis in the field of regional studies. The closure of important regional science departments<sup>15</sup> and an observable lack of interest of policy makers in the contribution of regional scientists put our class under stress. Many papers addressed this issue<sup>16</sup> calling for a need for convergence between regional science contributions in Europe and in North America. The research in Europe would need to become more fundamental whereas literature in the USA would need to become more policy-oriented. The idea that most of the fundamental literature is produced in the USA has to be interpreted carefully. As a matter of fact, important theoretical developments have been produced in Europe. As an example, we can cite Solow (1994) that explicitly recognises the promising research done in Europe with a special reference to the works on the "milieux innovateurs". Moreover, an increasing number of North-American authors are more and more interested in the research in course in Europe<sup>17</sup>.

Therefore the question arises: is there a European Regional Science with distinctive aspects or is the situation a result of a higher concern with real convergence and a less liberal policy orientation in the European Union? In this paper we intend to present empirical evidence on this issue. For this purpose we analysed articles published in seven leading journals during the 1990-98 period in order to determine if there is such a different orientation of research among European and North-American authors. The analyses considers 1670 articles, which in our view constitutes a good basis to determine if there is, as a matter of fact, a distinctive European approach to Regional Science.

## **2. Methodology and data**

The construction of any listing of mainstream journals in regional studies is not an easy task, since the list of publications that can be related to this field of knowledge comprises currently about fifty journals<sup>18</sup>. We have chosen to focus mainly on regional economics, thus leaving aside journals, that have urban economics, geography or planning as their primary subject. To further restrict our sample we selected regional

studies journals by their citation impact. For this purpose we used journals listings published in Taylor and Johnes (1992). Since we want to access the contribution of European and American researchers to Regional Science we have selected European journals<sup>19</sup> and North-American<sup>20</sup> journals (Table 1). For the purpose of the paper, journals were allocated to a particular geographical space by the affiliation of the editing institution or organisation.

As in other scientific fields, the use of English as the most frequent language represents a serious bias against non-English speaking European countries. In order to limit that bias we considered also, among the European journals, the *Revue d'Economie Régionale et Urbaine* (RERU). RERU is the flagship of the Association de Science Régionale de Langue Française<sup>21</sup>. Although the ASRLF is based in France, contrary to the other European regional science associations, it is not country specific. In fact, the ASRLF aggregates French speaking researchers<sup>22</sup>, mainly from Europe, Canada and North Africa.

Excepting for EUR, every selected journal started its publication before 1980. We intend to analyse the 1980-1998 period too, but for the moment this papers reports only on results from the 1990-98 period. We have analysed only full papers. Contributions published as Notes, Communications, Comments or shorter contributions in special sections<sup>23</sup> were not considered. In compiling the data we could not use electronic lists, because journals employ different conventions and some of the data we needed was missing. So we had to manually construct a database<sup>24</sup> from the direct inspection of each paper.

For each of the papers we have compiled the following information: Title, Journal of publication, Date of publication, Name of the author(s), National affiliation of the author(s), Key words, when provided. Where there was multiple authors, their respective names and affiliation were also introduced in the database, up to three co-authors. For papers with more than three authors we considered only the first three authors, as reported in the paper's title. National affiliation of the author relates to the country in which the author's institution, as indicated in the published paper<sup>25</sup>, is located.

## Regional Science in Europe: a Review

As unit of measurement we have chosen the number of papers instead of the number of pages per article. Most bibliometric studies use page counts, in page equivalent units. These are calculated adjusting for characters per page and quality. But, as we are not mainly interested in ranking institutions but in evaluating similarities and differences between European and North-American research in regional economics, the number of papers, although introducing a bias in favour of contributors of shorter papers, has the advantage of simplicity. So, in the following tables each paper was assigned a value of unity.

**Table 1**  
**Summary of information concerning selected reviews**

| Journal                 |      | 1 <sup>ST</sup> year of publication | Numbers per year                 | Vol N° in 12/1998 | Editor                      |                          |                |
|-------------------------|------|-------------------------------------|----------------------------------|-------------------|-----------------------------|--------------------------|----------------|
|                         |      |                                     |                                  |                   | Editor                      | Institution              | Country        |
| EUROPEAN JOURNALS       | RERU | 1978                                | 1978/82: 4                       | 21                | Paris, Economica            | IERS-ADICUEER            | France         |
|                         |      |                                     | 1983/98: 5                       |                   |                             |                          |                |
|                         | RS   | 1967                                | 1967/68:2                        | 32                | Carfax Pub. Co.             | -                        | United Kingdom |
|                         |      |                                     | 1969:3                           |                   |                             |                          |                |
|                         |      |                                     | 1970/76:4                        |                   |                             |                          |                |
|                         |      |                                     | 1977/91:6                        |                   |                             |                          |                |
|                         |      |                                     | 1991/98:8                        |                   |                             |                          |                |
|                         | ARS  | 1967                                | 1990/98:4                        | 32                | Springer Verlag             | -                        | Germany        |
|                         | EURS | 1994                                | 1994:2                           | 5                 | Longman                     | -                        | United Kingdom |
|                         |      |                                     | 1995/98:4                        |                   |                             |                          |                |
| NORTH AMERICAN JOURNALS | JRS  | 1961                                | 1970/??:3                        | 38                | Blackwell                   | -                        | USA            |
|                         |      |                                     | 19??/98:4                        |                   |                             |                          |                |
|                         | IRSR | 1975                                | 1975/89: 2                       | 21                | Regional Research Institute | West Virginia University | USA            |
|                         |      |                                     | 1990/98:3                        |                   |                             |                          |                |
|                         | PRS  | 1955                                | 1955/61:1                        | 77                | University of Illinois      | RSAI                     | USA            |
|                         |      |                                     | 1962/80:2                        |                   |                             |                          |                |
|                         |      |                                     | 1981/90 odd yrs:3;<br>even yrs:2 |                   |                             |                          |                |
|                         |      |                                     | 1991/98: 4                       |                   |                             |                          |                |

Source: Benko, G. op. cit. and author's own database

In order to classify the papers in sub-areas we defined 27 research areas. To do this we combined existing classifications, namely those provided by the Regional Science Association International and by the Journal of Economic Literature, but we had to complete theme classification by direct inspection of the data set. The adopted classification (Table 2) turned out to work well since only 73 out of 1670 papers were classified in the residual category (27 – Other themes).

**Table 2**  
**Classification of Regional Science Themes**

| <b>Themes</b> | <b>Subjects</b>   |
|---------------|---|
| 1             | Location  |
| 2             | Land-use; real estate markets; space representation.  |
| 3             | Housing   |
| 4             | Metropolitan areas; urbanisation; planning organisms; urban policies.   |
| 5             | Size; spatial distribution of economic activity; urban systems; central places; accessibility.                          |
| 6             | Production and pricing analysis.  |
| 7             | Infrastructures; public construction.   |
| 8             | Transportation; travel.   |
| 9             | Population; migrations and mobility.  |
| 10            | Employment; labour; labour markets; human resources.  |
| 11            | Growth models; convergence/divergence; regional disparities.  |
| 12            | Innovation; new technologies; networks; industrial districts; entrepreneurship; production systems; flexible production |
| 13            | Producer services; services.  |
| 14            | Globalisation; international trade; multinational firms; foreign direct investment; urban and regional competitiveness. |
| 15            | European union; European integration; cross-border development.   |
| 16            | Regional development policies; public policies; cost-benefit analysis; evaluation of regional development policies.     |
| 17            | Local development; rural areas.   |
| 18            | Regional and local finance; public economics; public choice; institutions.  |
| 19            | Industry.   |
| 20            | Agriculture.  |
| 21            | Recreation; leisure; tourism.   |
| 22            | Econometrics; spatial statistics; input-output; quantitative methods.   |
| 23            | Environment; natural resources; residential quality.  |
| 24            | General spatial economics; welfare; spatial interaction; spatial markets; regional models.                              |
| 25            | Regional science methodology  |
| 26            | Geographical systems.   |
| 27            | Other themes.   |

### 3. Empirical results

In Table 3 we present some descriptive statistics on the selected regional science journals. The total number of articles included in the data set is 1670, corresponding to 265 journal numbers. European journals published 63,2% of the papers included in our database. The average number of papers per journal number is similar for European and North American journals.

**Table 3**  
**Total Numbers and Papers in each journal, 1990-1998**

| Journals       |       | Numbers published |            | Papers Published |            | Papers per Number |
|----------------|-------|-------------------|------------|------------------|------------|-------------------|
|                |       | Total             | Percentage | Total            | Percentage |                   |
| European       | ARS   | 36                | 13,6       | 212              | 12,7       | 5,9               |
|                | EURS  | 18                | 6,8        | 74               | 4,4        | 4,1               |
|                | RERU  | 45                | 17,0       | 361              | 21,6       | 8,0               |
|                | RS    | 69                | 26,0       | 409              | 24,5       | 5,9               |
|                | Total | 168               | 63,4       | 1056             | 63,2       | 6,3               |
| North American | IRSR  | 27                | 10,2       | 143              | 8,6        | 5,3               |
|                | JRS   | 36                | 13,6       | 268              | 16,0       | 7,4               |
|                | PRS   | 34                | 12,8       | 203              | 12,2       | 6,0               |
|                | Total | 97                | 36,6       | 614              | 36,8       | 6,3               |
| Total          |       | 265               | 100,0      | 1670             | 100,0      | 6,3               |

Source: Author's own calculations

Analysing the orientation of journals by themes, we detect major differences among Europe and North America edited journals (Table 4). European journals have a clear orientation for research areas such as innovation, new technologies, networks, industrial districts, entrepreneurship, production systems and flexible production. North American journals pay special attention to research areas such as spatial statistics, quantitative methods, spatial markets, general spatial economics, growth models, and regional disparities. It is interesting to observe that there is a clear asymmetry between these journals in what concerns the above-referred themes.



A different approach is to determine the distribution of papers on each theme by European and North American journals. We have to take into account that in our data set European edited journals account for 63,2% of total number of papers published. Therefore, in order to conclude for a clear pattern of concentration of European journals in particular themes, we need to observe percentages over 63,2%.

As we can observe in the two last columns of Table 4, European journals published a very large proportion of papers in the above-referred areas, but also in areas such as producer services, globalisation, urban and regional competitiveness, European Union, cross-border development. On the other hand, some areas are clearly sub-represented in European journals as, for instance, city size, spatial distribution of economic activity, urban systems, central places, accessibility, regional science methodology, spatial statistics, location theory, land-use and real estate markets. Computing the standard deviation of theme percentages, it is no surprise to verify that the standard deviation is smaller for the overall sample (2,484) than for each sub-sample (3,178 for European Journals and 3,548 for North American journals).

**Table 4**

**Distribution of papers by theme, in European and American Journals 1990-1998**

| Theme | European Journals |            | North American Journals |            | Total |            | Theme distribution by Journal origin |           |
|-------|-------------------|------------|-------------------------|------------|-------|------------|--------------------------------------|-----------|
|       | Total             | Percentage | Total                   | Percentage | Total | Percentage | Europe                               | N.America |
| 1     | 24                | 2,3        | 42                      | 6,8        | 66    | 4,0        | 36,4                                 | 63,6      |
| 2     | 17                | 1,6        | 28                      | 4,6        | 45    | 2,7        | 37,8                                 | 62,2      |
| 3     | 17                | 1,6        | 9                       | 1,5        | 26    | 1,6        | 65,4                                 | 34,6      |
| 4     | 43                | 4,1        | 19                      | 3,1        | 62    | 3,7        | 69,4                                 | 30,6      |
| 5     | 9                 | 0,9        | 25                      | 4,1        | 34    | 2,0        | 26,5                                 | 73,5      |
| 6     | 0                 | 0,0        | 0                       | 0,0        | 0     | 0,0        | 0,0                                  | 0,0       |
| 7     | 7                 | 0,7        | 3                       | 0,5        | 10    | 0,6        | 70,0                                 | 30,0      |
| 8     | 47                | 4,5        | 18                      | 2,9        | 65    | 3,9        | 72,3                                 | 27,7      |
| 9     | 33                | 3,1        | 48                      | 7,8        | 81    | 4,9        | 40,7                                 | 59,3      |
| 10    | 79                | 7,5        | 27                      | 4,4        | 106   | 6,3        | 74,5                                 | 25,5      |
| 11    | 49                | 4,6        | 55                      | 9,0        | 104   | 6,2        | 47,1                                 | 52,9      |
| 12    | 167               | 15,8       | 11                      | 1,8        | 178   | 10,7       | 93,8                                 | 6,2       |
| 13    | 32                | 3,0        | 9                       | 1,5        | 41    | 2,5        | 78,0                                 | 22,0      |
| 14    | 69                | 6,5        | 12                      | 2,0        | 81    | 4,9        | 85,2                                 | 14,8      |
| 15    | 43                | 4,1        | 8                       | 1,3        | 51    | 3,1        | 84,3                                 | 15,7      |
| 16    | 53                | 5,0        | 20                      | 3,3        | 73    | 4,4        | 72,6                                 | 27,4      |
| 17    | 51                | 4,8        | 18                      | 2,9        | 69    | 4,1        | 73,9                                 | 26,1      |
| 18    | 66                | 6,3        | 10                      | 1,6        | 76    | 4,6        | 86,8                                 | 13,2      |
| 19    | 20                | 1,9        | 2                       | 0,3        | 22    | 1,3        | 90,9                                 | 9,1       |

|       |      |       |     |       |      |       |       |      |
|-------|------|-------|-----|-------|------|-------|-------|------|
| 20    | 1    | 0,1   | 0   | 0,0   | 1    | 0,1   | 100,0 | 0,0  |
| 21    | 15   | 1,4   | 1   | 0,2   | 16   | 1,0   | 93,8  | 6,3  |
| 22    | 33   | 3,1   | 74  | 12,1  | 107  | 6,4   | 30,8  | 69,2 |
| 23    | 57   | 5,4   | 16  | 2,6   | 73   | 4,4   | 78,1  | 21,9 |
| 24    | 52   | 4,9   | 76  | 12,4  | 128  | 7,7   | 40,6  | 59,4 |
| 25    | 20   | 1,9   | 53  | 8,6   | 73   | 4,4   | 27,4  | 72,6 |
| 26    | 6    | 0,6   | 3   | 0,5   | 9    | 0,5   | 66,7  | 33,3 |
| 27    | 46   | 4,4   | 27  | 4,4   | 73   | 4,4   | 63,0  | 37,0 |
| Total | 1056 | 100,0 | 614 | 100,0 | 1670 | 100,0 | 63,2  | 36,8 |

Source: Authors' own database

Table 5 allows us to detect major differences concerning the relative access authors working in different countries have to the selected regional science journals. Language seems to matter since French speaking authors tend to publish massively in the RERU. Proximity, both in terms of nationality and interests of research, is also a relevant factor: French authors dominate the Revue d'Economie Régionale et Urbaine (RERU) whereas Regional Studies (RS) and European Urban and Regional Studies (EURS) exhibit a clear dominance of authors from the United Kingdom and journals edited in the United States of America, especially the International Regional Science and the Journal of Regional Science, have a significant participation of North-American authors. Aggregating the papers in three categories (European, North-American and Others) we realise that papers with a first author working in Europe represent 56,9% of total papers published in the period 1990-98 in the selected regional science journals. This fact confirms that regional science research in Europe is still strong, compared with other fields in Economics.

**Table 5**  
**Published papers by country of first author**

| <b>ARS</b>            | <b>EURS</b>       | <b>IRSR</b>           | <b>JRS</b>        | <b>PRS</b>            | <b>RERU</b>           | <b>RS</b>             |
|-----------------------|-------------------|-----------------------|-------------------|-----------------------|-----------------------|-----------------------|
| USA<br>(36,3%)        | UK<br>(54,1%)     | USA<br>(73,4%)        | USA<br>(67,5%)    | USA<br>(43,3%)        | France<br>(76,2%)     | UK<br>(62,3%)         |
| Germany<br>(9,4%)     | Germany<br>(6,8%) | Canada<br>(4,2%)      | UK<br>(7,5%)      | UK<br>(11,8%)         | Canada<br>(3,3%)      | USA<br>(14,7%)        |
| UK<br>(7,1%)          | Sweden<br>(5,4%)  | Netherlands<br>(3,5%) | Canada<br>(5,6%)  | Japan<br>(7,9%)       | Belgium<br>(3,0%)     | Canada<br>(3,7%)      |
| Japan<br>(6,6%)       | France<br>(4,1%)  | UK (3,5%)             | Japan<br>(3,7%)   | Netherlands<br>(5,4%) | Switzerland<br>(2,8%) | Netherlands<br>(3,4%) |
| Netherlands<br>(8,0%) | Greece<br>(4,1%)  | Ukrania<br>(2,8%)     | Germany<br>(1,5%) | Canada<br>(4,4%)      | Spain<br>(2,2%)       | Germany<br>(2,4%)     |
| Sweden<br>(5,7%)      | Denmark<br>(4,1%) | Russia<br>(2,1%)      | France<br>(1,1%)  | Spain<br>(3,4%)       | Portugal<br>(2,2%)    | Italy<br>(1,7%)       |

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|                     |                   |                   |                   |                     |                       |                     |
|---------------------|-------------------|-------------------|-------------------|---------------------|-----------------------|---------------------|
| Australia<br>(5,2%) | Others<br>(17,6%) | Others<br>(10,5%) | Belgium<br>(1,1%) | Austria<br>(2,5%)   | UK<br>(2,2%)          | Australia<br>(1,2%) |
| Canada<br>(3,3%)    |                   |                   | Others<br>(12,0%) | Australia<br>(2,5%) | Netherlands<br>(1,7%) | Israel<br>(1,2%)    |
| Israel<br>(3,3%)    |                   |                   |                   | Germany<br>(2,5%)   | Italy<br>(1,4%)       | Spain<br>(1,2%)     |
| Others<br>(15,1%)   |                   |                   |                   | Sweden<br>(2,5%)    | Others<br>(5,0%)      | Sweden<br>(1,2%)    |
|                     |                   |                   |                   | Others<br>(13,8%)   |                       | Others<br>(7,0%)    |
| Total:100%          | Total:100%        | Total: 100%       | Total: 100%       | Total:100%          | Total:100%            | Total: 100%         |

Source: Authors' own database

Comparing the frequency of publication of papers by theme we find patterns for research published by European and North-American authors (Table 6). European authors tend to do more research in the following topics:

- Innovation; new technologies; networks; industrial districts; entrepreneurship;
- Employment; labour; labour markets; human resources;
- Globalisation; international trade; multinational firms, foreign direct investment; urban and regional competitiveness.

**Table 6**  
**Papers by themes according to affiliation of first author, 1990-98**

| Themes | North America | Others | Europe | % North America | %Others | %Europe |
|--------|---------------|--------|--------|-----------------|---------|---------|
| 1      | 31            | 7      | 28     | 5,3%            | 5,3%    | 2,9%    |
| 2      | 15            | 8      | 22     | 2,6%            | 6,1%    | 2,3%    |
| 3      | 7             | 2      | 17     | 1,2%            | 1,5%    | 1,8%    |
| 4      | 17            | 3      | 42     | 2,9%            | 2,3%    | 4,4%    |
| 5      | 15            | 3      | 16     | 2,6%            | 2,3%    | 1,7%    |
| 6      | 0             | 0      | 0      | 0,0%            | 0,0%    | 0,0%    |
| 7      | 5             | 0      | 5      | 0,9%            | 0,0%    | 0,5%    |
| 8      | 12            | 13     | 40     | 2,1%            | 9,8%    | 4,2%    |
| 9      | 54            | 9      | 18     | 9,2%            | 6,8%    | 1,9%    |
| 10     | 23            | 5      | 78     | 3,9%            | 3,8%    | 8,2%    |
| 11     | 51            | 8      | 45     | 8,7%            | 6,1%    | 4,7%    |
| 12     | 41            | 8      | 129    | 7,0%            | 6,1%    | 13,6%   |
| 13     | 11            | 2      | 28     | 1,9%            | 1,5%    | 2,9%    |
| 14     | 21            | 3      | 57     | 3,6%            | 2,3%    | 6,0%    |
| 15     | 1             | 0      | 50     | 0,2%            | 0,0%    | 5,3%    |
| 16     | 20            | 4      | 49     | 3,4%            | 3,0%    | 5,1%    |
| 17     | 18            | 3      | 48     | 3,1%            | 2,3%    | 5,0%    |
| 18     | 17            | 4      | 55     | 2,9%            | 3,0%    | 5,8%    |
| 19     | 7             | 3      | 12     | 1,2%            | 2,3%    | 1,3%    |
| 20     | 0             | 0      | 1      | 0,0%            | 0,0%    | 0,1%    |
| 21     | 1             | 2      | 13     | 0,2%            | 1,5%    | 1,4%    |

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|              |            |            |            |             |             |             |
|--------------|------------|------------|------------|-------------|-------------|-------------|
| <b>22</b>    | 59         | 7          | 39         | 10,1%       | 5,3%        | 4,1%        |
| <b>23</b>    | 23         | 4          | 46         | 3,9%        | 3,0%        | 4,8%        |
| <b>24</b>    | 63         | 23         | 42         | 10,8%       | 17,4%       | 4,4%        |
| <b>25</b>    | 50         | 2          | 21         | 8,6%        | 1,5%        | 2,2%        |
| <b>26</b>    | 3          | 0          | 6          | 0,5%        | 0,0%        | 0,6%        |
| <b>27</b>    | 19         | 9          | 45         | 3,3%        | 6,8%        | 4,7%        |
| <b>Total</b> | <b>584</b> | <b>132</b> | <b>952</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> |

Note: For 2 papers we do not know the country of first author.

Source: Authors' own database

As for North American authors, they tend to concentrate their research on the following themes:

- General spatial economics; welfare; spatial interaction; spatial markets;
- Econometrics; spatial statistics, input-output; other quantitative methods;
- Population; migration; mobility;
- Regional growth models; convergence/divergence; regional disparities;
- Methodology of regional science.

North-American research is more abstract and closer to research in other core areas of economics, namely industrial organisation and microeconomics. European research is more policy oriented and less abstract. There is a close relationship between theme orientation by place of edition of journals and place of work of authors.

**Table 7**  
**Relative importance of Southern European literature by themes, 1990-98**

| <b>Themes</b> | <b>Southern Europe<br/>(number of papers)</b> | <b>Other European<br/>Countries<br/>(number of papers)</b> | <b>Southern Europe<br/>(% of papers)</b> | <b>Other European<br/>Countries<br/>(% of papers)</b> |
|---------------|---|--|--|---|
| <b>1</b>      | 13  | 15   | 3,7                                      | 2,5   |
| <b>2</b>      | 11  | 11   | 3,1                                      | 1,8   |
| <b>3</b>      | 6   | 11   | 1,7                                      | 1,8   |
| <b>4</b>      | 24  | 18   | 6,8                                      | 3,0   |
| <b>5</b>      | 3   | 13   | 0,8                                      | 2,2   |
| <b>6</b>      | 0   | 0  | 0,0                                      | 0,0   |
| <b>7</b>      | 2   | 3  | 0,6                                      | 0,5   |
| <b>8</b>      | 13  | 27   | 3,7                                      | 4,5   |
| <b>9</b>      | 3   | 15   | 0,8                                      | 2,5   |
| <b>10</b>     | 19  | 59   | 5,4                                      | 9,8   |
| <b>11</b>     | 22  | 23   | 6,2                                      | 3,8   |
| <b>12</b>     | 59  | 70   | 16,7                                     | 11,7  |
| <b>13</b>     | 6   | 22   | 1,7                                      | 3,7   |
| <b>14</b>     | 24  | 33   | 6,8                                      | 5,5   |
| <b>15</b>     | 18  | 32   | 5,1                                      | 5,3   |
| <b>16</b>     | 15  | 34   | 4,2                                      | 5,7   |

|              |     |     |     |     |
|--------------|-----|-----|-----|-----|
| <b>17</b>    | 26  | 22  | 7,4 | 3,7 |
| <b>18</b>    | 25  | 30  | 7,1 | 5,0 |
| <b>19</b>    | 2   | 10  | 0,6 | 1,7 |
| <b>20</b>    | 0   | 1   | 0,0 | 0,2 |
| <b>21</b>    | 5   | 8   | 1,4 | 1,3 |
| <b>22</b>    | 7   | 32  | 2,0 | 5,3 |
| <b>23</b>    | 22  | 24  | 6,2 | 4,0 |
| <b>24</b>    | 10  | 32  | 2,8 | 5,3 |
| <b>25</b>    | 9   | 12  | 2,5 | 2,0 |
| <b>26</b>    | 0   | 6   | 0,0 | 1,0 |
| <b>27</b>    | 9   | 36  | 2,5 | 6,0 |
| <b>Total</b> | 353 | 599 | 100 | 100 |

Source: Authors' own database

Another question we want to address is to determine to what degree research in Southern European Countries (France, Italy, Spain, Portugal, Greece, Turkey, and others) has a different orientation of research produced in other European countries. As we can see in Table 7, there are some differences, but they have not the scope we sometimes expect. Southern Europeans tend to pay more attention to subjects that characterise as distinctive the European production (innovation; new technologies; networks; industrial districts; entrepreneurship; globalisation; international trade; multinational firms; foreign direct investment; urban and regional competitiveness).

So far, we only consider the country where first author works. It is also important to determine the relative frequency of joint research between authors working in different countries (Table 8). According to our results, 148 papers (8,9% of total) have been written by authors from two or more countries (only four papers were written by authors working in three different countries). From those 148 papers, 43 have authors working in Europe and North America. From these 43 papers 11 correspond to joint work between authors working in North America and in the United Kingdom and 8 to joint work between North America and Switzerland, authors.

**Table 8**  
**Joint Papers between Europe and North American authors, 1990-1998**

| <b>European Country</b> | <b>North American Country</b> | <b>Number of Papers</b> |
|-------------------------|-------------------------------|-------------------------|
| Austria                 | USA                           | 3                       |
| Belgium and France      | Canada                        | 1                       |
| Germany                 | Canada                        | 1                       |
| France                  | Canada                        | 2                       |
| France                  | USA                           | 2                       |

|                    |                |           |
|--------------------|----------------|-----------|
| Germany and Sweden | USA            | 1         |
| Italy and France   | Canada         | 1         |
| Netherlands        | Canada         | 1         |
| Netherlands        | USA            | 1         |
| Portugal           | USA            | 1         |
| Spain              | USA            | 3         |
| Sweden             | USA            | 4         |
| Switzerland        | Canada and USA | 1         |
| Switzerland        | Canada         | 2         |
| Switzerland        | USA            | 5         |
| UK                 | Canada         | 2         |
| UK                 | USA            | 11        |
| Ukraine            | USA            | 1         |
| <b>Total</b>       |                | <b>43</b> |

Source: Authors' own database

This effort of joint research between the two continents is stronger in themes that constitute a core area of research for one the continents. As we can observe in annex 2 such is the case of themes 24, 12, 1, 22 and 11.

#### 4. Conclusions

In this paper we intended to present empirical evidence on the distinctive aspects of Regional Science research produced in Europe when compared with similar research produced in North America. For that purpose we constructed a data set with articles published in seven leading journals in the field of Regional Science. We analysed 1670 articles, which in our view constitute a good basis to detect distinctive features of Regional Science in Europe and North America.

Our results confirm that there is, as a matter of fact, a different approach by researchers in Europe and North America. European researchers tend to work on more policy oriented issues whereas North American researchers tend to develop more abstract issues. European production has its core areas in issues such as innovation, new technologies, networks, industrial districts, entrepreneurship, production systems, flexible production, producer services, globalisation, European Union and cross-border development. North American authors tend to concentrate on issues such as spatial statistics, quantitative methods, spatial markets, general spatial economics, regional growth models and regional disparities.

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We found a close relationship between place of work of authors of papers published and place of edition of journals in five out of seven journals. The journal orientation and the type of research produced is very similar in each of the sub-spaces considered. It remains to determine which is the cause and the effect. Does journal orientation influences research produced or it is the other way around?

Trying to detect differences between Southern European research and other European research, we found that differences have not the scope we expected. Nevertheless, we can conclude that Southern European authors tend to pay more attention to subjects that are distinctive features of European research in the regional science field.

Although joint production of papers is very frequent, only 148 papers (8,9%) of total have been written by authors working in two or more countries. From those 143 papers, 43 were written by authors working in Europe and North America. Analysing the themes where such collaboration happens we found that it occurs more frequently in subjects belonging to the core areas identified above. It seems that joint research is more useful when one of the parts has a comparative advantage, both in terms of experience of research in the subject and access to journals oriented to such issues.

**Annex 1 – Journals in Regional Science and related areas**

| TITLE   | DETAILS OF PUBLICATION |                            |                         |             |
|---|------------------------|----------------------------|-------------------------|-------------|
|   | 1ST YEAR               | Issues per Year as in 1997 | DOMINANT LANGUAGE       | COUNTRY     |
| ASIAN AND PACIFIC MIGRATION JOURNAL (APMJ)  | ?                      | 4                          | ?                       | Philippines |
| JOURNAL OF THE AMERICAN REAL ESTATE AND URBAN ECONOMICS ASSOCIATION (AREUEA)  | ?                      | 4                          | English                 | USA         |
| THE ANNALS OF REGIONAL SCIENCE, An International Journal of Urban, Regional and Environmental Research and Policy (ARS) | 1967                   | 4                          | English                 | Germany     |
| LES ANNALES DE LA RECHERCHE URBAINE   | 1978                   | 4                          | French                  | France      |
| COMPETITION AND CHANGE, The Journal of Global Business and Political Economy (CC)                                       | 1995                   | ?                          | English                 | UK          |
| DEMOGRAPHY (DEM)  | ?                      | 4                          | English                 | USA         |
| ECONOMIC DEVELOPMENT QUARTERLY (EDQ)  | ?                      | 4                          | English                 | USA         |
| ECONOMIC GEOGRAPHY (EG)   | 1925                   | 4                          | English                 | USA         |
| ENVIRONMENT AND PLANNING A (EPA)  | 1969                   | 12                         | English                 | UK          |
| ENVIRONMENT AND PLANNING C: Government and Policy (EPC)   | 1983                   | 4                          | English                 | UK          |
| L'ESPACE GEOGRAPHIQUE   | 1972                   | 4                          | French                  | France      |
| EUREG, European Journal of Regional Development (EUROG)   | 1994                   | 4                          | English, French, German | Germany     |
| EUROPEAN PLANNING STUDIES (EPS)   | 1993                   | 6                          | English                 | UK          |
| EUROPEAN SPATIAL RESEARCH AND POLICY (ESRP)   | 1994                   | 4                          | English                 | Poland      |
| EUROPEAN URBAN AND REGIONAL STUDIES (EURS)  | 1994                   | 4                          | English                 | UK          |
| ENTREPRENEURSHIP AND REGIONAL DEVELOPMENT (ERD)   | ?                      | 4                          | English                 | Ireland     |
| EUROPEAN RESEARCH IN REGIONAL SCIENCE (ERRS)  | ?                      | 1                          | English                 | UK          |
| GEOGRAPHICAL ANALYSIS (GA)  | 1969                   | 4                          | English                 | USA         |
| GEOGRAPHICAL AND ENVIRONMENTAL MODELLING (GEM)  | 1997                   | 2                          | English                 | UK          |
| GEOGRAPHY AND ENVIRONMENTAL MODELLING (GYEM)  | 1998                   | 4                          | English                 | Canada      |
| GEOGRAPHICAL SYSTEMS (GS)   | ?                      | 4                          | English                 | USA         |



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|   |      |   |                   |                 |
|---|------|---|-------------------|-----------------|
| GEOGRAPHIA POLONICA (GP)  | ?    | 3 | ?                 | Poland          |
| GENDER, PLACE AND CULTURE (GPC)   | ?    | 3 | English           | USA             |
| GROWTH AND CHANGE (GC)  | 1970 | 4 | English           | USA             |
| INTERNATIONAL JOURNAL OF URBAN AND REGIONAL RESEARCH (IJURR)                                    | 1977 | 4 | English           | UK              |
| INTERNATIONAL PLANNING STUDIES (IPS)  | 1996 | ? | English           | UK              |
| INTERNATIONAL REGIONAL SCIENCE REVIEW (IRSR)  | 1975 | 3 | English           | USA             |
| JOURNAL OF REGIONAL SCIENCE (JRS)   | 1961 | 4 | English           | USA             |
| JOURNAL OF URBAN ECONOMICS (JUE)  | 1974 | 6 | English           | USA             |
| PAPERS IN REGIONAL SCIENCE: The Journal of the Regional Science Association International (PRS) | 1954 | 4 | English           | USA             |
| PLANNING PRACTICE AND RESEARCH (PPR)  | 1986 | 4 | English           | UK              |
| PROGRESS IN PLANNING (PIP)  | 1973 | 4 | English           | USA             |
| RÉGION ET DÉVELOPPEMENT (RD)  | 1995 | 4 | French            | France          |
| REGIONAL DEVELOPMENT DIALOGUE (RDD)   | ?    | 2 | ?                 | Japan           |
| REGIONAL POLITICS AND POLICY - REGIONAL AND FEDERAL STUDIES (RPP)                               | 1991 | 3 | English           | UK              |
| REGIONAL SCIENCE AND URBAN ECONOMICS (RSUE)   | 1975 | 6 | English           | The Netherlands |
| REGIONAL SCIENCE STUDIES (RSS)  | N.D. | 4 | English           | USA             |
| REGIONAL STUDIES (RS)   | 1967 | 9 | English           | UK              |
| REVIEW OF REGIONAL STUDIES (RRS)  | 1970 | 3 | English           | USA             |
| REVIEW OF URBAN AND REGIONAL DEVELOPMENT STUDIES (RURDS)  | ?    | 2 | ?                 | Japan           |
| REVUE CANADIENNE DES SCIENCES RÉGIONALES (RCSR)   |      | 3 | English<br>French | Canada          |
| REVUE D'ÉCONOMIE INDUSTRIELLE (REI)   | 1977 | 4 | French            | France          |
| REVUE D'ÉCONOMIE RÉGIONALE ET URBAINE (RERU)  | 1978 | 4 | French            | France          |
| RURAL SOCIOLOGY (RSOC)  | ?    | 4 | English           | USA             |
| SPACE AND POLICY (SP)   | 1997 | 4 | English           | UK              |
| SYSTEMI URBANI (SU)   | 1979 | 4 | ?                 | Italy           |

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|  |      |   |         |                 |
|--|------|---|---------|-----------------|
| SOCIO-ECONOMIC PLANNING SCIENCES (SEPS)                  | ?    | 4 | English | USA             |
| TIJDSCHRIFT VOOR ECONOMISCHE EN SOCIALE GEOGRAFIE (TESG) | ?    | 5 | ?       | The Netherlands |
| THE RURAL SOCIOLOGIST (TRS)                              | ?    | 4 | English | USA             |
| TOWN PLANNING REVIEW (TPR)                               | 1910 | 4 | English | UK              |
| URBAN GEOGRAPHY (UG)                                     | 1980 | 8 | English | USA             |
| URBAN STUDIES (US)                                       | 1964 | 9 | English | UK              |

Source: Benko, G. 1998, *La Science Régionale*, Paris: Presses Universitaires de France, pp. 18-21.

IRSR, vol.21, no. 3, pp. 252-257.

**Annex 2 - Joint papers written by European and North American authors, by theme, 1990-98**

| Themes       | Number of papers | % of joint papers between European and North American Authors |
|--------------|------------------|---|
| 1            | 4                | 9,3   |
| 2            | 2                | 4,7   |
| 3            | 0                | 0   |
| 4            | 1                | 2,3   |
| 5            | 1                | 2,3   |
| 6            | 0                | 0   |
| 7            | 0                | 0   |
| 8            | 4                | 9,3   |
| 9            | 1                | 2,3   |
| 10           | 2                | 4,7   |
| 11           | 4                | 9,3   |
| 12           | 5                | 11,6  |
| 13           | 0                | 0   |
| 14           | 2                | 4,7   |
| 15           | 0                | 0   |
| 16           | 0                | 0   |
| 17           | 0                | 0   |
| 18           | 0                | 0   |
| 19           | 0                | 0   |
| 20           | 0                | 0   |
| 21           | 0                | 0   |
| 22           | 3                | 7,0   |
| 23           | 0                | 0   |
| 24           | 7                | 16,3  |
| 25           | 4                | 9,3   |
| 26           | 1                | 2,3   |
| 27           | 2                | 4,7   |
| <b>Total</b> | 43               | 100   |

Source: Authors' own database

<sup>1</sup> Petty, W., *The Economic Writings of Sir W.P.* (edited in 1901).

<sup>2</sup> Cantillon, R., 1755, *Essai sur la Nature du Commerce en Général*

<sup>3</sup> Von Thünen, J.H., *Der isolierte Staat in Beziehung auf Landwirtschaft und Nationalökonomie*, Hamburg and Rostock, 1826-1863.

<sup>4</sup> Launhardt, W. 1882, *Die Bestimmung des zweckmassigsten Standortes einer gerverblichen Anlage*, *Zeitschrift des vereins deutscher Ingenieure*, no. 3, and 1855, *Mathematische Begründung des Volkswirtschaftslehre*.

<sup>5</sup> Weber, A., 1909, *Über den Standort der Industrien*, Tübingen

<sup>6</sup> Christaller, W., 1933, *Die Zentralen Orte in Süddeutschland*, Iena, Fischer

<sup>7</sup> Lösch, A., 1940, *Die Räumliche Ordnung der Wirtschaft*, Iena, Fischer

<sup>8</sup> Other important contributions are those of Alfred Marshall (1890), *Principles of Economics* and Tord Palander (1935) *Beiträge zur Standortstheorie*, Uppsala.

<sup>9</sup> An important North-American contribution is that of H.Hotelling's 1929 paper, *Stability in Competition*, published in *The Economic Journal*.

<sup>10</sup> Some years later, seminal work by R. F. Muth 1961, *The spatial structure of the housing market*, *Papers of the R.S.A.*, vol. 7, L. Wingo 1961, *Transportation and urban land*, *Resources for the Future*, Washington and W. Alonso 1964, *Location and Land Use. Toward a General Theory of Land Rent*,

Cambridge, MA, Harvard University Press, contributed to the emergence of another field of spatial economics: urban economics.

<sup>11</sup> The birth of the field of Regional Science is commonly associated with the formation of the regional Science Association (RSA).

<sup>12</sup> Isard, W., 1956, *Location and Space Economy*, London, Chapman & Hall

<sup>13</sup> F. Perroux (1950), *Les espaces économiques*, *Economie Appliquée*, no. 1, pp. 225-244.

<sup>14</sup> Ponsard, C., 1955, *Economie et Espace. Essai d'intégration du facteur spatial dans l'analyse économique*, Paris. Sedes

<sup>15</sup> As for instance the Department of Regional Science at the University of Pennsylvania.

<sup>16</sup> As for instance Funck (1989, published in 1991), Jensen (1991), and the panel on "Regional Science in crisis" held during the 32nd Meeting of the Western Regional Science Association and published in 1994 in the *PRS*: Bailly and Coffey (1994), Gibson (1994), Plane (1994), Vickerman (1994). On the other side of the Atlantic, a similar concern gave rise to contributions from a group of students of the University of Bordeaux (Columbus, *RERU*, 1995, no. 2). In fact, this particular *RERU* number contains other contributions on the same subject.

<sup>17</sup> Special joint sessions have been organised in annual regional science meetings, by European and North-American dominated regional science associations. There is also an increasing participation of North-American researchers in major European meetings and of European researchers in North-American meetings.

<sup>18</sup> See annex 1. Journals in the regional and urban studies group are mainly in the following subject areas: economics, geography and planning. Some of the journals listed are not primarily regional or urban studies journals, but they are often cited by regional or urban researchers (Taylor and Johnes, 1992: 94).

<sup>19</sup> Selected European journals are: *ARS* – The Annals of Regional Science ; *EURS* – European Urban and Regional Studies; *RERU* – Revue d'Economie Régionale et Urbaine; *RS* – Regional Studies.

<sup>20</sup> Selected North-American journals are: *JRS* – Journal of Regional Science; *IRSR* – International Regional Science Review; *PRS* - Papers in Regional Science

<sup>21</sup> Among selected journals we have two "official" journals of the main international regional science associations – the RSAI which is English speaking dominated and the ASRDLF, which aggregates mainly French speaking researchers.

<sup>22</sup> The ASRDLF was founded in 1961, by F. Perroux and W. Isard, under the initiative of J. Boudeville (Lajugie, Delfaud and Lacour, 1985: 145).

<sup>23</sup> As for instance, contributions in the "Policy review" section of *Regional Studies*.

<sup>24</sup> All the selected papers have been loaded in a database using Microsoft Access software. Authors wish to acknowledge the contribution of Jorge Barreiros, José Rodrigues, Michel Moreira and Ricardo Campos in loading the database that supports this research.

<sup>25</sup> Affiliation of the authors at the time of publication reflects "the actual research output produced, in contrast to the current affiliation of the authors which might serve as a proxy for future research output for the current institution" (Kalaitzidakis et al., 1999, 1152).

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